Los Angeles County
Metropolitan Transportation Authority

Recirculated Draft Environmental Impact Report

GOLD LINE EASTSIDE TRANSIT CORRIDOR PHASE 2

Metro

Prepared for
Los Angeles Metropolitan
Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012

June 2022

Recirculated Draft Environmental Impact Report

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Prepared for:
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Table of Contents

Tables

Figures

Appendices

Executive Summary

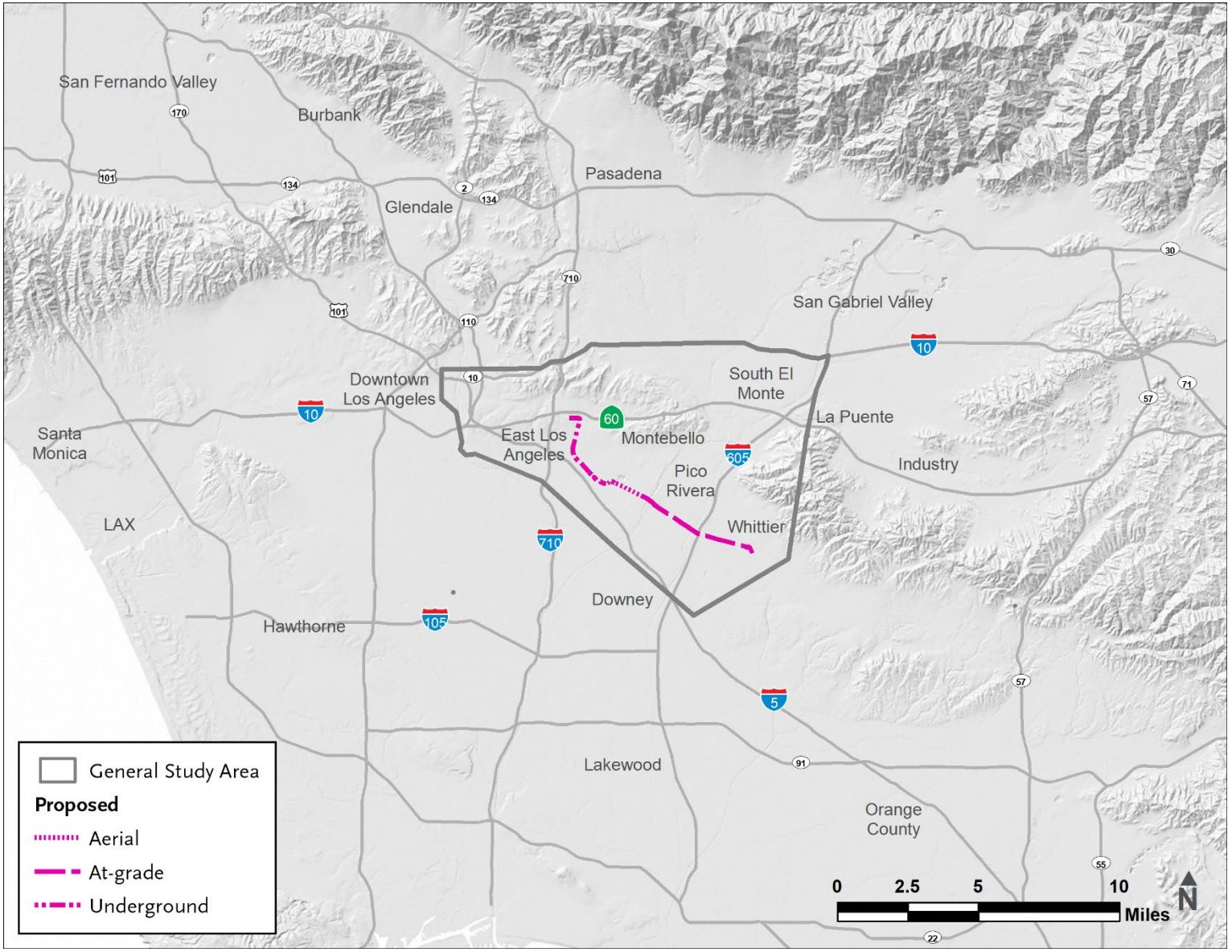
ES.1 Introduction

The intent of this Executive Summary is to provide a synopsis of the Los Angeles County Metropolitan Transportation Authority (Metro) Eastside Transit Corridor Phase 2 Project (Project) and its potential effects on the environment. The Executive Summary is an overview of the main elements of the document, including: purpose and process of the Recirculated Draft Environmental Impact Report (Draft EIR); project history, public review, and project objectives; descriptions of the alternatives considered; summary of the environmental analysis and comparison of alternatives; and areas of controversy and issues to be resolved. More detailed discussion, analysis, and information is contained within the Recirculated Draft EIR and the Appendices.

The Project would extend the Metro L (Gold) Line, a light rail transit (LRT) line, from its current terminus at the Atlantic Station in the unincorporated community of East Los Angeles to the city of Whittier within the Gateway Cities subregion of Los Angeles County. It would extend the existing Metro L (Gold) Line approximately 3.2 to 9.0 miles and include maintenance and storage facility (MSF) site options and design options, depending on the Build Alternative. A diverse mix of land uses are located along the alignment, including single- and multi-family residences, commercial and retail uses, industrial development, parks and recreational, health and medical uses, educational institutions, and vacant land. The Project would traverse densely populated, low-income, and heavily transit-dependent communities with major activity centers.

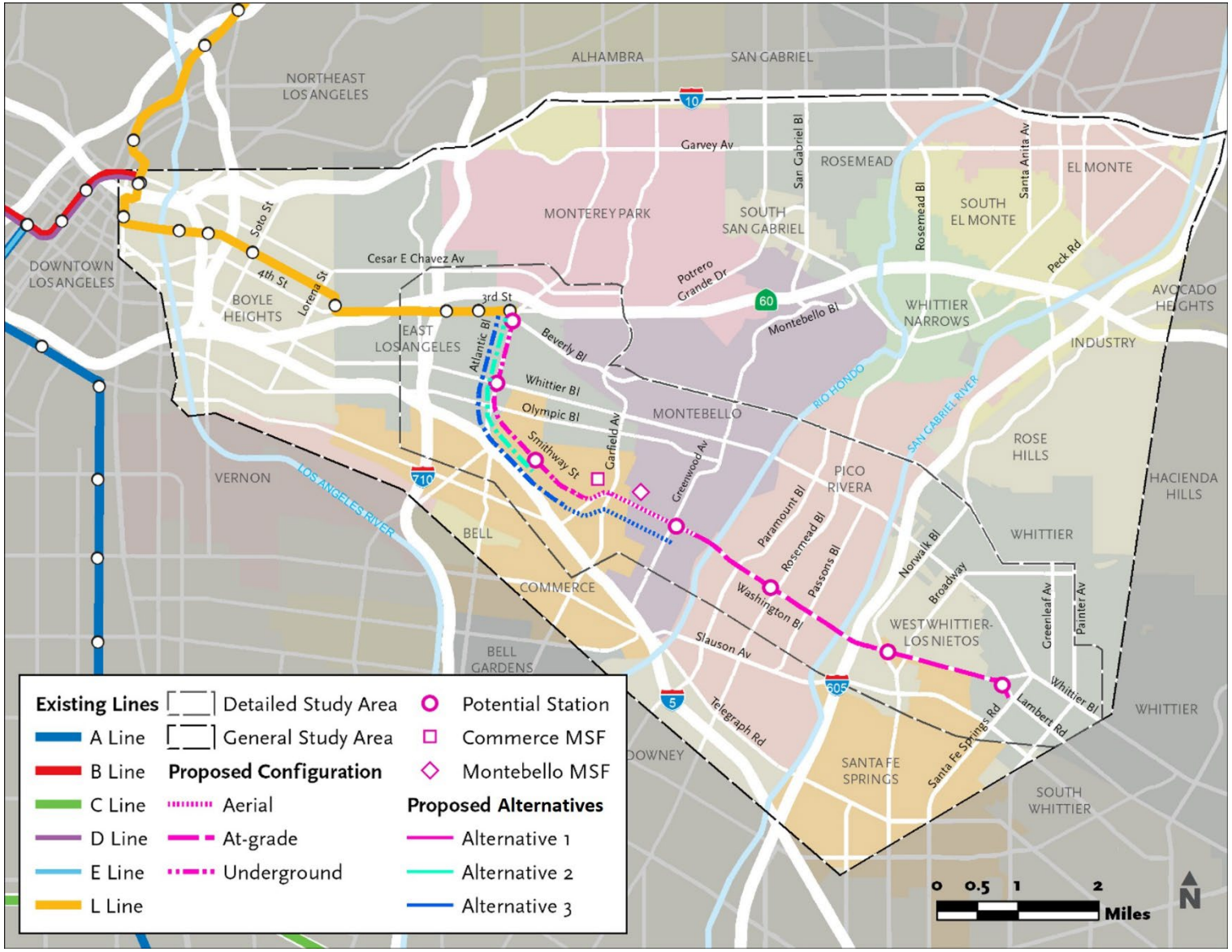
For purposes of describing the Project, two study areas have been defined. The general study area (GSA) is regional in scope and scale and consists of a wider area that is expected to be served by the Project. The GSA currently has limited transportation options, which contributes to long travel delays connecting to and from downtown Los Angeles and would be served by improved access to LRT. The detailed study area (DSA) encompasses the local area within approximately two miles from the Project alignment. **Figure ES.1** shows the Project's regional location and **Figure ES.2** shows the Project's GSA and DSA.

Below is a summary of the Recirculated Draft EIR, highlighting the Project alternatives considered and their impact findings and conclusions.



Source: Metro; CDM Smith/AECOM JV, 2022.

Figure ES.1. Regional Location Map



Source: Metro; CDM Smith/AECOM JV, 2022.

Figure ES.2. General Study Area and Detailed Study Area

ES.2 Purpose of the Recirculated Draft Environmental Impact Report

This Recirculated Draft EIR satisfies the requirements of the California Environmental Quality Act (CEQA)[1] and CEQA Guidelines[2] to inform decision-makers and the public about the potential significant environmental impacts of the Project; ways to avoid significant effects through a review of Build Alternatives, MSF site options, and design options; required mitigation measures that would minimize or reduce impacts to less than significant levels; and impacts that would be significant and avoidable. As the lead public agency, Metro has the principal responsibility for approving the Project and will use this Recirculated Draft EIR to consider the environmental consequences of the Project. Lead public agencies are charged with the duty to avoid or substantially lessen significant environmental impacts of a project, where feasible. In approving the Project, Metro will balance the Project's environmental, economic, social, and transportation benefits compared to its significant and unavoidable impact on the environment. As such, this Recirculated Draft EIR is an informational public document to be used to analyze the significant environmental effects of the Project, identify alternatives, and disclose potential ways to reduce or avoid the possible change to the environment. Significant effects on the environment are defined as a substantial adverse change in the physical conditions which exist in the area affected by the Project.[3]

ES.2.1 Environmental Review Process

This document is a recirculation of an earlier Draft EIR/Environmental Impact Statement (EIS) that was issued for public review on August 22, 2014. Per CEQA Guidelines,[4] Metro is required to recirculate when significant new information is added to the EIR after the public review notice was given, such as changes to either the Project or environmental setting. Since August 2014, the project definition has been refined; as such, on May 31, 2019, a Notice of Preparation (NOP) and Notice of Intent (NOI) of a Recirculated Draft EIR/EIS was issued.

The Project's environmental review process began in January 2009, when the Metro Board of Directors (Metro Board) approved the Project's Alternatives Analysis (AA) which identified two build alternatives for environmental review. The Project was identified in Metro's 2009 and 2020 Long Range Transportation Plan (LRTP) and is a transit project funded by local tax Measure R (approved by voters in November 2008) and Measure M (approved by voters in November 2016).

A NOP and NOI to prepare a Draft EIR/EIRS was originally issued in 2010 with two build alternatives – State Route 60 (SR 60) and Washington Boulevard, as well as a No Build and Transportation Systems Management (TSM) Alternative. To address initial environmental concerns, outreach efforts to agencies affiliated with the Project were conducted, including agency scoping meetings, participation in a Technical Advisory Committee, and 37 individual agency coordination meetings. As part of the outreach program during the AA and Draft EIS/EIR phases, Metro also held over 300 meetings with a wide array of stakeholder groups.

1 Per Public Resources Code Section 21000, et seq.
2 California Code of Regulations, Title 14, Chapter 3, Section 15000, et seq. (CEQA Guidelines).
3 California Code of Regulations, Title 14, Chapter 3, Section 15002(g).
4 California Code of Regulations, Title 14, Chapter 3, Section 15088.5(a).

The Draft EIR/EIS was released on August 22, 2014, for a public comment period of 60 days. Based on the volume and scope of comments received on the Draft EIR/EIS, in November 2014, the Metro Board determined that additional technical investigation would be needed to address major areas of concern raised on both build alternatives. As a result, three north-south connection options for the Washington Boulevard Alternative were developed and shared at community meetings held in March 2016, June 2016, and February 2017 and extensive community feedback was collected and assessed. Based on the technical analysis, design refinements and feedback received from the community and key stakeholders, the Atlantic Boulevard below-grade option was recommended for Metro Board approval as part of a refined Washington Boulevard Alternative.

In May 2017, the Metro Board advanced the No Build Alternative and three refined build alternatives for environmental review: SR 60 Alternative, Washington Boulevard Alternative, and a Combined Alternative (defined as full build out of both the SR 60 and Washington Boulevard Alternatives). The Federal Transit Administration (FTA) published a Notice of Intent (NOI) in the Federal Register to initiate the EIS process (pursuant to the National Environmental Policy Act (NEPA)), and Metro issued NOP (pursuant to CEQA) on May 31, 2019. The NOI/NOP informed the public of the Build Alternatives, provided notice of a 45-day scoping period, and issued a notice of intent to release a Supplemental/Recirculated Draft EIS/EIR. The NOI/NOP also described consideration of adopting a Locally Preferred Alternative (LPA) by the Metro Board based on the findings of the Supplemental/Recirculated Draft EIS/EIR.

Issues and constraints within or along the SR 60 Alternative became more evident as further technical environmental analysis, additional engineering design, and Metro policy and program updates were completed. Conflicts with future improvements along the SR 60 freeway and environmental challenges associated with running parallel or in an aerial configuration along the SR 60 corridor created engineering and environmental challenges. The Combined Alternative compounded these technical challenges as it required the addition of an underground wye junction at the current terminus of the Metro L (Gold) Line.

In February 2020, the Metro Board approved withdrawal of the SR 60 and Combined Alternatives and the discontinuation of the NEPA analysis. Following this Metro Board action, FTA and cooperating agencies were notified of the decision to discontinue the NEPA environmental study (Supplemental Draft EIS) and advance a Recirculated Draft EIR pursuant to CEQA.

Consistent with CEQA Guidelines,[5] Metro requests public and agency reviewers submit comments on this Recirculated Draft EIR during a 60-day public comment period. This comment period includes public hearings throughout the DSA to present findings of the Draft EIR and solicit public comments on the document. Opportunities for the public to provide comments and participate in public hearings are identified in Chapter 6, Public Outreach.

After circulation of the Recirculated Draft EIR and review of public and agency comments, the Metro Board can consider and select an LPA. Public and agency comments received on the Recirculated Draft EIR will be considered as part of the LPA selection process. If an LPA is selected by the Metro Board, Metro will then prepare a Final EIR including written responses to public and agency comments. The Metro Board may then adopt the findings of the Project's environmental effects after implementation of mitigation measures and statement of overriding considerations, certify the Final EIR, and approve the Project.

5 California Code of Regulations, Title 14, Chapter 3, Section 15088.5(f)(1).

ES.2.2 Project Objectives

East Los Angeles County faces an increasing number of mobility challenges due to high population, employment growth, and a constrained transportation network. The existing terminus of Metro L (Gold) Line is located approximately four miles east of Downtown Los Angeles at Atlantic Boulevard and Pomona Boulevard in the unincorporated community of East Los Angeles. There is no rail connection for communities located to the east. By extending the existing Metro L (Gold) Line into eastern Los Angeles County, the Project will enhance access and mobility to communities located further east and provide connectivity to other destinations along Metro's regional transit system. Further, the Project will reduce travel times and the need for transfers within the system. By serving concentrated areas of employment, activity centers and residential communities, the Project will support transit-oriented community goals and address the needs of transit-dependent populations. The Project will provide new and faster transit options which will help lead to equitable development and in-fill growth opportunities throughout eastern Los Angeles County. In support of the goals documented in Metro's 2020 LRTP and Metro's Vision 2028 Strategic Plan, the Project Objectives include the following:

- Enhance regional connectivity and air quality goals by extending the existing Metro L (Gold) Line further east from the East Los Angeles terminus
- Provide mobility options to increase accessibility and convenience to and from eastern Los Angeles County
- Improve transit access to activity centers and employment within eastern Los Angeles County that would be served by the Project
- Accommodate future transportation demand resulting from increased population and employment growth
- Enable jurisdictions in eastern Los Angeles County to address their transit-oriented community goals and provide equitable development opportunities
- Improve accessibility and connectivity to transit-dependent communities

ES.3 Alternatives Considered/Project Description

Metro has identified three Build Alternatives as well as a No Project Alternative that are considered and included in this Recirculated Draft EIR. The Build Alternatives include Alternative 1 Washington (Atlantic Boulevard to Lambert Station), Alternative 2 (Atlantic to Commerce/Citadel Initial Operating Segment [IOS]), and Alternative 3 (Atlantic to Greenwood IOS). The three Build Alternatives have the same guideway alignment east of the existing terminus at Atlantic Station but vary in length. Alternative 1 has the longest alignment at approximately 9.0 miles with seven stations (one relocated/reconfigured and six new), two maintenance and storage facility (MSF) site options and would terminate at Lambert station on Lambert Road in the city of Whittier. Alternative 2 is approximately 3.2 miles in length with three stations, one MSF site option, and would terminate at the Commerce/Citadel station in the city of Commerce, with non-revenue lead tracks extending further

into the city of Commerce to connect to the Commerce MSF site option. Alternative 3 is approximately 4.6 miles in length with four stations, two MSF site options, and would terminate at Greenwood station in the city of Montebello.

There are also design options under consideration for each of the three Build Alternatives that consist of a variation in the design of the relocated/reconfigured Atlantic Station (applicable to Alternatives 1, 2, and 3) and a variation in the station and alignment profile in the city of Montebello (applicable to Alternatives 1 and 3). Construction and operation of one or both design options are considered and evaluated for Alternative 1 and Alternative 3.

To differentiate the impacts evaluation of a Build Alternative with or without the design option(s) incorporated, a Build Alternative without the design option(s) is referred to as the "base Alternative" (i.e., base Alternative 1). A Build Alternative with a design option incorporated is referred to by using the design option name (e.g., Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option). A summary of the three Build Alternatives and design options are provided below.

ES.3.1 Build Alternatives

Three Build Alternatives, two design options, and two MSF site options evaluated in this Draft EIR include:

- Alternative 1: Washington (Atlantic Boulevard to Lambert station)
  - Design Option 1: Atlantic/Pomona Station Option
  - Design Option 2: Montebello At-Grade Option
  - Commerce MSF site option
  - Montebello MSF site option
- Alternative 2: Atlantic to Commerce/Citadel IOS
  - Design Option 1: Atlantic/Pomona Station Option
  - Commerce MSF site option
- Alternative 3: Atlantic to Greenwood IOS
  - Design Option 1: Atlantic/Pomona Station Option
  - Design Option 2: Montebello At-Grade Option
  - Commerce MSF site option
  - Montebello MSF site option

Table ES-1 summarizes the components for each Build Alternative.

Table ES-1. Summary of Build Alternatives Components

Components	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Alignment length	9 miles	3.2 miles	4.6 miles
Length of underground, aerial, and at-grade2	**Base Alternative[1]**		
	3 miles underground; 1.5 miles aerial; 4.5 miles at-grade[3]	3 miles underground 0.1 miles aerial; 0.1 miles at-grade[3]	3 miles underground; 1.5 miles aerial; 0.1 miles at-grade[3]
	Atlantic/Pomona Station Option		
	Approximately 50 feet of additional underground alignment	Approximately 50 feet of additional underground alignment	Approximately 50 feet of additional underground alignment
	Montebello At-Grade Option		
	3 miles underground; 0.5 miles aerial; 5.5 miles at-grade	NA	3 miles underground; 0.5 miles aerial; 1.1 miles at-grade
Station configuration	**Base Alternative1**		
	7 stations: 3 underground (1 relocated/reconfigured); 1 aerial; 3 at-grade	3 stations: 3 underground (1 relocated/reconfigured)	4 stations: 3 underground (1 relocated/reconfigured); 1 aerial
	Montebello At-Grade Option		
	4 at-grade; 0 aerial	NA	1 at-grade; 0 aerial
Major (signalized) at-grade intersection crossings	**Base Alternative1**		
	11	0	0
	Montebello At-Grade Option		
	15	NA	4
Major aerial crossings	**Base Alternative**		
	6	0	6
	Montebello At-Grade Option		
	2	NA	
Freight rail crossings	5	4	5
Freeway crossings	1 undercrossing at I-605	0	0
River crossings5	2	0	0
TPSS facilities6,	8	3	4
MSF[6] site options	2	1	2

Notes:
1 The Base Alternative is the Build Alternative without the implementation of any design options (Atlantic/Pomona Station Option and/or Montebello At-Grade Option). Design Option are listed in the table if they differ from the Base Alternative.
2 Total lengths do not include MSF lead track
3 The at-grade length includes 0.05-mile of transition from at-grade to underground.
4 Freight rail crossings would be grade separated and would not occur in the at-grade configuration.
5 The Base Alternative with design options would have the same number of river crossings.
6 The Base Alternative with design options would have the same number of TPSS facilities.
Key:
TPSS = Traction Power Substation; MSF = Maintenance and Storage Facility; O&M = Operations and Maintenance; NA = Not Applicable

The Build Alternatives would operate approximately 21.5 hours daily, seven days per week, from 4:00 am to 1:30 am. Construction activities are anticipated to occur over the course of approximately 60 months to 84. Revenue service is anticipated to begin in 2035, but availability and source of funding may change and allow construction to initiate sooner.

Figure ES.3, **Figure ES.4**, and **Figure ES.5** shows the alignments and station locations for the Build Alternatives

ES.3.2 No Project Alternative

Pursuant to CEQA Guidelines,[6] the No Project Alternative establishes impacts that would reasonably be expected to occur in the foreseeable future if the Project were not approved. The No Project Alternative would maintain existing transit service and include planned regional projects through the year 2042. No new transportation infrastructure would be built within the GSA aside from projects currently under construction or funded for construction and operation by 2042 via Measure R or Measure M sales tax measures that were approved by voters. The No Project Alternative would include highway and transit projects identified for funding in Metro's 2020 LRTP and Southern California Association of Governments (SCAG) *Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020 RTP/SCS).

ES.4 Environmental Analysis

The Recirculated Draft EIR identifies the potential environmental impacts of the Project alternatives and discusses design features or mitigation measures that would avoid or substantially reduce these impacts to less than significant levels. Project measures are incorporated as part of the Project and consists of design features, best management practices, or other measures required by law and/or permit approvals. Where relevant, these are included as part of the Project alternatives, MSF site options, and design options. Mitigation measures are the additional actions, not otherwise part of the Project that would be applied to avoid, minimize, or compensate for significant impacts identified. Mitigation measures are required where significant impacts have been identified based on the impact analyses for operation or construction of the Project alternatives, MSF site options, and design options.

Table ES-2 presents a summary of impacts by environmental resources and **Table ES-3** identifies the environmental impacts, required mitigation measures, and impact remaining after mitigation (as applicable) for the Project alternatives.

6 California Code of Regulations, Title 14, Chapter 3, Section 15126.6(e)(2).

Source: Metro; CDM Smith/AECOM JV, 2022.

Figure ES.3. Alternative 1 Washington

Source: Metro; CDM Smith/AECOM JV, 2022.

Figure ES.4. Alternative 2 Atlantic to Commerce/Citadel IOS

Source: Metro; CDM Smith/AECOM JV, 2022.

Figure ES.5. Alternative 3 Atlantic to Greenwood IOS

Table ES-2. Summary of Impacts by Environmental Resource

Alternative		Aesthetics	Air Quality	Biological Resources	Cultural Resources	Energy Resources	Geology and Soils	Green House Gas Emissions	Hazards and Haz-Materials	Hydrology and Water Quality	Land Use	Noise and Vibration	Population and Housing	Public Services and Recreation	Transportation	Tribal Cultural Resources	Utilities and Service Systems	Growth Inducing Impacts
No Project Alternative		NI	SU	NI	NI	NI	NI	SU	NI	LTS	NI	NI	NI	NI	SU	NI	NI	NI
Alt 1[1,2]	Commerce MSF	LTS	LTS	LTSM	SU	LTS	SU	LTS	LTSM	LTSM	LTS	LTSM	LTS	LTS	LTSM	LTSM	LTS	LTS
	Montebello MSF	LTS	LTS	LTSM	LTSM	LTS	SU	LTS	LTSM	LTSM	LTS	LTSM	LTS	LTS	LTSM	LTSM	LTS	LTS
Alt 2[1]	Commerce MSF[1]	LTS	LTS	LTSM	SU	LTS	SU	LTS	LTSM	LTSM	LTS	LTSM	LTS	LTS	LTSM	LTSM	LTS	LTS
Alt 3[1,2]	Commerce MSF	LTS	LTS	LTSM	SU	LTS	SU	LTS	LTSM	LTSM	LTS	LTSM	LTS	LTS	LTSM	LTSM	LTS	LTS
	Montebello MSF	LTS	LTS	LTSM	LTSM	LTS	SU	LTS	LTSM	LTSM	LTS	LTSM	LTS	LTS	LTSM	LTSM	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.

Notes:

1 The Atlantic/Pomona Station design option would be applied to all three Build Alternatives. In comparison with Base Alternatives, this design option would require less cut-and-cover construction which may reduce the severity of significant geological and cultural resources impacts during construction. However, overall findings of significant and unavoidable impacts for would still apply for all Build Alternatives with this design option.

2 The Montebello At-Grade design option would be applied as part of Alternative 1 and Alternative 3. In comparison with the Base Alternatives, this design option includes an at-grade configuration east of Garfield Avenue along Washington Boulevard which would avoid property acquisitions and reduce the severity of significant geological and cultural resources impacts during construction. However, additional transportation mitigation would need to be applied for the at-grade configuration between Garfield Avenue and Montebello Boulevard and the overall findings of significant and unavoidable impacts for Alternative 1 and 3 would still remain with this design option.

Key:

NI = No Impact; LTS = Less Than Significant; LTSM = Less Than Significant with Mitigation; SU = Significant and Unavoidable

Table ES-3. Summary of Impact Evaluation of Recirculated Draft EIR

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
Aesthetics	AES-1	Vistas	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	AES-2	Scenic Highways	Alt 1:	No Impact	None	No Impact
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
	AES-3	Visual Character	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	AES-4	Light and Glare	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
Air Quality	AQ-1	Air Quality Plan	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	AQ-2	Regional Criteria Pollutant Emissions	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 3:	Less Than Significant	None	Less Than Significant
	AQ-3	Localized Pollutant Concentrations	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	AQ-4	Other Emissions	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HR-1	Human Health Risks	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
Biological Resources	BIO-1	Protected Species	Alt 1:	Potentially Significant	• MM BIO-1 (Bat Emergence Surveys) • MM BIO-2 (Bat Nesting Survey) • MM BIO-3 (Bat Exclusion Plan and Measures) • MM BIO-4 (Bird Nesting Survey)	Less Than Significant
			Alt 2:	Potentially Significant	• MM BIO-4 (Bird Nesting Survey)	Less Than Significant
			Alt 3:	Potentially Significant	• MM BIO-4 (Bird Nesting Survey)	Less Than Significant
	BIO-2	Riparian Habitat/ Sensitive Natural Communities	Alt 1:	Potentially Significant	• MM BIO-5 (Equipment Cleaning to reduce spread of Invasive Species) • MM BIO-6 (Tire Cleaning to reduce spread of Invasive Species)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 2:	Potentially Significant	• MM BIO-5 (Equipment Cleaning to reduce spread of Invasive Species) • MM BIO-6 (Tire Cleaning to reduce spread of Invasive Species)	Less Than Significant
			Alt 3:	Potentially Significant	• MM BIO-5 (Equipment Cleaning to reduce spread of Invasive Species) • MM BIO-6 (Tire Cleaning to reduce spread of Invasive Species)	Less Than Significant
	BIO-3	Movement of Fish and Wildlife Species	Alt 1:	Less than Significant	None	Less Than Significant
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
	BIO-4	Policies/ Ordinances	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
Cultural Resources	CUL-1	Historical Resources	Alt 1:	Potentially Significant	• MM CUL-1 (Protection Measures for the Golden Gate Theatre) • MM CUL-2 (Historical Resource Archival Documentation for the Pacific Metals Company Building) • MM CUL-3 (Interpretive Program for the Pacific Metals Company Building) • MM CUL-4 (Protection Measures for Dal Rae Restaurant Sign) • MM CUL-5 (Historical Resource Archival Documentation for the Vail Field Industrial Addition) • MM CUL-6(Interpretive Program for the Vail Field Industrial Addition)	Less Than Significant (If Montebello MSF Site Option is selected) or Significant Unavoidable (If Commerce MSF Site Option is selected)

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 2:	Potentially Significant	• MM CUL-1 (Protection Measures for the Golden Gate Theatre) • MM CUL-5 (Historical Resource Archival Documentation for the Vail Field Industrial Addition) • MM CUL-6 (Interpretive Program for the Vail Field Industrial Addition)	Significant Unavoidable (Commerce MSF Site Option would be selected)
			Alt 3:	Potentially Significant	• MM CUL-1 (Protection Measures for the Golden Gate Theatre) • MM CUL-2 (Historical Resource Archival Documentation for the Pacific Metals Company Building) • MM CUL-3 (Interpretive Program for the Pacific Metals Company Building) • MM CUL-5 (Historical Resource Archival Documentation for the Vail Field Industrial Addition) • MM CUL-6 (Interpretive Program for the Vail Field Industrial Addition)	Less Than Significant (If Montebello MSF Site Option is selected) or Significant Unavoidable (If Commerce MSF Site Option is selected)
	CUL-2	Archaeological Resources	Alt 1:	Potentially Significant	• MM CUL-7 (Site of the Battle of Rio San Gabriel) • MM CUL-8 (Unknown Archaeological Resources)	Less Than Significant
			Alt 2:	Potentially Significant	• MM CUL-8 (Unknown Archaeological Resources)	Less Than Significant
			Alt 3:	Potentially Significant	• MM CUL-8 (Unknown Archaeological Resources)	Less Than Significant
	CUL-3	Disturbance of Human Remains	Alt 1:	Potentially Significant	• MM CUL-9 (Unanticipated Discovery of Human Remains)	Less Than Significant
			Alt 2:	Potentially Significant	• MM CUL-9 (Unanticipated Discovery of Human Remains)	Less Than Significant
			Alt 3:	Potentially Significant	• MM CUL-9 (Unanticipated Discovery of Human Remains)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
Energy	ENG-1	Energy Consumption	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	ENG-2	Energy Plans	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
Geology, Soils, Seismicity, and Paleontological Resources	GEO-1	Exposure to Seismic Hazards	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	GEO-2	Soil Erosion	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	GEO-3	Soil Stability	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	GEO-4	Expansive Soils	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 3:	Less Than Significant	None	Less Than Significant
	GEO-5	Paleontological Resources	Alt 1:	Potentially Significant	• MM GEO-1 (retaining a qualified paleontologist and a qualified paleontological monitor) • MM GEO-2 (ability to readily salvage fossils and samples of sediment) • MM GEO-3 (ability to identify and permanently preserve specimens) • MM GEO-4 (ability to curate specimen to a professional accredited museum repository)	Significant Unavoidable when tunneling using a TBM; Less Than Significant for all other construction and during operations
			Alt 2:	Potentially Significant	• MM GEO-1 (retaining a qualified paleontologist and a qualified paleontological monitor) • MM GEO-2 (ability to readily salvage fossils and samples of sediment) • MM GEO-3 (ability to identify and permanently preserve specimens) • MM GEO-4 (ability to curate specimen to a professional accredited museum repository)	Significant Unavoidable when tunneling using a TBM; Less Than Significant for all other construction and during operations
			Alt 3:	Potentially Significant	• MM GEO-1 (retaining a qualified paleontologist and a qualified paleontological monitor) • MM GEO-2 (ability to readily salvage fossils and samples of sediment) • MM GEO-3 (ability to identify and permanently preserve specimens) • MM GEO-4 (ability to curate specimen to a professional accredited museum repository)	Significant Unavoidable when tunneling using a TBM; Less Than Significant for all other construction and during operations

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
Greenhouse Gas Emissions	GHG-1	Emission Generation	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	GHG-2	Conflicts	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
Hazards and Hazardous Materials	HAZ-1	Transport, Storage, Use, or Disposal of Hazardous Materials	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HAZ-2	Release of Hazardous Materials	Alt 1:	Potentially Significant	• MM HAZ-1 (Phase II Environmental Site Investigation) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials) • MM HAZ-4 (Worker Health and Safety Plan) • MM HAZ-5 (Hazardous Building Survey and Abatement)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 2:	Potentially Significant	• MM HAZ-1 (Phase II Environmental Site Investigation) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials) • MM HAZ-4 (Worker Health and Safety Plan) • MM HAZ-5 (Hazardous Building Survey and Abatement)	Less Than Significant
			Alt 3:	Potentially Significant	• MM HAZ-1 (Phase II Environmental Site Investigation) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials) • MM HAZ-4 (Worker Health and Safety Plan) • MM HAZ-5 (Hazardous Building Survey and Abatement)	Less Than Significant
	HAZ-3	Hazardous Materials Within One-Quarter Mile of a School	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	HAZ-4	Hazardous Materials Sites (Government Code Section 65962.5)	Alt 1:	Potentially Significant	• MM HAZ-1 (Phase II Environmental Site Investigation) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials) • MM HAZ-4 (Worker Health and Safety Plan) • MM HAZ-5 (Hazardous Building Survey and Abatement)	Less Than Significant
			Alt 2:	Potentially Significant	• MM HAZ-1 (Phase II Environmental Site Investigation) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials) • MM HAZ-4 (Worker Health and Safety Plan) • MM HAZ-5 (Hazardous Building Survey and Abatement)	Less Than Significant
	HAZ-4	Hazardous Materials Sites (Government Code Section 65962.5)	Alt 3:	Potentially Significant	• MM HAZ-1 (Phase II Environmental Site Investigation) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials) • MM HAZ-4 (Worker Health and Safety Plan) • MM HAZ-5 (Hazardous Building Survey and Abatement)	Less Than Significant
	HAZ-5	Airport Land Use Plans	Alt 1:	No Impact	None	No Impact
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	HAZ-6	Emergency Response or Emergency Evacuation Plan	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HAZ-7	Wildland Hazards	Alt 1:	No Impact	None	No Impact
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
Hydrology and Water Quality	HWQ-1	Water Quality	Alt 1:	Potentially Significant	• MM HWQ-1 (Work Area Isolation at Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials)	Less Than Significant
			Alt 2:	Potentially Significant	• MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials)	Less Than Significant
			Alt 3:	Potentially Significant	• MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials)	Less Than Significant
	HWQ-2	Groundwater Supplies and Recharge	Alt 1:	Potentially Significant	• MM HWQ-2 (Compensatory Mitigation due to LRT Bridge Piers)	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HWQ-3(i)	Erosion and Siltation	Alt 1:	Potentially Significant	• MM HWQ-1 (Work Area Isolation at Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HWQ-3(ii)	Surface Runoff	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HWQ-3(iii)	Stormwater Drainage	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	HWQ-3(iv)	Flood Flows	Alt 1:	Potentially Significant	• MM HWQ-2 (Compensatory Mitigation due to LRT Bridge Piers)	Less Than Significant
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
	HWQ-4	Inundation	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
	HWQ-5	Water Management	Alt 1:	Potentially Significant	• MM HWQ-1 (Work Area Isolation at Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River) • MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 2:	Potentially Significant	• MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials)	Less Than Significant
			Alt 3:	Potentially Significant	• MM HAZ-2 (Soil and Groundwater Management Plan) • MM HAZ-3 (Contractor Specifications for Hazardous Materials)	Less Than Significant
Land Use and Planning	LUP-1	Dividing an Established Community	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	LUP-2	Plan, Policy or Regulation	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
Noise and Vibration	NOI-1	Ambient Noise	Alt 1:	Potentially Significant	• MM NOI-1 (Construction Noise Plan and Noise Monitoring Plan) • MM NOI-2 (Cast-in-Drilled-Hole Construction Methodology) • MM NOI-3 (Noise Barriers) • MM NOI-4 (Construction Staging Area) • MM NOI-5 (Haul Routes) • MM NOI-6 (Best Available Control Technologies) • MM NOI-7 (Construction Working Hours) • MM NOI-8 (Public Notification of Construction Operations and Schedules) • MM NOI-9 (Tunneling Boring Machine Muck Removal Equipment) • MM NOI-10 (Tunneling Boring Machine Muck Removal Construction Working Hours) • MM NOI-11 (Placement of Tunnel Vent Fans)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	NOI-1	Ambient Noise	Alt 2:	Potentially Significant	• MM NOI-1 (Construction Noise Plan and Noise Monitoring Plan) • MM NOI-2 (Cast-in-Drilled-Hole Construction Methodology) • MM NOI-3 (Noise Barriers) • MM NOI-4 (Construction Staging Area) • MM NOI-5 (Haul Routes) • MM NOI-6 (Best Available Control Technologies) • MM NOI-7 (Construction Working Hours) • MM NOI-8 (Public Notification of Construction Operations and Schedules) • MM NOI-9 (Tunneling Boring Machine Muck Removal Equipment) • MM NOI-10 (Tunneling Boring Machine Muck Removal Construction Working Hours) • MM NOI-11 (Placement of Tunnel Vent Fans)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	NOI-1	Ambient Noise	Alt 3:	Potentially Significant	• MM NOI-1 (Construction Noise Plan and Noise Monitoring Plan) • MM NOI-2 (Cast-in-Drilled-Hole Construction Methodology) • MM NOI-3 (Noise Barriers) • MM NOI-4 (Construction Staging Area) • MM NOI-5 (Haul Routes) • MM NOI-6 (Best Available Control Technologies) • MM NOI-7 (Construction Working Hours) • MM NOI-8 (Public Notification of Construction Operations and Schedules) • MM NOI-9 (Tunneling Boring Machine Muck Removal Equipment) • MM NOI-10 (Tunneling Boring Machine Muck Removal Construction Working Hours) • MM NOI-11 (Placement of Tunnel Vent Fans)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	NOI-2	Ground Borne Vibration	Alt 1:	Potentially Significant	• MM NOI-2 (Cast-in-Drilled-Hole Construction Methodology) • MM NOI-4 (Construction Staging Area) • MM NOI-5 (Haul Routes) • MM NOI-7 (Construction Working Hours) • MM NOI-8 (Public Notification of Construction Operations and Schedules) • MM NOI-9 (Tunneling Boring Machine Muck Removal Equipment) • MM NOI-12 (High Resilience Track Support Systems) • MM NOI-13 (Gapless Switches) • MM NOI-14 (Vibration Pre-Construction Survey) • MM NOI-15 (Construction Vibration Plan and Vibration Monitoring Plan)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	NOI-2	Ground Borne Vibration	Alt 2:	Potentially Significant	• MM NOI-2 (Cast-in-Drilled-Hole Construction Methodology) • MM NOI-4 (Construction Staging Area) • MM NOI-5 (Haul Routes) • MM NOI-7 (Construction Working Hours) • MM NOI-8 (Public Notification of Construction Operations and Schedules) • MM NOI-9 (Tunneling Boring Machine Muck Removal Equipment) • MM NOI-12 (High Resilience Track Support Systems) • MM NOI-13 (Gapless Switches) • MM NOI-14 (Vibration Pre-Construction Survey) • MM NOI-15 (Construction Vibration Plan and Vibration Monitoring Plan)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	NOI-2	Ground Borne Vibration	Alt 3:	Potentially Significant	• MM NOI-2 (Cast-in-Drilled-Hole Construction Methodology) • MM NOI-4 (Construction Staging Area) • MM NOI-5 (Haul Routes) • MM NOI-7 (Construction Working Hours) • MM NOI-8 (Public Notification of Construction Operations and Schedules) • MM NOI-9 (Tunneling Boring Machine Muck Removal Equipment) • MM NOI-12 (High Resilience Track Support Systems) • MM NOI-13 (Gapless Switches) • MM NOI-14 (Vibration Pre-Construction Survey) • MM NOI-15 (Construction Vibration Plan and Vibration Monitoring Plan)	Less Than Significant
Population and Housing	PPH-1	Unplanned Population Growth	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	PPH-2	Displacement	Alt 1:	No Impact	None	No Impact
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
Public Services and Recreation	PSR-1	Public Services	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
	PSR-2	Increased Recreation	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	PSR-3	New Recreation Facilities	Alt 1:	No Impact	None	No Impact
			Alt 2:	No Impact	None	No Impact
			Alt 3:	No Impact	None	No Impact
Transportation and Traffic	TRA-1	Conflict with Programs, Plans, and Policies	Alt 1:	Potentially Significant	• MM TRA-1 (Traffic Management Plan)	Less Than Significant
			Alt 2:	Potentially Significant	• MM TRA-1 (Traffic Management Plan)	Less Than Significant
			Alt 3:	Potentially Significant	• MM TRA-1 (Traffic Management Plan)	Less Than Significant
	TRA-2	Conflict with CEQA Guidelines	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	TRA-3	Design Hazards or Incompatible Uses	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	TRA-4	Inadequate Emergency Access	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
Tribal Cultural Resources	TCR-1	Historical Resources	Alt 1:	Potentially Significant	• MM TCR-1 (Tribal Cultural Resources Training) • MM TCR-2 (Retain a Native American Monitor) • MM TCR-3 (Unknown Tribal Cultural Resources)	Less Than Significant
			Alt 2:	Potentially Significant	• MM TCR-1 (Tribal Cultural Resources Training) • MM TCR-2 (Retain a Native American Monitor) • MM TCR-3 (Unknown Tribal Cultural Resources)	Less Than Significant
			Alt 3:	Potentially Significant	• MM TCR-1 (Tribal Cultural Resources Training) • MM TCR-2 (Retain a Native American Monitor) • MM TCR-3 (Unknown Tribal Cultural Resources)	Less Than Significant
	TCR-2	Native Tribal Significance	Alt 1:	Potentially Significant	• MM TCR-1 (Tribal Cultural Resources Training) • MM TCR-2 (Retain a Native American Monitor) • MM TCR-3 (Unknown Tribal Cultural Resources)	Less Than Significant
			Alt 2:	Potentially Significant	• MM TCR-1 (Tribal Cultural Resources Training) • MM TCR-2 (Retain a Native American Monitor) • MM TCR-3 (Unknown Tribal Cultural Resources)	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 3:	Potentially Significant	• MM TCR-1 (Tribal Cultural Resources Training) • MM TCR-2 (Retain a Native American Monitor) • MM TCR-3 (Unknown Tribal Cultural Resources)	Less Than Significant
Utilities and Service Systems	UTL-1	Relocation or Construction	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	UTL-2	Water Supplies	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	UTL-3	Wastewater	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	UTL-4	Solid Waste	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant
	UTL-5	Regulations	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant

Environmental Topic	Impact Evaluated		Impact Before Mitigation		Mitigation Measures Needed	Impacts After Mitigation
			Alt 3:	Less Than Significant	None	Less Than Significant
Growth Inducing	GRW-1	Growth Inducing	Alt 1:	Less Than Significant	None	Less Than Significant
			Alt 2:	Less Than Significant	None	Less Than Significant
			Alt 3:	Less Than Significant	None	Less Than Significant

ES.4.1 Significant and Unavoidable Impacts

According to the environmental impact analysis, there are no feasible mitigation measures to reduce significant impacts on historical resources if the Commerce MSF is selected (Impact CUL-1) or paleontological resources (Impact GEO-5) to less than significant. According to the environmental impact analysis, there are also no feasible measures to reduce the Project's cumulatively significant contribution to the cumulatively significant impacts on historical resources if the Commerce MSF is selected (Impact CUL-1) or paleontological resources (Impact GEO-5). As such, the construction of the Project would result in significant and unavoidable impacts related to Historical Resources if the Commerce MSF is selected (Impact CUL-1) and Paleontological Resources (Impact GEO-5) as discussed in Section 3.6, Cultural Resources, and Section 3.16, Geology, Soils, Seismicity & Paleontological Resources, of this Recirculated Draft EIR.

ES.5 Comparison of Alternatives

Table ES-4 provides a comparison of those resources that have significant and unavoidable impacts under one or more Alternatives and identifies the impact determination for each Alternative.

Table ES-4. Comparison of Impact Determinations by Alternative for Environmental Resources with Significant and Unavoidable Impacts

Alternative		Environment Resource with Significant and Unavoidable Impacts					
		Air Quality	Cultural Resources	Geology, Seismicity, Soils, and Paleontological Resources	Greenhouse Gas Emissions	Land Use	Transportation and Traffic
No Project Alternative		SU	NI	NI	SU	SU	SU
Alternative 1	Commerce MSF	LTS	SU	SU	LTS	LTS	LTSM
	Montebello MSF[1]	LTS	LTSM	SU	LTS	LTS	LTSM
Alternative 2	Commerce MSF	LTS	SU	SU	LTS	LTS	LTSM
Alternative 3	Commerce MSF	LTS	SU	SU	LTS	LTS	LTSM
	Montebello MSF[1]	LTS	LTSM	SU	LTS	LTS	LTSM

Source: CDM Smith/AECOM JV, 2022.
Note:
1 Alternative 1 with the Montebello MSF site option would have greater severity and number of impacts that would need to be mitigated compared Alternative 2 with the Montebello MSF site option, given its longer at-grade alignment and number of potential stations.
Key:
NI = No Impact; LTS = Less Than Significant; LTSM – Less Than Significant with Mitigation; SU = Significant and Unavoidable

ES.5.1 Environmentally Superior Alternative

Based the comparison of environmental analysis summarized above and described in detail in Chapter 5, Comparison of Alternatives, Alternative 3 with the Montebello MSF site option would be the environmentally superior alternative as it would result in a lower number of significant and unavoidable impacts compared to Alternatives 1, 2, and 3 with the Commerce MSF site option, and smaller level of environmental effects when compared to the full build of the Alternative 1 with Montebello MSF site option.

ES.6 Public Outreach

Metro has implemented a comprehensive outreach program for the Project, starting in 2007 with outreach meetings for the Alternatives Analysis (AA) and continuing through 2022 for the efforts related to this Recirculated Draft EIR. As part of this extensive outreach, Metro has informed elected officials, agency staff, community stakeholders, and the general public of the status of the Project, including progress of the environmental review process.

The Project's history includes the publications of the following documents: the 2009 AA (Attachment A of Appendix T), the 2014 Draft EIS/ EIR, and the 2017 Post Draft EIS/EIR Technical Study. In 2007, Metro began outreach for the Project, with community engagement representing an integral component of the environmental process for the published documents mentioned above. A summary of these efforts is discussed in this section and presented in more detail in Chapter 6, Public Outreach.

The scoping period during the preparation for the Draft EIS/EIR began with the publication of the Notice of Preparation/Notice of Intent on January 25, 2010 and continued through April 14, 2010. During the 80-day scoping period, Metro hosted a total of five scoping meetings, four public meetings and one agency meeting, between February 22 and 27, 2010. The meetings were attended by more than 300 people. In addition to the official scoping meetings, Metro also participated upon request in various city and stakeholder events to enhance the outreach effort and increase awareness during the scoping period. For a detailed list of the scoping meeting dates and times, please refer to Attachment A1 of Appendix S. In compliance with CEQA and NEPA, an NOA was released to notify the public regarding the availability the 2014 Draft EIS/EIR for its public review and comment. A 60-day public review period began on August 22, 2014 and ended on October 21, 2014.

Following the 2017 Post Draft EIS/EIR Technical Study, Metro re-initiated the CEQA and NEPA processes to further evaluate potential impacts associated with the refined Build Alternatives. In advance of the Public Scoping Meetings in Summer 2019, Metro offered a Community Update Meeting in East Los Angeles. One meeting was held in East Los Angeles Library on May 13, 2019 from 5:30 to 7:30 pm. The Community Update Meeting was attended by approximately 120 community members, including staff from Los Angeles County Supervisor Hilda Solis' office, community-based organization staff and members of the public.

ES.7 Areas of Controversy and Issues to Be Resolved

ES.7.1 Areas of Controversy

The following areas of controversy and concerns were identified based on public comments submitted during the scoping period and through ongoing stakeholder coordination:

- Impacts to businesses during construction
- Traffic impacts due to reduction of lanes on Washington Boulevard
- Impacts to parking and need for parking
- Noise levels during construction
- Safety for students at nearby schools
- Security at stations

ES.7.2 Issues to be Resolved

The following issues are to be resolved as the Project proceeds through the environmental process and stakeholder coordination:

- Selection of Maintenance and Storage Facility
- Selection of Design Options
- Selection of the LPA: The Metro Board will select an LPA after circulation of the Recirculated Draft EIR
- Funding Shortfall
- Design Refinements

1. Introduction

This document is a Recirculated Draft Environmental Impact Report (Recirculated Draft EIR) for the Los Angeles County Metropolitan Transportation Authority (Metro) Eastside Transit Corridor Phase 2 Project (Project). The Project would extend the existing Metro L (Gold) Line light rail transit (LRT) line from its current terminus at Atlantic Station in the unincorporated area of East Los Angeles to eastern Los Angeles County, a distance of approximately 3.2 to 9.0 miles, depending on the Build Alternative. Three Build Alternatives with up to two design options and two Maintenance and Storage Facility (MSF) site options (one of which has one design option), are being considered for the Project and are described in Chapter 2.0, Project Description. This Recirculated Draft EIR has been prepared in conformance with the California Environmental Quality Act of 1970 (CEQA) (California Public Resources Code Section 21000 et seq., as amended) and its implementing guidelines (California Code of Regulations., Title 14, Section 15000 et seq.). Metro is the lead agency for the Project under CEQA.

1.1 Purpose of this Recirculated Draft Environmental Impact Report

The Project requires the discretionary approval of the Metro Board of Directors (Metro Board). Therefore, the Project is subject to the environmental review requirements of CEQA. The purpose of this Recirculated Draft EIR is:

- To satisfy the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code [PRC] Section 21000, et seq.) and the CEQA Guidelines (California Code of Regulations [CCR], Title 14, Chapter 3, Section 15000, et seq.).
- To inform public agency decision-makers and the public of the significant environmental effects of the Project and possible ways to minimize those significant effects.
- To enable Metro to consider environmental consequences when deciding whether to approve the Project. Metro serves as the Lead Agency for the Project in accordance with Sections 15051 and 15367 of the CEQA Guidelines, which define the Lead Agency as the public agency that has the principal responsibility for executing or approving a project.

As described in CEQA and the CEQA Guidelines, lead agencies are charged with the duty to avoid or substantially lessen significant environmental impacts of a project, where feasible. In discharging its duties under CEQA, a lead agency has an obligation to balance the economic, social, technological, legal, and other benefits of a project against its significant unavoidable impacts on the environment. This Recirculated Draft EIR is an informational document designed to identify the potentially significant impacts of the Project on the environment; to indicate the manner in which those significant impacts can be minimized; to identify reasonable and potentially feasible alternatives to the Project that would avoid or reduce the significant impacts; and to identify any significant and unavoidable adverse impacts that cannot be mitigated.

This Recirculated Draft EIR was prepared in accordance with Section 15151 of the CEQA Guidelines, which defines the standards for EIR adequacy as follows:

> *An EIR should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.*

1.2 Environmental Impact Report Background

As described in Chapter 2.0 of this Recirculated Draft EIR, Metro initiated plans for a high-capacity transit connection for the second phase of the Eastside Transit Corridor, resulting in publication of the Eastside Transit Corridor Phase 2 Alternatives Analysis (AA) Report in 2007. In October 2009, the Metro Board authorized staff to advance two Build Alternatives for further environmental analysis.

A Draft Environmental Impact Statement (EIS)/EIR was released for public review in August 2014. After evaluating the public comments on the 2014 Draft EIS/EIR, the Metro Board directed staff to conduct additional technical studies to identify a new north-south connection from the existing Metro L (Gold Line) to the Washington Boulevard Light Rail Transit (LRT) Alternative.

In May 2019, the Federal Transit Administration (FTA) published a Notice of Intent (NOI) in the Federal Register to initiate the National Environmental Policy Act (NEPA) Supplemental EIS process, and Metro issued a Notice of Preparation (NOP) to initiate the CEQA Recirculated EIR process.

In 2020, following the Metro Board's action to no longer pursue federal funds for the Project, the FTA rescinded the NOI, rendering NEPA inapplicable.

1.3 Scope and Content

In accordance with the CEQA Guidelines, this Recirculated Draft EIR includes detailed analyses of the following environmental topics:

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology, Seismicity, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services and Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Growth-Inducing Impacts
- Cumulative Impacts

This Recirculated Draft EIR was prepared under the direction and supervision of Metro and reflects the independent judgment of Metro. During the public review and comment period, public agencies, organizations and individuals may submit written comments concerning the adequacy of the document by email or mail to:

Jenny Cristales-Cevallos, Project Manager
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, California 90012
Email: eastsidephase2@metro.net

Depending on Covid-19 State Health Regulations, Metro will conduct a virtual and/or in-person public hearing to receive testimony on the Recirculated Draft EIR during the public review and comment period. After the end of the public review and comment period, written responses to all written comments and oral testimony pertaining to environmental issues received during the comment period will be prepared as part of the Recirculated Final EIR. As required by CEQA, responses to comments submitted by commenting agencies will be distributed to those agencies for review prior to consideration of the Recirculated Final EIR by the Metro Board. Upon the completion of the Recirculated Final EIR and other required documentation, if warranted, the Metro Board will adopt findings relative to the Project's environmental effects, and prepare a statement of overriding considerations, in conjunction with the certification of the Recirculated Final EIR and approval of the Project.

1.4 Environmental Impact Report Organization

This Recirculated Draft EIR is comprised of the following:

- **ES Executive Summary**. This chapter provides a summary of the Project, public outreach information, project background, environmental impacts, and mitigation measures. This summary also presents areas of controversy, including issues raised by members of the public and agencies.

- **Chapter 1. Introduction**. This chapter briefly discusses the purpose of the Recirculated Draft EIR, identifies the environmental topics evaluated in the document, describes the environmental review process and organization, and discusses the intended use of this Recirculated Draft EIR.

- **Chapter 2. Project Description**. This chapter provides a detailed description of the Project, including location and surrounding uses, history, objectives, operating characteristics, and construction schedule and phasing.

- **Chapter 3. Environmental Impacts Analysis**. This chapter is divided into sub-sections corresponding with the environmental topics listed under **Section 1.3** above and provides the environmental setting (regulatory framework and existing conditions), methodology, impact analyses, project measures and/or mitigation measures if applicable, and conclusions regarding the level of significance after mitigation for each environmental topic.

- **Chapter 4. Other CEQA Required Topics**. This chapter includes possible effects of the Project that were determined not to be significant; a discussion of significant unavoidable impacts that would result from the Project; and an analysis of the significant irreversible changes in the environment.

- **Chapter 5. Comparison of Project Alternatives**. This chapter provides an evaluation of the No Project Alternative and a comparison of the alternatives evaluated in Chapter 3.0, as well as the No Project Alternative. This chapter also provides the identification of the environmentally superior alternative, as required by CEQA. It identifies alternatives that were considered, but not carried forward for detailed review.

- **Chapter 6. Public Outreach**. This chapter provides an overview of the outreach efforts conducted from the Public Hearings associated with the publication of the 2014 Draft EIR/Environmental Impact Statement (EIS) up until the 2022 public outreach efforts associated with this Recirculated Draft EIR.

- **Chapter 7. Acronyms and Abbreviations**. This chapter identifies and defines the acronyms and abbreviations used in the document.

- **Chapter 8. List of Contributors and Preparers**. This chapter lists the persons who contributed to the preparation of this Recirculated Draft EIR.

- **Chapter 9. References.** This chapter lists all the references and sources used in the preparation of this Recirculated Draft EIR. Documents listed in this chapter are available for review upon request.

- **Appendix A: Notice of Preparation and Scoping Summary Report**. This appendix includes the Notice of Preparation as well as a report that summarizes the public scoping process, including all comment letters received during scoping.

- **Appendices B-R: Impact Reports**. A total of 17 impact reports were prepared in support of the environmental evaluation of this Recirculated Draft EIR and are included as appendices to the document.

- **Appendix S**. This appendix includes a summary of the public outreach efforts that have been conducted for this Project.

- **Appendix T**. This appendix includes a detailed summary of alternatives considered and the Alternatives Analysis Report Addendum.

- **Appendix U**. This appendix provides a list of project measures that are incorporated into the Project in compliance with regulations, guidelines, and permit approvals to avoid or reduce potential impacts.

- **Volume 2: Advanced Conceptual Design**. Volume 2 provides the plan set of the advanced conceptual engineering drawings for all of the Build Alternatives, which were used for the environmental evaluation in Chapter 3.0.

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2. Project Description

This chapter provides a description of the Los Angeles County Metropolitan Transportation Authority (Metro) Eastside Transit Corridor Phase 2 Project (Project). This includes the Project history and background, Project objectives, the setting and location, a description of the Build Alternatives (including design options) and No Project Alternative, the proposed construction activities, the anticipated permits and approvals, and the implementation schedule.

The Project would extend the existing Metro L (Gold) Line light rail transit (LRT) line from its current terminus at Atlantic Station in the unincorporated area of East Los Angeles to eastern Los Angeles County approximately 3.2 to 9.0 miles, depending on the Build Alternative. This Recirculated Draft EIR evaluates potential environmental impacts of three Build Alternatives and a No Project Alternative. The Build Alternatives described under **Section 2.5** are: Alternative 1 Washington (Alternative 1), Alternative 2 Atlantic to Commerce/Citadel Initial Operating Segment (IOS) (Alternative 2), and Alternative 3 Atlantic to Greenwood IOS (Alternative 3). The No Project Alternative is described in **Section 2.9**.

2.1 Background

The following provides a brief history and background of previous studies conducted and summarizes the Build Alternatives carried into this Recirculated Draft Environmental Impact Report (EIR).

The easterly extension of the Metro L (Gold) Line is being constructed in phases. In January 2002, Metro published a Final Supplemental Environmental Impact Statement (EIS) and Final Subsequent EIR for an LRT extension of the Pasadena Blue Line into East Los Angeles (later named the Metro Gold Line Eastside Extension) (Metro 2002). This project represented the first phase of the Metro L (Gold) Line Eastside Extension. In 2007, Metro initiated plans for a high-capacity transit connection for the second phase entitled the Eastside Transit Corridor Phase 2 Alternatives Analysis (AA) Report and in October 2009, the Metro Board of Directors (Metro Board) authorized staff to further study two build alternatives, the State Route (SR) 60 LRT Alternative and the Washington Boulevard LRT Alternative, as well as a No Build Alternative, and a transportation systems management (TSM) alternative for further environmental analysis (Metro 2009).

In November 2009, the first phase of the Metro L (Gold) Line Eastside Extension (to Atlantic Station) was completed. Upon completion, planning was initiated for the second phase. This second phase, known as the Eastside Transit Corridor Phase 2 Project, is the subject of this Recirculated Draft EIR. A Draft EIS/EIR was released for public review in August 2014 (Metro 2014).

The 2014 Draft EIS/EIR received comments from stakeholders and regulatory agencies. The Metro Board directed staff to conduct additional technical studies including identifying a new north-south connection to Washington Boulevard, addressing agency comments regarding the SR 60 Alternative and exploring a Combined Alternative. Based on the technical analysis and feedback received through public meetings and stakeholder workshops, the Eastside Transit Corridor Phase 2 Post Draft EIS/EIR Technical Study Report was approved by the Metro Board in November 2017 with an updated Project Definition to move forward for environmental review and analysis (Metro 2017).

The Federal Transit Administration (FTA) published a Notice of Intent (NOI) in the Federal Register on May 29, 2019 to initiate the EIS process (Federal Register 2019), and Metro issued a Notice of

Preparation (NOP) pursuant to the California Environmental Quality Act (CEQA) on May 31, 2019. The NOI/NOP included three Build Alternatives (SR 60 Alternative, Washington Alternative, and Combined Alternative) and a No Build Alternative. The NOI/NOP informed the public of the Build Alternatives, provided notice of a 45-day scoping period, and provided notice of intent to release a Supplemental/Recirculated Draft EIS/EIR. The NOI/NOP also described consideration of adopting a Locally Preferred Alternative (LPA) by the Metro Board based on the findings of the Supplemental/Recirculated Draft EIS/EIR.

Issues and constraints within or along the SR 60 Alternative became more evident as further technical environmental analysis, additional engineering design, and Metro policy and program updates were completed. In addition, conflicts with future improvements along the SR 60 freeway were also identified, including the addition of high-occupancy vehicle (HOV) lanes, bringing the existing general-purpose lanes up to current standards and the SR 60/Interstate (I) 605 Interchange Improvements project. Several environmental challenges associated with running parallel to or in an aerial configuration along the SR 60 freeway right-of-way (ROW) were also identified, such as potential impacts to adjacent sensitive land uses and environmental resources. This included crossing the Operating Industries Inc. (OII) Landfill Superfund site to avoid disturbance of contaminated materials and avoiding conflicts with Southern California Edison (SCE) overhead transmission lines. The SR 60 Alternative was also inconsistent with Metro's policies and programs that addressed equity, Transit Oriented Communities (TOC), First/Last Mile (FLM), and parking (Metro 2020a). These programs and policies were not in place when the Project was first introduced. Initial findings from the TOC and FLM assessment indicated that the SR 60 Alternative lacked potential as it correlated to the three policy criteria: TOC, FLM, and Environment and Equity. This was due to the SR 60 alignment location and the spatial nature of proposed station areas along the alignment. The Combined Alternative compounded these technical challenges as it required the addition of an underground wye junction at the current terminus of the Metro L (Gold) Line.

In February 2020, the Metro Board approved the withdrawal of the SR 60 and Combined Alternatives, which faced significant environmental and engineering challenges, and the discontinuation of the National Environmental Policy Act (NEPA) analysis. Metro subsequently notified the FTA and cooperating agencies of the decision to discontinue the NEPA environmental study (Supplemental Draft EIS) and to advance a Recirculated Draft EIR pursuant to CEQA.

2.2 Project Objectives

East Los Angeles County faces an increasing number of mobility challenges due to high population, employment growth, and a constrained transportation network. The existing terminus of Metro L (Gold) Line is located approximately four miles east of Downtown Los Angeles at Atlantic Boulevard and Pomona Boulevard in the unincorporated community of East Los Angeles. There is no rail connection for communities located to the east. Many residents within the general study area (GSA), defined in **Section 2.3**, encounter long travel delays connecting to and from downtown Los Angeles and beyond. If unaddressed, these mobility challenges pose a risk to future population and economic growth, including challenges for transit dependent populations, pedestrian and bicycle safety, capacity constraints on existing infrastructure, inefficiency of goods movement, poor air quality conditions, and other environmental considerations. If no action is taken, these transportation challenges will continue to grow. In support of the goals documented in Metro's 2020 Long Range Transportation Plan (LRTP) and Metro's Vision 2028 Strategic Plan, the Project Objectives include the following:

- Enhance regional connectivity and air quality goals by extending the existing Metro L (Gold) Line further east from the East Los Angeles terminus
- Provide mobility options to increase accessibility and convenience to and from eastern Los Angeles County
- Improve transit access to activity centers and employment within eastern Los Angeles County that would be served by the Project
- Accommodate future transportation demand resulting from increased population and employment growth
- Enable jurisdictions in eastern Los Angeles County to address their transit-oriented community goals and provide equitable development opportunities
- Improve accessibility and connectivity to transit-dependent communities

Each Build Alternative meets the Project Objectives to varying extents by creating benefits, both to the region and to local communities. By extending the existing Metro L (Gold) Line into eastern Los Angeles County, the Project will enhance access and mobility and provide connectivity to other destinations along Metro's regional system. Further, the Project will reduce travel times and the need for transfers within the system by providing a one-seat ride via the Regional Connector. By serving concentrated areas of employment, activity centers and residential communities, the Project will support transit-oriented community goals and address the mobility needs of transit-dependent populations. The Project will provide new and faster transit options which will help lead to equitable development and in-fill growth opportunities throughout eastern Los Angeles County.

2.3 Project Setting and Location

For purposes of describing the Project, two study areas have been defined. The GSA, which is regional in scope and scale, consists of a wider area that is expected to be served by the Project. The GSA currently has limited transportation options, which contributes to long travel delays connecting to and from downtown Los Angeles and would be served by improved access to LRT. The detailed study area (DSA) encompasses the local area within approximately two miles from the Project alignment.

The GSA establishes the study area for environmental resources that are regional in scope and scale, such as the regional transportation network, vehicle miles traveled (VMT), travel demand, and the regional population, housing, and employment context. The GSA includes several jurisdictions within Los Angeles County including the cities of Bell, Commerce, El Monte, Industry, Los Angeles, Montebello, Monterey Park, Pico Rivera, Rosemead, South El Monte, Santa Fe Springs, Whittier, unincorporated areas of Los Angeles County, which include East Los Angeles and West Whittier-Los Nietos, and other cities within the San Gabriel Valley. The GSA is generally bounded by I-10 to the north, Peck Road in South El Monte and Lambert Road in Whittier to the east, I-5 and Washington Boulevard to the south, and I-710 to the west. **Figure 2.1** presents the boundaries of the GSA as well as the regional transportation network and related jurisdictions and the DSA, described below.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.1. Alternative 1 Washington GSA and DSA

The DSA establishes a study area to evaluate environmental resources that are more sensitive to the physical location of the Build Alternatives, such as potential impacts associated with noise and safety hazards. The DSA is generally bounded by a half-mile to two-mile radius from the Project alignment's centerline (see **Figure 2.1** for Alternative 1 DSA). It primarily encompasses the five cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier and communities of unincorporated East Los Angeles and Whittier-Los Nietos, which are located along the alignment corridor.

The DSA for Alternative 2 Atlantic to Commerce/Citadel Initial Operating Segment (IOS) and Alternative 3 Atlantic to Greenwood IOS would not extend as far east as the DSA for Alternative 1 and is shown in **Figure 2.2** and **Figure 2.3**. The DSA for Alternative 2 and Alternative 3 primarily includes the cities of Commerce and Montebello and community of unincorporated East Los Angeles.

Both the GSA and DSA include a diverse mix of uses and activity centers, including single- and multi-family residences, commercial and retail uses, industrial development, parks and recreation, health and medical uses, educational institutions, flood control facilities, and vacant land. The Project would traverse densely populated, low-income, and heavily transit-dependent communities with major activity centers within the Gateway Cities subregion of Los Angeles County. **Figure 2.4** shows the land uses within the GSA and DSA. Further discussion on land use surrounding the Project can be found in Section 3.10, Land Use, and the Eastside Transit Corridor Phase 2 Land Use Impacts Report (Appendix K).

Major activity centers would support the Project both regionally within the GSA and locally in the DSA. This includes large educational institutions, such as Whittier College, and East Los Angeles Community College, recreation areas serving local residents, major retail and commercial centers (e.g., Citadel Outlets and the Historic Whittier Boulevard Shopping District), civic centers (Pico Rivera City Center), and medical centers (Whittier Presbyterian Intercommunity Hospital). In addition, many businesses and industrial and commercial areas are located near the major arterials in the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. **Figure 2.5** shows major activity centers within the GSA and DSA. Additional activity center details are further described in Section 6.2 of the Eastside Transit Corridor Phase 2 Community and Neighborhoods Impacts Report (Appendix M).

2.4 Travel Market

As previously stated, the NOP for this study was approved in March 2019, one year after Metro released their Travel Demand Model, Corridor Based Model (CBM18) in 2018. The base year data in the CBM18 model is from 2017 and represents the most recently available data when the model was created, which was the Southern California Association of Governments' (SCAG) 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) (SCAG 2016). Therefore, ridership forecasts, VMT estimates, and other travel demand modeling projections for the Build Alternatives and No Project Alternative are based on the results of the CBM18 model and includes all transportation projects identified for construction and implementation in SCAG's financially constrained 2016 RTP/SCS including projects through year 2042. This data has been used to represent 2019, the base year in this study.

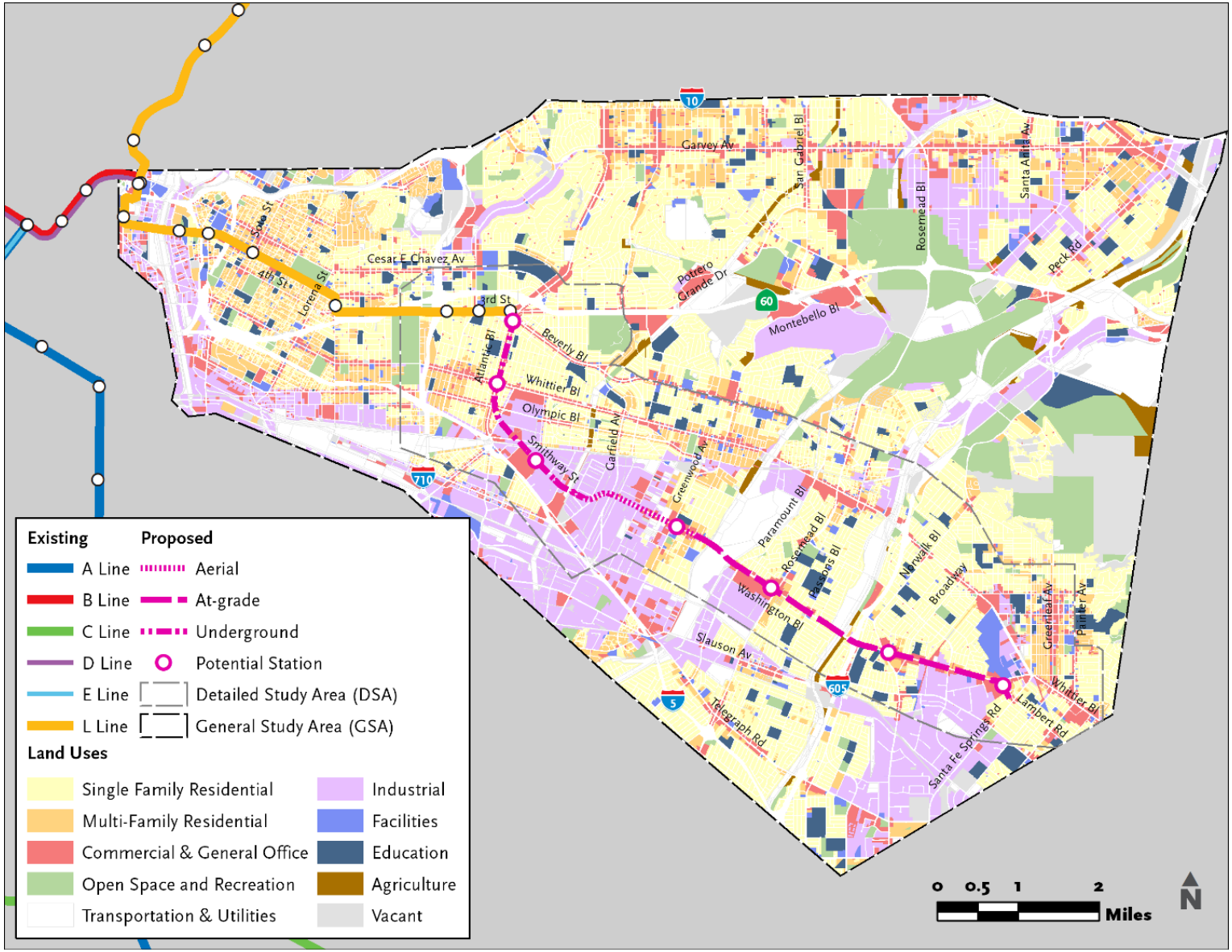
SCAG develops an RTP approximately every four years to present the transportation vision for the region, prioritize projects, and guide development. Since approval of the NOP, SCAG has released the Connect SoCal 2020-2045 RTP/SCS (2020 RTP/SCS). This updated plan is also included in this study to identify local plans, policies and regulations relative to each environmental topic.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.2. Alternative 2 Atlantic to Commerce/ Citadel IOS GSA and DSA

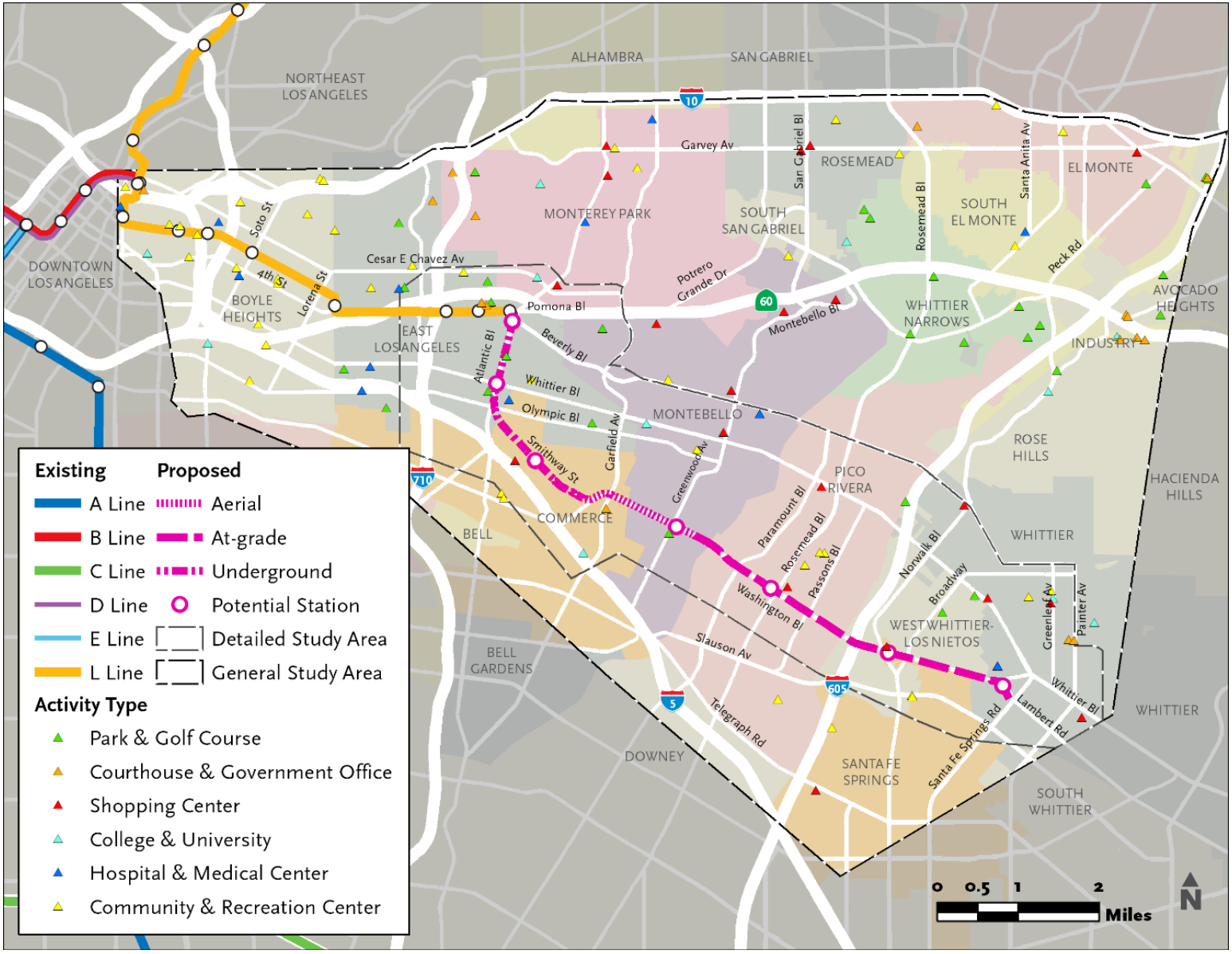
Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.3. Alternative 3 Atlantic to Greenwood IOS GSA and DSA



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.4. Land Uses



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.5. Major Activity Centers

2.5 Build Alternatives

The Project would extend the Metro L (Gold) Line LRT from the current terminus at the Atlantic Station into eastern Los Angeles County. There are three Build Alternatives and a No Project Alternative under consideration in this Recirculated Draft EIR: Alternative 1 Washington (Alternative 1), Alternative 2 Atlantic to Commerce/Citadel IOS (Alternative 2), and Alternative 3 Atlantic to Greenwood IOS (Alternative 3).

Alternative 1 has the longest alignment at approximately 9.0 miles with seven stations (one relocated/reconfigured and six new stations) and two maintenance and storage facility (MSF) site options, one in the city of Commerce and one in the city of Montebello. The alignment would terminate at Lambert station on Lambert Road in the city of Whittier. Additionally, two IOS alternatives are being evaluated in this Recirculated Draft EIR (Alternative 2 and Alternative 3). Both have the same guideway alignment east of the existing terminus at Atlantic Station but vary in length and eastern terminus. Alternatives 2 and 3 would run along the same alignment and have the same LRT design features and operating characteristics as the full length Alternative 1. However instead of extending to Lambert Road and Washington Boulevard as would Alternative 1, Alternative 2 would terminate at the Commerce/Citadel station in the city of Commerce, with tracks used only to access the MSF (i.e., non-revenue lead tracks) extending east to connect to the Commerce MSF site option. Alternative 2 is approximately 3.2 miles in length with three stations and one MSF site option. Alternative 3 would terminate at the Greenwood station on Greenwood Avenue and Washington Boulevard in the city of Montebello. Alternative 3 is approximately 4.6 miles in length with four stations and two MSF site options. Each of the IOS alternatives would therefore possess a smaller project footprint than Alternative 1.

An IOS is a segment of the project alignment that can function as a stand-alone project with independent constructability (independent of other segments or phases to be constructed). The purpose of developing and evaluating the IOS alternatives is to identify constructability options and a cost-effective solution with the greatest benefit of the Project. Pursuant to Section 15126.6 of the CEQA Guidelines, the IOSs are a reasonable range of project alternatives that would "feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project…". Metro is proceeding with IOSs on other projects as this will provide the Metro Board with flexibility in determining the most efficient and cost-effective manner to implement those projects. Alternatives 2 and 3 are evaluated in this Recirculated Draft EIR as individual Build Alternatives and would function as stand-alone projects. In the event that Metro selects an IOS as a preferred alternative, the full length of Alternative 1 may still be constructed and operated sometime in the future, contingent on future funding sources being identified and secured and compliance with CEQA's provisions for subsequent or supplemental environmental review. Additionally, as further required pursuant to Section 15126.6, the comparative merits of the alternatives are evaluated in Chapter 5, Analysis of Alternatives.

There are design options under consideration for each of the three Build Alternatives that consist of a variation in the design of the relocated/reconfigured Atlantic station (applicable to Alternatives 1, 2, and 3) and a variation in the station and alignment profile in Montebello (applicable to Alternatives 1 and 3 and the Montebello MSF site option). Construction of one design option is considered and evaluated for Alternative 2. Construction and operation of one or both design options are considered and evaluated for Alternative 1, Alternative 3, and the Montebello MSF site option.

To differentiate the impacts evaluation of a Build Alternative with or without the design option(s) incorporated, a Build Alternative without the incorporation of a design option(s) is referred to as the "base Alternative" (i.e., base Alternative 1). A Build Alternative with a design option incorporated is referred to by using the design option name (e.g., Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option). The three Build Alternatives and the design options are described in greater detail in **Section 2.5.1.3**.

Conceptual engineering designs showing the alignment plans and profiles, including potential station sites, are incorporated into this Recirculated Draft EIR (see Volume 2, Advanced Conceptual Design). These drawings are provided for illustrative and analysis purposes only and may or may not represent the Project's ultimate design and build-out.

Table 2-1 presents an overview of the various components of the Build Alternatives, including the base alignment and design options for a potential relocated/reconfigured Atlantic station under all Build Alternatives and an at-grade configuration along Washington Boulevard under consideration for Alternative 1 and Alternative 3. The following subsections summarize the Build Alternatives in more detail. The No Project Alternative is described in further detail in **Section 2.9.**

Table 2-1. Components of the Build Alternatives

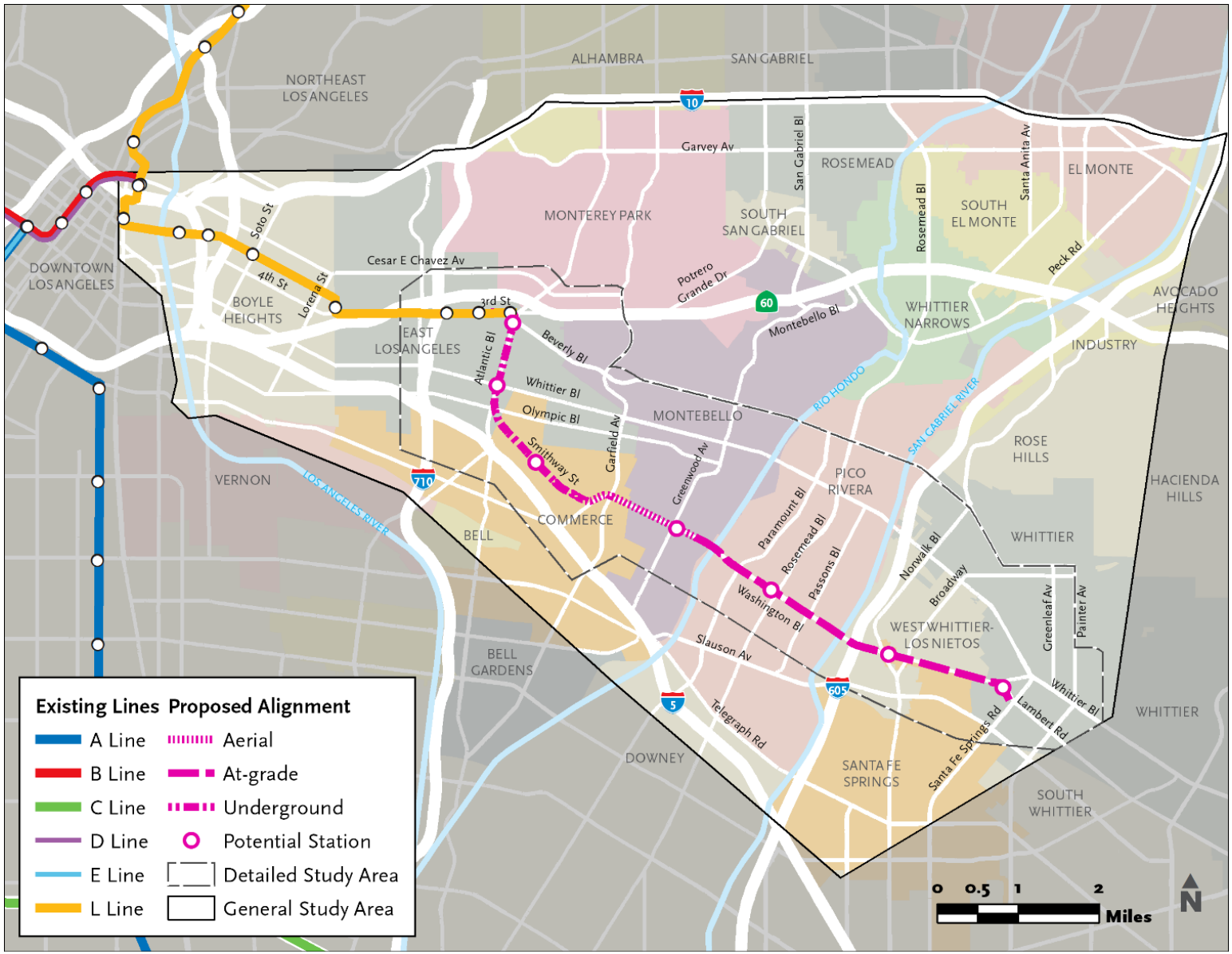
Components	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Alignment length	9 miles	3.2 miles	4.6 miles
Length of underground, aerial, and at-grade[2]	**Base Alternative[1]**		
	3 miles underground; 1.5 miles aerial: 4.5 miles at-grade[3]	3 miles underground 0.1 miles aerial; 0.1 miles at-grade[3]	3 miles underground; 1.5 miles aerial; 0.1 miles at-grade[3]
	Atlantic/Pomona Station Option		
	Approximately 50 feet of additional underground alignment	Approximately 50 feet of additional underground alignment	Approximately 50 feet of additional underground alignment
	Montebello At-Grade Option		
	3 miles underground; 0.5 miles aerial; 5.5 miles at-grade	NA	3 miles underground; 0.5 miles aerial; 1.1 miles at-grade
Station configuration	**Base Alternative1**		
	7 stations: 3 underground (1 relocated/ reconfigured); 1 aerial; 3 at-grade	3 stations: 3 underground (1 relocated/reconfigured)	4 stations: 3 underground (1 relocated/reconfigured); 1 aerial
	Montebello At-Grade Option		
	4 at-grade; 0 aerial	NA	1 at-grade; 0 aerial

Components	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Major (signalized) at-grade intersection crossings	**Base Alternative1**		
	11	0	0
	Montebello At-Grade Option		
	15	NA	4
Major aerial crossings	**Base Alternative**		
	6	0	6
	Montebello At-Grade Option		
	2	NA	
Freight rail crossings	5	4	5
Freeway crossings	1 undercrossing at I-605	0	0
River crossings[5]	2	0	0
TPSS facilities[6,]	8	3	4
MSF[6] site options	2	1	2

Notes:.
1 The Base Alternative is the Build Alternative without the implementation of any design options (Atlantic/Pomona Station Option and/or Montebello At-Grade Option). Design Option are listed in the table if they differ from the Base Alternative.
2 Total lengths do not include MSF lead track.
3 The at-grade length includes 0.05-mile of transition from at-grade to underground.
4 Freight rail crossings would be grade separated and would not occur in the at-grade configuration.
5 The Base Alternative with design options would have the same number of river crossings.
6 The Base Alternative with design options would have the same number of TPSS facilities.
Key:
TPSS = Traction Power Substation MSF = Maintenance and Storage Facility O&M = Operations and Maintenance

2.5.1 Alternative 1 Washington

Alternative 1 would extend the Metro L (Gold) Line LRT approximately 9.0 miles east from the current terminus station at Atlantic Boulevard to the new eastern terminus at Lambert station in the city of Whittier. The base Alternative 1 would include a relocated/reconfigured Atlantic station in an underground configuration and six new stations in a mix of underground, at-grade and aerial configurations. The alignment would transition from the existing at-grade alignment to an underground configuration and would transition to an aerial configuration in the city of Commerce before transitioning to at-grade at Montebello Boulevard. The alignment includes approximately 3.0 miles of tunnel, 1.5 mile of aerial, and 4.5 miles of at-grade alignment. The Alternative 1 alignment crosses the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The existing San Gabriel River and Rio Hondo bridges would be replaced. **Figure 2.6** shows the Alterative 1 alignment and stations.



Source: Metro; CDM Smith/AECOM JV, 2019.

Figure 2.6. Alternative 1 Washington

Replacement of bridges over the Rio Hondo and San Gabriel River would involve removal of the existing bridges and construction of new structures to carry both the LRT guideway and the replacement roadway. The Rio Hondo replacement bridge would be wider by approximately 12 feet on each side, and the San Gabriel River replacement bridge would be wider by approximately 16 feet on each side. Demolition of the existing substructure and construction of the bridge would be sequenced. Further details on the bridge replacements can be found in the Eastside Transit Corridor Phase 2 Construction Impacts Report (Appendix P).

An MSF and other ancillary facilities would also be constructed as part of the Project, including overhead catenary system (OCS), cross passages, ventilation structures, traction power substations (TPSS) sites, crossovers, emergency generators, radio tower poles and equipment shelters, and other supporting facilities along the alignment. These facilities are described in **Section 2.5.5**. A summary of the guideway alignment, proposed stations, ancillary facilities, and operating hours and frequency is provided below. A description of the two MSF site options are provided in **Section 2.5.4.1** and **Section 2.5.4.2**. The Advanced Conceptual Design of Alternative 1 can be found in Volume 2.

Design options for a relocated/reconfigured Atlantic station and the at-grade configuration of the guideway along a portion of Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello are described in **Section 2.5.1.3** and evaluated within this Recirculated Draft EIR.

2.5.1.1 Guideway Alignment

The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then turn south and run beneath Atlantic Boulevard to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. As described in further detail in **Section 2.6**, construction of the tunneling portion of the underground guideway would necessitate a launching and extraction site for the tunnel boring machine (TBM). The launching of the TBM would occur west of Saybrook Avenue and south of Gayhart Street, and the TBM extraction would occur at the construction staging area directly west of the relocated/reconfigured Atlantic station. As indicated in Volume 2, the additional parcels west of Atlantic Boulevard between Via Corona Street and East 4th Street would be utilized as construction staging areas to support underground construction.

After crossing Saybrook Avenue, the guideway would daylight from underground to an aerial configuration. Depending on the MSF site option that is selected, the aerial guideway would continue parallel to Washington Boulevard, east of Garfield Avenue, and merge into the center median of Washington Boulevard (Commerce MSF site option) or merge into the center median of Washington Boulevard at Gayhart Street (Montebello MSF site option). The alignment would maintain an aerial configuration then transition to an at-grade configuration east of Carob Way and remain at-grade in the center of Washington Boulevard. The at-grade alignment would terminate at Lambert station in the city of Whittier.

For the at-grade portions of the alignment, vehicular and pedestrian crossings would be limited to traffic signal-controlled intersections. Uncontrolled vehicular crossings of tracks and mid-block left-turns would not be permitted. As discussed further in Section 3.14, Transportation and Traffic, changes would occur to approach and departure traffic patterns for some properties with existing vehicle access along Washington Boulevard (e.g., for parking lots, loading docks, etc.), but would not

preclude access. Pedestrians and motor vehicles would be protected from the at-grade guideway by a fence or traffic barrier for pedestrian and vehicular safety. At unsignalized crossings, left turns and pedestrian crossings would be controlled using best practice safety measures (e.g., mid-block crosswalks, signal-protected pedestrian movements, channelization, barriers to protect and route pedestrians, Americans with Disabilities Act [ADA]-compliant curb ramps, and warning signs). Right-turn parking access and egress would remain along the alignment.

2.5.1.2 Proposed Stations

Alternative 1 would relocate/reconfigure the existing at-grade Atlantic Station to a new underground station and provide six new stations (two underground, one aerial, and three at-grade). It is anticipated that property acquisitions would be required to accommodate the stations and related facilities. The proposed station locations for Alternative 1 would be as follows:

- **Atlantic (Relocated/Reconfigured)** – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station. Access to the station would be via an entrance located west of Atlantic Boulevard between Beverly Boulevard and 4th Street, and would include a set of stairs, escalators, and elevators.

- **Atlantic/Whittier** – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station. Access to the station would be provided via an entrance located on the northwest corner of the Whittier Boulevard and Atlantic Boulevard intersection at the site of the current Sketchers store.

- **Commerce/Citadel** – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station. Access to the station would be provided via an entrance located south of Smithway Street west of Gaspar Avenue.

- **Greenwood** – This station would be aerial with a side platform located in the median of Washington Boulevard east of Greenwood Avenue in the city of Montebello. This station would provide a surface parking facility near the northeast corner of the intersection of Greenwood Avenue and Washington Boulevard. The station platform would be accessible through two entrances: one located at the northeast corner of Greenwood Avenue and Washington Boulevard and the other located at the southeast corner of Greenwood Avenue and Washington Boulevard.

- **Rosemead** – This station would be at-grade with a center platform located in the center of Washington Boulevard west of Rosemead Boulevard in the city of Pico Rivera. This station would provide a surface parking facility near the intersection of Rosemead and Washington Boulevards. Access to the station would be provided through an entrance located west of the Rosemead Boulevard and Washington Boulevard intersection. A secondary entrance would be located on the western side of the station platform that would be accessible with a mid-block pedestrian crossing.

- **Norwalk** – This station would be at-grade with a center platform located in the median of Washington Boulevard east of Norwalk Boulevard in the city of Santa Fe Springs. This station would provide a surface parking facility near the intersection of Norwalk and Washington Boulevards. Access to the station would be provided via an entrance located east of Norwalk Boulevard and a secondary station entrance west of Boer Avenue.

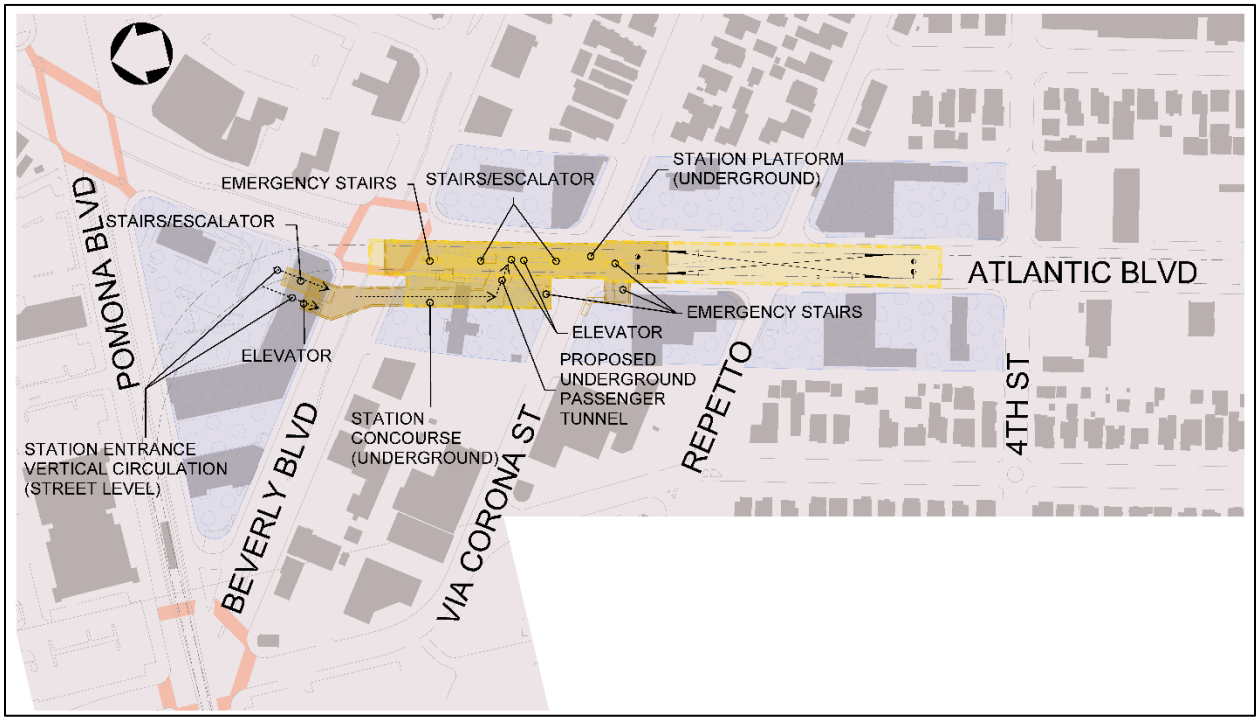
- **Lambert** – This station would be at-grade with a center platform located south of Washington Boulevard just west of Lambert Road in the city of Whittier. This station would provide a surface parking facility near the intersection of Lambert Road and Washington Boulevard. Two entrances to the station would be provided at each end of the platform.

Station amenities would include items in the Metro Rail Design Criteria and Systemwide Station Design Standards Policy (Metro 2018b) such as station markers, security cameras, bus shelters, benches, emergency telephones, public telephones, stairs, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and site-specific public art. Escalators and elevators would be located in aerial and underground stations. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning, urban design, and FLM improvements, would be evaluated and determined at a later phase (once Metro has approved a LPA and stations). Conceptual site plans for the proposed station locations are shown in **Figure 2.7** through **Figure 2.13** and Volume 2.

2.5.1.3 Design Options

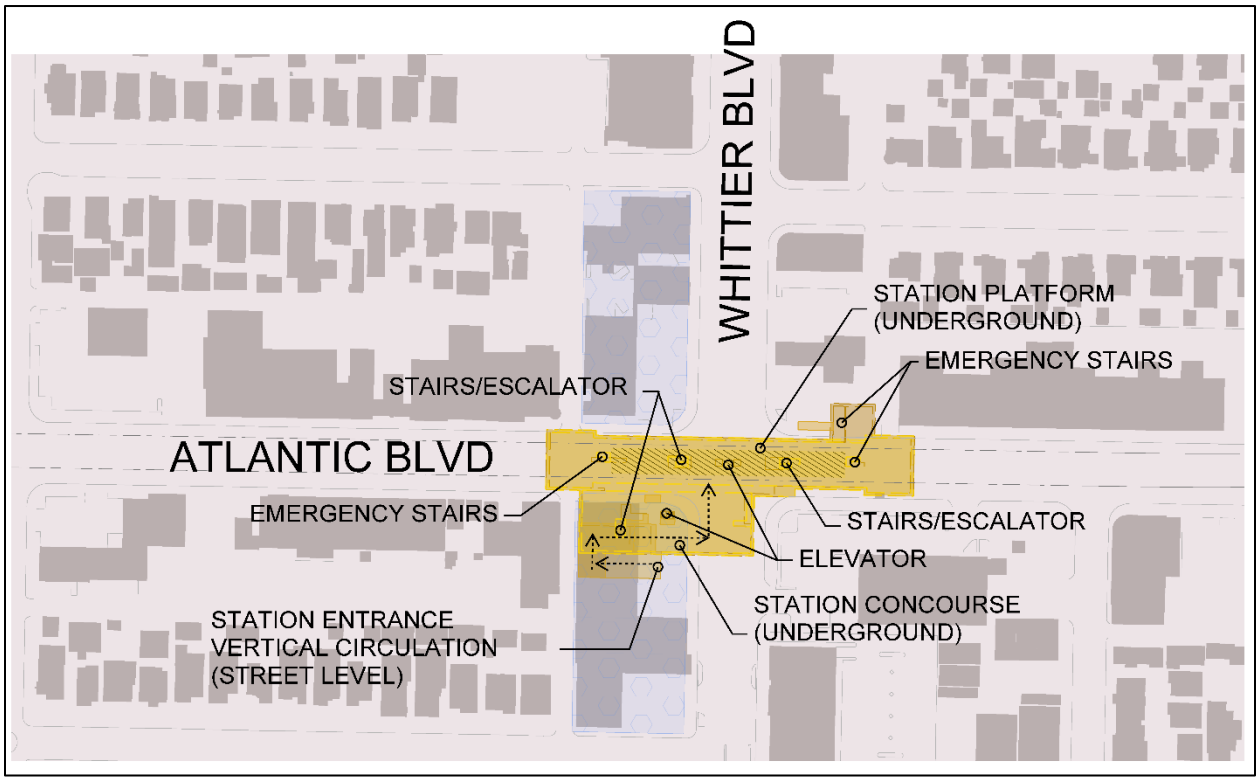
There are two design options being considered in addition to the base Alternative 1. The design options are described below:

- **Atlantic/Pomona Station Option** – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy. As shown in **Figure 2.14**, this station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation. This option would also impact the guideway alignment and location of the TBM extraction pit. As shown in **Figure 2.14**, the underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.



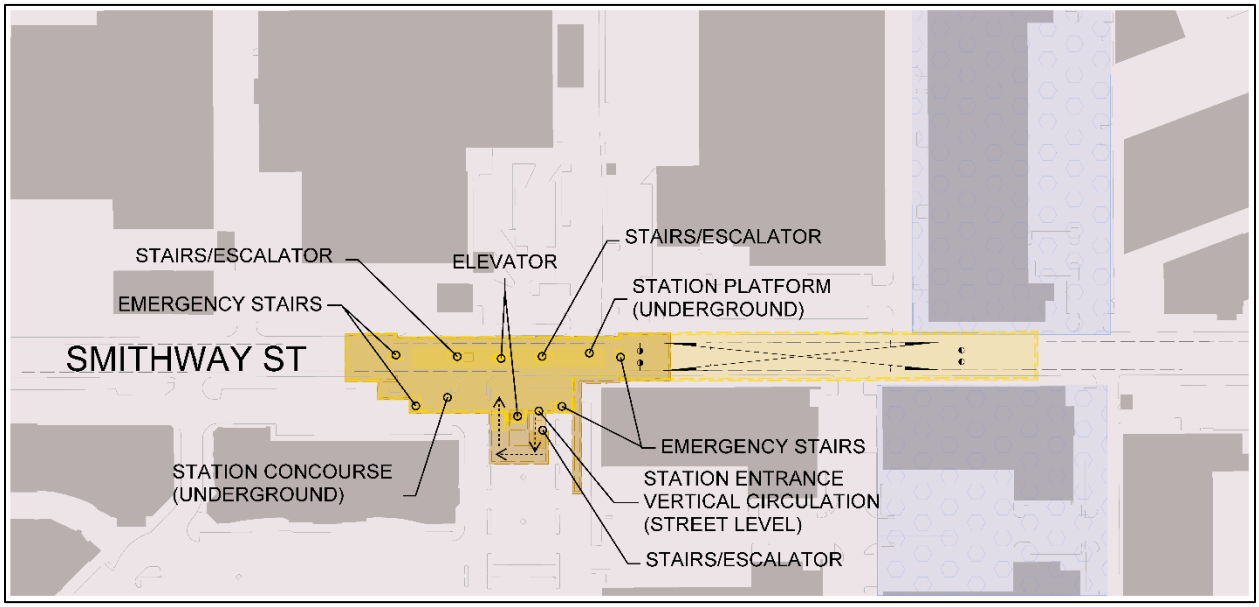
Source: Metro; ACE Team, June 2022.

Figure 2.7. Atlantic Station (Relocated/Reconfigured) Conceptual Site Plan



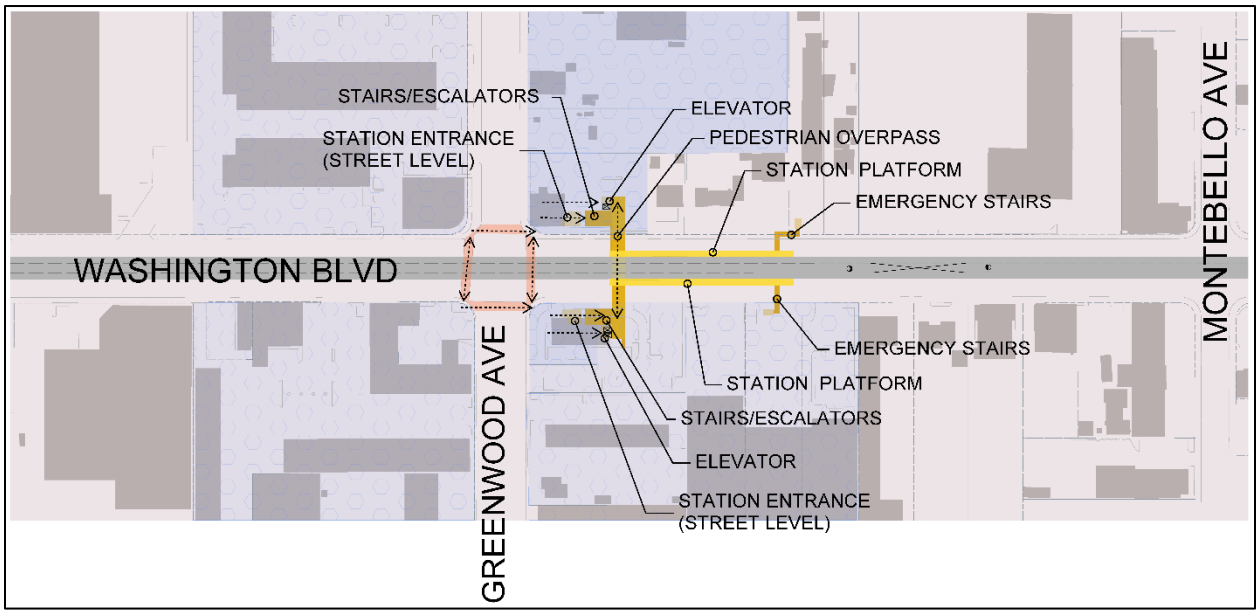
Source: Metro; ACE Team, June 2022.

Figure 2.8. Atlantic/Whittier Station Conceptual Site Plan



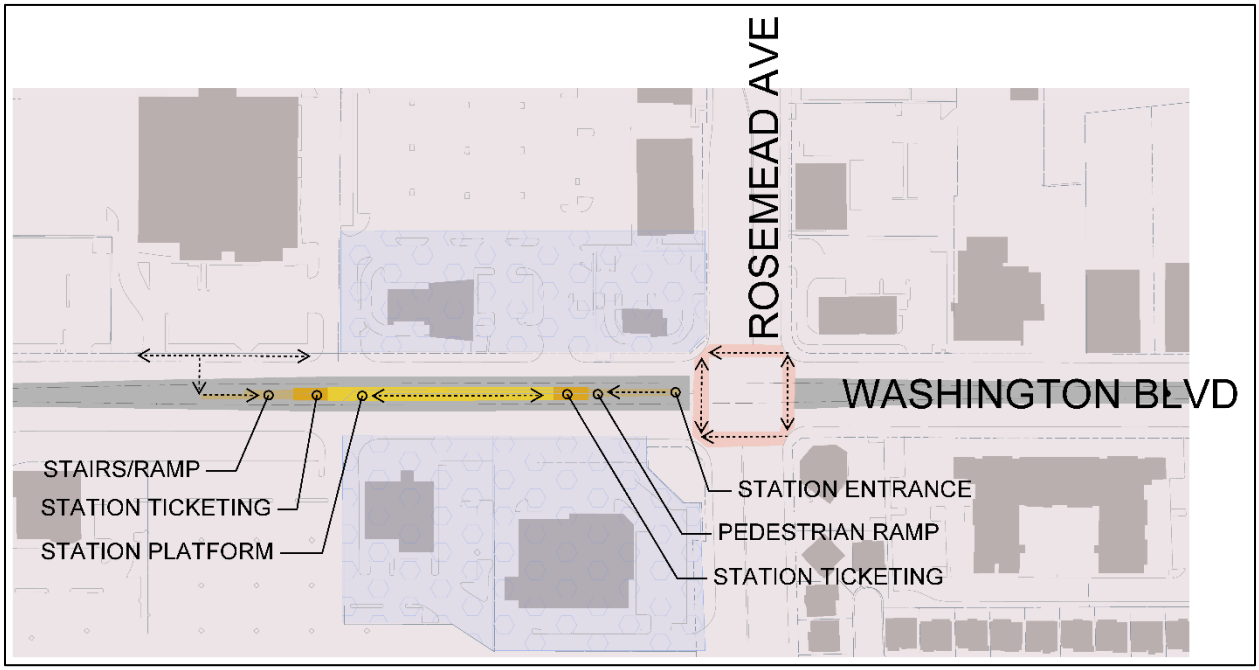
Source: Metro; ACE Team, June 2022.

Figure 2.9. Commerce/Citadel Station Conceptual Site Plan



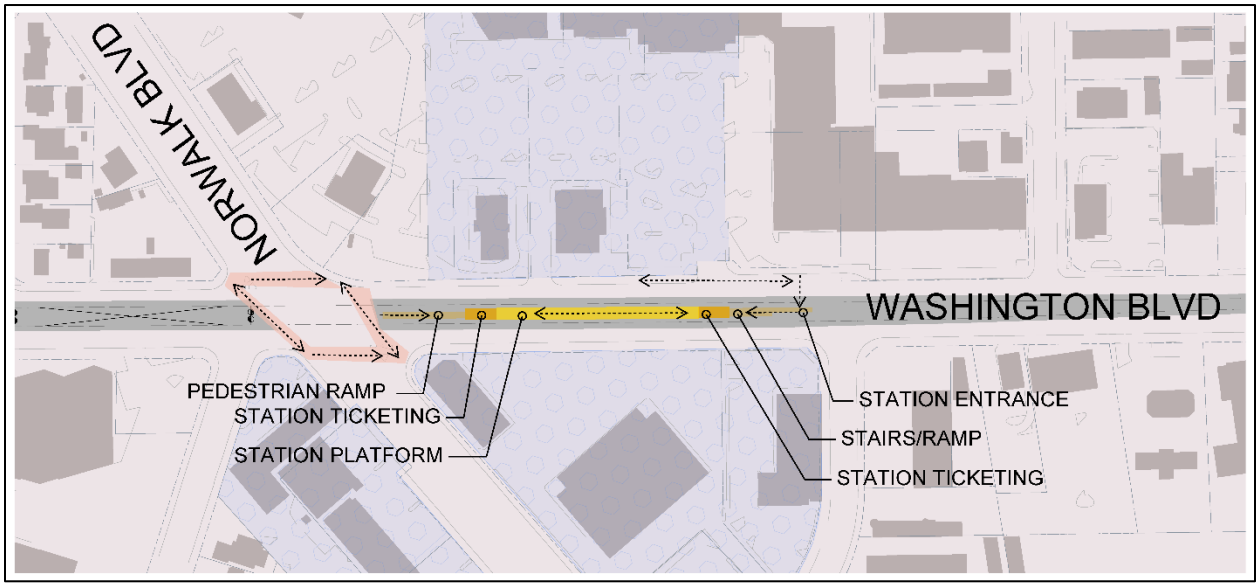
Source: Metro; ACE Team, June 2022.

Figure 2.10. Greenwood Station Conceptual Site Plan



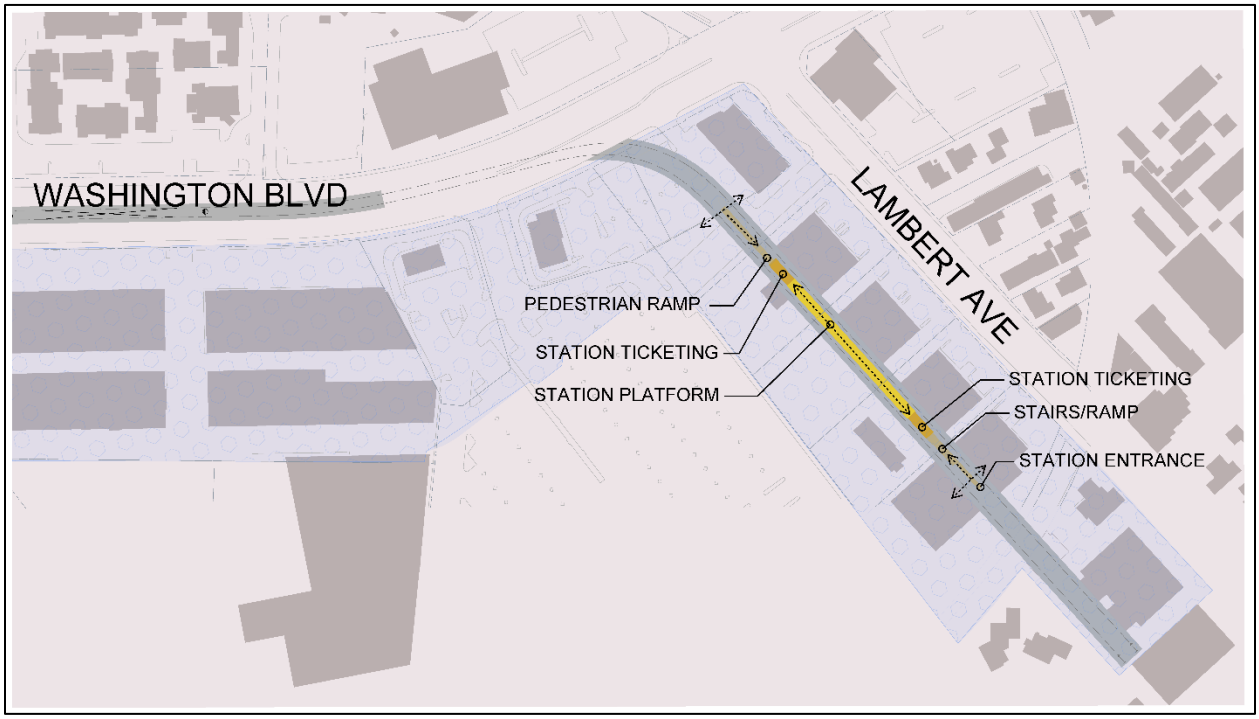
Source: Metro; ACE Team, June 2022.

Figure 2.11. Rosemead Station Conceptual Site Plan



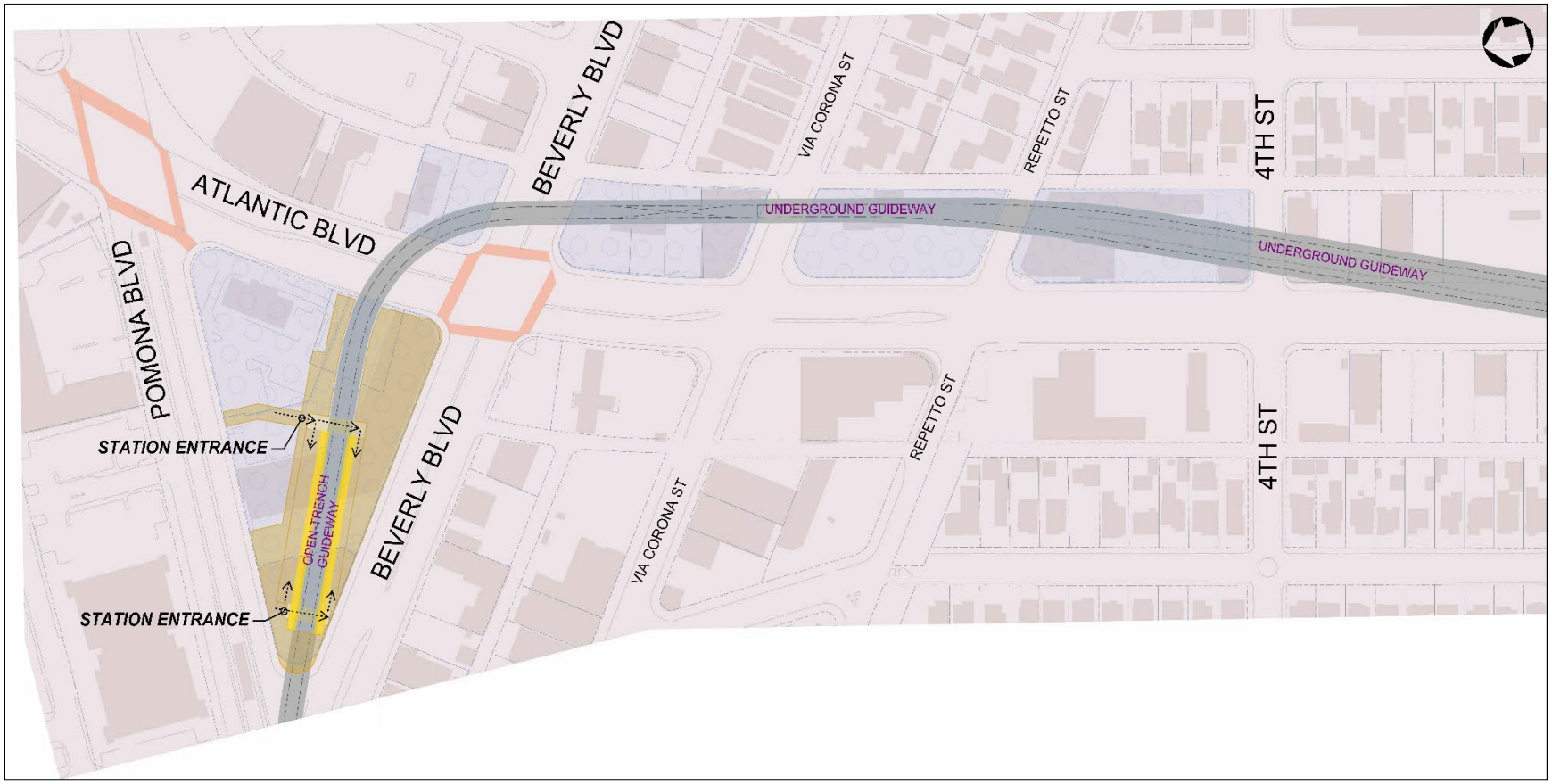
Source: Metro; ACE Team, June 2022.

Figure 2.12. Norwalk Station Conceptual Site Plan



Source: Metro; ACE Team, June 2022.

Figure 2.13. Lambert Station Conceptual Site Plan



Source: Metro; ACE Team, January 2022.

Figure 2.14. Atlantic/Pomona Station Option

- **Montebello At-Grade Option** – This design option consists of approximately one mile of at-grade guideway along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello. In this design option, after crossing Saybrook Avenue, the LRT guideway would daylight from underground to an aerial configuration to avoid disrupting existing Burlington Northern Santa Fe (BNSF) Railway tracks. The aerial guideway would continue parallel to Washington Boulevard, then merge into the center median east of Garfield Avenue. At Yates Avenue, the guideway would transition from aerial to an at-grade configuration and remain at-grade until terminating near Lambert Road in the city of Whittier as shown in **Figure 2.15**. This design option also includes an at-grade Greenwood station located west of Greenwood Avenue, as well as roadway reconfigurations to accommodate the at-grade segment of the alignment. The lead tracks to the Montebello MSF site option would also be at-grade. Alternative 1 with the Montebello At-Grade Option would have approximately 3.0 miles of underground, 0.5 miles of aerial, and 5.5 miles of at-grade alignment.

2.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

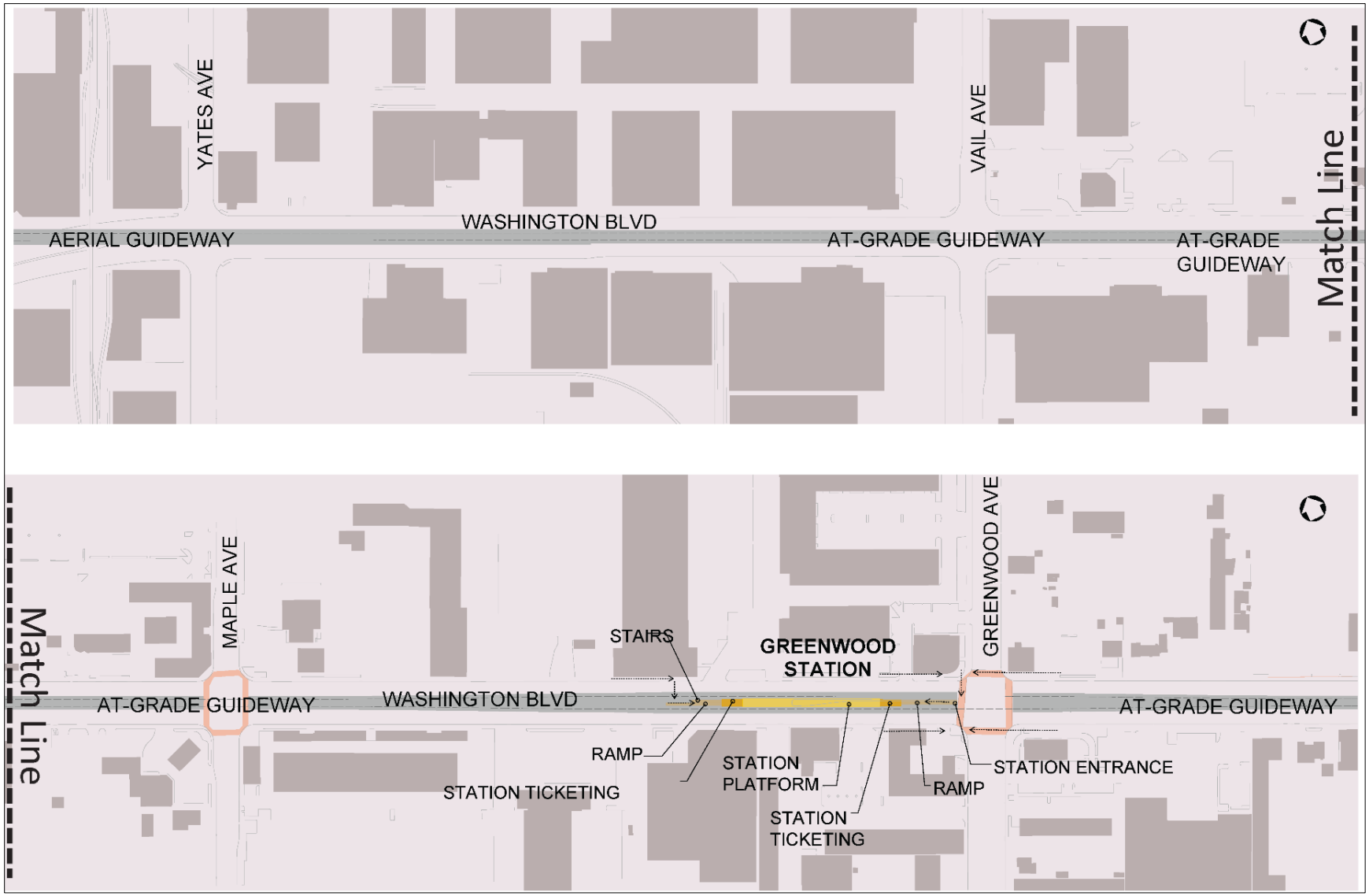
Alternative 2 would extend the Metro L (Gold) Line approximately 3.2 miles from the current at-grade terminus at Atlantic Boulevard to an underground terminal station at the Commerce/Citadel station in the city of Commerce with lead tracks connecting to the Commerce MSF site option. This alternative would include the relocated/reconfigured Atlantic station and two new stations in an underground configuration. The base Alternative 2 alignment includes approximately 3.0 miles of underground, 0.1 miles of aerial, and 0.1 mile of at-grade alignment. **Figure 2.16** shows the proposed Alterative 2 alignment and stations. There is one design option for this alternative.

The Commerce MSF site option and other ancillary facilities would also be constructed as part of the Project, including OCS, lead tracks, cross passages, ventilation structures, TPSSs, crossovers, emergency generators, radio tower poles and equipment shelters, and other facilities along the alignment. These facilities are described in **Section 2.5.5**. A summary of the guideway alignment, proposed stations, and operating hours and frequency is provided below. The Advanced Conceptual Design of Alternative 2 can be found in Volume 2.

A design option for a relocated/reconfigured Atlantic/Pomona station described in **Section 2.5.1.3** and shown on **Figure 2.14** is being evaluated for Alternative 2 within this Recirculated Draft EIR.

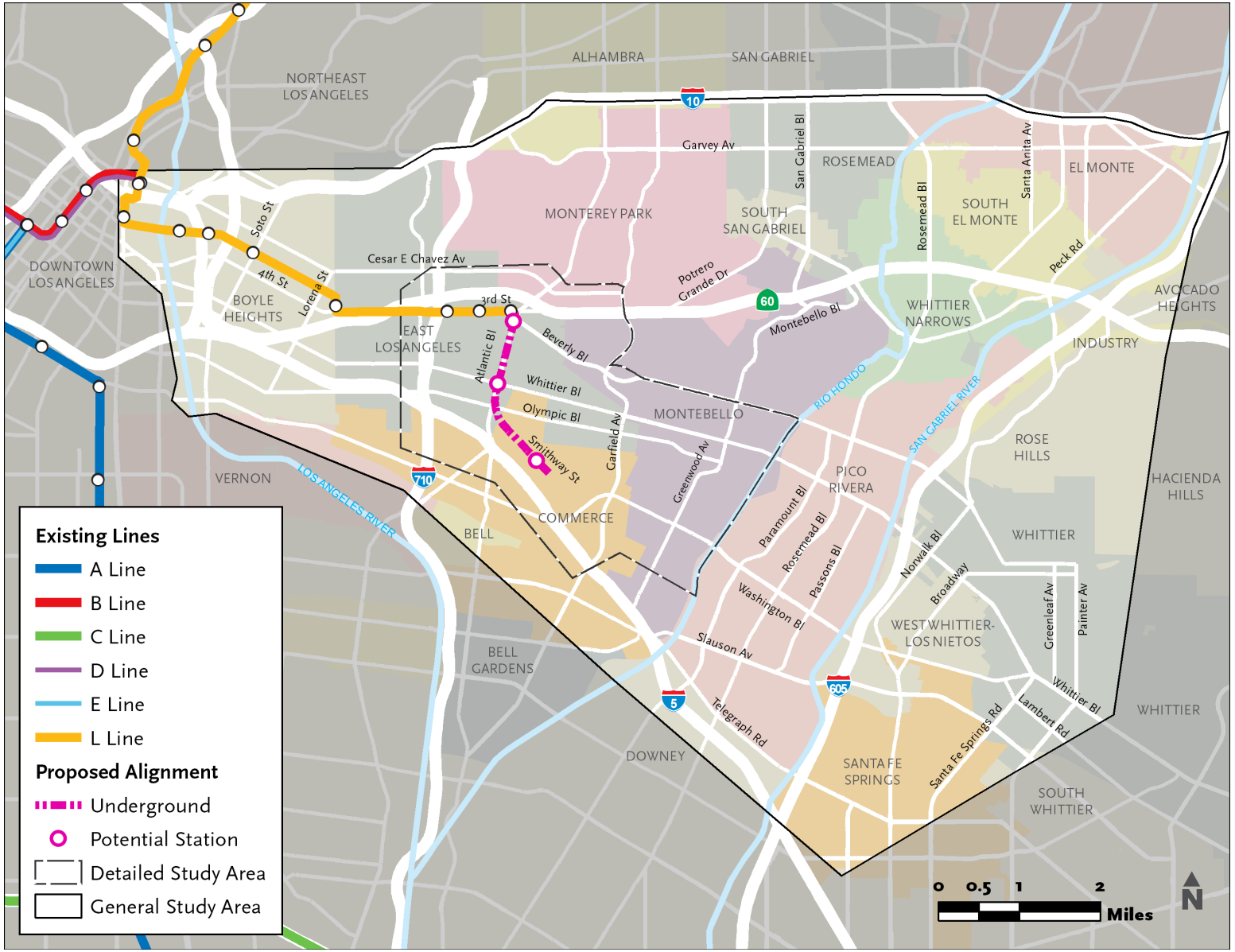
2.5.2.1 Guideway Alignment

The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then run beneath Atlantic Boulevard in the south direction to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce. The alignment would terminate at the Commerce/Citadel station with non-revenue lead tracks connecting to the Commerce MSF site option in an aerial configuration after crossing Saybrook Avenue.



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 2.15. Montebello At-Grade Option



Source: Metro; CDM Smith/AECOM JV, 2019.

Figure 2.16. Alternative 2 Atlantic to Commerce/Citadel IOS

As described in further detail in **Section 2.6**, construction of the tunneling portion of the underground guideway would necessitate a launching and extraction site for the TBM. The launching of the TBM would occur west of Saybrook Avenue and south of Gayhart Street, and the TBM extraction would occur at the construction staging area directly west of the relocated/reconfigured Atlantic station. As indicated in Volume 2, the additional parcels west of Atlantic Boulevard between Via Corona Street and East 4th Street would be utilized as construction staging areas to support underground construction.

2.5.2.2 Proposed Stations

Alternative 2 would relocate/reconfigure the at-grade Atlantic Station to a new underground station and provide two new stations (also underground). It is anticipated that property acquisitions would be required to accommodate the stations and related facilities. The proposed station locations for Alternative 2 would be as follows:

- **Atlantic (Relocated/Reconfigured)** – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station. Access to the station would be via an entrance located west of Atlantic Boulevard between Beverly Boulevard and 4th Street, and would include a set of stairs, escalators, and elevators.

- **Atlantic/Whittier** – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station. Access to the station would be provided via an entrance located on the northwest corner of the Whittier Boulevard and Atlantic Boulevard intersection at the site of the current Sketchers store.

- **Commerce/Citadel** – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station. Access to the station would be provided via an entrance located south of Smithway west of Gaspar Avenue.

Station amenities would include items consistent with the Metro Rail Design Criteria and Systemwide Station Design Standards Policy (Metro 2018b) such as station markers, station entry portals, security cameras, bus shelters, benches, emergency telephones, public telephones, stairs, escalators, elevators, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and integrated site-specific art. Landscaping would be provided near station portals. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning, urban design, and FLM improvements, would be evaluated and determined at a later phase (once Metro has approved a LPA and stations). Conceptual site plans for the proposed station locations are shown in **Figure 2.7** through **Figure 2.9** and Volume 2.

2.5.2.3 Design Option

There is one design option being considered in addition to the base Alternative 2. The design option is described below:

- **Atlantic/Pomona Station Option** – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy. As shown in **Figure 2.14**, this station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation. This option would also impact the guideway alignment and location of the TBM extraction pit. As shown in **Figure 2.14**, the underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.

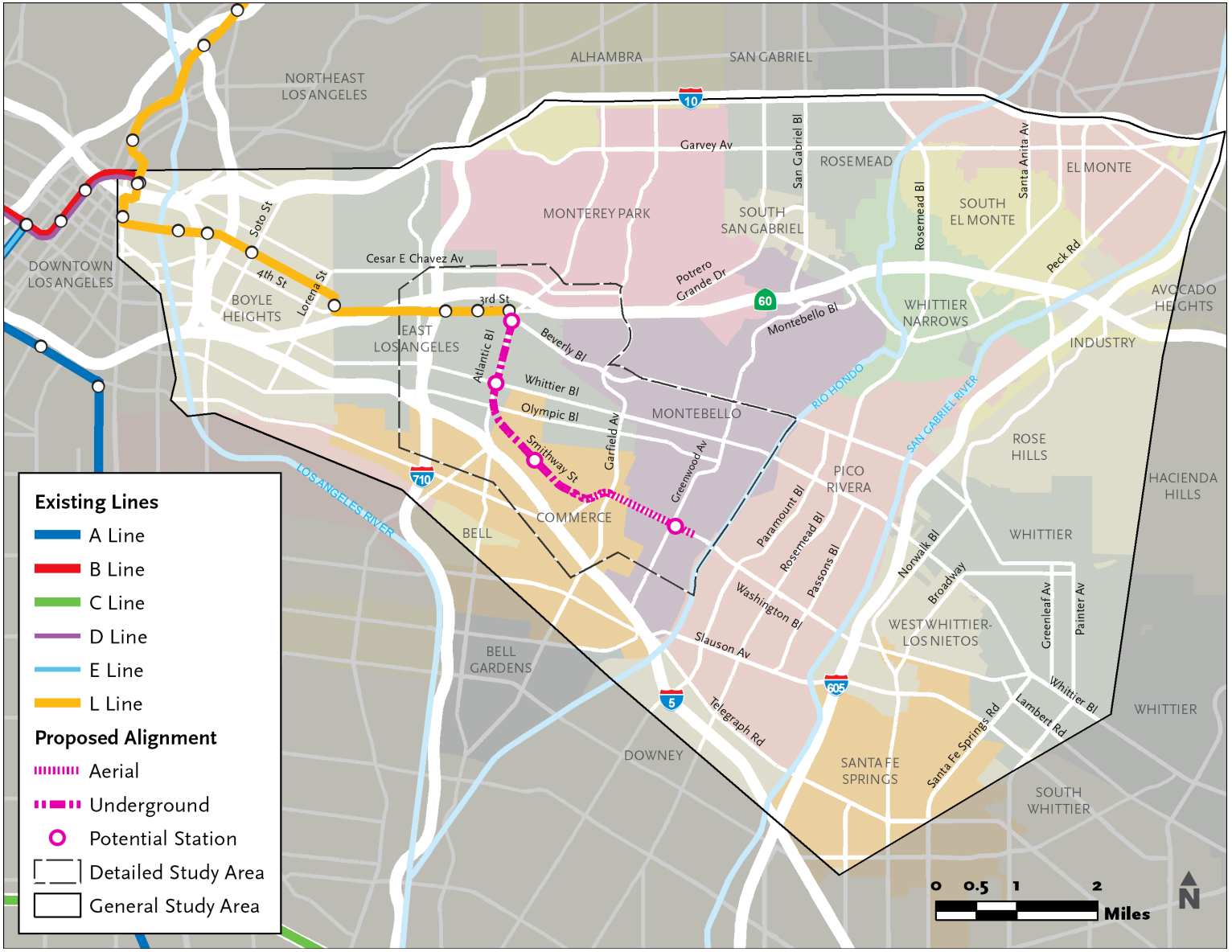
2.5.3 Alternative 3 Atlantic to Greenwood IOS

Alternative 3 would extend the Metro L (Gold) Line LRT approximately 4.6 miles east from the current at-grade station at Atlantic Boulevard to an aerial terminal station at Greenwood station in the city of Montebello. This alternative would include a relocated/reconfigured underground Atlantic station and three new stations: Atlantic/Whittier (underground), Commerce/Citadel (underground), and Greenwood (aerial). The base Alternative 3 alignment includes approximately 3.0 miles of underground, 1.5 miles of aerial, and 0.1 mile of at-grade alignment.

Figure 2.17 shows the proposed Alterative 3 alignment and stations.

An MSF and other ancillary facilities would also be constructed as part of the Project, including OCS, tracks, cross passages, ventilation structures, TPSSs, track crossovers, emergency generators, radio tower poles and equipment shelters, and other facilities along the alignment. These facilities are described in **Section 2.5.5**. A summary of the guideway alignment, proposed stations, and operating hours and frequency is provided below. The Advanced Conceptual Design of Alternative 3 can be found in Volume 2.

Design options for a relocated/reconfigured Atlantic/Pomona station and potential at-grade guideway configuration along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello are described in **Section 2.5.1.3** and evaluated within this Recirculated Draft EIR.



Source: Metro; CDM Smith/AECOM JV, 2019.

Figure 2.17. Alternative 3 Atlantic to Greenwood IOS

2.5.3.1 Guideway Alignment

The guideway would begin at the eastern end of the existing East Los Angeles Civic Center Station, transitioning from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The guideway would then run beneath Atlantic Boulevard south to approximately Verona Street and Olympic Boulevard. The underground guideway would then curve southeast, running under Smithway Street near the Citadel Outlets in the city of Commerce.

As described in further detail in **Section 2.6**, construction of the tunneling portion of the underground guideway would necessitate a launching and extraction site for the TBM. The launching of the TBM would occur west of Saybrook Avenue and south of Gayhart Street, and the TBM extraction would occur at the construction staging area directly west of the relocated/reconfigured Atlantic station. As indicated in Volume 2, the additional parcels west of Atlantic Boulevard between Via Corona Street and East 4th Street would be utilized as construction staging areas to support underground construction.

After crossing Saybrook Avenue, the guideway would daylight from underground to an aerial configuration. Depending on the MSF site option that is selected, the aerial guideway would continue in an aerial configuration parallel to Washington Boulevard, east of Garfield Avenue, and merge into the center median of Washington Boulevard (Commerce MSF site option) or merge into the center median of Washington Boulevard at Gayhart Street in an aerial configuration (Montebello MSF site option). The alignment would maintain an aerial configuration along Washington Boulevard. The alignment would terminate at the Greenwood station in the city of Montebello.

2.5.3.2 Proposed Stations

Alternative 3 would relocate/reconfigure the at-grade Atlantic Station to a new underground station and provide three new stations (two underground and one aerial). It is anticipated that property acquisitions would be required to accommodate the stations and related facilities. The proposed station locations for Alternative 3 would be as follows:

- **Atlantic (Relocated/Reconfigured)** – The existing Atlantic Station would be relocated and reconfigured to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles. The existing parking structure located north of the 3rd Street and Atlantic Boulevard intersection would continue to serve this station. Access to the station would be via an entrance located west of Atlantic Boulevard between Beverly Boulevard and 4th Street, and would include a set of stairs, escalators, and elevators.

- **Atlantic/Whittier** – This station would be underground with a center platform located beneath the intersection of Atlantic and Whittier Boulevards in East Los Angeles. Parking would not be provided at this station. Access to the station would be provided via an entrance located on the northwest corner of the Whittier Boulevard and Atlantic Boulevard intersection at the site of the current Sketchers store.

- **Commerce/Citadel** – This station would be underground with a center platform located beneath Smithway Street near the Citadel Outlets in the city of Commerce. Parking would not be provided at this station. Access to the station would be provided via an entrance located south of Smithway Street west of Gaspar Avenue.

- **Greenwood** – This station would be aerial with a side platform located in the median of Washington Boulevard east of Greenwood Avenue in the city of Montebello. This station would provide a surface parking facility near the northeast corner of the intersection of Greenwood Avenue and Washington Boulevard. The station platform would be accessible through two entrances: one located at the northeast corner of Greenwood Avenue and Washington Boulevard and the other located at the southeast corner of Greenwood Avenue and Washington Boulevard.

Station amenities would include items in the Metro Rail Design Criteria and Systemwide Station Design Standards Policy (Metro 2018b) such as station markers, station entry portals, security cameras, bus shelters, benches, emergency telephones, public telephones, stairs, escalators, elevators, map cases, fare collection, pedestrian and street lighting, hand railing, station landscaping, trash receptacles, bike racks and lockers, emergency generators, power boxes, fire hydrants, and site-specific public art. Escalators and elevators would be located in aerial and underground stations. Station entry portals would be implemented at underground stations. Station access would be ADA-compliant and also have bicycle and pedestrian connections. Details regarding most of these items, including station area planning, urban design, and FLM improvements, would be evaluated and determined at a later phase (once Metro has approved a LPA and stations). Conceptual site plans for the proposed station locations are shown in **Figure 2.7** through **Figure 2.10** and Volume 2.

2.5.3.3 Design Options

There are two design options being considered in addition to the base Alternative 3. The design options are described below:

- **Atlantic/Pomona Station Option** – The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to a shallow open air underground station with two side platforms and a canopy. As shown in **Figure 2.14**, this station design option would be located beneath the existing triangular parcel bounded by Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. The excavation depth of the station invert would be approximately 20 to 25 feet from the existing ground elevation. This option would also impact the guideway alignment and location of the TBM extraction pit. As shown in **Figure 2.14**, the underground guideway would be located east of Atlantic Boulevard and require full property acquisitions at its footprint between Beverly Boulevard and 4th Street. The alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. The TBM extraction pit would be east of Atlantic Boulevard between Repetto Street and 4th Street. Limits for the excavation would occur between the TBM extraction pit and the intersection of Pomona Boulevard and Beverly Boulevard.

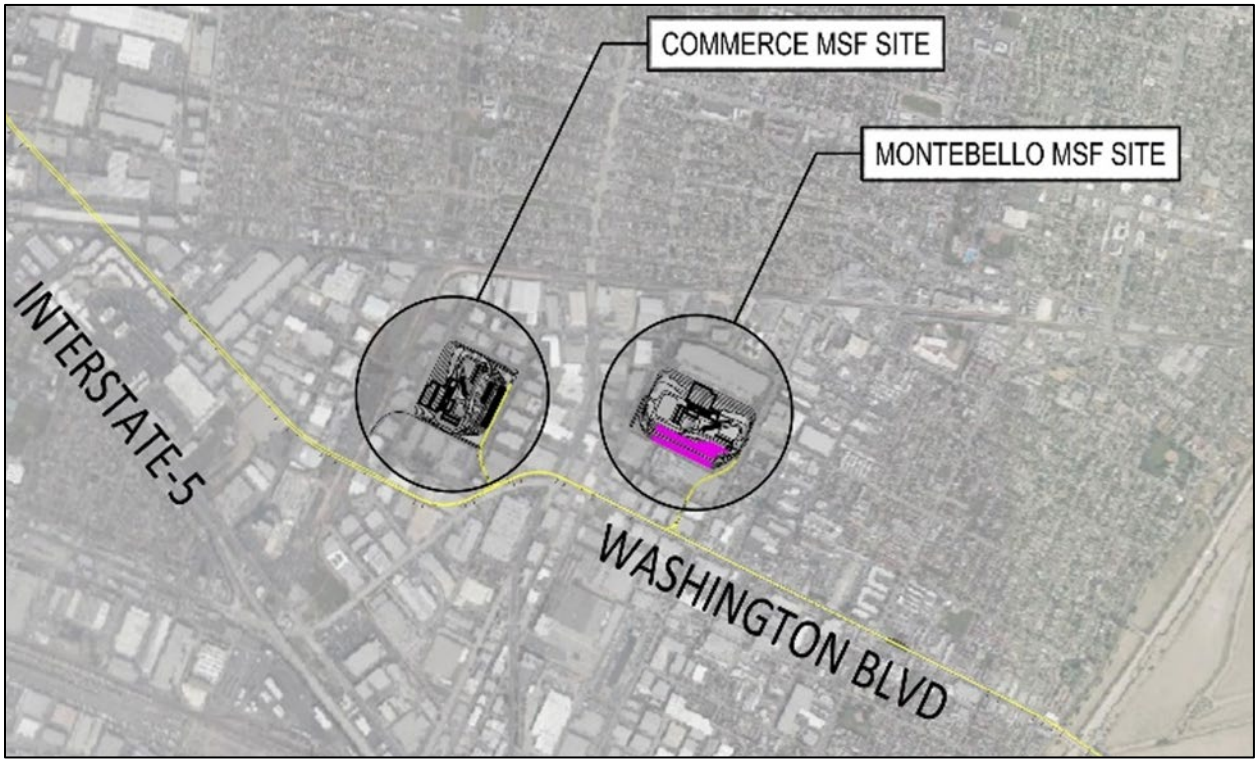
- **Montebello At-Grade Option** – This design option consists of approximately one mile at-grade guideway along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello. In this design option, after crossing Saybrook Avenue, the LRT guideway would daylight from underground to an aerial configuration to avoid disrupting existing BNSF Railway tracks. The aerial guideway would continue parallel to Washington Boulevard, then merge into the center median east of Garfield Avenue. At Yates Avenue, the guideway would transition from aerial to an at-grade configuration, run along Washington Boulevard to Carob Way, and then continue east in an at-grade configuration, as described under Alternative 3.

  This design option also includes an at-grade Greenwood station located just west of Greenwood Avenue, as well as roadway reconfigurations to accommodate the at-grade segment of the alignment. The lead tracks to the MSF site option would also be at-grade. Alternative 3 with the Montebello At-Grade Option would have approximately 3.0 miles of underground, 0.5 miles of aerial, and 1.1 miles of at-grade alignment.

2.5.4 Maintenance and Storage Facilities

The Project has two MSF site options: the Commerce MSF site option and the Montebello MSF site option. One MSF site option would be constructed. The MSF would provide equipment and facilities to clean, maintain and repair rail cars, vehicles, tracks, and other components of the system. The MSF would enable storage of light rail vehicles (LRV) that are not in service and would connect to the mainline with one lead track. The MSF would also provide office space for Metro rail operation staff, administrative staff, and communications support staff. The MSF would be the primary physical employment centers for rail operation employees, including train operators, maintenance workers, supervisors, administrative, security personnel and other roles. An estimated total of approximately 350 people is expected to staff the MSF site with a maximum overlap of 240 expected to be on site at one time. The number of parking spaces on site would be approximately 250 to accommodate employees.

The Commerce MSF site option is located in the city of Commerce, and the Montebello MSF site option is located in the city of Montebello. The Commerce MSF site option is located where it could support any of the three Build Alternatives. The Montebello MSF site option is located where it could support Alternative 1 or Alternative 3. As stated above, only one of the two MSF site options would be constructed under the Project. **Figure 2.18** shows the location of the two MSF site options for the Project. Each MSF site option is described in the following **Section 2.5.4.1** and **Section 2.5.4.2**.



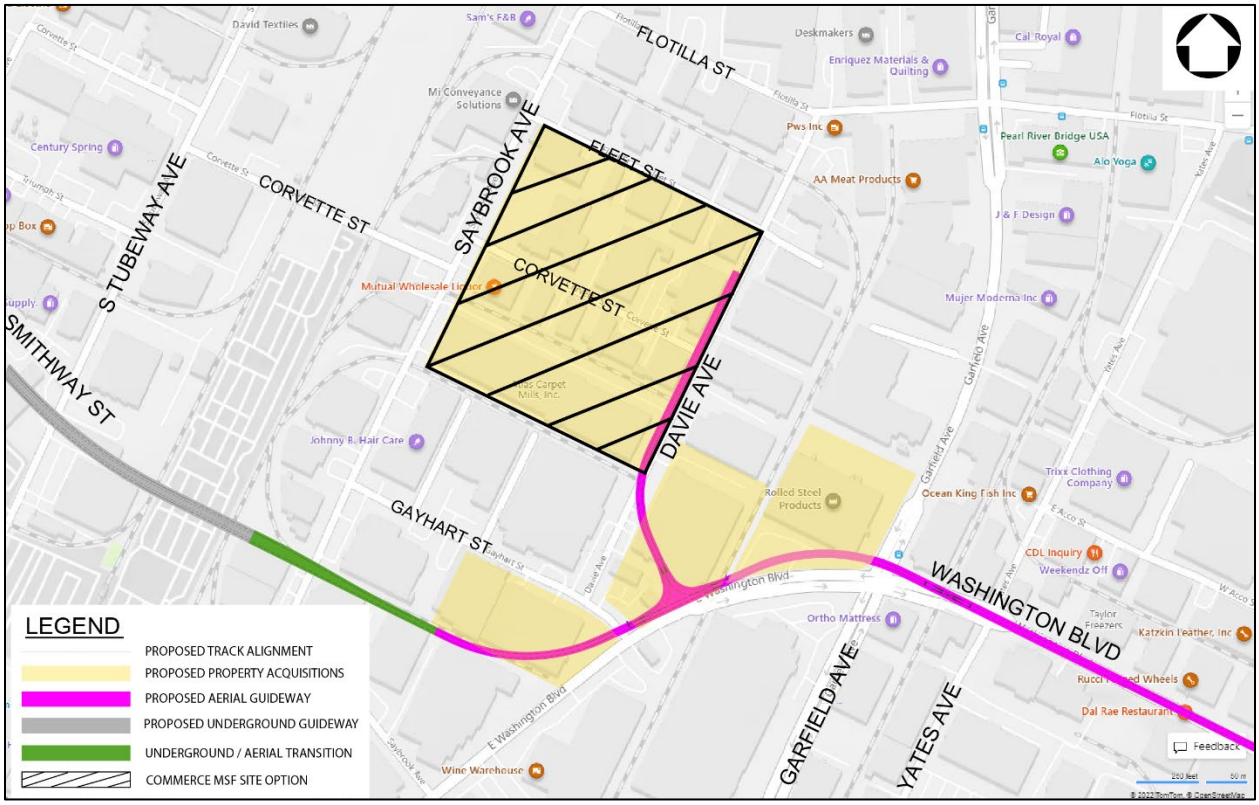
Source: Metro; ACE Team, June 2022.

Figure 2.18. Commerce and Montebello MSF Site Options

2.5.4.1 Commerce MSF

The Commerce MSF site option is located in the city of Commerce, west of Washington Boulevard and north of Gayhart Street (see **Figure 2.19**). The site is bounded by Davie Avenue to the east, Fleet Street to the north, Saybrook Avenue to the west, and an unnamed street to the south. The site is approximately 24 acres. Additional acreage would be needed to accommodate the lead track and construction staging. The guideway alignment with the Commerce MSF site option would daylight from an underground to aerial configuration west of the intersection of Gayhart Street and Washington Boulevard and would run parallel to Washington Boulevard from Gayhart Street to Yates Avenue. The lead tracks to the Commerce MSF site option would be located northeast of the intersection of Gayhart Street and Washington Boulevard and would extend in an aerial configuration and then transition to at-grade within the MSF site option after crossing Davie Avenue. To construct and operate the Commerce MSF site option, Corvette Street, an undivided two-lane road, would be permanently closed between Saybrook Avenue and Davie Avenue. Corvette Street is functionally classified as a local street under the California Road System. The facility would accommodate storage for approximately 100 LRVs.

The Commerce MSF site option would require acquisition of several properties with low-rise commercial and industrial buildings serving light industrial, wholesale, warehousing, distribution, and commercial supply businesses. The parcels in the vicinity of the Commerce MSF site option are designated as Public Facility, Heavy Industrial, and Unlimited Commercial in the city of Commerce zoning code (City of Commerce 2019).

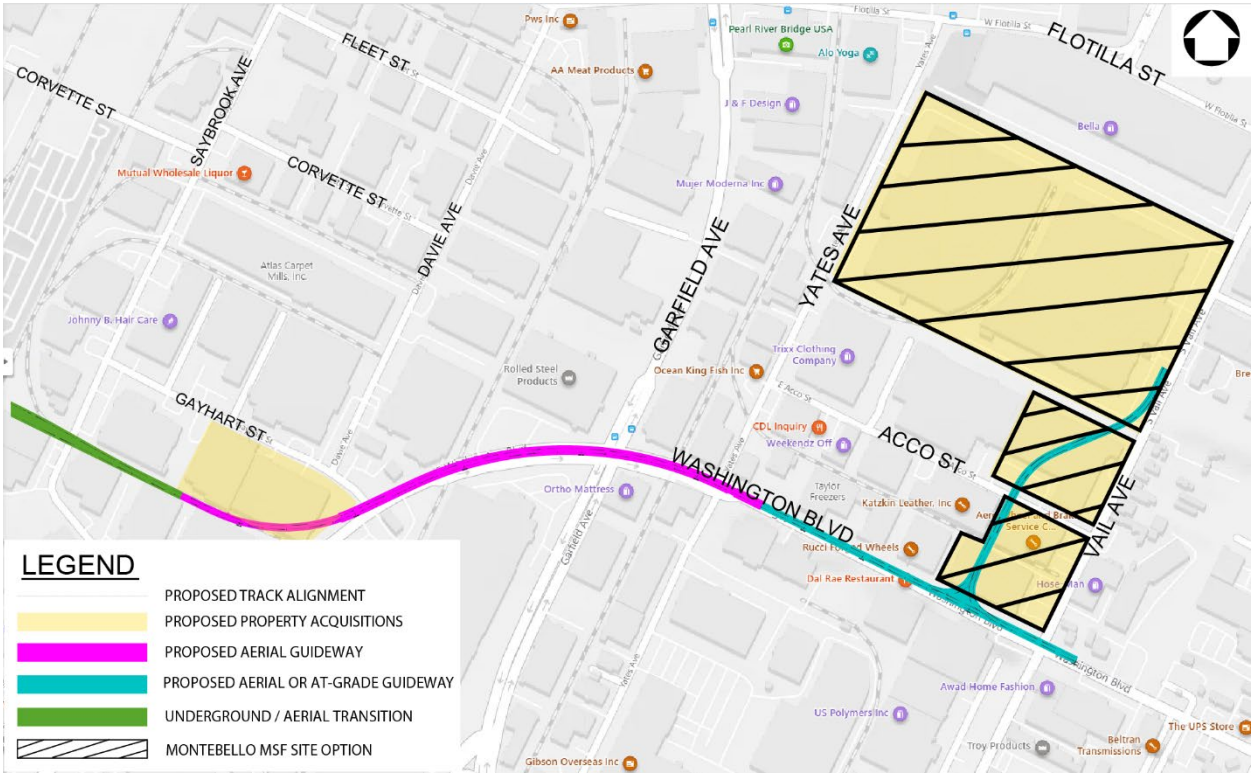


Source: Metro; ACE Team, June 2022.

Figure 2.19. Commerce MSF Site Option Site Plan

2.5.4.2 Montebello MSF

The Montebello MSF site option is located in the city of Montebello, north of Washington Boulevard and south of Flotilla Street between Yates Avenue and S. Vail Avenue (**Figure 2.20**). The site is approximately 30 acres and is bounded by S. Vail Avenue to the east, a warehouse structure along the south side of Flotilla Street to the north, Yates Avenue to the west, and a warehouse rail line to the south. Additional acreage would be needed to accommodate the lead track and construction staging. As shown on in a solid line on **Figure 2.21**, the guideway alignment with the Montebello MSF site option would daylight from an underground to an aerial configuration west of intersection of Gayhart Street and Washington Boulevard. The alignment would be located further east than the alignment with the Commerce MSF site option. The aerial guideway for the Montebello MSF site option would transition to the median of Washington Boulevard at Gayhart Street. Columns that would provide structural support for the aerial guideway would be installed in the median of Washington Boulevard. The lead track would be in an aerial configuration from Washington Boulevard and would transition to at-grade as the track approaches the MSF site option.

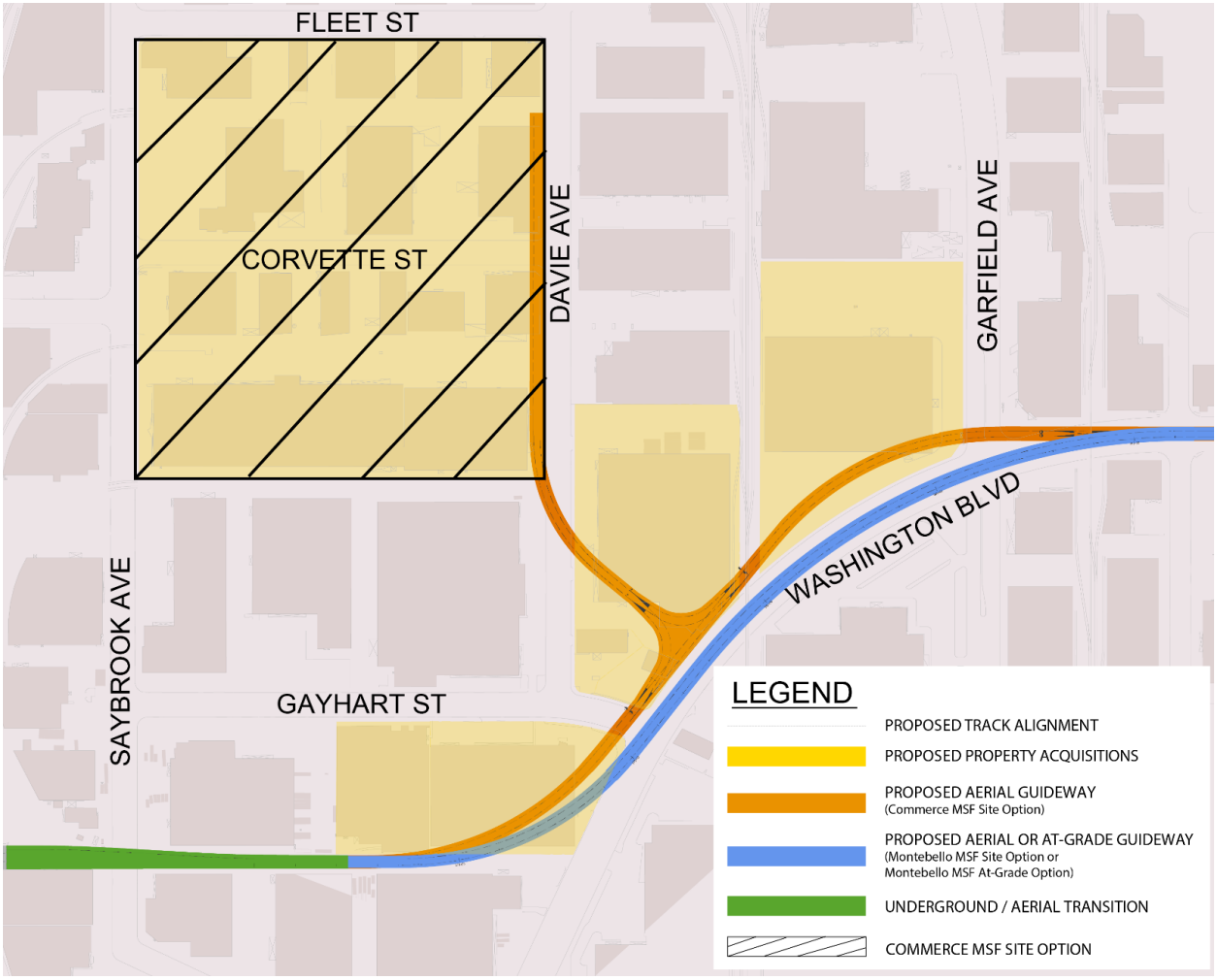


Source: Metro; ACE Team, June 2022.

Figure 2.20. Montebello MSF Site Option Site Plan

Property acquisitions would be required for lead track east of S. Vail Avenue. The Montebello MSF site option would require acquisition of several properties with commercial and industrial uses. The parcels within the Montebello MSF site option and in the vicinity are classified as Heavy Manufacturing under the city of Montebello zoning code. A significant portion of the Montebello MSF site option is occupied by an industrial/commercial paving business. The facility would accommodate storage for approximately 120 LRVs.

The Montebello MSF At-Grade Option includes an at-grade configuration for the lead tracks to the Montebello MSF site option. This design option would be necessary if the Montebello At-Grade Option is selected under Alternative 1 or Alternative 3. In this design option, the lead tracks would be in an at-grade configuration from Washington Boulevard, paralleling S. Vail Avenue, and remain at-grade to connect to the Montebello MSF site option. For this design option, through access on Acco Street to Vail Avenue would be eliminated and cul-de-sacs would be provided on each side of the lead tracks to ensure that access to businesses in this area is maintained. The undivided two-lane road, Acco Street, is functionally classified as a local street under the California Road System.



Source: Metro; ACE Team, June 2022.

Figure 2.21. Montebello MSF S-Curve Alignment

2.5.5 Ancillary Facilities

The Build Alternatives would require a number of additional elements to support vehicle operations, including but not limited to an OCS, tracks, crossovers, cross passages, ventilation structures, TPSS, train control house and electric power switches, and an MSF. Alternatives 1, 2, and 3 would have a underground alignment of approximately 3 miles in length between La Verne and Saybrook Avenue. Per Metro's Fire Life Safety Criteria, ventilation shafts and emergency fire exits would be installed along the tunnel portion of the alignment. These would be located at the underground stations or public ROW. The precise location of ancillary facilities would be determined in a subsequent design phase.

Following are descriptions of the OCS, tracks, crossovers, cross passages, ventilation structures, TPSS and train control house and electric power switches.

2.5.5.1 Overhead Contact System

The OCS is a network of overhead wires that distribute electricity to LRT, as shown in **Figure 2.22**. The OCS would include steel poles to support an electrical power line that would be suspended above the LRT tracks. A pantograph or "arm" on the roof of LRT vehicles would slide along the underside of the contact wire and deliver electric power to the vehicles. The OCS poles would be approximately 30 feet tall and typically located every 90 to 170 feet between two LRT tracks. The overhead conductor rails (OCR) would be applied to the underground portion of the guideway. Interchangeable to the OCS system, the OCR would also distribute electrification to the LRT system. However, overhead wires would be hung from the tunnel ceiling instead of OCS poles.

Source: Metro, 2021.

Figure 2.22. Metro OCS for LRT Vehicles

2.5.5.1.1 Tail Tracks

Tail tracks allow for train storage, reversing direction, and short-lining of service if a pocket track is provided along the alignment. Tail tracks are typically located at each end-of-line the LRT station terminus.

2.5.5.1.2 Crossovers

A track crossover allows a train to reverse direction and use an adjacent track to continue operation.

2.5.5.1.3 Cross Passages

Cross passages are short tunnel segments that connect two parallel tunnels in underground segments. These passages allow emergency access from one tunnel to another. Cross passages for the Project would be approximately 15 feet high and 10 feet wide and would be located approximately every 800 feet along tunnel alignments.

2.5.5.1.4 Ventilation Structures

Ventilation structures allow for climate control and emergency ventilation of tunnels and underground stations. These structures would be included within the underground stations and would have ventilation gratings on sidewalks (or other public areas) typically on both sides of all underground stations.

2.5.5.1.5 Traction Power Substations

TPSSs are electrical substations that would typically be placed every one to one and a half miles. The LRT vehicles would be powered by approximately eight TPSS units, which would be spaced relatively evenly along the alignment to provide direct current to the LRT vehicles. TPSSs would be located at points along the alignment where maximum power draw is expected (such as at stations and on inclines). In the event that one TPSS needs to be taken off line, the LRT vehicle would continue to operate temporarily. Separate TPSS would be required for the maintenance buildings at the MSF.

The size of each TPSS unit would be approximately 60 feet by 80 feet and about 12 to 14 feet high. The unit would require access to the local road network for equipment installation and maintenance. Power would be fed to the OCS through underground feeders in duct banks and up a pole to a connection with the contact wire.

The TPSS units may be located underground at underground stations, within the public ROW, in parking facilities, or in acquired parcels. A representative TPSS is shown in **Figure 2.23**. For the purposes of analysis in this Recirculated Draft EIR, potential or typical TPSS locations were evaluated. However, other more suitable locations could be selected if they become available and are comparable to the potential locations analyzed herein.

2.5.5.1.6 Radio Communications

The Atlantic/Whittier station and Commerce/Citadel station would have equipment used to receive, process and transmit communication signals that would require antenna structures approximately 60 feet tall. Pole height is subject to the total number of required radio channels and bands. Communication cables would connect the antennas to the station train control and communications rooms. At the Commerce/Citadel station, an above-ground outdoor shelter may be required if the underground control room cannot support additional equipment. An equipment shelter and antenna of approximately 70 feet in height would also be located at the MSF site option.

2.5.5.1.7 Train Control House and Electrical Power Switches

The train control house contains signal equipment and electric power switches (contained in metal box-like enclosures) that would transfer electric power from utility providers to the underground traction power and other rail systems. Communications and electrical power switches would be located at each station.

Source: Metro Gold Line Foothill Extension Construction Authority, 2012.

Figure 2.23. Typical Light-Rail TPSS

2.5.6 Operating Hours and Frequency

Alternative 1 would provide LRT service from the terminus at Lambert Road station (city of Whitter), Alternative 2 would provide LRT service from the terminus at the Commence/Citadel station (city of Commerce), and Alternative 3 would provide LRT service from the terminus at the Greenwood station (city of Montebello). All Build Alternatives would provide LRT service from each designated terminus to downtown Los Angeles where Metro L (Gold) Line service would continue on Regional Connector tracks connecting to Metro E Line to Santa Monica.

The operating hours and schedules for Alternatives 1, 2, and 3 would be similar to the weekday, Saturday, Sunday, and holiday schedules for the existing Metro L (Gold) Line. LRT trains would operate every day from 4:00 am to 1:30 am. On weekdays, trains would operate approximately every 5 minutes to 10 minutes during peak hours, every 10 minutes mid-day and until 8:00 pm, and every 15 minutes in the early morning and after 8:00 pm. On weekends, trains would operate approximately every 10 minutes from 9:00 am to 6:30 pm, every 15 minutes from 7:00 am to 9:00 am and from 6:30 pm to 7:30 pm, and every 20 minutes before 7:00 am and after 7:30 pm. These operational headways are consistent with Metro design requirements for future rail services.

2.6 Construction

This section provides an overview of the typical construction activities and sequencing that would occur to build an LRT system based on Volume 2 and described in further detail in Appendix P. These methods are consistent with how the Eastside Transit Corridor Phase 1 Project, as well as other Metro LRT projects have been built. Final design and actual construction methods, sequencing, and equipment may vary, depending in part on how contractors choose to implement their work to be most cost-effective, within the parameters set forth in the bid and contract documents.

Construction of the Project would include a combination of various elements dependent upon the locally preferred alternative. The major construction activities include guideway construction (at-grade, aerial, underground), decking and tunnel boring for the underground guideway, station construction, demolition, utility relocation and installation work, street improvements including sidewalk reconstruction and traffic signal installation, retaining walls, LRT operating systems installation including TPSS and OCS, parking facilities, an MSF, and construction of other ancillary facilities. Alternative 1 would include construction of bridge replacements over the Rio Hondo and San Gabriel and River.

Construction of the Project would require grading, excavation, and the movement of excavated material. Estimated volumes of excavated material per base alternative is shown in **Table 2-2**. Actual volumes of material would depend on a number of factors, including the final design, individual contractor's choices, and coordination with the appropriate local jurisdictions. As further described in the Section 3.8, Transportation and Traffic. and Section 3.14, Hazards and Hazardous Materials, haul routes would be located along the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Major streets may include Atlantic Boulevard, Saybrook Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard, Slauson Avenue, and Whittier Boulevard. These haul routes shall be identified during final design in cooperation with the jurisdictions along the alignment and implemented throughout the construction process.

Table 2-2. Estimate of Excavated Material Volumes

Base Alternative[1]	Estimated Volumes of Excavated Material
Alternative 1 Washington	568,344 cubic yards
Alternative 2 Atlantic to Commerce/Citadel IOS	509,782 cubic yards
Alternative 3 Atlantic to Greenwood IOS	522,088 cubic yards

Notes:
[1] Excavation amounts for the Alternatives with one or both design options are not expected to be substantively different from that of the base Alternatives.

In addition to adhering to regulatory compliance, the development of the Project would employ conventional construction methods, techniques, and equipment. Project engineering and construction would, at minimum, be completed in conformance with the regulations, guidelines, and criteria:

- Metro Rail Design Criteria (Metro 2018a)
- Metro Systemwide Station Design Standards Policy (Metro 2018b)

- California Manual of Uniform Traffic Control Devices (MUTCD) (California Department of Transportation [Caltrans]) (Caltrans 2021)
- Greenbook: Standards for Public Works Construction(Public Work Standards et al. 2021)
- California Building Code(California Building Standards Commission 2021)
- California Green Building Standards Code Title 24, Part 11, Section 5.408.3(CalGreen 2019)
- National Fire Protection Association (NFPA) Standard for Fixed Guideway Transit and Passenger Rail Systems(NFPA 2019; NFPA 2020)
- National Electrical Code (NFPA 70)
- American Railway Engineering and Maintenance of Way Association (AREMA) Standards (AREMA 2019)
- Metro Operating Rules
- California, Public Utility Commission (CPUC) General Orders (Including but not limited to 88, 95, 143-B, and 164-D)
- Metro Sustainability Principles(Metro 2020)
- South Coast Air Quality Management District (SCAQMD) Rule 403 (SCAQMD 2005)
- SCAQMD Clean Air Act Rule 1403—asbestos regulation(SCAQMD 2019)
- National Pollutant Discharge Elimination System (NPDES) (United States Environmental Protection Agency [USEPA] (USEPA 2021)
- Standard Urban Stormwater Mitigation Plan (SUSMP) (Los Angeles Regional Water Quality Control Board 2000)
- Stormwater Pollution Prevention Plan (SWPPP) (USEPA 2021)

Best Management Practices (BMP) that would be implemented in compliance with regulations, guidelines, and permit approvals that would be implemented to avoid or reduce potential impacts are identified as project measures that would be incorporated into the Project. These project measures are identified in Chapter 3 of this Recirculated Draft EIR where applicable. Additionally, a complete list of all project measures is provided Appendix U.

2.6.1 Construction Sequencing

The construction of the Project is expected to last approximately 60 months to 84 months. Preconstruction would include geotechnical and hazardous material field surveys to identify potential hazards and constraints related to the design and construction of the Project. Construction would then commence with utility and site preparation. After demolition and site clearing, conflicting utilities would be relocated or protected-in-place, followed by any temporary roadway reconfiguration or restriping to accommodate temporary or permanent design elements related to the Project. The

launching of the TBM machine would occur west of Saybrook Avenue and south of Gayhart Street under the base Alternatives. Depending on the alternative, the aerial alignment construction would commence along Washington Boulevard. Cut-and-cover excavation, roadway decking, temporary shoring, mass excavation, and underground construction would occur along Smithway Street at the TBM launching pit and then the TBM receiving pit west of Atlantic Boulevard and south of Pomona Boulevard. Tunnel boring could occur simultaneously with aerial and at-grade construction. It is estimated that tunnel boring would occur at a minimum rate of approximately 30 feet per day, aerial construction would occur in roughly 0.5-mile segments and at-grade construction would occur in roughly 1-mile segments. Stations would be built simultaneously with guideway construction. Track installation and LRT operating systems including elements such as OCS, TPSS, train control house (among others) would generally occur during and after station construction. Ancillary facilities, final street improvements, public art, and landscaping would typically follow guideway construction.

Most construction activities would occur during daytime hours. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions; construction work during nighttime hours would be conducted in accordance with community input. Traffic control and pedestrian control during construction would follow local jurisdiction guidelines and the Manual of Uniform Traffic Control Devices (MUTCD) standards. Typical roadway construction traffic control methods and devices would be followed, including the use of signage and barricades to regulate, warn, or guide road users.

Table 2-3 provides a summary of typical construction activities to support LRT construction, describing the activity, typical duration, description of construction activities, and equipment required. This summary is meant to be representative not all inclusive.

Table 2-3. Summary of Typical LRT Construction Activities

Activity	Typical Duration (Total Months)	Description	Equipment Required
At-Grade Alignment			
Utility Relocation	16-24	Relocate utilities from temporary and permanent elements related to the construction and/or operation of the Project.	Saw cutter, backhoes, jackhammers, excavators, hydro excavation trucks, dump trucks, cement trucks, asphalt pavers, forklift, manlift, cranes, bucket trucks, cable-pull trucks.
Construction Staging Laydown Yard	3-6	Demolish existing buildings to store construction equipment and materials including the TBM, office space.	Bulldozer, excavators, dump trucks, backhoes.
Roadway	12-36	Reconfigure roadway, demolition of existing roadway installation of curb and gutter and other public right of way improvements. Install relocated traffic signals and stripe roadway.	Excavators, backhoes, compactors, milling machines, jackhammers, asphalt pavers, pavement breakers, manlifts, forklifts, dump trucks, cement trucks, road-striping trucks.
Guideway	24	Install slab and track.	Forklift, dump trucks, excavators, cement trucks, rail installation equipment, and truck mounted welders

Activity	Typical Duration (Total Months)	Description	Equipment Required
Station Construction	12-18	Install mechanical, electrical, and plumbing (MEP), canopies, faregates, ticketing, finishes, stairs, walkways, and artwork.	Forklifts, generator sets, loaders, welders, cement trucks, cranes, manlifts
LRT Systems Installation	8-12	Install OCS, OCS electrical and communication ducts, OCS foundations, TPSS, and gate-arms.	Excavators, backhoes, forklifts, Hi-Rail vehicles, cranes, manlifts
Parking Facilities	3-6	Parking facilities and landscaping	Cranes, forklifts, cement trucks, pavement breakers, diamond saws, compressors, paving machines, loaders, haul trucks
Maintenance and Storage Facility	18-24	Install MEP, special track, specialized washing equipment, and rebar installation, and concrete pours.	Crane, forklifts, cement trucks.
Aerial Alignment			
Utility Relocation	12-18	Relocate underground and/or overhead utilities from temporary and permanent elements related to the construction and/or operation of the Project.	Saw cutter, backhoes, jackhammers, excavators, hydro excavation trucks, dump trucks, cement trucks, asphalt pavers, cranes, bucket trucks, forklift, manlift, cable-pull trucks.
Civil Roadway	12-24	Reconfigure roadway to accommodate aerial guideway. Demolish existing roadway. Install curb and gutter, sidewalks and drainage. Install relocated traffic signals and stripe roadway.	Excavators, backhoes, compactors, milling machines, jackhammers, asphalt pavers, pavement breakers, manlifts, forklifts, dump trucks, cement trucks, road-striping. trucks.
Mechanically Stabilized Earth (MSE) Walls	6-12	Structure would allow for transition from underground or at-grade into an aerial configuration.	Excavators, cranes, compactors, cement truck, forklifts, dump trucks.
Station Construction	18-24	Install rebar, MEP, fire and life safety systems, canopies, faregates, ticketing, finishes, elevators, escalators, concrete pours, and artwork. Construction of pedestrian bridge connection for Greenwood station.	Forklifts, cranes, generator sets, loaders, welders, cement trucks, manlifts.
Elevated Guideway	12-18	Install foundation columns, falsework, track slabs, track, and elevated sections.	Cast-in-drilled-hole (CIDH) drill rig or pile driver, cranes, forklifts, compressors, haul trucks, manlifts, loaders, cement trucks.

Activity	Typical Duration (Total Months)	Description	Equipment Required
Bridges	12-18	Install bridges for Alternative 1 over the Rio Hondo and San Gabriel River. Install foundation, excavate abutment, approach slab, erect falsework, install rebar, pour concrete for the superstructure.	Drill rig or pile driver, cranes, forklifts, haul trucks, manlifts, loaders, cement trucks, and grouting equipment.
LRT Systems Installation	8-12	Install catenary overhead wire system, TPSS, and gate arms.	Excavators, backhoes, forklifts, Hi-Rail vehicles, cable pull truck, cranes, manlifts.
Underground Alignment			
Utility Relocation	12-18	Relocate and hang underground utilities from temporary and permanent elements related to the construction and operation of the Project.	Saw cutter, backhoes, jackhammers, excavators, hydro excavation trucks, dump trucks, cement trucks, pavers, forklift, manlift, jack and bore, horizontal directional drilling (HDD) drill.
Cut and Cover Construction	18-24	Supports the construction of the TBM launching and receiving pit, underground stations. Install soldier piles for beam and lag support of excavation (SOE) and excavation. Cover excavation with temporary decking.	Mobile cranes tower cranes, excavators, CIDH drill rigs or pile drivers, skid steers, backhoes, loaders, dump trucks.
Bored Tunnel	15-16 (3-4 Month Lag on Starting 2nd Bore)	Underground guideway construction.	TBM, rail mounted equipment and material/labor/tunnel liner delivery vehicles, spoil retrieval conveyors, earth moving vehicles, substation, air compressor, grouting plant, soil conditioning plant, cranes, drilling rigs, concrete mixers and pumping equipment, flatbed trucks, electric power supply equipment, tunnel ventilation equipment, sand and gravel delivery trucks, dump trucks, ripper teeth or roadheader mounted excavators, drill jumbo, grouting equipment, shotcrete pump and nozzle.
Station Construction	36-48	Install MEP, rebar, canopies, faregates, ticketing, finishes, elevators, escalators, and artwork.	Tower crane, skid steer, CIDH drill rig or pile driver, Forklifts, generator sets, loaders, welders.
LRT Systems Installation	8-12	Install TPSS, and signal switches.	Forklifts, skid steer, Hi-Rail vehicles.
Underground Guideway	12-18	Install special trackwork and track.	Forklifts, compressors.

Source: CDM Smith/AECOM JV and HNTB/Cordova JV, 2021.
Key:
TBM = Tunnel Boring Machine
CIDH=Cast-in-drilled hole
OCS = Overhead Catenary System
HDD= horizontal directional drilling
MSE = Mechanically Stabilized Earth
SOE= Support of Excavation

Additional construction activity details are described in Appendix P.

2.6.2 Construction Staging Areas

The laydown and storage areas for construction equipment and materials would be established in the vicinity of the Project within parking facilities, and/or on parcels that would be acquired for the proposed stations, TPSS sites, and MSF site options. Construction staging areas would be used to store building materials and construction equipment, assemble the TBM, provide temporary storage of excavated materials, and serve as temporary field offices for the contractor. Construction staging areas are addressed in further detail in Appendix P and Volume 2 of the Recirculated Draft EIR.

Staging areas would be needed at the MSF site options, adjacent to future station locations, Project-related parking facilities, new bridge crossings, grade separations, TPSS sites, and intermittently along the at-grade and aerial alignment. Temporary easements would be required to allow construction staging on public sidewalks, streets, and in some cases, private property if necessary. Site clearance and demolition of existing structures at the construction staging areas would begin before major construction activity. Metro's criteria for siting staging areas include consideration of following: proximity and access to support construction; issues related to property acquisition; jurisdiction planning goals; and potential parking facility or future joint development after Metro is finished with construction. Use of construction staging areas is temporary. The size for a construction staging site ranges from approximately 0.7 acres (29,865 square feet) to 14.5 acres (632,337 square feet). Staging areas supporting the underground segment would require additional space compared to the at-grade and aerial segments to accommodate activities including but not limited to tunneling, assembling and launching and extraction of the TBM, and decking operations.

At the TBM launching site, the staging area would also be used for storage and preparation of precast concrete segments, temporary spoil storage, ventilation lines, shaft support (air, water, electricity, spoil hoisting), workshops, mixing and processing slurry for excavation support or tunnel excavation, and post-excavation slurry treatment (separation), which would include filters, centrifuges, and vibrator equipment.

Most of the potential staging area sites also have a nearby optional site, which provides an alternative staging area location. The intention is to acquire only one of the alternative sites for construction. See Appendix P and Volume 2 for additional information.

2.7 Permits and Approvals

Metro will comply with all applicable federal, state, and local environmental regulations and will responsibly and reasonably mitigate significant environmental impacts resulting from the Project in accordance with Metro policies and applicable laws. This Recirculated Draft EIR identifies impacts that would potentially be significant and proposes mitigation measures to address those impacts. Additionally, Metro would continue to avoid and minimize project impacts wherever possible.

The Build Alternative would require various environmental permits and/or approvals. **Table 2-4** and **Table 2-5** list the anticipated agency/jurisdiction and permit/approval required.

Table 2-4. Required Agency/Jurisdiction Approvals

Agency/Jurisdiction	Approval
USACE	Section 404, 408
CDFW	1602 Streambed Alteration Agreement
Caltrans	Permit approvals for encroachment on I-605
DTSC	Hazardous materials cleanup
CPUC	Grade Separations, Crossings, State Safety Oversight
Metro	Certification of Recirculated Draft EIR, adoption of Findings and Statement of Overriding Considerations, adoption of the Mitigation Monitoring and Reporting Program as Lead Agency under CEQA

Key:
Caltrans = California Department of Transportation
CDFW = California Department of Fish and Wildlife
CEQA = California Environmental Quality Act
CPUC= California Public Utilities Commission
DTSC = Department of Toxic Substance Control
MMRP= Mitigation Monitoring and Reporting Program
USCACE = United States Army Corps of Engineers

Table 2-5. Required Agency/Jurisdiction Permits

Agency/Jurisdiction	Permits
State Water Resources Control Board	NPDES Dewatering permit, Los Angeles County MS4 NPDES Package, Industrial General Permit; Construction General Permit and SWPPP
Regional Water Quality Control Boards	Section 401
SCAQMD	Consultation to identify best practices for construction emissions, Clean Air Act Title V permit (if required)
BNSF Railroad	Encroachment permits
UPRR	Encroachment permits
Los Angeles County Flood Control District	Permits
Los Angeles County Department of Public Works	Permits
County of Los Angeles and cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier	Permits and/or discretionary actions required

Key:
BNSF = Burlington Northern Santa Fe
MS4 = Municipal Separate Storm Sewer System
NPDES= National Pollutant Discharge Elimination System
SCAQMD = Southern Coast Air Quality Management District
SWPPP = Stormwater pollution prevention plan
UPRR = Union Pacific Railroad

2.8 Implementation Schedule

The Project is currently included within the constrained component of Metro's 2020 LRTP and the SCAG's 2016-2040 RTP/SCS and 2020-2045 RTP/SCS, which commit funding to the project starting in 2029. This commitment is based on the availability of funds from Measure R, which funds $1.25 billion of the project starting in Fiscal Year (FY) 2026 and Measure M for a total of $6.0 billion in 2015. Measure M allocates the $6.0 billion in two cycles. Cycle 1 identifies $3 billion for one alignment with a 2029 groundbreaking date and an opening date of 2035. Cycle 2 identifies $3 billion with a 2053 groundbreaking date and an opening date of 2057. The Project is also one of four pillar projects identified by the Metro Board as priority project to be completed in time for the 2028 Olympics and Paralympic Games in Los Angeles (Metro 2019).

The tentative schedule for completing the environmental process, design, and construction of the Project is shown in **Table 2-6**. As indicated above, based on reasonable assessment of the timing of availability of funds for implementation of the Project, the Metro Board may direct the staff to move into the Final EIR phase either upon adoption of the LPA or at a later date. The construction impact analysis contained in this document represents the current funding availability scenario and anticipated operations in 2035. The availability and source of funding may change and allow construction to initiate sooner.

Table 2-6. Project Timeline

Activity	Timeframe
Recirculated Draft EIR Published	Spring/summer 2022
Recirculated Draft EIR Comment Period	45 Days
Metro Board Identifies Locally Preferred Alternative	Summer/Fall 2022
Initiation of the Final EIR[1]	2023
Final Design[2]	Years 2023-2028
Construction-Related Activities[3]	Years 2029
Operations	Year 2035

Notes:
1 Upon conclusion of the selection of the Locally Preferred Alternative (LPA), the Metro Board may select to initiate a Final EIR.
2 Final design is initiated upon availability of funding. The final design and construction schedule are based on the current availability of funds from Measure R, which funds $1.25 billion of the project starting in FY 2026. The availability and source of funding may change and allow construction to initiate sooner.
3 Years of construction include construction activities and preconstruction activities such as ROW acquisition and utility relocation. Year 2035 is the first year of operation.

2.9 No Project Alternative

The No Project Alternative is used for comparison purposes to assess the relative benefits and impacts of constructing a new transit project versus implementing only currently planned and funded projects. The No Project Alternative is also a requirement per CEQA Section 15126.6(e) to allow decision-makers to compare the impacts of approving the Project with the impacts of not approving the Project. The No Project Alternative establishes impacts that would reasonably be expected to occur in the foreseeable future if the Project were not approved (OPR 2002).

The No Project Alternative would maintain existing transit service through the year 2042. No new transportation infrastructure would be built within the GSA aside from projects currently under construction or funded for construction and operation by 2042 via the 2008 Measure R or 2016 Measure M sales taxes. The No Project Alternative would include highway and transit projects identified for funding in Metro's 2020 LRTP (Metro 2020b) and the SCAG 2020-2045 RTP/SCS (SCAG 2020).

The No Project Alternative includes existing projects from the regional base year (2019) and planned regional projects in operation in the horizon year (2042). As such, the planned regional transit projects assumed in operation by 2042 include:

- Metro L (Gold) Line Foothill Extension to Claremont
- West Santa Ana Transit Corridor LRT from Artesia to Downtown LA
- Airport Metro Connect 96th Street Station/Metro C Line Extension LAX
- Metro C (Green) Line Extension to Crenshaw Blvd in Torrance – Redondo Beach to Torrance Transit Center
- Metro K (Crenshaw/LAX) Line
- Vermont Transit Corridor BRT – Hollywood Blvd to 120th Street
- Metro D (Purple) Line Extension
- East San Fernando Valley (SFV) Transit Corridor Project connecting Metro G (Orange) Line Van Nuys Station to the Sylmar/San Fernando Metrolink Station
- Metro G Line BRT Improvements
- North Hollywood to Pasadena BRT
- Sepulveda Pass Transit Corridor from Metro E (Expo) Line to East San Fernando Valley Line (Phase 1 and 2)
- Metro Regional Connector Transit Project

3. Environmental Analysis

3.0.1 Introduction

This section describes the structure and format of the analysis for each of the 17 environmental resource areas addressed herein and defines the terminology used in characterizing the level of significance for each potential impact from the three Build Alternatives, design options, and MSF site options and, where appropriate, associated mitigation. Chapter 3 presents, and in some cases summarizes, the evaluations made in the Impacts Reports which are provided as appendices to this Recirculated Draft EIR.

The following 17 resource areas addressed in this chapter were determined by Metro to require further evaluation.

- Aesthetics
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Greenhouse Gas Emissions
- Geology, Seismicity, Soils, and Paleontological Resources
- Growth Inducing Impacts
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise and Vibration
- Population and Housing
- Public Services and Recreation
- Transportation and Traffic
- Tribal Cultural Resources
- Utilities and Service Systems

For those resource areas where it was determined that no impact would occur (i.e., agriculture and forestry resources, mineral resources, and wildfire), a brief evaluation of the no impact determination is provided in Chapter 4, Other CEQA Required Topics. The No Project Alternative is addressed in Chapter 5, Comparison of Project Alternatives. The analysis of each resource area includes the following components:

- Introduction – provides an introduction to the resource area analysis.
- Regulatory Framework – contains an overview of the federal, state, regional, and local laws and regulations that apply to the Project relative to each resource area.
- Methodology – identifies how potential impacts on a resource area were determined.

- Thresholds of Significance – presents the criteria against which the significance of impacts is judged for the resource area. The thresholds of significance used in the analysis of Project impacts reflect guidance provided in Appendix G of the State CEQA Guidelines.
- Existing Setting – describes current conditions with regard to the resource area. State CEQA Guidelines Section 15125 states that "An EIR must include a description of the physical environmental conditions in the vicinity of the project. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to provide an understanding of the significant effects of the proposed project and its alternatives."
- Impact Evaluation – states whether a given impact meets or exceeds a threshold of significance. Impacts are determined without consideration of mitigation measures, and if any mitigation measures are applicable, impacts are determined again with consideration of applicable mitigation measures. For purposes of determining significance, impacts were compared to the environmental baseline conditions, as further described in the terminology discussion below.
- Project Measures and Mitigation Measures –lists the project measures that are relevant to the resource area and the mitigation measures that are recommended to reduce or avoid a significant impact if applicable.
- Significance After Mitigation – summarizes the impact conclusions for each impact, based on the applicable threshold of significance. This includes a determination of any significant impacts that would remain significant even after all feasible mitigation measures are applied.

3.0.2 Terminology Used in This Environmental Analysis

3.0.2.1 Environmental Baseline

Section 15125 of the State CEQA Guidelines states that "[g]enerally, the lead agency should describe physical environmental conditions as they exist at the time the notice of preparation is published..."

As described in Section 2.1 of Chapter 2, Project Description, the Notice of Preparation (NOP) was published on May 31, 2019.[1] As such, 2019 generally serves as the baseline year for characterizing existing conditions in the environmental analysis. However, where existing conditions data specific to 2019 do not accurately represent baseline conditions, would be misleading or without informational value, or where more recent data is available for the subject resource area, the Draft EIR explains why this was the case and identifies the alternative information used to represent baseline conditions.

1 Metro published the NOP joined with a Notice of Intent (NOI); the NOI was published to comply with the National Environmental Policy Act (NEPA) procedures. Refer to Section 2.1 of Chapter 2, Project Description for an explanation of the project background.

3.0.2.2 Impacts and Mitigation

For each potential impact of the Project, this Recirculated Draft EIR applies significance criteria specific to the impact category in question (e.g., transportation and traffic). These criteria establish a significance threshold which, if exceeded, triggers the need for mitigation of the impact under review. 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, or other measures required by law and/or permit approvals. These measures are components 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.

The following terms are used to describe each impact and, where significant impacts are determined, how mitigation measures are to be applied:

- No Impact – No impact occurs when the threshold of significance does not apply to the Project or if the Project would not create an impact.
- Less Than Significant Impact – A less than significant impact occurs when an impact from the Project would not reach or exceed the threshold of significance, therefore not causing a substantial adverse change in the environment or where impacts have been reduced to less than significant after application of mitigation.
- Significant Impact – A significant impact occurs when an impact from the Project reaches or exceeds the threshold of significance, therefore causing (or potentially causing) a substantial adverse change in the environment.
- Significant Unavoidable Impact – Per Section 15126.2(b) of the CEQA Guidelines, a significant unavoidable (sometimes referred to as 'significant and unavoidable') impact occurs when a significant impact from the Project cannot be reduced to a less than significant level through any feasible mitigation measure(s).
- Project Measures – Project Measures are design features, best management practices, or other measures required by law and/or permit approvals that are components of the Project.
- Mitigation – Mitigation refers to measures that would be implemented to avoid or lessen potentially significant impacts. Mitigation includes:
    - avoiding the impact completely by not taking a certain action or parts of an action;
    - minimizing the impact by limiting the degree or magnitude of the action and its implementation;
    - rectifying the impact by repairing, rehabilitating, or restoring the affected environment;
    - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and/or

- compensating for the impact by replacing or providing substitute resources or environments.

The mitigation measures would be proposed as a condition of project approval and would be monitored to ensure compliance and implementation.

Note that the Recirculated Draft EIR "shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy" (State CEQA Guidelines, Section 15126.4(a)(1)). In addition, the discussion of mitigation measures "shall distinguish between the measures which are proposed by project proponents to be included in the project and other measures proposed by the lead, responsible or trustee agency or other persons which are not included but the lead agency determines could reasonably be expected to reduce adverse impacts if required as conditions of approving the project" (State CEQA Guidelines, Section 15126.4(a)(1)(A)). Mitigation measures must be enforceable through permit conditions, agreements, or other legally binding instruments (State CEQA Guidelines, Section 15126.4(a)(2)). Note, however, that if a mitigation measure cannot legally be imposed or implemented, the lead agency need not recommend it or analyze it (State CEQA Guidelines, Section 15126.4(a)(5)).

As further discussed in Chapter 5, Comparison of Project Alternatives, in accordance with Section 15126.6 of the State CEQA Guidelines, four alternatives (including the No Project alternative) were selected and carried forward for further consideration in this Recirculated Draft EIR to evaluate whether such alternatives would avoid or substantially reduce any of the significant environmental impacts associated with the proposed project that are identified in the following sections.

3.1 Aesthetics

3.1.1 Introduction

This section discusses the Project setting in relation to aesthetics resources. It describes existing conditions, current applicable regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options. Information in this section is based on the Eastside Transit Corridor Phase 2 Visual and Aesthetics Impacts Report (Appendix B). The study area for aesthetics is the detailed study area (DSA).

3.1.2 Regulatory Framework

3.1.2.1 State

The State Scenic Highways Program lists highways that are either eligible for designation as a scenic highway or are already designated as a scenic highway. A highway may be designated as scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view (California Department of Transportation [Caltrans] 2022). The Streets and Highways Code establishes state responsibility for protecting, preserving, and enhancing California's natural scenic beauty of scenic routes and areas that require special scenic conservation and treatment.

3.1.2.2 Regional and Local

Regional agencies, Los Angeles County, and the cities within the DSA have local regulations and policies pertaining to aesthetics and visual quality as summarized below. More information on the agencies' guiding principles and specific policies relevant to the Project is available in Appendix B.

In September 2020, the Southern California Association of Governments (SCAG) Regional Council adopted the Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (2020 RTP/SCS). While the 2020 RTP/SCS focuses primarily on transportation and land use decisions, it incorporates elements relating to aesthetic impacts, primarily in the form of conservation and open space. In particular, the 2020 RTP/SCS Public Health Technical Report identifies the importance of preserving open space, parks, and natural lands.

In January 2018, Metro adopted a Systemwide Station Design Standards Policy to ensure all future Metro Rail stations follow a consistent, streamlined systemwide design, with integrated site-specific public art and sustainable landscaping as variable elements. Metro's Systemwide Station Design Standard uses a modular system which ensure stations are streamlined and adaptable for varying site conditions, allowing stations to be more cost-effective to design, construct, operate, and maintain (Metro 2018). Metro's other planning documents and policies related to aesthetics include the *Metro Rail Design Criteria (MRDC), the Metro Art Program Policy,* and *Metro's Signage Standards* (2012). An overarching goal of these plans is to visually enhance Metro projects, create a more inviting environment for system users, and establish consistency of Metro's signage.

The Los Angeles County 2035 General Plan sets specific goals and policies related to aesthetics resources for the County, including unincorporated areas, such as East Los Angeles. The East Los Angeles Community Plan establishes a framework of goals, policies and programs that is designed to provide guidance to those making decisions affecting allocations of resources and the pattern, density, and character of development in East Los Angeles (MBA 1998).

The general plan policies of the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier are similar; generally, they all intend to enhance the visual quality or character of their communities. Other related provisions include the development, expansion or preservation of landscaping and recreational open space, establishment of a safe multi-modal transportation system, preservation of historic or cultural resources, and policies to protect visual identity.

3.1.3 Methodology

The methodology for analyzing aesthetics impacts generally follows the principles outlined in the Guidelines for the Visual Impact Assessment for Highway Projects (2015) published by the Federal Highway Administration (FHWA). Despite assessment guidance, findings of an analysis of existing visual resources and potential aesthetics impacts can be highly subjective, dependent on the background of the assessor and the opinions of viewers. As discussed below, three steps were taken to assess the existing visual setting and potential aesthetics impacts of the Project.

3.1.3.1 Landscape Units

The immediate vicinity of the Build Alternatives was subdivided into a series of landscape units to capture the overall characteristics of different segments of the corridor. A landscape unit is typically defined by the limits of a particular viewshed or the distinct transition in land uses. Views representative of the visual character of the area were identified within each landscape unit.

3.1.3.2 Aesthetic Resources

Aesthetics resources include those items typically found in the natural environment (e.g., land, water, vegetation, animals); the cultural environment (e.g., buildings, infrastructure, structures, iconic artifacts and art); or the Project environment (e.g., highway geometrics, grading, constructed elements, vegetative cover, ancillary visual elements, and atmospheric conditions). The cohesion or variation in form and the level of upkeep or deterioration of these environments are part of the process in the identification of visual resources.

Visual quality is the value that viewers place on their relationship—their experience—with the visual resources in their environment. Primary viewer groups (e.g., residents, transit users, pedestrians and bicyclists, people who work in the area) were identified by observing the surrounding land uses and circulation patterns. Their perception of visual resources is influenced by physical constraints—topography, land cover (e.g., vegetation and structures) and temporary presence of typical atmospheric conditions (e.g., smoke, dust, fog, and precipitation). In addition, visibility is constrained by the physiological limits of human sight—location, proximity, and lighting.

Typically, visual sensitivity varies with the type of viewer groups and is based on the visibility of and distance to the visual resource, relative elevation of the viewers compared to the visual resource, and frequency and duration of views. Residents and recreationalists of parklands or other public space may

be the most sensitive to changes to the visual environmental because their activities are enhanced by the presence of visual resources. Users and employees of commercial, industrial, and office facilities are less sensitive to changes in the visual environment because these users generally do not utilize these facilities for their visual and aesthetic values. Motorists and bicyclists on streets generally have lower expectations and sensitivity than other viewer groups due to the speed at which they travel through the environment.

3.1.3.3 Aesthetics and Visual Impacts

Aesthetics and visual impacts are determined by assessing the compatibility of the Project components (i.e., mass, scale, and lighting and glare) with the existing surrounding visual character and the viewer groups' sensitivity to the changes in the visual character or changes to their views of visual resources. Adverse visual impacts may include the removal of visual resources, obstruction of scenic vistas, glare from reflective surfaces and light spill onto sensitive uses, and the introduction of new Project components that may detract from the visual character of a local area. Project components may include modified medians, tracks and at-grade crossings, elevated guideways, stations (including ramps, platforms, fare vending equipment, and canopies), overhead catenary system poles and power lines, radio tower poles and equipment shelters, traction power substations (TPSS), barriers to restrict access to the guideway, parking facilities, and the MSF. Visual simulations of representative areas where the Build Alternative would introduce new visual features were developed and used in the evaluation of potential visual changes from Project implementation. Additionally, the analysis includes site reconnaissance of the DSA and consideration of the Project components and preliminary design.

3.1.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, an Alternative would have a significant impact related to aesthetics if it would:

Impact AES-1: Have a substantial adverse effect on a scenic vista.

Impact AES-2: Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

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

Impact AES- 4: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.1.5 Existing Setting

3.1.5.1 Regional Setting

The regional setting is characterized by a primarily built-out urban environment consisting of a variety of commercial, industrial, and residential development, as well as rivers and spreading grounds and parks. The DSA is a relatively flat lowland plain with little to no changes in elevation.

3.1.5.2 Scenic Vistas and State Scenic Highways

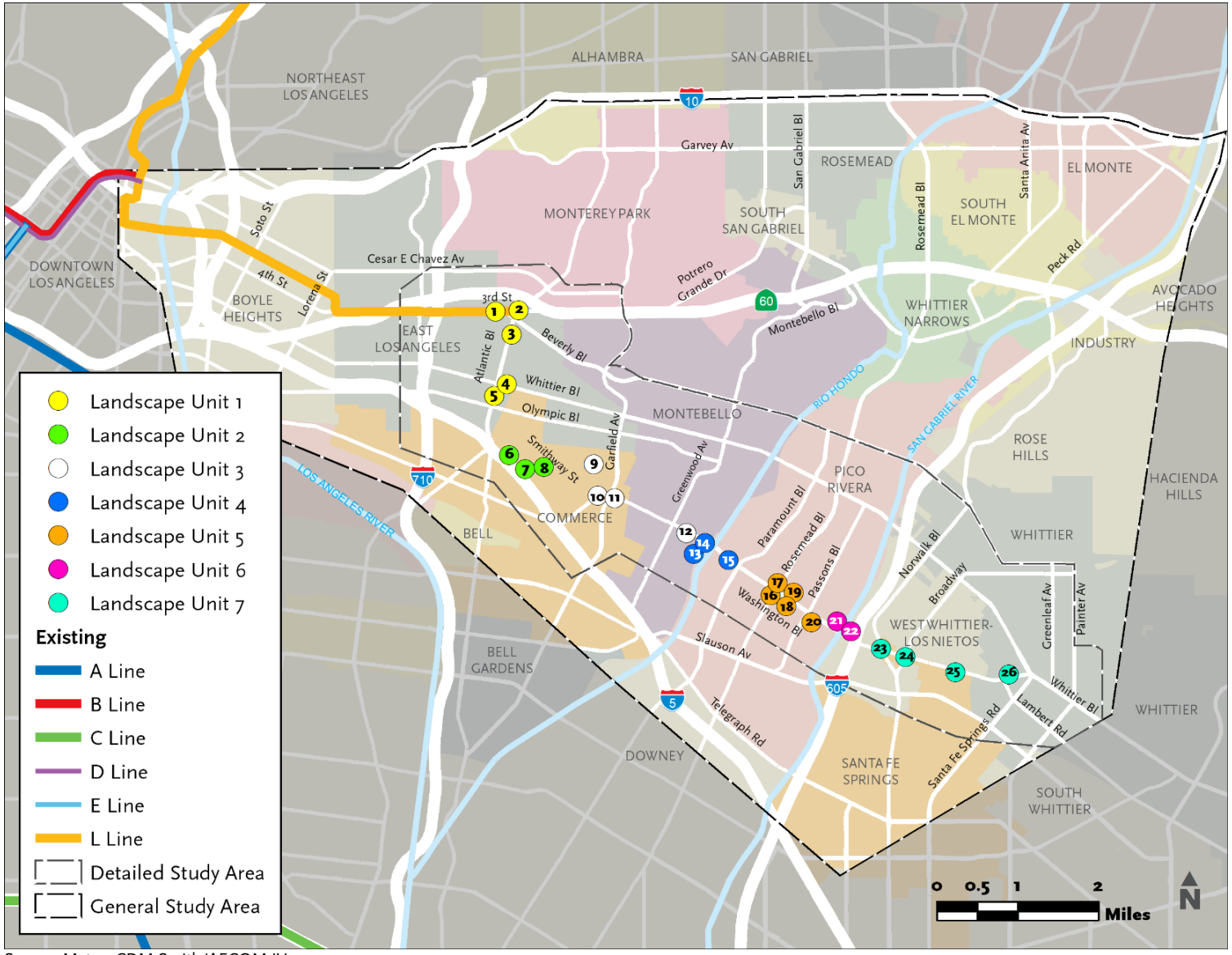
According to the general plans of the local jurisdictions within the DSA, there are no formal or designated scenic vistas. Depending on the publicly accessible location, distant views include the San Gabriel Mountains to the north, Puente Hills to the east, and downtown Los Angeles skyline to the west; however, these vistas may be minimally visible along the Project alignment due to orientation of the roadway and built-out urban landscape (e.g., intervening structures, utility poles). There are no state- or county-designated scenic highways, or eligible state scenic highways in the DSA or with views of the DSA. The closest designated scenic highway is State Route 2 (SR 2) located approximately eight miles northwest of the existing Atlantic Station.

3.1.5.3 Light and Glare

Due to the urbanized nature of the DSA, a moderate level of ambient nighttime light and daytime glare already exists. Nighttime lighting sources include streetlights, vehicle headlights, and interior, exterior building illumination, including light fixtures on nearby residential, commercial, and industrial uses. Glare is mostly a daytime occurrence and associated with buildings with exterior façades largely or entirely comprised of highly reflective glass or mirror-like materials.

3.1.5.4 Local Setting

The following describes the existing aesthetic conditions in the DSA. As identified in **Section 3.1.3**, the alignment is divided into a series of landscape units with particular viewsheds or transitions in land use. Alternative 1 is divided into seven landscape units (Landscape Units 1 – 7), as shown in **Figure 3.1.1**. Alternative 2 consists of two landscaped units (Landscape Units 1 and 2), and Alternative 3 consists of three landscape units (Landscape Units 1 – 3). The landscape units are described below with photographs of representative viewpoints. **Table 3.1-1** lists the viewpoints by landscape unit and presents an identification (ID) number that corresponds to the viewpoint location shown on **Table 3.1-1**. **Table 3.1-1** also lists the figure number of each photograph. Additional photographs are provided in Appendix B.



Source: Metro; CDM Smith/AECOM JV, 2021.
Note: Number inside the photograph viewpoint location corresponds to the ID number for each viewpoint listed in **Table 3.1-1**.

Figure 3.1.1. Landscape Units and Locations of Photograph Viewpoints

Table 3.1-1. Photograph Viewpoints

ID Number[1]	Photograph Location	Figure Number
	Landscape Unit 1	
1	Metro Atlantic Station and Beverly Boulevard in the Foreground	**Figure 3.1.2**
2	Metro Atlantic Station at 3rd Street	**Figure 3.1.3**
3	Atlantic Boulevard at 4th Street	**Figure 3.1.4**
4	Golden Gate Theater (CVS Pharmacy)	**Figure 3.1.5**
5	Atlantic Boulevard at Verona Street	**Figure 3.1.6**
	Landscape Unit 2	
6	Citadel Outlets Main Entrance	**Figure 3.1.7**
7	Citadel Outlets	**Figure 3.1.8**
8	Smithway Street Behind Citadel Outlets	**Figure 3.1.9**
	Landscape Unit 3	
9	Davies Avenue at Corvette Street	**Figure 3.1.10**
10	Pacific Metals Company Building Constructed 1955	**Figure 3.1.11**
11	Washington Boulevard at Garfield Avenue	**Figure 3.1.12**
12	Washington Boulevard at Carob Way	**Figure** 3.1.13
	Landscape Unit 4	
13	Washington Boulevard Over Rio Hondo	**Figure 3.1.14**
14	Rio Hondo Spreading Grounds and Rio Hondo	**Figure 3.1.15**
15	Washington Boulevard Across Rio Hondo Spreading Grounds	**Figure 3.1.16**
	Landscape Unit 5	
16	Washington Boulevard at Rosemead Boulevard Adjacent to Pico Rivera Towne Center	**Figure 3.1.17**
17	Dal Re Restaurant Constructed 1951	**Figure 3.1.18**
18	Atchison, Topeka & Santa Fe Railway Depot Constructed 1886	**Figure 3.1.19**
19	Cliff May-Designed Ranch House Constructed 1953	**Figure 3.1.20**
20	Washington Boulevard at Millux Avenue	**Figure 3.1.21**
	Landscape Unit 6	
21	Washington Boulevard in the Background	**Figure 3.1.22**
22	San Gabriel Mountains in the Background	**Figure 3.1.23**
	Landscape Unit 7	
23	Washington Boulevard at Norwalk Boulevard	**Figure 3.1.24**
24	Washington Boulevard at Broadway	**Figure 3.1.25**
25	Washington Boulevard at Appledale Avenue	**Figure 3.1.26**
26	Washington Boulevard at Lambert Road	**Figure 3.1.27**

Note:
1 The ID number corresponds to the location identified on **Figure 3.1.1** and the figure number identifies number of each photograph presented in the description of the landscape units.

3.1.5.4.1 Landscape Unit 1 – Atlantic Boulevard, East Los Angeles

Landscape Unit 1 begins at the intersection of 3rd Street and Woods Avenue, curves at the intersection of 3rd Street and Atlantic Boulevard and continues south. At approximately Atlantic Boulevard and Verona Street, the landscape unit curves southeast, crosses Amalia Avenue, Boswell Place, Pacific Place, and ends at the intersection of Goodrich Boulevard and Union Pacific Avenue. This landscape unit is along the alignment of all Build Alternatives and is entirely within the community of East Los Angeles. Its visual character and quality are depicted in **Figure 3.1.2** through **Figure 3.1.6**.

Atlantic Boulevard is a five-lane arterial roadway that runs north-south with two lanes of traffic in both directions and a center left-turn lane. There is a consistent placement of streetlights, crosswalks, and street trees on both sides of the street. Landscape Unit 1 is primarily an auto-oriented commercial corridor surrounded by residences, some mixed-use development, public facilities, and schools, including Garfield High School and Fourth Street Elementary School. Buildings along Atlantic Boulevard generally range between one and two stories with surface parking lots.

Amalia Avenue, Boswell Place, and Pacific Place are residential streets consisting of single-family homes, residential landscaping, and sidewalks on both sides of the street. Many of these homes are eligible for the National Register of Historic Places (NRHP) at the local level of significance for their association with the residential development of East Los Angeles in the pre-World War II era. However, these buildings are not eligible for listing as historic resources for lack of architectural integrity; as such, these are not considered visually sensitive resources. The impacts of the Project on the historic homes is further addressed in Section 3.4, Cultural Resources.

The primary viewers in Landscape Unit 1 consist of motorists, pedestrians, residents, and patrons of commercial businesses. Atlantic Boulevard includes multiple bus stops, so transit users would also constitute primary viewers. Some sections of the Atlantic Boulevard consist of medians with greenery or landscaped shrubbery along the sidewalks. Atlantic Park provides visual relief from the commercial activity along the corridor with trees and green open space.

Visual resources along this corridor include the St. Alphonsus Catholic Church and the former Golden Gate Theater (repurposed as a CVS Pharmacy), which features a Spanish Churrigueresque-style façade. Although the commercial corridor is surrounded by a residential area, neither single-family homes nor multi-family complexes are visible from most of this corridor. From Atlantic Boulevard, there are limited background views of the San Gabriel Mountains and clear views of the hills of Monterey Park to the north. From Pomona Boulevard, there are limited background views of the open space hillside of the former Operating Industries, Inc. (OII) landfill site to the east.

Figure 3.1.2. Viewpoint 1: Metro Atlantic Station and Beverly Boulevard in the Foreground
(Looking southeast from 3rd Street and Woods Avenue intersection)

Figure 3.1.3. Viewpoint 2: Metro Atlantic Station at 3rd Street
(Looking west)

Figure 3.1.4. Viewpoint 3: Atlantic Boulevard at 4th Street
(Looking north)

Figure 3.1.5 Viewpoint 4: Golden Gate Theater (CVS Pharmacy)
(Looking west from Atlantic Boulevard and Whittier Boulevard intersection)

Figure 3.1.6. Viewpoint 5: Atlantic Boulevard at Verona Street
(Looking north)

3.1.5.4.2 Landscape Unit 2 – Smithway Street, Commerce

Landscape Unit 2 begins at the intersection of Goodrich Boulevard and Union Pacific Avenue, crosses Ferguson Drive and Union Pacific Railroad (UPRR) before aligning with Smithway Street between Flotilla and Tubeway, and ends at the Southern California Edison (SCE) utility and Burlington Northern Santa Fe (BNSF) ROW. This landscape unit is along the alignment of all Build Alternatives and is located entirely within the city of Commerce. Its visual character and quality are depicted in **Figure 3.1.7** through **Figure 3.1.9**. This area is generally characterized as industrial except for the Citadel Outlets. The primary viewers are motorists, workers, and visitors to the Citadel Outlets.

Goodrich Boulevard is a four-lane collector roadway that runs north-south with two lanes of traffic in both directions and sidewalks on both sides of the street. Union Pacific Avenue is an east-west running collector road with a sidewalk on the south side of the street. Ferguson Boulevard is a four-lane collector roadway that runs east to west with two lanes of traffic in both directions and a sidewalk on the south side of the roadway. Generally, this area consists of heavy industrial warehouses, surface parking associated with Los Angeles County administrative offices, street trees, minimal landscaping, and the UPRR.

Smithway Street is a two-lane arterial roadway that runs east-west with one lane of traffic in each direction. The roadway is not typically busy and functions as an access road for the north entrance of the Citadel Outlets' parking facilities and for the surrounding industrial buildings. Vegetation along Smithway Street is minimal and consists of a few small, landscaped areas with trees and ornamental vegetation.

Tubeway Avenue is a two-lane roadway with one lane running north-south in each direction. Generally, this area consists of warehouses and parking lots; however, there are views of the Crowne Plaza Hotel and Commerce Casino to the south along Tubeway Avenue. The hotel and the casino add visual interest to this landscape with a white, Assyrian and Babylonian-theme façade; however, only partial views are available when looking south on Tubeway Avenue from Smithway Street.

The views available from this area are limited due to the industrialized nature of the development, primarily consisting of multi-story industrial warehouses and a tall fence on the north side of the Citadel Outlets with little variation in visual character. The Citadel Outlets, which features a front façade decorated to commemorate ancient Sumerian, Akkadian, and Babylonian cultures, is the most dominant visual feature along Telegraph Road; however, the views of this façade are not available along Smithway Street. The Citadel Outlets façade also feature prominent electronic signage.

The private surface parking lot within the SCE ROW affords background views of the San Gabriel Mountains to the north with foreground views of electrical transmission towers and lines; however, this view is only available to the employees who have access to this parking facility.

Figure 3.1.7. Viewpoint 6: Citadel Outlets Main Entrance
(Looking southeast from Telegraph Road and Citadel Drive intersection)

Figure 3.1.8. Viewpoint 7: Citadel Outlets
(Looking north from Citadel Drive)

Figure 3.1.9. Viewpoint 8: Smithway Street Behind Citadel Outlets
(Looking northwest)

3.1.5.4.3 Landscape Unit 3 – Washington Boulevard, Montebello

Landscape Unit 3 begins at Saybrook Avenue, immediately east of SCE utility and BNSF railway ROW and extends east along Washington Boulevard to Bluff Road in Montebello. Washington Boulevard is a six-lane major truck arterial that runs east-west with three lanes of traffic in each direction. This landscape unit is along the alignment of Alternative 1 and Alternative 3 and is within the city of Montebello. Its visual character and quality are depicted in **Figure 3.1.10** through **Figure 3.1.13**. There would be a portion of non-revenue track under Alternative 2 that would also extend partially into Landscape Unit 3 to the Commerce MSF site option.

The landscape unit area is highly concentrated with automobiles and truck traffic with low volumes of pedestrians or cyclists; therefore, the primary viewers are motorists and truck drivers. Washington Boulevard also includes multiple bus stops, so transit users would also constitute primary viewers. There are very few significant visual resources in the area. The most dominant visual features of this landscape unit consist of large warehouses, railroad crossings, and several billboards. Most warehouses that face Washington Boulevard are uniform in size, shape, and color. The Pacific Metals Company/Rolled Steel Products building, located at the northwest corner of Washington Boulevard and Garfield Avenue, is eligible for listing in the NRHP at the local level of significance for its distinctive architectural design character as an example of local International Style industrial architecture from the 1950s. This is the only historic/visual resource in this locale, as the other nearby buildings are more recent typical industrial development.

The area between Saybrook Avenue and Greenwood Avenue, which includes the sites proposed for the Commerce MSF site option and Montebello MSF site option, is built-out industrial and developed with single-story nondescript warehouse buildings. Utility poles and overhead wires run along Washington Boulevard and secondary roads (i.e., Davies Avenue, Corvette Street, Maple Avenue, Saybrook Avenue, and Vail Avenue). There are a limited number of trees and ornamental landscaping within this existing

industrial area, primarily adjacent to building frontages, sidewalks, and parking strips. Although inconsistent, the trees and ornamental landscaping along Washington Boulevard and secondary roads provide some visual relief within the industrial setting.

At Greenwood Avenue, the industrial character of Washington Boulevard transitions from the truck terminal and heavy assembly and manufacturing uses to retail and commercial development. East of Greenwood Avenue, the South Montebello Irrigation District administration building is an intact example of a modestly scaled infrastructure building from 1941, eligible for the NRHP for its association with local water distribution. Just east of the administration building is the William and Florence Kelly House, a one-story Spanish Colonial Revival style single-family residence built in 1937. It is eligible for the NRHP at the local level of significance for its association with residential development of Montebello in the pre-World War II era. However, the eligibility determination for these buildings is not based on their architectural integrity; as such, these are not considered visually sensitive resources. Additional information regarding the Project's potential impacts on historic resources is provided in Section 3.4, Cultural Resources.

From Greenwood Avenue to Bluff Road, the visual character of Washington Boulevard is mixed-use comprised of commercial and light industry. It contains limited-to-no landscaping and no documented historic buildings. West of Bluff Road, motorists and pedestrians on Washington Boulevard have background views of the downtown Los Angeles skyline.

Figure 3.1.10. Viewpoint 9: Davies Avenue at Corvette Street
(Looking south)

Figure 3.1.11. Viewpoint 10: Pacific Metals Company Building Constructed 1955
(View Northwest)

Figure 3.1.12. Viewpoint 11: Washington Boulevard at Garfield Avenue
(Looking east)

Figure 3.1.13. Viewpoint 12: Washington Boulevard at Carob Way
(Looking west)

3.1.5.4.4 Landscape Unit 4 – Rio Hondo and Rio Hondo Spreading Grounds

Landscape Unit 4 is along Washington Boulevard between Bluff Road and the eastern edge of the Rio Hondo Spreading Grounds along Alternative 1 only. Its visual character and quality are depicted in **Figure 3.1.14** through **Figure 3.1.16**.

East of Bluff Road, Washington Boulevard crosses the concrete-lined channel of the Rio Hondo. From the intersection at Bluff Road and crossing at Rio Hondo, motorists and pedestrians are afforded views of the Rio Hondo and nearby shallow basins (Rio Hondo Spreading Grounds), and San Gabriel Mountains and Puente Hills to the north and east, respectively. A bike path is located along the Rio Hondo and Rio Hondo Spreading Grounds to promote a regional river trail system that connects neighboring jurisdictions. The bike paths are popular and considered a prominent recreational resource along the stretch of the Rio Hondo. Pedestrians and bicyclists from the river and bike path also enjoy scenic views of the San Gabriel Mountains to the north and Puente Hills to the east.

East of Rio Hondo, large mature trees are in the median and on both sides of Washington Boulevard. The trees are a visually defining feature for their shape and size. The trees obscure the motorist and pedestrian view of the San Gabriel Mountains to the north and Puente Hills to the east. Additionally, the electrical transmission towers and power lines along the eastern edge of the Rio Hondo Spreading Grounds add a structural element to the visual character of the surroundings.

Figure 3.1.14. Viewpoint 13: Washington Boulevard Over Rio Hondo
(Looking northeast from Bluff Road)

Figure 3.1.15. Viewpoint 14: Rio Hondo Spreading Grounds and Rio Hondo
(Looking south from Washington Boulevard, west of Bluff Road)

Figure 3.1.16. Viewpoint 15: Washington Boulevard Across Rio Hondo Spreading Grounds
(Looking west)

3.1.5.4.5 Landscape Unit 5 – Washington Boulevard, Pico Rivera

Landscape Unit 5 is on Washington Boulevard along Alternative 1 only between the eastern edge of the Rio Hondo Spreading Grounds and Pico Vista Road, immediately west of the San Gabriel Spreading Grounds. Its visual character and quality are depicted in **Figure 3.1.17** through **Figure 3.1.21**. The primary viewers are motorists and pedestrians. East of the Rio Hondo Spreading Grounds, visual character of Washington Boulevard transitions from flood control to commercial and single-family residential with overhead power lines.

The Pico Rivera Towne Center, a 60-acre open-air shopping center located south of Washington Boulevard between Paramount Boulevard and Rosemead Boulevard, is the most notable visual feature. The Pico Rivera Towne Center attracts many local residents and shoppers. Washington Boulevard in this area features trees and ornamental landscaping along the median and sidewalks. However, the commercial retail strip to the north is not architecturally or visually significant compared to the Pico Rivera Towne Center. For instance, the wide and curvy sidewalk, flowering shrubs, and trees are attractive visual features of the shopping center on the south side of Washington Boulevard compared to the north side of the street, which is characterized by mostly retail buildings of simple design with minimal sidewalk landscaping and mature trees.

Near the northeast corner of Washington Boulevard and Rosemead Boulevard, the Dal Rae Restaurant is eligible under NRHP for its association as a fine dining restaurant and cocktail lounge from the post-World War II era. A tall two-sided neon pole sign that displays the restaurant's name has been a familiar icon along the Washington Boulevard corridor for more than 50 years. Additional neon signs

mark the auto entrance as well as the west- and south-facing façades. These signs are contributing features of the property. Further east of the restaurant, the Pico Rivera Historical Museum is also a visually recognizable local landmark that is eligible for listing in the California Register of Historical Resources (CRHR) for its architectural style as an early railroad depot. At the northwest corner of Lindsey Avenue and Washington Boulevard, the Cliff May-designed ranch house, originally constructed in 1953, is eligible for the NRHP and is considered a visually sensitive resource in Pico Rivera.

Between Rosemead Boulevard and Pico Vista Road, Washington Boulevard is comprised primarily of single-family residential uses. There are smaller trees along the sidewalks and landscaped median of Washington Boulevard, interfacing with residences east and west of Passons Boulevard to protect the neighborhood's visual quality and provide a buffer between the neighborhood and Washington Boulevard. Periodic background views of the Puente Hills to the east tend to be blocked by street trees.

Figure 3.1.17. Viewpoint 16: Washington Boulevard at Rosemead Boulevard Adjacent to Pico Rivera Towne Center
(Looking west)

Figure 3.1.18. Viewpoint 17: Dal Re Restaurant Constructed 1951
(View Southwest)

Figure 3.1.19. Viewpoint 18: Atchison, Topeka & Santa Fe Railway Depot Constructed 1886
(View East)

Figure 3.1.20. Viewpoint 19: Cliff May-Designed Ranch House Constructed 1953
(View Northwest)

Figure 3.1.21. Viewpoint 20: Washington Boulevard at Millux Avenue
(West of San Gabriel River looking east)

3.1.5.4.6 Landscape Unit 6 – San Gabriel River and San Gabriel Spreading Grounds

Landscape Unit 6 is on Washington Boulevard along Alternative 1 only between Pico Vista Road and I-605 freeway. East of Pico Vista Road, Washington Boulevard slopes up slightly to cross the San Gabriel River, and then slopes back down under the I-605 overpass. Its visual character and quality are depicted in **Figure 3.1.22** and **Figure 3.1.23**. The San Gabriel Spreading Grounds is bordered by Whittier Boulevard to the north, residential communities along Pico Vista Road to the west, Washington Boulevard to the south, and the San Gabriel River to the east. The Los Angeles County property is generally closed to the public, except for public trails within the spreading grounds. From Washington Boulevard, views of the spreading grounds and associated trails are slightly obscured by mature trees along the southern edge. From the trails of the spreading grounds, visitors can view the San Gabriel Mountains and Puente Hills to the north. The San Gabriel River has a soft bottom and a bike trail on its eastern edge. From the bike trail, background views of the San Gabriel Mountains and Puente Hills are to the north and foreground views of I-605 are to the east.

Figure 3.1.22. Viewpoint 21: Washington Boulevard in the Background
(Looking south from the San Gabriel Spreading Grounds Trail)

Figure 3.1.23. Viewpoint 22: San Gabriel Mountains in the Background
(Looking north from San Gabriel River Trail at Washington Boulevard)

3.1.5.4.7 Landscape Unit 7 – Washington Boulevard, West Whittier-Los Nietos

Landscape Unit 7 is on Washington Boulevard along Alternative 1 only between I-605 freeway in West Whittier-Los Nietos and Lambert Road in Whittier. The visual character and quality are depicted in **Figure 3.1.24** through **Figure 3.1.27**. At the intersection of Washington Boulevard and Pioneer Boulevard, I-605 freeway is visually dominating. The surface parking facility of Pioneer High School at the southeast corner of Pioneer Boulevard and Washington Boulevard is often empty. The school campus is farther southeast and not visible from Washington Boulevard. From Pioneer Boulevard to Norwalk Boulevard, the visual character of Washington Boulevard is defined by mostly low-density, single-family residences with small trees lining both sides of the street. The Santa Fe Springs Market Place, a community-scale shopping center on the northeast corner of Norwalk and Washington Boulevards, marks a change in neighborhood character from residential to commercial retail.

Between Norwalk Boulevard and Allport Avenue, Washington Boulevard traverses a community-scale commercial neighborhood that consists of convenience shops, auto repair shops, fast food restaurants, surface parking, used car sale dealerships, and a car wash. Sidewalks are narrow with few street trees with the visual character being defined primarily by auto-oriented uses. In general, there is no defining visual features, as the small-scale commercial buildings along Washington Boulevard are not distinctive in their architecture and have little visual uniformity or unique variation from block to block.

Between Allport and Crowndale Avenues, Washington Boulevard is characterized by commercial retail and light industrial uses. The median of Washington Boulevard is landscaped with tall, swaying palm trees that create a strong vertical element for the length of corridor. The trees are a visually defining feature of this area. In addition, the Rheem Laboratory buildings at 12000 Washington Boulevard, currently operated by the Salvation Army as a transitional living center, are the only historic/visual resources in this locale and are eligible under NRHP for their significant role in the development of manufacturing and scientific research.

East of Crowndale Avenue, there is a mix of commercial and institutional buildings, mainly associated with the Presbyterian Intercommunity Health (PIH) Hospital at the Washington Boulevard and Lambert Road intersection. Background views of the Puente Hills are visible along this segment of Washington Boulevard by pedestrians and motorists but are partially obstructed by street trees, billboards and signs, overhead utility wires, and taller buildings associated with the hospital. Puente Hills is an important ecological and visual resource for the city of Whittier and represents the only remaining large undeveloped area within the city. In addition, as part of Puente Hills, the Rose Hills Memorial Park is a landform backdrop as seen from residential areas; however, the suburban cityscape prevents clear views from the Lambert Road and Washington Boulevard intersection.

Figure 3.1.24. Viewpoint 23: Washington Boulevard at Norwalk Boulevard
(Looking west)

Figure 3.1.25. Viewpoint 24: Washington Boulevard at Broadway
(Looking west)

Figure 3.1.26. Viewpoint 25: Washington Boulevard at Appledale Avenue
(Looking west)

Figure 3.1.27. Viewpoint 26: Washington Boulevard at Lambert Road
(Looking west)

3.1.5.4.8 Summary

Overall, the aesthetic context of the DSA is heavily urbanized with commercial and light industrial development, but also includes a presence of suburban communities. **Table 3.1-2** summarizes the existing visual resources in each landscape unit.

Table 3.1-2. Existing Visual Resources by Landscape Unit

Landscape Unit	Visual Resources
1	Atlantic Park, St. Alphonsus Catholic Church, former Golden Gate Theater, hills of Monterey Park, OII landfill site
2	Façade of the Citadel Outlet Mall, Crowne Plaza Hotel and Commerce Casino
3	Downtown Los Angeles Skyline, Pacific Metals Company/Rolled Steel Products building, South Montebello Irrigation District administration building, William and Florence Kelly house
4	Rio Hondo and associated spreading grounds, mature trees along Washington Boulevard median, Puente Hills
5	Dal Rae Restaurant, Pico Rivera Historical Museum, Cliff May-designed Ranch House
6	San Gabriel River and associated spreading grounds, Puente Hills
7	Rheem Laboratory (Salvation Army building), tall palm trees along Washington Boulevard median, Puente Hills

Note: To various extents based on location and other factors, all landscape units may afford views of the San Gabriel Mountains to the north.

3.1.6 Impact Evaluation

3.1.6.1 Impact AES-1: Vistas

Impact AES-1: Would a Build Alternative have a substantial adverse effect on a scenic vista?

3.1.6.1.1 Alternative 1 Washington

Operational Impacts

No scenic vistas are present in the DSA. Views of surrounding landscapes and topography are available but not considered unique or of aesthetic significance. In addition, these views are not the primary focus of affected viewer groups.

Within Landscape Unit 1, the guideway would transition from at-grade to underground at the intersection of South La Verne Avenue and East 3rd Street. The primary visual elements of the Project would be the tunnel portal along 3rd Street, west of Woods Avenue, the relocated/reconfigured access plaza for the underground stations along Atlantic Boulevard at Beverly Boulevard, and the new access plaza for the underground station along Whittier Boulevard. The visibility of the tunnel portal is limited to the area along 3rd Street directly in front of and facing the portal. The tunnel portal is anticipated to be a tube-shaped passageway structure without a dissipative design and would not be visually obtrusive. Additionally, an approximately 60-foot tall antenna structure (radio tower) would be installed near the Atlantic/Whittier station. These features would not substantially obstruct views of the Monterey Park hills and San Gabriel Mountains to the north (available from Atlantic Boulevard) or the former OII landfill to the east (available from Pomona Boulevard) because the built-out urban landscape already prevents clear views of the mountains.

Within Landscape Unit 2, the guideway would be underground. The primary visual elements of the Project would include the new access plaza for the underground Commerce/Citadel station along Smithway Street and an approximately 60-foot tall antenna structure (radio tower) would be installed near the Commerce/Citadel station. Additionally, an above-ground outdoor shelter may be required if the underground control room cannot support additional equipment. These features would not substantially obstruct views of the San Gabriel Mountains to the north (available from Tubeway Avenue) because the surrounding industrial and commercial development already prevents clear views of the mountains.

Within Landscape Unit 3, the primary visual elements of the Project would include the tunnel portal east of Saybrook Avenue, retaining wall to support the daylighting to an aerial configuration, columns to support the aerial LRT guideway, column bents to support the aerial Greenwood station, the at-grade LRT infrastructure and ultimately the completed aerial and at-grade guideways and aerial Greenwood station. While these features, particularly the aerial guideway and aerial station, would be highly visible, they would not substantially obstruct views of the San Gabriel Mountains to the north or the downtown Los Angeles skyline to the west because the surrounding industrial and commercial development already prevents clear views of the mountains and skyline. Further, scenic views of these resources are often dependent on weather and atmospheric conditions or limited due to the area's flat topography. The MSF site option would also be located within Landscape Unit 3 as discussed in **Section 3.1.6.2.4**.

Within Landscape Unit 4, the primary visual elements of the Project would include the at-grade LRT infrastructure along the center median of Washington Boulevard. These features would not substantially obstruct views of the San Gabriel Mountains and Puente Hills to the north and east, respectively, from vantage points along Rio Hondo or Bluff Road and within the Rio Hondo Spreading Grounds because the addition of LRT vehicles would be comparable to the roadway traffic along Washington Boulevard. Additionally, electrical transmission towers and overhead power lines in the foreground do not beneficially contribute to these views.

Within Landscape Unit 5, the primary visual elements of the Project would include the at-grade LRT infrastructure and the platform and canopy associated with the Rosemead station along the center median of Washington Boulevard. These features would not substantially obstruct views of the San Gabriel Mountains to the north because the addition of LRT vehicles would be comparable to the roadway traffic along Washington Boulevard. Additionally, the surrounding commercial and residential development already prevents clear views of the mountains.

Within Landscape Unit 6, the primary visual elements of the Project would include the at-grade LRT infrastructure along the center median of Washington Boulevard. These features would not substantially obstruct views of the San Gabriel Mountains and Puente Hills to the north and east, respectively, from vantage points along the San Gabriel River or within the San Gabriel River Spreading Grounds because the addition of LRT vehicles would be comparable to the roadway traffic along Washington Boulevard. Metro's LRT vehicle is approximately 87 feet in length and 12 feet in height. They typically run in two- or three-car trains. They operate every five to 10 minutes during peak hours and with an average a speed of 24 to 35 mph (Metro, 2022). Due to their size, and brief passage, the LRT vehicles would not be sufficient to adversely obstruct views.

Within Landscape Unit 7, the primary visual elements of the Project would include the at-grade LRT infrastructure and the platform and canopy associated with the Norwalk and Lambert stations. These features would not substantially obstruct views of the San Gabriel Mountains and Puente Hills to the north and east, respectively, because the addition of LRT vehicles would be comparable to the roadway traffic along Washington Boulevard. Additionally, the surrounding industrial and commercial development already prevents clear views of the mountains.

Overall, views in the DSA as a whole would not be substantially affected. Therefore, operation of Alternative 1 would result in a less than significant impact to scenic vistas.

Design Options

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option would not obstruct views of the primary visual elements within the surrounding area because it would operate below-grade in a trench covered by a canopy. Additionally, the built-out urban landscape already prevents clear views of the Monterey Park hills and San Gabriel Mountains to the north or the former OII landfill to the east. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact to scenic vistas.

Montebello At-Grade Option

Under the Montebello At-Grade Option, the guideway along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello would be at-grade instead of aerial. The at-grade LRT infrastructure and platform and canopy for the at-grade Greenwood station would not substantially obstruct the views of the San Gabriel Mountains or downtown Los Angeles skyline to the north and west, respectively, because the surrounding industrial and commercial development already prevents clear views of the mountains and skyline. The addition of LRT vehicles would be comparable to the roadway traffic along Washington Boulevard. Additionally, the overhead wires and catenary poles would not diminish long-range views of these natural landscapes, which are readily visible from many points along Washington Boulevard. These views as a whole would not be substantially affected. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact to scenic vistas.

Construction Impacts

Construction of Alternative 1 would introduce visually disruptive elements in each landscape unit, including light and heavy excavation, tunneling, roadway/bridge demolition and reconstruction, structural falsework, tree removal, security fencing, stockpiled building materials, safety and directional signage, and installation of LRT infrastructure, station platforms and plazas, and ancillary facilities. Large, heavy equipment may include cranes, bulldozers, scrapers and trucks. Construction activities, while a visual nuisance, would not substantially obstruct views of the San Gabriel Mountains, Puente Hills, or downtown Los Angeles skyline, because activities would be temporary and intermittent and limited to the immediate area. Therefore, construction of Alternative 1 would result in a less than significant impact to scenic vistas.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not obstruct views of the Monterey Park hills and San Gabriel Mountains to the north or the former OII landfill to the east because activities would be temporary and intermittent and limited to the immediate area. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact to scenic vistas.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would be at ground level as opposed to aerial along Washington Boulevard. Views of the San Gabriel Mountains and downtown Los Angeles skyline to the north and west, respectively, would not be substantially obscured and continue to be limited by the surrounding industrial development. Additionally, construction activities would be temporary and intermittent and limited to the immediate area. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact to scenic vistas.

3.1.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option, in Landscape Units 1 and 2, would not substantially obstruct views of the primary visual elements within each landscape unit because it would operate almost entirely underground, with the exception of the access plazas for the underground stations and the 0.1-mile at-grade segment where the existing at-grade alignment transitions to the new underground alignment. The 0.1-mile at-grade segment would be consistent with existing conditions as the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street. The access plazas would not substantially obstruct views of the Monterey Park hills and San Gabriel Mountains to the north (available from Atlantic Boulevard and Tubeway Avenue) or the former OII landfill to the east (available from Pomona Boulevard) because the built-out urban landscape already obscures these views. Alternative 2 non-revenue tracks would extend partially into Landscape Unit 3 to Commerce MSF site option. The primary visual elements of the Project would include the tunnel portal east of Saybrook Avenue, retaining wall to support the daylighting to an aerial configuration, and the structure supporting the aerial lead tracks to the Commerce MSF. While these features, particularly the aerial guideway would be highly visible, they would not substantially obstruct views of the San Gabriel Mountains to the north or the downtown Los Angeles skyline to the west because the surrounding industrial and commercial development already prevents clear views of the mountains and skyline. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact to scenic vistas.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would introduce visually disruptive elements but would not substantially obstruct views of the San Gabriel Mountains or the former OII landfill site because activities would be temporary, intermittent, and limited to the immediate area. Therefore, construction of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would result in a less than significant impact to scenic vistas.

3.1.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not substantially obstruct views of the surrounding landscapes and topography in Landscape Units 1 – 3, including the San Gabriel Mountains, former OII landfill, and downtown Los Angeles skyline because the surrounding industrial and commercial development already prevents clear views of the mountains and skyline. The aerial guideway and aerial Greenwood station would be highly visible but would not substantially obstruct views of the San Gabriel

Mountains to the north that are sparingly available from Washington Boulevard, depending on weather and atmospheric conditions.

The Atlantic/Pomona Station Option would not obstruct views of the primary visual elements within the surrounding area because it would operate below-grade in a trench covered by a canopy. The at-grade LRT infrastructure and platform and canopy for the at-grade Greenwood station associated with the Montebello At-Grade Option would be at ground level and would not substantially obstruct the views of the San Gabriel Mountains or downtown Los Angeles skyline to the north and west, respectively, because the surrounding industrial and commercial development already prevents clear views of the mountains and skyline. The addition of LRT vehicles would be comparable to the roadway traffic along Washington Boulevard and the overhead wires and catenary poles would not diminish long-range views of these natural landscapes, which are readily visible from many points along Washington Boulevard. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact to scenic vistas.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would introduce visually disruptive elements but would not substantially obstruct views of the San Gabriel Mountains or downtown Los Angeles skyline, because activities would be temporary and intermittent and limited to the immediate area. Further, views of the San Gabriel Mountains and downtown Los Angeles, would continue to be limited by the surrounding industrial development. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact to scenic vistas.

3.1.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are within a heavily industrialized area within Landscape Unit 3. Operation of these MSF site option would fit within the context of the existing industrial character and would not substantially obstruct views of the San Gabriel Mountains to the north. Surrounding industrial development already prevents clear views of the mountains. Therefore, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would result in a less than significant impact to scenic vistas.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would introduce visually disruptive activities (e.g., demolition, site clearing, and grading) but would not substantially obstruct views of the San Gabriel Mountains to the north, because such activities would be temporary and intermittent and limited to the immediate industrial area. Therefore, construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would result in a less than significant impact to scenic vistas.

3.1.6.2 Impact AES-2: Scenic Highways

Impact AES-2: Would a Build Alternative substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

3.1.6.2.1 Alternative 1 Washington

Operational and Construction Impacts

Alternative 1 would travel through portions of unincorporated Los Angeles County, Montebello, Commerce, Pico Rivera, Santa Fe Springs, and Whittier. Based on a review of the general plans and community plans of those jurisdictions, no state- or local-designated scenic highway, or eligible state scenic highways are located in the DSA. The closest state designated scenic highway is SR 2, Angeles Crest Highway, approximately eight miles northwest of the existing East Los Angeles Civic Center Station. SR 2 does not have views of the DSA. Therefore, operation and construction of Alternative 1 would not damage any scenic resources (e.g., trees, rock outcroppings, or historic buildings) within the viewshed of a state scenic highway. No impact would occur.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option is not within the viewshed of SR 2 or along any scenic roadway corridors identified in any local jurisdictions' general plan. Therefore, operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would not damage any scenic resources (e.g., trees, rock outcroppings, or historic buildings) within the viewshed of a state scenic highway. No impact would occur.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option is not within the viewshed of SR 2 or along any scenic roadway corridors identified in any local jurisdictions' general plan. Therefore, operation and construction of Alternative 1 with the Montebello At-Grade Option would not damage any scenic resources (e.g., trees, rock outcroppings, or historic buildings) within the viewshed of a state scenic highway. No impact would occur.

3.1.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational and Construction Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option are not within the viewshed of SR 2, the closest state designated scenic highway, and would largely operate underground. Therefore, operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not damage any scenic resources (e.g., trees, rock outcroppings, or historic buildings) within the viewshed of a state scenic highway. No impact would occur.

3.1.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Option

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are not within the viewshed of SR 2, the closest state designated scenic highway, and would largely operate underground with a short at-grade segment and short aerial segment to the Commerce MSF site option. Therefore, operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not damage any scenic resources (e.g., trees, rock outcroppings, or historic buildings) within the viewshed of a state scenic highway. No impact would occur.

3.1.6.2.4 Maintenance and Storage Facilities

Operational and Construction Impacts

The Commerce MSF site option, the Montebello MSF site option, and the Montebello At-Grade Design Option are not within the viewshed of SR 2, the closest state designated scenic highway, and not located along any scenic roadway corridors identified in any local jurisdictions general plan. Therefore, operation and construction of the MSF site options would not damage any scenic resources (e.g., trees, rock outcroppings, or historic buildings) within the viewshed of a state scenic highway. No impact would occur.

3.1.6.3 Impact AES-3: Visual Character

Impact AES-3: Would a Build Alternative in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

The Build Alternatives, including design options, and MSF site options are in an urbanized area, as defined by CEQA Guidelines Section 15387; therefore, in accordance with Appendix G of the CEQA Guidelines, a significant impact would occur if the Build Alternative (with or with the design option[s])

conflicts with applicable zoning and other regulations governing scenic quality. The zoning ordinances of each jurisdiction in the DSA do not directly regulate the design of transportation infrastructure elements including LRT. Additionally, the jurisdictions in the DSA generally do not have policies or regulations that govern visual quality during construction activities for transportation-related projects. The Build Alternative (with or without the design option[s]) would be designed in conformance with all Metro policies related to visual resources, including the Metro Systemwide Station Design Standards Policy.

The analysis of the potential to affect visual character and quality is also address below for informational purposes.

3.1.6.3.1 Alternative 1 Washington Alternative

Operational Impacts

Operational components of Alternative 1, including but not limited to station design, trackway, auxiliary facilities, parking facilities, and new landscaping would follow the MRDC (2018), Metro's Transit Service Policies and Standards, Metro Art Program Policy, Systemwide Station Design Standards Policy, and Architectural Standard/Directive Drawings (2018). As discussed further in Appendix B, these documents provide a uniform basis for the design of LRT projects and identify systemwide design policies, principles and requirements, including the inclusion of art, sustainable design features, and sustainable landscaping. Alternative 1 would mostly operate underground or within the public roadway ROW. Certain elements that would be located on properties outside of the public ROW (e.g., station plazas and TPSS) would comply with applicable zoning and design requirements of the local jurisdiction, including undergoing design review where applicable. Therefore, operation of Alternative 1 would not conflict with local zoning ordinances pertaining to scenic quality and impacts would be less than significant.

Within Landscape Unit 1, Alternative 1 would primarily operate beneath Atlantic Boulevard and would not result in adverse visual impacts on any visual resource, including Atlantic Park, St. Alphonsus Catholic Church, and the historic property of the former Golden Gate Theater. Alternative 1 would result in permanent alterations to commercial parcels where station entry and plazas are proposed for the new underground stations. Such at-grade facilities would be designed to integrate with the existing character of the surrounding land uses. The relocated/reconfigured Atlantic station and Atlantic/Whittier station would be designed as a pedestrian-friendly environment to promote a sense of place and enhance the neighborhood commercial area's visual unity. An antenna structure would be located at Atlantic/Whittier station. This would be similar to infrastructure that already exists in the urban landscape, such as telephone poles, light poles, and cellular and other antennas and would not be visually disruptive or incompatible. Therefore, operation of Alternative 1 would not substantially degrade the visual character and quality of its surroundings in Landscape Unit 1.

Within Landscape Unit 2, Alternative 1 would operate beneath Smithway Street and would not result in adverse visual impacts on any visual resource, including the façade of the Citadel Outlets along Telegraph Road and the Crowne Plaza and Commerce Casino along Tubeway Avenue. The proposed station entry and plaza for the underground Commerce/Citadel station, located next to Smithway Street, would be compatible with the surrounding small-scale, industrial and commercial development. The Commerce/Citadel station would be designed as a pedestrian-friendly environment to promote a sense of place and enhance the neighborhood commercial area's visual unity. An antenna structure and potentially an outdoor shelter would be located at Commerce/Citadel station. This would be similar to infrastructure that already exists in the urban landscape, such as telephone poles, light poles, and cellular and other antennas and would not be visually disruptive or incompatible. Therefore, operation of Alternative 1 would not substantially degrade the visual character and quality of its surroundings in Landscape Unit 2.

Within Landscape Unit 3, Alternative 1 would operate aerial (west of Carob Way) and at-grade (east of Carob Way) along Washington Boulevard. The MSF site option would also be located within Landscape Unit 3 as discussed in **Section 3.1.6.2.4**. Although the aerial guideway and Greenwood station would be relatively the same height as the existing utility infrastructure (approximately 60 feet) located on the eastbound side of Washington Boulevard, it would be highly visible, as shown in **Figure 3.1.28**. Such elevated, bulky, concrete railway structures crossing commercial thoroughfares are typically more visually tolerable in industrial and commercial areas. These features, while conspicuous, would be congruent with other railway infrastructure in the area such as the Metrolink Orange County and Riverside Lines approximately three quarters of a mile south and north, respectively, of the Greenwood station.

Regarding the historic resources, the Pacific Metals Company/Rolled Steel Products building would be acquired and demolished if the Commerce MSF site option is selected. While the building does have distinctive architectural design and qualities, it is an industrial building in a developed area with other industrial buildings that lacks scenic quality. Demolition of the building would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Refer to Section 3.4, Cultural Resources, and the Eastside Transit Corridor Phase 2 Cultural Resources Impacts Report (Appendix E) for more detailed information on the Pacific Metals Company building. If the Montebello MSF site option is selected, the aerial structure would be located in the median of Washington Boulevard between Gayhart Street and Yates Avenue approximately 60 feet from the southeast corner of the Pacific Metals Company building. The Pacific Metals Company building would not be acquired, and it would not be physically demolished, destroyed, relocated, or altered. The aerial structure would generally follow existing transportation corridors and would not limit views of the Pacific Metals Company building. The new aerial structure would introduce a new visual element but would not change the historic character of the building or substantially degrade the existing visual character or quality of public views of the site and its surroundings.

The aerial Greenwood station would not materially impair in an adverse manner the physical traits or integrity of the South Montebello Irrigation District building and William and Florence Kelly House that convey its historical significance. The Greenwood station would be designed as a pedestrian-friendly environment to promote a sense of place and enhance the neighborhood commercial area's visual unity.

As described above, operation of Alternative 1 would alter, but not substantially degrade, the visual character and quality of its surroundings in Landscape Unit 3.

Figure 3.1.28. Visual Simulation: Washington Boulevard at Greenwood Avenue
(Looking east)

Within Landscape Unit 4, Alternative 1 would operate at-grade along the center median of Washington Boulevard. The line of mature trees presently along the center median of Washington Boulevard would be removed to accommodate the placement of the proposed at-grade LRT guideway infrastructure; thus, reducing the visual connectivity and changing the visual character of this segment of Washington Boulevard. However, as shown in **Figure 3.1.29**, no new visible feature, including the barrier divider for safety purposes, would be visually incompatible with the existing urban and transportation-oriented visual aesthetic of Washington Boulevard or substantially detract from the Rio Hondo and Rio Hondo Spreading Grounds, which are the primary focal point of this area. Therefore, Alternative 1 would alter, but not substantially degrade, the visual character and quality of its surroundings in Landscape Unit 4.

Within Landscape Unit 5, Alternative 1 would operate at-grade along Washington Boulevard. The Rosemead station would be designed as a pedestrian-friendly environment by including landscaping, canopies, benches, and site-specific public art thereby, promoting a sense of place and enhancing the commercial area's visual unity. As shown in **Figure 3.1.30**, no new visible feature, including the barrier divider for safety purposes, would be visually incompatible with the existing transportation-oriented visual aesthetic of Washington Boulevard. Regarding the historic resources, the at-grade LRT infrastructure would not materially impair in an adverse manner the physical traits or integrity of the Dal Rae Restaurant, Pico Rivera Historical Museum, and Cliff May-designed ranch house that convey its historical significance. Therefore, operation of Alternative 1 would alter, but not substantially degrade, the visual character and quality of its surroundings in Landscape Unit 5.

Figure 3.1.29. Visual Simulation: Washington Boulevard at Rio Hondo Spreading Grounds
(Looking east)

Figure 3.1.30. Visual Simulation: Washington Boulevard at Rosemead Boulevard
(Looking east)

Within Landscape Unit 6, Alternative 1 would operate at-grade along Washington Boulevard. The existing bridges across the Rio Hondo and the San Gabriel River would be replaced with new bridges that would be of similar height and design, but wider to accommodate an at-grade LRT guideway. As shown in **Figure 3.1.31**, no new visible feature, including the barrier divider for safety purposes, would be visually incompatible with the existing transportation-oriented visual aesthetic of Washington Boulevard or detract from the San Gabriel River and spreading grounds, which are the primary focal point of this area. Therefore, operation of Alternative 1 would alter, but not substantially degrade, the visual character and quality of its surroundings in Landscape Unit 6.

Figure 3.1.31. Visual Simulation: Washington Boulevard at San Gabriel River
(Looking north)

Within Landscape Unit 7, Alternative 1 would operate at-grade along Washington Boulevard. The line of tall palm trees along the median of Washington Boulevard between Allport and Appledale Avenues would be replaced by the at-grade LRT guideway infrastructure, thus reducing the visual continuity. The Norwalk and Lambert stations would be designed as a pedestrian-friendly environment by including landscaping, canopies, benches, and public art, thereby promoting a sense of place and enhancing the neighborhood commercial area's visual unity. As shown in **Figure 3.1.32** and **Figure 3.1.33**, the proposed at-grade LRT operations along Washington Boulevard would introduce new visual elements within its immediate surroundings. However, no new visible features, including the barrier divider for safety purposes, would be visually incompatible with the existing transportation-oriented visual aesthetic of Washington Boulevard. In addition, the alteration of the setting with the new at-grade LRT elements would not materially impair the historic resource significance of the Rheem Laboratory (Salvation Army buildings). Therefore, operation of Alternative 1 would alter, but not substantially degrade, the visual character and quality of its surroundings in Landscape Unit 7.

Figure 3.1.32. Visual Simulation: Washington Boulevard at Pioneer Boulevard
(Looking west)

Figure 3.1.33. Visual Simulation: Washington Boulevard East of Sorensen Avenue
(Looking west)

Design Options

Atlantic/Pomona Station Option

Within Landscape Unit 1, the Atlantic/Pomona Station Option is located within auto-oriented commercial uses of an urbanized area. The Atlantic/Pomona Station Option would operate in a below-grade trench. The station plaza and TPSSs for the station would be designed to integrate with the existing character of the surrounding land uses and would follow the MRDC (2018), Metro's Transit Service Policies and Standards, Metro Art Program Policy, Systemwide Station Design Standards Policy, and Architectural Standard/Directive Drawings (2018). These Metro standards, design criteria, policies, and directives include design elements for LRT infrastructure. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would comply with local zoning ordinances and regulations governing scenic quality, where applicable, and would result in less than significant impacts.

Montebello At-Grade Option

Within Landscape Unit 3, the Montebello At-Grade Option is located within light-industrial and commercial uses of an urbanized area. The Montebello At-Grade Option and associated Greenwood station would operate along the center median of Washington Boulevard. Certain elements that would be located on properties outside of the public roadway ROW (e.g., parking facilities and TPSS) would comply with applicable zoning and design requirements, including undergoing mandated design review and coordinating with local jurisdictions during preliminary and final design. As shown in **Figure 3.1.34**, the Montebello At-Grade Option would be consistent with the existing visual character or quality of the immediate area. It would also follow Metro's Transit Service Policies and Standards, Metro Art Program Policy, and Systemwide Station Design Standards Policy. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not conflict with local zoning ordinances pertaining to scenic quality and would result in less than significant impacts.

Figure 3.1.34. Visual Simulation: Washington Boulevard at Greenwood Avenue (At-Grade Option)
(Looking east)

Construction Impacts

Construction activities would alter the visual character and quality of the immediate surroundings with heavy equipment use, tunneling, tree removal, stock-piled building materials, and safety and directional signage. However, construction activities would be temporary and intermittent and limited to the immediate area. In addition, the perimeter of construction staging areas would be fenced for a variety of purposes, including screening views of construction site and activities, security, and noise controls, and could incorporate artwork, Metro-branded designs, and/or community relevant messaging. This would help to minimize the visual nuisance and ensure that the visual character and quality of the immediate area is not substantially degraded during construction. Additionally, Alternative 1 would comply with the South Coast Air Quality Management District (SCAQMD) Rule 403, which would beneficially affect visual quality during construction by reducing the amount of visible dirt and dust along public ROW and properties beyond the active construction area. Therefore, construction of Alternative 1 would not conflict with applicable regulations governing scenic quality and would result in less than significant impacts.

Design Options

Atlantic/Pomona Station Option

Construction of the Atlantic/Pomona Station Option would comply with applicable regulations governing scenic quality, including SCAQMD Rule 403, and would occur mostly underground. Although temporary and short-term in nature, construction activities would be a visual nuisance. However, the perimeter of construction staging associated with station plazas for underground stations would be fenced for a variety of purposes, including screening views, security, and noise control, and could incorporate artwork, Metro-branded designs, and/or community relevant messaging. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would not conflict with applicable regulations governing scenic quality and would result in less than significant impacts during construction.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would be visible to visually sensitive uses along the Greenwood Avenue. The construction activities would introduce heavy equipment (i.e., excavators, loaders, trucks) along Washington Boulevard. However, such activities would be temporary and short-term in nature. In addition, the perimeter of construction staging associated with the proposed Greenwood station and parking facilities would be fenced for a variety of purposes, including screening views, security, and noise control, and could incorporate artwork, Metro-branded designs, and/or community relevant messaging. Construction of the Montebello At-Grade Option would comply with applicable regulations governing scenic quality, including SCAQMD Rule 403. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would not conflict with applicable regulations governing scenic quality during construction and would result in less than significant impacts.

3.1.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would occur almost entirely underground. The station plazas and TPSSs for the underground stations would be designed to integrate with the existing character of the surrounding land uses and would follow the MRDC (2018), Metro's Transit Service Policies and Standards, Metro Art Program Policy, Systemwide Station Design Standards Policy, and Architectural Standard/Directive Drawings (2018). These Metro standards, design criteria, policies, and directives include design elements for LRT infrastructure. Therefore, operations would comply with local zoning ordinances and regulations governing to scenic quality, where applicable, and result in less than significant impacts. The lead tracks to the Commerce MSF would be in an aerial configuration. The aerial guideway would be highly visible but this would be located in an industrial and commercial area with existing transportation and other infrastructure, and while conspicuous, would be congruent with other railway infrastructure in the area such as the Metrolink Orange County and Riverside Lines, and would not substantially degrade the existing visual character or quality of the area.

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not substantially degrade the visual character and quality of its surroundings in Landscape Unit 1, Landscape Unit 2, or Landscape Until 3. Detailed analysis of the potential to affect visual character and quality is presented in Appendix B for informational purposes.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would comply with applicable regulations governing scenic quality, including SCAQMD Rule 403, and would occur mostly underground. Construction activities would be a visual nuisance. However, construction activities would be temporary and intermittent and limited to the immediate area. In addition, the perimeter of construction staging associated with station plazas for underground stations would be fenced for a variety of purposes, including screening views, security, and noise control, and could incorporate artwork, Metro-branded designs, and/or community relevant messaging. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict with applicable regulations governing scenic quality and would result in less than significant impacts.

3.1.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would mostly occur underground or within the public roadway ROW.

Certain elements that would be located on properties outside of the public ROW (e.g., station plazas and TPSS) would comply with applicable zoning and design requirements, including the MRDC (2018), Metro's Transit Service Policies and Standards, Metro Art Program Policy, Systemwide Station Design Standards Policy, and Architectural Standard/Directive Drawings (2018). These Metro standards, design criteria, policies, and directives include design elements for LRT infrastructure. Therefore, operations would comply with local zoning ordinances and regulations governing to scenic quality, where applicable, and result in less than significant impacts. Additionally, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not substantially degrade the visual character and quality of its surroundings in Landscape Unit 1, Landscape Unit 2, or Landscape Unit 3. Detailed analysis of the potential to affect visual character and quality is presented in Appendix B for informational purposes.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would comply with applicable regulations governing scenic quality, including SCAQMD Rule 403, and would occur mostly underground with a short at-grade segment and short aerial segment. Construction activities would be a visual nuisance. However, construction activities would be temporary and intermittent and limited to the immediate area. In addition, the perimeter of construction staging associated with station plazas for underground and aerial stations would be fenced for a variety of purposes, including screening views, security, and noise control, and could incorporate artwork, Metro-branded designs, and/or community relevant messaging. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with applicable regulations governing scenic quality and would result in less than significant impacts.

3.1.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Within Landscape Unit 3, the MSF site option would replace light-industrial land uses and would thus be aesthetically compatible with the existing industrial setting. A solid wall or steel fence around the perimeter of the MSF site options would be installed as a safety measure and would also prevent visual access. The physical perimeter would not encroach onto public ROW. No substantial change in visual character or quality would occur. Additionally, operation of the MSF site options would follow MRDC, which require MSFs to be designed in a manner appropriate with the existing urban context of the sites. Therefore, operation of the MSF site options would adhere to local zoning ordinances governing scenic quality, where applicable, and result in less than significant impacts.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would comply with applicable regulations governing scenic quality, including SCAQMD Rule 403, and would occur in a highly industrial area. Construction activities, while a temporary visual nuisance, would not be visible to any residential or visually sensitive uses. In addition, the perimeter of construction staging area would be fenced for a variety of purposes, including screening views, security, and noise control, and could incorporate artwork, Metro-branded designs, and/or community relevant messaging. Under the Commerce MSF site option, the Pacific Metals Company building, an historic resource would be acquired and demolished. While the building does have distinctive architectural design and qualities, it is an industrial building located in a developed area with other industrial buildings that lacks scenic quality. Demolition of the building would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. Refer to Section 3.4, Cultural Resources, and Appendix E for more detailed information about the Pacific Metals building.

Under the Montebello MSF the Pacific Metals Company Building would not be physically demolished, destroyed, relocated, or altered. The aerial structure would generally follow existing transportation corridors and would not limit views of the resource. The new aerial structure would introduce a new visual element but would not change the historic character of the building. The alteration of the setting with the new visual element of the aerial structure would not materially impair its significance. Therefore, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not conflict with applicable regulations governing scenic quality and would result in a less than significant impact.

3.1.6.4 Impact AES-4: Light and Glare

Impact AES-4: Would a Build Alternative create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

3.1.6.4.1 Alternative 1 Washington

Operational Impacts

Alternative 1 would be well lit at night to ensure a safe environment. New nighttime light would primarily emanate from station areas (e.g., station plazas, entryways, platforms and parking facilities), which would not substantially increase the amount of lighting in the immediate area because similar light sources and levels (e.g., buildings, streetlights, and parking facilities) currently exist. Light from headlights on LRT vehicles are also not expected to extend beyond the public transportation-related ROW and its light intensity is expected to be comparable to existing vehicular traffic along surrounding roads. Alternative 1 would follow the MRDC and Metro's Systemwide Station Design Standards Policy. Compliance with these requirements would ensure that permanent operations-related light sources at the proposed station areas would be directed downwards or feature directional shielding to minimize spillover onto adjacent properties, including residential uses and other light-sensitive uses. Additionally, several elements that would create new sources of glare at proposed station areas during the day (e.g., glass or metal surfaces) may be included. However, per Metro design criteria and

standards, these sources would be dulled to ensure they are not substantial. Overall, Alternative 1 would create a negligible addition to light and glare and would not constitute a substantial change in existing light and glare in the immediate area. Therefore, operation of Alternative 1 would have a less than significant impact related to light and glare.

Design Options

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option would operate entirely below grade in a trench covered by a canopy; however, its station entryways and plazas would be lit at night to ensure a safe environment. New nighttime light would primarily emanate from station areas (e.g., station plazas, entryways, platforms and parking facilities), which would not substantially increase the amount of lighting in the immediate area because similar light sources and levels (e.g., buildings, streetlights, and parking facilities) currently exist. The Atlantic/Pomona Station Option would follow the MRDC and Metro's Systemwide Station Design Standards Policy. Compliance with these requirements would ensure that permanent operations-related light sources at the proposed station areas would be directed downwards or feature directional shielding to minimize spillover onto adjacent properties, including residential uses and other light-sensitive uses. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact related to light and glare.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would create a negligible addition to light and glare along Washington Boulevard, which would not constitute a substantial change in existing light and glare. Light from headlights on LRT vehicles are also not expected to extend beyond the public transportation-related ROW and its light and glare intensity is expected to be comparable to existing vehicular traffic, streetlights, industrial/commercial buildings, and parking facilities. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact related to light and glare.

Construction Impacts

Construction of Alternative 1 would primarily occur during daytime hours. Nighttime and weekend construction, if any, would be limited. Such activities may include, but are not limited to, tunneling, columns and trackwork, installing catenary wire, and stockpiling materials. Construction lighting would be directed toward the construction areas and/or shielded with temporary screening to minimize light spillover and glare onto adjacent areas. Additionally, construction-related illumination would be temporary and limited to safety and security purposes. Construction of Alternative 1 would not be a substantial source of light and glare as several nighttime lighting sources already exist around the construction areas (e.g., streetlights, building illumination). Therefore, construction of Alternative 1 would have a less than significant impact related to light and glare.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would primarily occur during daytime hours. Nighttime and weekend construction, if any, would comply with local ordinance

restrictions. Construction lighting would be directed toward the construction areas and/or shielded with temporary screening to minimize light spillover and glare onto adjacent areas, including residences and other light-sensitive uses. Additionally, construction-related illumination would be temporary and limited to safety and security purposes. Construction of Alternative 1 with the Atlantic/Pomona Station Option would not be a substantial source of light and glare as several nighttime lighting sources already exist around the construction areas (e.g., streetlights, vehicular traffic). Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact related to light and glare.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would primarily occur during daytime hours. Nighttime and weekend construction, if any, would comply with local ordinance restrictions. Construction lighting would be directed toward the construction areas and/or shielded with temporary screening to minimize light spillover and glare onto adjacent areas, including residences and other light-sensitive uses. Additionally, construction-related illumination would be temporary and limited to safety and security purposes. Construction of Alternative 1 with the Montebello At-Grade Option would not be a substantial source of light and glare as several nighttime lighting sources already exist around the construction areas (e.g., streetlights, vehicular traffic). Therefore, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact related to light and glare.

3.1.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would occur almost entirely underground; however, station entryways and plazas would be lit at night to ensure a safe environment. New nighttime light would not substantially increase the amount of lighting in the immediate area because similar light sources and levels (e.g., commercial buildings, streetlights, and parking facilities) currently exist. Operations would follow the MRDC and Metro's Systemwide Station Design Standards Policy. Compliance with these requirements would ensure that permanent operations-related light sources at the proposed station areas would be directed downwards or feature directional shielding to minimize spillover onto adjacent properties. Additionally, several elements that would create new sources of glare at proposed station areas during the day (e.g., glass or metal surfaces) would be included. However, per Metro design criteria and standards, these sources would be dulled to ensure they are not substantial. Overall, operations would create a negligible addition to light and glare, which would not constitute a substantial change in existing light and glare in the immediate area. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact related to light and glare.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would primarily occur during daytime hours. Nighttime construction lighting, if any, would be directed toward the construction areas and/or shielded with temporary screening to minimize light spillover and glare onto adjacent areas. Additionally, construction-related illumination would be temporary and limited to safety and security purposes. Construction would not be a substantial source of light and glare as several nighttime lighting sources already exist around the construction areas (e.g., streetlights, building illumination). Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact related to light and glare.

3.1.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be well lit at night to ensure a safe environment. New nighttime light would primarily emanate from aboveground station areas, which would not substantially increase the amount of lighting in the immediate area because similar light sources and levels currently exist. Light from headlights on LRT vehicles are also not expected to extend beyond the public transportation-related ROW and its light intensity is expected to be comparable to existing vehicular traffic along surrounding roads. Operations would follow the MRDC and Metro's Systemwide Station Design Standards Policy. Compliance with these requirements would ensure that permanent operations-related light sources at the proposed station areas would be directed downwards or feature directional shielding to minimize spillover onto adjacent properties, including residential uses and other light-sensitive uses. Additionally, several elements that would create new sources of glare at proposed station areas during the day would be included. However, per Metro design criteria and standards, these sources would be dulled to ensure they are not substantial. Overall, operations would create a negligible addition to light and glare, which would not constitute a substantial change in existing light and glare in the immediate area. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact related to light and glare.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would primarily occur during daytime hours. Nighttime construction lighting, if any, would be directed toward the construction areas and/or shielded with temporary screening to minimize light spillover and glare onto adjacent areas. Additionally, construction-related illumination would be temporary and limited to safety and security purposes. Construction would not be a substantial source of light and glare as several nighttime lighting sources already exist around the

construction areas (e.g., streetlights, building illumination). Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact related to light and glare.

3.1.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would be lit to provide sufficient illumination for operations and maintenance activities and ensure a safe environment on a 24-hour basis. Metro design criteria and standards would require new light sources (e.g., security lighting and mounted yard light fixtures) to be shielded towards the MSF site option. Additionally, the MSF site options do not include the use of materials that would be a substantial source of glare. Light and glare associated with the MSF site options would be a negligible addition to existing light and glare because the adjacent area is industrial with similar light intensity/conditions. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact related to light and glare.

Construction Impacts

MSF Site Options and Design Option

Construction activities associated with the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would occur during daytime hours. Nighttime construction lighting, if any, would be directed toward the construction areas and/or shielded with temporary screening to minimize light spillover and glare onto adjacent areas. Construction lighting would be comparable to the illuminance levels of the adjacent industrial area, and it would be temporary and directed toward the construction areas and shielded to minimize spillover lighting and glare. Construction would not substantially increase levels of ambient nighttime light or glare in the immediate area. Therefore, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact related to light and glare.

3.1.7 Project Measures and Mitigation Measures

As identified in **Section 3.1.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on aesthetics under Impacts AES-1 (Vistas), AES-3 (Visual Character), and AES-4 (Light and Glare) and no impact under Impact AES-2 (Scenic Highways). MSF site options would have less than significant impacts under Impacts AES-1 (Vistas), AES-3 (Visual Character), and AES-4 (Light and Glare) and no impact under Impact AES-2 (Scenic Highways). No project measures or mitigation measures would be required for operation or construction. **Table 3.1-3 i**dentifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s). All impacts would be less than significant for all alternatives and design options.

3.1.8 Significance After Mitigation

As identified in **Table 3.1-3**, no mitigation is required for the Build Alternatives and Build Alternatives with the design option(s). Less than significant impacts would remain under Impacts AES-1, AES-3, and AES-4 and no impact would remain under Impact AES-2.

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Table 3.1-3. Summary of Impact Determinations for Build Alternatives and MSF Options

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
AES-1 Vistas	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
AES-2 Scenic Highways	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
AES-3 Visual Character	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
AES-4 Light and Glare	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**	**LTS**

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.2 Air Quality

3.2.1 Introduction

This section discusses the Project setting in relation to air quality. It describes existing conditions, current applicable regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options. The Project is located within the Los Angeles sub-area of the South Coast Air Basin (SoCAB). The area of potential impact for the air quality analysis is limited to the DSA, which would be most affected by temporary Project construction. Information in this section is based on the Eastside Transit Corridor Phase 2 Air Quality Impacts Report (Appendix C).

3.2.2 Regulatory Framework

Federal, state, and local governments all share responsibility for air quality management. The Federal Clean Air Act (CAA) and California Clean Air Act (CCAA) are the primary statutes that establish ambient air quality standards. They establish regulatory authorities to design and enforce air quality regulations. Applicable regulations are summarized below and described in more detail in Appendix C.

3.2.2.1 Federal

Under authority granted by CAA, the U.S. Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), inhalable particulate matter or particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}), fine particulate matter or particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers ($PM_{2.5}$), and sulfur dioxide (SO_2).

Table 3.2-1 presents the NAAQS for criteria air pollutants. O_3 is a secondary pollutant, meaning that it is formed in the atmosphere from reactions of other precursor compounds under certain conditions. Primary precursor compounds that lead to formation of O_3 include volatile organic compounds (VOC) and nitrogen oxides (NOx). $PM_{2.5}$ can be emitted directly from sources (e.g., engines) or can form in the atmosphere from other precursor compounds. $PM_{2.5}$ precursor compounds in the South Coast Air Basin (SoCAB) include sulfur oxides (SOx), NOx, VOC, and ammonia. **Table 3.2-2** summarizes the health effects associated with these pollutants.

The CAA specifies dates for achieving compliance with NAAQS and mandates that states submit, implement, and enforce a state implementation plan (SIP) to attain and maintain the NAAQS. SIPs must include pollution control measures and demonstrate how standards will be met. The CAA identifies specific emission reduction goals for areas not meeting NAAQS. The CAA requires a demonstration of reasonable further progress toward attainment and provides additional sanctions for failure to attain or meet interim milestones.

A nonattainment designation means an area does not meet (or contributes to ambient air quality in a region that does not meet) the NAAQS or California Ambient Air Quality Standards (CAAQS). A maintenance designation means a pollutant was previously in nonattainment but was re-designated as

attainment. It indicates measures included in the SIP are intended to ensure that the NAAQS for a pollutant are not exceeded. **Table 3.2-3** presents the federal and state attainment designation and classification, where applicable, for each of the federal criteria air pollutants.

Table 3.2-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS	NAAQS Primary	NAAQS Secondary
CO	1-Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	NS
	8-Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	NS
NO_2	1-Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	NS
	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as primary
O_3	1-Hour	0.09 ppm (180 µg/m^3)	NS	NS
	8-Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (137 µg/m^3)	Same as primary
Pb	30-Day Average	1.5 µg/m^3	NS	NS
	Rolling 3-Month Average	NS	0.15 µg/m^3	Same as primary
PM_{10}	24-Hour	50 µg/m^3	150 µg/m^3	Same as primary
	Annual	20 µg/m^3	NS	NS
$PM_{2.5}$	24-Hour	No separate State standard	35 µg/m^3	Same as primary
	Annual	12 µg/m^3	12.0 µg/m^3	15 µg/m^3
SO_2	1-Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	NS
	3-Hour	NS	NS	0.5 ppm (1,300 µg/m^3)
	24-Hour	0.04 ppm (105 µg/m^3)	NS	NS

Source: California Air Resources Board (CARB), 2016.
Key:
µg/m^3 = micrograms per cubic meter; CAAQS = California Ambient Air Quality Standard; CO = carbon monoxide; mg/m^3 = milligrams per cubic meter; NAAQS = National Ambient Air Quality Standard; NO_2 = nitrogen dioxide; NS = no standard; O_3 = ozone; Pb = lead; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; ppm = parts per million; SO_2 = sulfur dioxide

Table 3.2-2. Characteristics and Health Effects of Criteria Pollutants

Pollutant	Characteristics	Health Effects	Major Sources
CO	Odorless, colorless gas that is highly toxic. Formed by the incomplete combustion of fuels.	• Impairment of oxygen transport in the bloodstream. • Aggravation of cardiovascular disease. • Fatigue, headache, dizziness.	Automobile exhaust, combustion of fuels, and combustion of wood in woodstoves and fireplaces.
NO_2	Reddish-brown gas formed during combustion.	• Increased risk of acute and chronic respiratory disease.	Automobile and diesel truck exhaust, industrial processes, and fossil-fueled power plants.
O_3	A highly reactive photochemical pollutant created by the action of sunlight on ozone precursors (VOC and NOx).	• Eye irritation. • Respiratory function impairment.	Combustion sources, such as factories and automobiles, and evaporation of solvents and fuels.
PM_{10} and $PM_{2.5}$	Small particles that measure 10 microns or less are termed PM_{10} (fine particles less than 2.5 microns are $PM_{2.5}$). Solid and liquid particles of dust, soot, aerosols, smoke, ash, and pollen and other matter that are small enough to remain suspended in the air for a long period.	• Aggravation of chronic disease and heart/lung disease symptoms.	Combustion of gasoline, oil, diesel fuel, or wood. Dust from construction sites, landfills and agriculture, wildfires and brush/waste burning, industrial sources, wind-blown dust from open lands, pollen, and fragments of bacteria.
SO_2	Colorless gas with a pungent odor.	• Increased risk of acute and chronic respiratory disease.	Motor vehicles, locomotives, ships, and off-diesel equipment that are operated with fuels that contain high levels of sulfur.

Source: CARB, 2021b; CARB, 2021c; Metro, 2014.
Key:
CO = carbon monoxide; NO_2 = nitrogen dioxide; NOx = nitrogen oxides; O_3 = ozone; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; VOC – volatile organic compound

Table 3.2-3. Federal and State Attainment Status

Pollutant	Federal (NAAQS) Status	State (CAAQS) Status
CO	Maintenance	Attainment
NO_2	Maintenance	Attainment
O_3	Nonattainment, Extreme	Nonattainment
Pb	Nonattainment[1]	Attainment
PM_{10}	Maintenance	Nonattainment
$PM_{2.5}$	Nonattainment[2,3]	Nonattainment
SO_2	Attainment	Attainment

Source: CARB, 2020; USEPA, 2019a.
Notes:
1 Only the Los Angeles portion of the SoCAB is considered nonattainment for Pb. All other portions of the SoCAB are in attainment of the Pb NAAQS.
2 Classified as moderate nonattainment under the 2012 PM2.5 NAAQS, serious nonattainment under the 2006 PM2.5 NAAQS, and attainment under the 1997 PM2.5 NAAQS.
3 While currently designated a nonattainment area for the 1997 and 2006 PM2.5 NAAQS, the SCAQMD is in the process of requesting redesignation to maintenance (CARB, 2021a).
Key:
CO = carbon monoxide; NO_2 = nitrogen dioxide; O_3 = ozone; Pb = lead; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide

3.2.2.2 State

The CCAA, signed into law in 1988, requires all areas of the state to achieve and maintain the CAAQS by the earliest practicable date. CAAQS are at least as stringent as, and often more stringent than, NAAQS. **Table 3.2-1** lists currently applicable CAAQS and NAAQS. Attainment status for each pollutant concerning CAAQS is presented in **Table 3.2-3**.

The California Air Resources Board (CARB) has jurisdiction over many air pollutant emission sources in the state. Specifically, CARB can develop emission standards for stationary sources and on-road motor vehicles (when USEPA grants them a waiver to do so) and some off-road mobile sources. CARB has delegated authority to regional air pollution control and air quality management districts to develop stationary source emission standards, issue air quality permits, and enforce permit conditions.

CARB adopted the Innovative Clean Transit (ICT) Regulation in December 2018, which requires all public transit agencies to gradually transition to a 100 percent zero-emission bus (ZEB) fleet by 2040.

3.2.2.3 Regional

Under conformity regulations of the CAA, the Southern California Association of Governments (SCAG) is the metropolitan planning organization responsible for coordinating the development of transportation infrastructure in a six-county region of Southern California (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura). This ensures that air quality objectives are included with transportation goals in regional transportation plans. SCAG predicts population and business growth in the region and estimates future demand for traffic, seaports, airports, and heavy and light rail infrastructure. From the demand estimates, SCAG develops a Regional Transportation Plan (RTP) and Federal Transportation Improvement Program (FTIP) to guide transportation growth and

infrastructure development. The FTIP and RTP consider air quality requirements in the region. The FTIP is typically updated every two years. SCAG updates its forecasts and RTP approximately every four years. The most recently adopted RTP was the 2020 RTP/SCS, approved and adopted by the SCAG Regional Council on September 3, 2020.

Under authority delegated by CARB, regional air pollution control and air quality management in the DSA is managed by the South Coast Air Quality Management District (SCAQMD). SCAQMD uses SCAG's forecasts for vehicle miles traveled (VMT) and activities predicted for seaports, airports, and rail, as well as stationary source to develop updates to Air Quality Management Plans (AQMPs). SCAQMD works directly with SCAG, county transportation commissions, and local governments, and cooperates with state and federal government agencies. The SoCAB is a sub-region within SCAQMD's jurisdiction that covers a 6,745 square mile area and encompasses all of Orange County and non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The DSA is located within the Los Angeles sub-area of the SoCAB.

SCAQMD develops rules and regulations, establishes permitting requirements, inspects emissions sources, and enforces measures through educational programs or fines. In coordination with CARB and SCAG, SCAQMD also prepares and implements the AQMP, which is used by CARB in SIP development and to meet CAAQS and NAAQS. The AQMP mandates control technology for existing sources, control programs for area sources and indirect sources, a permitting system to ensure no net increase in emissions from any new or modified permitted sources of emissions, transportation control measures, sufficient control strategies to achieve emissions reduction targets, and demonstration of compliance with CARB's established reporting periods for compliance with air quality goals.

On March 3, 2017, SCAQMD adopted a comprehensive update, the 2016 AQMP for the SoCAB. The 2016 AQMP outlines air pollution control measures needed to meet federal O_3 and $PM_{2.5}$ standards. The SCAQMD is currently in the process of preparing the 2022 AQMP (SCAQMD 2021).

Relevant SCAQMD rules and regulations that apply to the Project for this air quality analysis include, but are not limited to, Rule 402 and Rule 403. Rule 402 (nuisance) prohibits the discharge of air contaminants that cause injury, detriment, nuisance, or annoyance to the public. The Project would not be likely to cause the discharge of air contaminants that cause injury, detriment, nuisance, or annoyance to the public. Therefore, the Project would operate in compliance with Rule 402. Rule 403 (fugitive dust) prohibits fugitive dust emissions from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. During proposed construction, best available control measures identified in the rule would be required to minimize fugitive dust emissions from proposed earth-moving and grading activities.

3.2.2.4 Local

3.2.2.4.1 Los Angeles Metropolitan Transportation Authority

Metro has developed a number of plans and policies related to improving air quality. Metro's *Countywide Sustainability Planning Policy* (Metro 2012) is intended to define outcomes and establish measurements related to developing a Sustainable Regional Transportation System. The *Metro Climate Action and Adaptation Plan* (Metro 2019) builds on Metro's existing commitments to environmental sustainability and stewardship and establishes a framework to reduce GHG emissions. The *Moving Beyond Sustainability* (MBS) strategic plan (Metro 2020), outlines a comprehensive

sustainability strategy that incorporates aspects of emissions and pollution control. Metro's *Construction Demolition Debris Recycling and Reuse Policy* (Metro 2007) requires Metro to give preference to recyclable and recycled products in the selection of construction materials to the maximum extent feasible during design and construction of Metro or Metro-funded capital projects. Metro's *Green Construction Policy* (Metro 2011), commits Metro to using greener, less polluting construction equipment and vehicles on all Metro construction projects performed on Metro properties and rights-of-way than the statewide fleet average. More information about these plans and policies is in Appendix C.

3.2.2.4.2 County and City General Plans

Los Angeles County and the cities within the DSA have general plans that include goals and policies supportive of improving air quality with the region. Applicable goals and policies in the *Los Angeles County 2035 General Plan* include, but are not limited to, reducing air pollution and emissions through coordinated land use, transportation, and air quality planning, and reducing emissions and fugitive dust from construction activities through implementation of best management practices (BMPs). Relevant general plan policies of the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier are established to guide land use planning decisions to improve air quality within the region, including through supporting transit and development of transit-oriented communities. More information about these policies is in Appendix C.

3.2.3 Methodology

This section describes the methodology and assumptions for analysis of potential impacts to air quality and assessment of health risks. Construction projects may impact air quality through emissions from construction equipment or the generation of dust. Conversely, the operation of mass transit systems may benefit air quality through reductions in the number of vehicles operating in an area.

3.2.3.1 Operational Emissions

Operational emissions include emissions related to the operation of public highway vehicles, Project parking facilities, and a Project MSF site option. For each of these emission sources under 2042 without Project Conditions and each of the Build Alternatives, emissions were quantified so that the Project's benefits or impacts could be evaluated against 2042 without Project Conditions. As detailed below, operation of proposed stations or the LRVs would not be expected to result in direct criteria pollutant emissions in the DSA.

Emissions for regional traffic, evaporative leaks from parked vehicle fuel tanks, and parking facility maintenance activities were calculated using the current USEPA-approved version of the California Emission Factor (EMFAC) model[1]. The model was queried to determine the appropriate traffic emission factors for the Los Angeles sub-area of the SoCAB, the model region most representative of the DSA. The model generates emission factors for a variety of vehicle classes, representing different types of on-road vehicles that operate in the region. EMFAC was also used to describe the highway fleet mix (relative ratio of VMT travel in the region for each vehicle class) for the SoCAB in each year of the analysis. Aggregate highway-vehicle emission factors for each pollutant were determined by

1 While EMFAC2021 is the current version of the EMFAC model (released in April 2021), EMFAC2017 is the most recent version of the model approved by the USEPA. Therefore, EMFAC2017 was used in the analysis (CARB 2021g).

weighting the EMFAC default emission factors for each vehicle class using the fleet mix. The emission factors queried were for an average vehicle speed of 35 miles per hour for the existing conditions (2019)[2] analysis, and an average vehicle speed of 30 miles per hour for the future conditions (2042).

The Project would include the addition of parking facilities to accommodate passengers at several of the proposed stations. Project-related parking would result in a new source of VOC emissions from evaporative leaks from parked vehicle fuel tanks. Evaporative emissions from vehicles left in the parking facilities throughout the day were estimated using EMFAC reactive organic gases (ROG)[3] emission factors for the Los Angeles sub-area of the SoCAB. The EMFAC model was queried to generate evaporative ROG emission factors for the vehicle classes most representative of those vehicles which would utilize the Project parking facilities (light-duty automobiles and trucks), and those factors were weighted using the regional VMT-based fleet mix for those vehicle classes, resulting in an aggregated evaporative ROG emission factor. It was estimated that each Project parking space would be occupied, and thus contribute to evaporative Project ROG emissions, for 10-hours each day. Additional parking facility maintenance activities, such as lot restriping, would also result in ROG emissions. These emissions were estimated using default model parameters for the "parking lot" land use type of the California Emission Estimator Model (CalEEMod) version 2020.4.0. Additional necessary modeling parameters for the parking facilities include the region (Los Angeles sub-area of the SoCAB), the climate zone (9), utility (Southern California Edison), and the count of spaces assumed for each facility.

Emissions from powering the electric LRT vehicles or lighting the proposed stations were not assumed to occur locally and therefore, were not estimated. Maintenance activities for the proposed stations would not be expected to result in material criteria pollutant emissions.

Operation of either of the Project MSF options would result in criteria pollutant emissions from combustion of natural gas for comfort heating and from structure and LRT maintenance and upkeep activities. These emissions were quantified using CalEEMod.

Refer to Appendix C for more information regarding methodology and assumptions used in the operational air quality analysis

3.2.3.2 CO Hot Spots

A project has the potential to result in one or more CO hot spots (high localized ambient concentrations) when project emissions occur at higher rates in small or constricted areas. For the Project, traffic volumes at major intersections represent the only emission source which could result in CO hot spots.

2 As described in Section 3.14, Transportation and Traffic, the base year data in Metro's regional travel demand forecasting model (the Corridor Based Model 2018 [CBM18]) is from 2017 and represents the data that was most recently available when the model was created in 2018. This data has been used to represent 2019, the base year in this study.
3 The definitions of VOC and ROG are essentially the same and are used interchangeably in this analysis.

The 2017 BAAQMD CEQA Guidelines indicate that CO hot spots would not occur at intersections servicing fewer than 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).[4] This updated screening criteria was used for the CO hot spot analysis of this EIR. Traffic volumes at Project intersections are based on detailed traffic modeling conducted for the transportation analysis (see Section 3.14, Transportation).

3.2.3.3 Construction Emissions

Construction emissions were estimated for all components of each Build Alternative, including construction of stations and parking facilities, rail lines, and the MSF. Emissions from construction of the Project were estimated from the methods developed by the SCAQMD in its 1993 *CEQA Air Quality Handbook* (Handbook). The analysis used the current USEPA-approved version of the CARB EMFAC model, which is also incorporated in the current version of CalEEMod (2020.4.0), to generate on-road emission factors instead of the on-road mobile source emission factors in the Handbook. The CARB OFFROAD model emission factors, incorporated in the current version of CalEEMod, were used to generate off-road emission factors instead of the off-road mobile source emission factors in the Handbook. The analysis used factors developed for current version of CalEEMod to update the fugitive construction dust and architectural coating emission factors identified in the Handbook.

Emission reductions associated with applicable rules and regulations, such as a 66 percent reduction in fugitive dust associated with site watering as required by SCAQMD Rule 403, were also incorporated into the analysis.

The Project was modeled using CalEEMod with the alignment subdivided into smaller components which were modeled individually. The emissions associated with overlapping components of Project construction were added together to determine total peak project emissions. General Project component information, such as approximate construction durations and equipment requirements are presented in Table 3-1 of Appendix P, Eastside Transit Corridor Phase 2 Construction Impacts Report. Refer to Appendix C for more information regarding methodology and assumptions used in the construction air quality analysis.

3.2.3.4 Health Risk Assessment

CEQA analysis typically includes a Health Risk Assessment (HRA) for sensitive receptors (e.g., residents, workers, school children) near the Project that are likely to be exposed to toxic air contaminants (TAC) emitted from Project activities. Most TAC are categorized as organic (primarily volatile) or inorganic (primarily particulate) emissions. Therefore, emissions of TAC are typically calculated by applying chemical-specific mass fractions (also called speciation profiles) to the total organic gases (TOG) or PM_{10} emission rates calculated for criteria pollutant emission inventories.

4 Neither Metro nor the SCAQMD have developed screening criteria for the evaluation of CO hot spots impacts associated with vehicle traffic. Section 14 CCR § 15064.7 (c) of the State CEQA Guidelines states that lead agencies may consider the adopted or recommended thresholds of other public agencies in the consideration of thresholds of significance. The BAAQMD screening criteria directly relates potential CO hot spots impact levels to changes in traffic quantities and is the most applicable promulgated criteria for evaluating CO hot spots for the Project.

CARB developed speciation profiles (CARB 2021d) for a variety of sources, such as gasoline motor vehicles and construction dust, which were used with projected TOG and PM_{10} emission levels to determine TAC emissions for each Build Alternative.

Although not applicable to this air quality analysis, SCAQMD Rule 1401, which limits the health risk implications of newly permitted facilities or air emission units in SCAQMD's jurisdiction, was used to identify the primary TAC of concern to be evaluated for health risk impacts. Thirty-four TAC were identified from the speciation profiles for mobile emission sources. This analysis calculated speciated emissions for exhaust, evaporation, tire wear, brake wear, paved road dust, construction dust, and architectural coatings.

Where operational TAC emissions would decrease as a result of project implementation, human health hazards would decrease, and no assessment would be required. Construction of a Build Alternative would always result in short-term emissions of TAC relative to existing conditions. These short-term construction TAC emissions were analyzed to determine risk impacts to sensitive receptors nearby. Sensitive receptors in the DSA include residences and locations where the elderly, children, or other groups with a greater susceptibility to adverse health effects could be located, such as schools, hospitals, convalescent homes, parks, and daycare centers. The SCAQMD has developed a tiered approach to assess risk from exposure to TAC (SCAQMD 2017a and SCAQMD 2017b). The Tier 2 analysis approach (a series of lookup tables with additional project-specific parameters) was applied to the construction phase to determine if human health impacts may be significant.

3.2.3.4.1 Area of Potential Impact

The area of potential impact must be sufficiently large to identify the location of the maximum exposed individual for health risk purposes. The zone of impact normally encompasses the area where a person would be subject to an added lifetime cancer risk of 10 in 1 million or greater ($\geq$ 10.0 x 10^{-6}). However, because the Project is expected to have a long-term regional beneficial impact on air quality and inhalation health risk, the area of potential impact was limited to the DSA, which would be most affected by temporary Project construction. Construction of the aerial alignment would occur in segments approximately 0.5-miles in length and construction of the at-grade alignment would occur in segments approximately 1-mile in length. Tunnel boring would occur at a minimum rate of approximately 30 feet per day. For the evaluation of construction human health risk impacts, emissions from on-site construction activities anticipated to occur were quantified for each active construction segment. Since these emissions would be distributed within the (minimum 0.5-mile) active construction segment, a 0.25-mile receptor distance was used as the halfway portion for a given receptor's exposure to construction activities within the active segment. A portion of emissions from haul trucks, delivery trucks, and construction worker vehicle trips were also included to account for the localized portion of emissions from vehicle operations from the construction site to trip ends (landfills, material source locations, or worker homes).

3.2.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to Air Quality if it would:

Impact AQ-1: Conflict with or obstruct implementation of the applicable air quality plan.

Impact AQ-2: Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.

Impact AQ-3: Expose sensitive receptors to substantial pollutant concentrations.

Impact AQ-4: Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Additionally, although not explicitly listed in Appendix G of the State CEQA Guidelines, in compliance with CEQA, a Build Alternative would have a significant impact related to Human Health if it would:

Impact HR-1: Expose sensitive receptors to TAC that would be likely to cause a substantial increase in human health risks.

3.2.4.1 SCAQMD Thresholds

The SCAQMD is the agency given primary responsibility for developing plans, programs, rules and regulations that will improve the air quality in the SoCAB. The SCAQMD published CEQA significance thresholds for analyzing the significance of project air quality impacts in the *CEQA Air Quality Handbook* (SCAQMD 1993). Regular updates are published on the SCAQMD website (SCAQMD 2019). The SCAQMD has developed quantitative CEQA significance thresholds for regional criteria air pollutant emissions (relating to Impact AQ-2), localized criteria air pollutant emissions (relating to Impact AQ-3), and localized TAC emissions (relating to Impact HR-1). Each set of thresholds is described below.

3.2.4.1.1 Regional Criteria Pollutant Emissions Thresholds

The SCAQMD developed quantitative significance thresholds for mass daily regional emissions of criteria pollutants for both construction and operational sources. These thresholds are summarized in **Table 3.2-4**.

Table 3.2-4. SCAQMD Mass Daily Thresholds

Pollutant	Construction	Operation
CO	550 lbs/day	550 lbs/day
NOx	100 lbs/day	55 lbs/day
Pb	3 lbs/day	3 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
SOx	150 lbs/day	150 lbs/day
VOC	75 lbs/day	55 lbs/day

Source: SCAQMD, 2019.
Key:
CO = carbon monoxide; lbs/day = pounds per day; NOx = nitrogen oxides; Pb = lead; PM10 = fine particulate matter; PM2.5 = fine particulate matter; SOx = sulfur oxides; VOC = volatile organic compound

Typically, in a CEQA analysis, project-related impacts are compared to existing (without project) conditions. However, pursuant to CEQA Guidelines Section 15125(a)(2), a lead agency has the

discretion to exclusively use a future conditions baseline for the purposes of determination of significance under CEQA in instances where using an existing conditions baseline would be misleading or without informational value. Use of an existing conditions baseline would be misleading for the Project because it would ignore the regional background growth in population, traffic, and transportation infrastructure that would occur between the existing conditions baseline year of 2019 and the future conditions (i.e., the 2019 existing conditions will be substantially altered by regional growth that will occur independent of the Project, which, in turn, would mask the impacts that are attributable to the Project and would not provide the reader with an accurate and meaningful delineation of Project-related impacts). Considering such growth is critical when determining future effects for transit projects designed to reduce traffic congestion and associated air quality impacts over time. Isolating the Project's impacts from ancillary changes in the environment would result in a misleading analysis.

Therefore, for quantification of air pollutant emissions, Project emissions are defined as the difference between a Project alternative (2042) and the existing conditions in 2019 adjusted for regional growth that would occur by 2042, pursuant to Section 15125(a)(1)(2) of the State CEQA Guidelines that provides for the use of a projected future conditions (beyond the date of project operations) baseline. For the Project, this "projected future conditions baseline" is 2042 without Project Conditions. The horizon year (2042) of the regional travel demand Corridor Based Model 2018 (CMB18), which incorporates Metro Measure M projects identified in the Measure M Expenditure Plan, roadway improvements, and other transit improvements anticipated to occur throughout the transit corridor, was selected as the Project design year. Use of this 2042 design year represents a characterization of the holistic, long-term benefits of the Project as transit-oriented development expands within the GSA and throughout the region. Additionally, although the Project is projected to open in 2035, emission factors for highway vehicles (the preeminent emission source affected by this project) decrease as engine technology improves and vehicle manufacturers meet more stringent state and federal engine emission and efficiency standards. Since all alternatives would reduce VMT associated with highway traffic as compared to 2042 without Project Conditions, the use of 2042 highway traffic emission rates would result in fewer criteria pollutant reductions from this emission source as compared to the reductions which might be achieved using 2035 factors. Therefore, evaluation of Project impacts during the 2042 design year would conservatively evaluate the impacts of operations.

Project emissions greater than thresholds for a given air pollutant would be considered significant under CEQA.

3.2.4.1.2 Localized Significance Thresholds

The SCAQMD developed quantitative thresholds to evaluate local air quality impacts from construction and operational activity (SCAQMD 2008 and SCAQMD 2006). These localized significance thresholds (LSTs) are only applicable to the following criteria pollutants: NOx, CO, PM_{10}, and $PM_{2.5}$. LSTs are analogous to CAAQS (pollutant levels below LSTs would not be expected to violate the CAAQS). LSTs consider ambient concentrations of pollutants for a given source receptor area and the distance from the project site to the nearest sensitive receptor. For PM_{10}, LSTs were based on SCAQMD Rule 403 – Fugitive Dust.

As described in **Section 3.2.2.3**, the DSA is located within the SoCAB, which is further divided into 38 Source-Receptor Areas (SRAs); the DSA predominantly falls within the Southeast Los Angeles County SRA. LST emission tables have been developed for project sizes up to five acres. Most construction sites could be partitioned into active areas that are less than or equal to five acres in size. **Table 3.2-5** summarizes the allowable construction emissions for a project located in the Southeast Los Angeles

County SRA. Since the Project will be located in close proximity to other receptors, the closest receptors were assumed to be within 25 meters (82 feet) of the construction site boundaries, the minimum distance provided in the LST guidance.

Table 3.2-5. Allowable Construction Emissions for Source-Receptor Area[1] for a 5-Acre Site at 25-Meter (82-Feet) Receptor Distance from Site Boundary

Pollutant	Localized Significance Threshold (lbs/day)
	Project Construction Site Size
	Southeast Los Angeles County SRA
CO_2	1,480
NO_X[2]	172
PM_{10} (Operation)	4
PM_{10} (Construction)	14
$PM_{2.5}$ (Operation)	2
$PM_{2.5}$ (Construction)	7

Source: SCAQMD, 2008.
Notes:
1 Southeast Los Angeles County SRA was used to evaluate each project alternative.
2 Threshold is applicable to both construction and operation.
Key:
CO = carbon monoxide; lbs/day = pounds per day; NOx = oxides of nitrogen; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter

3.2.4.1.3 TAC Health Risk Thresholds

The SCAQMD has established thresholds of significance for both carcinogenic and non-carcinogenic TAC exposure. A significant adverse health risk impact would occur if a project alternative would result in a:

- Maximum Individual Cancer Risk (MICR) ≥ 10 in 1 million, or
- Hazard Index (HI) ≥ 1.0 (for either chronic or acute exposure).

Both MICR and HI are typically evaluated based on the difference between the future with project health risk and baseline existing conditions health risk. However, as detailed in **Section 3.2.4.1**, for the purpose of evaluating incremental Project impacts for this CEQA analysis, and projected future conditions baseline (2042 without Project Conditions) is used. Therefore, for this analysis, the project increment is defined as the difference in health risk between the Proposed Project and the future 2042 without Project risk levels.

Although MICR and HI criteria are typically evaluated at each receptor in the vicinity of the Project, simplified methods have been published by SCAQMD for the evaluation of health risk impacts of a project. A Tier 1 HRA, which consists of a series of look-up values based on emission rates for each TAC, can be completed. A summation of TAC emission ratios compared to their respective Tier 1 look-up value results in a project's application screening index (ASI). An ASI less than 1 can be used to demonstrate less than significant health risk impacts of a project. However, an ASI greater than 1 does not necessarily indicate significant health risk impacts. A Tier 2 HRA, which consists of a series of look-up values with additional input options to account for project-specific parameters, such as daily

exposure duration, total exposure duration, and a larger range of receptor distances than a Tier 1 HRA considers, can also be completed.

3.2.5 Existing Setting

3.2.5.1 Air Quality Study Area

As described in **Section 3.2.2.3**, the DSA is located within the SoCAB. The SoCAB is bounded on the west by the Pacific Ocean, on the northwest by the Santa Susana Mountains and Simi Hills, on the north by the San Gabriel Mountains and San Bernardino Mountains, on the east by the San Jacinto Mountains and Santa Rosa Mountains, and on the south by the San Diego County line. The SCAQMD has divided the region into 38 SRA in which air quality is monitored. The DSA predominantly falls within the Southeast Los Angeles County SRA with the underground portion of the alignment north of Whittier Boulevard extending into the South San Gabriel Valley SRA. A variety of air pollution sources, including vehicular traffic, commercial operations, and industrial operations contribute to regional air quality in the SoCAB.

3.2.5.2 Health Risk Study Area

The DSA contains a variety of sensitive receptors, including residences and work places, and locations where the elderly, children, or other groups with a greater susceptibility to adverse health effects could be located. These locations include schools, hospitals, convalescent homes, parks, and daycare centers. Sensitive receptor locations of greater susceptibility to adverse health effects identified in the DSA and within one-kilometer [3,280-feet] radius of construction area are listed in Table 6-1 of Appendix C.

3.2.5.3 Existing Conditions

3.2.5.3.1 Climate and Atmospheric Conditions

The climate of the SoCAB is determined primarily by terrain and geography. Regional meteorology is dominated by a persistent high-pressure zone over the eastern Pacific Ocean. Seasonal variations in strength and position of this pressure system cause changes in area weather patterns. Local climactic conditions are characterized by warm summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes, and moderate humidity. The SoCAB's normally mild climate is occasionally interrupted by periods of hot weather, winter storms, and hot easterly Santa Ana winds. The SoCAB area has high levels of air pollution, particularly from June through September. Factors leading to high levels of pollution include a large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. These factors reduce pollutant dispersion, exacerbating elevated air pollution levels. Pollutant concentrations in the SoCAB vary by location, season and time of day.

Local climate conditions affect the dispersion, chemical reactions, and deposition of air pollutants throughout the region. Historically, the maximum summer temperatures in the DSA typically occur in August and average 89.7 degrees Fahrenheit (°F), the minimum winter temperatures typically occur in December and average 47.2°F, and annual rainfall averages 14.78 inches (WRCC, 2013).

3.2.5.3.2 Existing Air Quality Conditions

Air quality conditions for a project area are typically the result of meteorological conditions and existing emission sources in an area.

Monitoring Data – Criteria Pollutants

Air quality data from a monitoring station near the DSA is summarized in **Table 3.2-6**. This section used monitoring data from the south San Gabriel Valley station (Pico Rivera #2, CARB Number 70085) for most pollutants; however, the central Los Angeles station (North Main Street, CARB Number 70087) was used for pollutants not monitored in Pico Rivera. These stations best represent air quality conditions at the DSA; or, in the case of O_3, best represent air quality conditions for the region. See **Table 3.2-6** for the location of the monitoring stations.

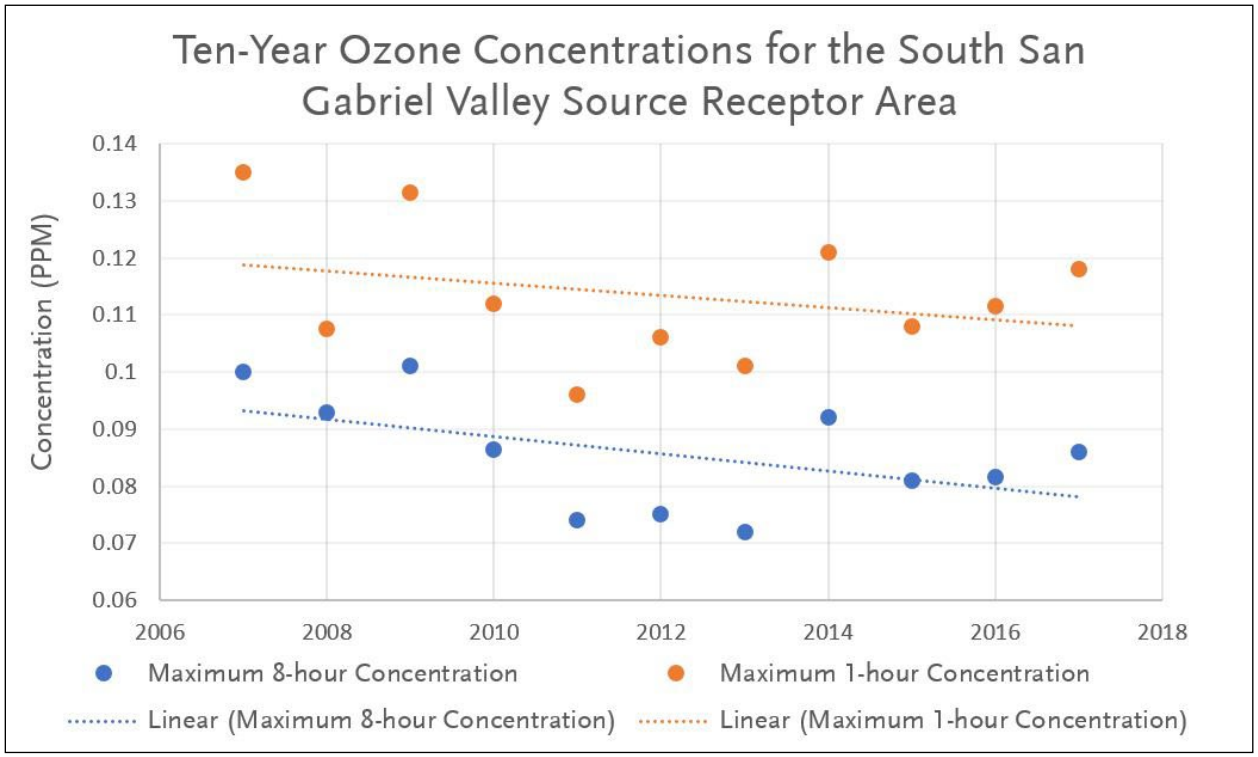
The 1-hour O_3 CAAQS was exceeded up to seven times a year during the period of 2017 through 2019 (see **Table 3.2-6**). Recorded 8-hour O_3 concentrations exceeded both the NAAQS and CAAQS up to nine times a year between 2017 and 2019. Substantial year-to-year variations in monitored O_3 levels are common. Although no clear trend in O_3 levels is demonstrated by monitoring results from 2017 through 2019, the ten-year trend shows a gradual decline in O_3 concentrations (see **Figure 3.2.1**).

Table 3.2-6. Summary of Pollutant Monitoring Data Near the DSA

Criteria Air Pollutant	Annual Monitoring Data			CAAQS	NAAQS
	2017	2018	2019		
Carbon Monoxide (CO)					
Pico Rivera					
Highest 1-hour concentration (ppmv)	2.5	2.0	1.9	20	35
Highest 8-hour concentration (ppmv)	2.0	1.5	1.4	9	9
Nitrogen Dioxide (NO_2)					
Pico Rivera					
National standard design value, 1-hour period (ppmv)	0.062	0.061	0.060	N/A	0.100
California designation value, 1-hour period (ppmv)	0.070	0.070	0.070	0.180	N/A
National standard design value, annual average (ppmv)	0.020	0.018	0.018	N/A	0.053
California designation value, annual average (ppmv)	0.019	0.019	0.019	0.03	N/A
Ozone (O_3)					
Pico Rivera					
Maximum concentration, 1-hour period, ppm	0.118	0.115	0.108	0.090	N/A
National standard design value, 8-hour period, ppm	0.076	0.075	0.075	N/A	0.07
California designation value, 8-hour period, ppm	0.083	0.083	0.083	0.07	N/A
Days above 1-hour CAAQS (0.09 ppmv)	7	3	5	N/A	N/A
Days above 8-hour CAAQS (0.07 ppmv)	9	5	8	N/A	N/A
Days above 8-hour NAAQS (0.07 ppmv)	9	5	7	N/A	N/A

Criteria Air Pollutant	Annual Monitoring Data			CAAQS	NAAQS
	2017	2018	2019		
Sulfur Dioxide (SO_2)					
Los Angeles – North Main Street					
Maximum concentration, 1-hour period (ppmv)	0.0057	0.0180	0.0101	0.25	N/A
99th percentile of 1-hour period (ppmv)	0.0030	0.0029	0.0028	N/A	0.075
Maximum concentration, 24-hour period (ppmv)	0.0015	0.0013	0.0014	0.04	N/A
Inhalable Particulate Matter (PM_{10})					
Los Angeles – North Main Street					
Maximum national concentration, 24-hour period, µg/m³	64.6	68.2	62.4	N/A	150
Maximum state concentration, 24-hour period, µg/m³	96.2	81.2	93.9	50	N/A
Maximum annual state concentration, 3-year average, µg/m³	27	34	34	20	N/A
Estimated number of days above 24-hour CAAQS (50 µg/m³)	*	31.8	*	N/A	N/A
Fine Particulate Matter ($PM_{2.5}$)					
Pico Rivera					
Maximum national concentration, 24-hour period, µg/m³	49.5	56.3	50.2	N/A	35
National 2013 annual standard design value, µg/m³	11.8	12.3	11.9	N/A	12
State annual designation value, µg/m³	12	12	12	12	N/A
Estimated number of days above 24-hour NAAQS (35 µg/m³)[1]	3.2	6.1	2.9	N/A	N/A

Source: CARB, 2019.
Notes:
1 Most PM2.5 measurements are taken every six days; therefore, the number of days over the 24-hour standard in any year is estimated mathematically.
Key:
* = there was insufficient data available throughout the year to determine the value; µg/m³ = micrograms per cubic meter;
CAAQS = California Ambient Air Quality Standard; NAAQS = National Ambient Air Quality Standard; ppmv = parts per million by volume



Source: CARB, 2019.

Figure 3.2.1. Ten-Year Ozone Concentration Trends

The 24-hour and annual PM_{10} CAAQS were exceeded during the 2017 to 2019 monitoring period. The 24-hour and annual $PM_{2.5}$ NAAQS were also exceeded during the same period.

Intersection Analysis – CO Hot Spots

CO pollution can have localized impacts that require additional analysis. If traffic volumes and congestion along a roadway substantially change, localized concentrations of CO have the potential to adversely affect sensitive populations.

This study evaluated CO hot spots for the highest volume intersections for each Build Alternative. Under existing conditions, the highest peak hour-volume intersections in the DSA would be the intersection of Rosemead Boulevard and Washington Boulevard with 5,135 vehicles per hour, and Paramount Boulevard and Washington Boulevard with 5,089 vehicles per hour, which are both less than the BAAQMD screening threshold of 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited. Traffic volumes less than the BAAQMD screening criteria would not be expected to result in a significant CO hot spots impact, however if traffic quantities were to exceed this screening criteria, a CO hot spots analysis, including a microscale analysis for CO concentrations, must be prepared. Although both BAAQMD and the SCAQMD have promulgated general methods for the evaluation of microscale CO concentrations, since the Project would occur within SCAQMD jurisdiction, the SCAQMD criteria would be followed if required. The SCAQMD requires that the following steps be used to determine if a localized CO impact exists (SCAQMD 1993):

- Determine "2042 without Project Conditions" ambient concentration of CO emissions
- Estimate CO emissions from the Project by modeling

- Add the "2042 without Project Conditions" ambient concentration level of CO emissions to those generated by the Project
- Compare the total Project impact to the state 1-hour and 8-hour CO standards
- If modeling indicates a CO hot spot could occur, determine if any sensitive receptors are located in the area
- Identify the level of CO emissions at sensitive receptors
- Compare the level of CO emissions at sensitive receptors to the state 1-hour and 8-hour CO standards

The maximum ambient CO concentrations for 1-hour and 8-hour averaging periods in the DSA are 2.5 parts per million by volume (ppmv) and 2.0 ppmv, respectively. These values represent the maximum concentrations observed during the past three years of sampling in the Project vicinity. Future background concentrations may be estimated by multiplying monitored maximum ambient background conditions by the ratio of future and current traffic volumes and the ratio of future to current emission factors.

Existing Operational Emissions (Criteria Pollutants)

This study compiled emissions inventories for the existing conditions baseline year. Identified potential operational emission sources include regional traffic, operation of LRVs, operation of LRV stations, evaporation of VOC from parked vehicle fuel tanks at LRV stations, operation of any MSFs, and operation of any bus routes.

Regional Highway Traffic Emissions

Emission modeling summarized in this section includes the entire vehicle fleet mix for the SoCAB used in EMFAC and includes vehicle types such as passenger cars, trucks, buses, and motorcycles. This analysis uses the EMFAC2017 model to generate emission factors for these vehicle types. To extrapolate the daily traffic data that was modeled to an annual value, an annualization value of 318 days per year was used (CDM Smith/AECOM 2019). This value was used to adjust traffic for reduced travel time on weekends and holidays. **Table 3.2-7** provides a summary of highway (regional) traffic emissions in the DSA.

Table 3.2-7. Existing Conditions Highway Traffic Emissions

Category	Emissions					
	VOC	CO	NOx	SO_2	PM_{10}[1]	$PM_{2.5}$[1]
Emission Factor (g/mi)[2]	0.097	1.891	0.353	0.004	0.349	0.098
Daily Emissions (lbs/day)[3]	101,659	1,983,240	370,334	3,922	365,674	102,897
Annual Emissions (tpy)[3]	16,164	315,335	58,883	624	58,142	16,361

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 The emission factors for particulate matter (PM10 and PM2.5) include engine exhaust, tire wear, brake wear, and paved road dust.
2 The EMFAC emission factors are based on the SoCAB geographic area fleet mix and an average vehicle speed of 35 miles per hour (based on traffic modeling information).
3 Daily and annual emissions are based on a regional daily estimate of 475,761,000 VMT (CDM Smith/AECOM JV, 2021). An annualization factor of 318 days per year was used to estimate annual emissions.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

LRV Operation Emissions

No LRVs would operate in the DSA under 2042 without Project Conditions, and therefore baseline emissions from this source would be zero. Additionally, since LRVs would be powered by electricity, there would also be no direct emissions of criteria pollutants from this source under any future alternative. Thus, LRV-related emissions were not further considered for air quality impacts (see Section 3.7, Greenhouse Gas Emissions and the Eastside Transit Corridor Phase 2 Climate Change and Greenhouse Gases Impacts Report [Appendix H], which addresses potential climate-change impacts and indirect emissions of GHG from Project operations).

Station Operation Emissions

One at-grade LRV station located at the current alignment terminus at Atlantic Boulevard would operate in the DSA under 2042 without Project Conditions. However, since LRV stations would be powered by electricity, there would be no direct emissions of criteria pollutants from this source under 2042 without Project Conditions or the Build Alternatives. Thus, LRV station-related emissions were not further considered for air quality impacts (see Section 3.7, Greenhouse Gas Emissions and Appendix H, which addresses potential climate-change impacts and indirect emissions of GHG from Project operations).

Parking-Related Emissions

Under each Build Alternative, parking-related evaporative VOC emissions were analyzed for all Project-related parking facilities. Although parking at existing facilities would result in regional evaporative VOC emissions, the emissions from these existing sources would not substantially change as a result of the Project. Thus, parking-related emissions were not analyzed for existing conditions.

MSF Emissions

Under each Build Alternative, MSF-related emissions were analyzed for each Project MSF site option. No MSFs currently operate in the DSA. Thus, MSF-related emissions were not analyzed for existing conditions.

Bus Operations Emissions

No bus routes were projected to be substantially adjusted or altered due to implementation of the Project or its alternatives; therefore, emissions related to local bus routes were not considered in the estimated emissions under 2042 without Project Conditions or the Build Alternatives.

Total Operational Emissions (Criteria Pollutants)

Table 3.2-8 summarizes the total DSA operating emissions under existing conditions.

Table 3.2-8. Existing Conditions Total Operational Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Regional Traffic	101,659	1,983,240	370,334	3,922	365,674	102,897
Total	101,659	1,983,240	370,334	3,922	365,674	102,897
Annual Emissions (tpy)						
Regional traffic	16,164	315,335	58,883	624	58,142	16,361
Total	16,164	315,335	58,883	624	58,142	16,361

Source: CDM Smith/AECOM JV, 2019.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

3.2.5.3.3 Existing Health Risk Conditions

In May 2015, the SCAQMD released the Final Multiple Air Toxics Exposure Study IV (MATES IV), which was a comprehensive monitoring and evaluation study of ambient TAC levels in the SoCAB. MATES IV was a continuation of previous air toxics studies in the SoCAB, characterizing ambient risk levels across the region (SCAQMD 2015a).

Compared to the previous MATES III study, MATES IV found a decreasing risk from air toxics exposure, with population weighted risk levels down 57 percent in the MATES IV study period (2012) as compared to the MATES III study period (2005). However, the study determined that risks are still unacceptable, and higher near major sources of emissions, such as ports or major transportation corridors. Particulate exhaust from diesel engines (DPM) was the predominant TAC contributing to carcinogenic risk in the SoCAB, representing 80 percent of carcinogenic health risks. MATES IV underscores the continued need for focused regional emission reduction efforts, particularly for DPM.

The MATES IV study originally estimated population-weighted average individual carcinogenic risk throughout the SoCAB to be approximately 418 in one million (SCAQMD, 2015b). However, as the study was being prepared, the California Office of Environmental Health Hazard Assessment (OEHHA) adopted revised methods for estimating carcinogenic risk that more accurately accounted for age-based risk susceptibility and breathing rates. Taking those factors into consideration, population-weighted average individual carcinogenic risk was calculated to be 1,023 in one million (nearly 2.45 times higher than initially estimated in the MATES IV study). More heavily urbanized portions of the basin have higher average risks than less urban areas. The highest estimated individual

carcinogenic risk identified in MATES IV study areas in the immediate vicinity of the Project was estimated at 1,671 in one million.

3.2.6 Impact Evaluation

3.2.6.1 Impact AQ-1: Air Quality Plan

Impact AQ-1: Would a Build Alternative conflict with or obstruct implementation of the applicable air quality plan?

3.2.6.1.1 Alternative 1 Washington

The applicable air quality plan is the SCAQMD 2016 AQMP, prepared in support of the SIP and approved by CARB in April 2017. As indicated in the SCAQMD Handbook, a project is consistent with the AQMP if:

- The project does not result in an increase to the frequency or severity of an existing air quality violation;
- The project does not cause or contribute to new air quality violations;
- The project does not delay the timely attainment of the air quality standards or the interim emission reductions specified in the AQMP;
- The project is consistent with the population and employment growth projections upon which the AQMP forecasted emission levels are based;
- Project development is consistent with AQMP land use policies; and
- The Project is consistent with the applicable mitigation measures assumed in preparation of the AQMP.

The SCAQMD 2016 AQMP relied on transportation, land use, and growth assumptions included in SCAG's 2016-2040 RTP/SCS in the development of its growth and regional air quality projections. In both SCAG's current 2020-2045 RTP/SCS and the 2016-2040 RTP/SCS, the DSA was identified as a priority growth area for urban transit and the Project was identified as a major transit capital project. The Project was incorporated into regional growth projections and transportation strategies in both the 2020-2045 RTP/SCS and 2016-2040 RTP/SCS.

Operational and Construction Impacts

Under Alternative 1, the Metro L (Gold) Line would be extended from a relocated/reconfigured Atlantic station in East Los Angeles approximately 9.0 miles east to the city of Whittier. This alternative would involve the construction and subsequent operation of seven stations (one relocated/reconfigured and six new) and other ancillary facilities and an MSF (see **Section 3.2.6.1.4).** The Project would not introduce new population or housing growth in the DSA and any additional employment at Metro operated facilities would not disproportionately contribute to the growth projections in the 2020-2045 RTP/SCS or 2016-2040 RTP/SCS. The construction and subsequent operation of Alternative 1 would result in a reduction in regional passenger vehicle VMT of approximately 3,180,000 miles annually.

Table 3.2-9, **Table 3.2-10**, and **Table 3.2-15** present the regional and localized emissions under Alternative 1 with each MSF site option. As shown, emissions would remain below applicable SCAQMD thresholds for all criteria pollutants during both construction and operation of the Project and would therefore not contribute to new air quality violations or an increase in the frequency or severity of existing air quality violations. Under Alternative 1, regional passenger vehicle VMT and associated criteria pollutants would be reduced, consistent with the VMT-reducing objectives of the AQMP. The Project would not delay the timely attainment of air quality standards or interim emission reductions specified in the AQMP.

Therefore, operation and construction of Alternative 1 would not conflict with or obstruct implementation of the applicable air quality plan and impacts with respect to consistency with the applicable air quality plan would be less than significant.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, implementation of Alternative 1 with the Atlantic/Pomona Station Option would not introduce new population or housing growth, disproportionately contribute to the growth projections, or delay the timely attainment of air quality standards or interim emission reductions specified in the AQMP. Therefore, operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the applicable air quality plan and impacts with respect to consistency with the applicable air quality plan would be less than significant.

Montebello At-Grade Option

As with the base Alternative 1, implementation of Alternative 1 with the Montebello At-Grade Option would not introduce new population or housing growth, disproportionately contribute to the growth projections, or delay the timely attainment of air quality standards or interim emission reductions specified in the AQMP. Therefore, operation and construction of Alternative 1 with the Montebello At-Grade Option would not conflict with or obstruct implementation of the applicable air quality plan and impacts with respect to consistency with the applicable air quality plan would be less than significant.

3.2.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational and Construction Impacts

Base Alternative and Design Option

Operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not introduce new population or housing growth, disproportionately contribute to the growth projections in the 2020-2045 RTP/SCS or 2016-2040 RTP/SCS, or delay the timely attainment of air quality standards or interim emission reductions specified in the AQMP. As shown in **Table 3.2-11**, **Table 3.2-12**, and **Table 3.2-16**, emissions would remain below applicable SCAQMD thresholds for all criteria pollutants during both construction and operation of the Project and would therefore not contribute to new air quality violations or an increase in the frequency or severity of existing air quality violations. The construction and subsequent operation of Alternative 2 would result in a reduction to regional passenger vehicle VMT of approximately 1,590,000 miles annually. The

reduction in regional passenger vehicle VMT and associated criteria pollutants would be consistent with the VMT-reducing objectives of the AQMP. Therefore, operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the applicable air quality plan and impacts with respect to consistency with the applicable air quality plan would be less than significant.

3.2.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Options

Operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not introduce new population or housing growth, disproportionately contribute to the growth projections in the 2020-2045 RTP/SCS or 2016-2040 RTP/SCS, or delay the timely attainment of air quality standards or interim emission reductions specified in the AQMP. As shown in **Table 3.2-13**, **Table 3.2-14**, **Table 3.2-17**, emissions would remain below applicable SCAQMD thresholds for all criteria pollutants during both construction and operation of the Project and would therefore not contribute to new air quality violations or an increase in the frequency or severity of existing air quality violations. The construction and subsequent operation of Alternative 3 would result in a reduction to regional passenger vehicle VMT of approximately 2,544,000 miles annually. The reduction in regional passenger vehicle VMT and associated criteria pollutants would be consistent with the VMT-reducing objectives of the AQMP. Therefore, operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with or obstruct implementation of the applicable air quality plan and impacts with respect to consistency with the applicable air quality plan would be less than significant.

3.2.6.1.4 Maintenance and Storage Facilities

Operational and Construction Impacts

MSF Site Options and Design Option

The construction and subsequent operation of the Project alternatives with either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not conflict with or obstruct implementation of the applicable air quality plan and would result in reductions to regional VMT. Operation and construction of an MSF is essential in maintaining a reliable light rail system and was included in the assessment of the Project's consistency with the applicable air quality plan. Therefore, operation and construction of Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not conflict with or obstruct implementation of the applicable air quality plan and impacts with respect to consistency with the applicable air quality plan would be less than significant.

3.2.6.2 Impact AQ-2: Regional Criteria Pollutant Emissions

Impact AQ-2: Would a Build Alternative result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

3.2.6.2.1 Alternative 1 Washington

Operational Impacts

Operational criteria air pollutant emission sources under Alternative 1 include exhaust from motor vehicle VMT in the vicinity of the Project, parking facility maintenance, parked vehicle fuel evaporation, and MSF operations which are essential in maintaining a reliable light rail system. Emissions associated with exhaust from motor vehicle VMT, which would be reduced under Alternative 1 as compared to 2042 without Project Conditions, were estimated to compare against the projected VMT-related emissions under 2042 without Project Conditions to properly account for emissions reductions associated with the Project. Emissions from powering the electric LRT vehicles were not assumed to occur locally and therefore, were not estimated. As presented in **Table 3.2-9**, there would be a net reduction in operational regional emissions of CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ under Alternative 1. While there would be a net increase in emissions of VOC from operation of Alternative 1, those emissions would be below the SCAQMD threshold and impacts with respect to operational regional criteria pollutant emissions would be less than significant. The emission reductions would be driven by the reduction in motor vehicle VMT associated with ridership of the Metro L (Gold) Line extension.

Table 3.2-9. Alternative 1 Operational Regional Criteria Pollutant Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Alternative 1 (2042)						
Regional Traffic	34,734	1,005,436	154,406	3,180	445,297	121,800
MSF Operations – Commerce Site Option[1]	4.0	<0.1	<0.1	<0.1	<0.1	<0.1
MSF Operations – Montebello Site Option[1]	4.0	<0.1	<0.1	<0.1	<0.1	<0.1
Parking Facility Maintenance and Parked Vehicle Fuel Evaporation	0.5	--	--	--	--	--
Maximum Total[2]	34,738	1,005,436	154,406	3,180	445,297	121,800
2042 without Project Conditions						
Regional Traffic	34,734	1,005,454	154,409	3,180	445,304	121,803
Maximum Total	34,734	1,005,454	154,409	3,180	445,304	121,803
Alternative 1 (2042) compared to 2042 without Project Conditions						
Net Project Emissions[3]	4	(17)	(3)	(<1)	(8)	(2)
SCAQMD Threshold	55	550	55	150	150	55
Exceeds Threshold	No	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Only one MSF site option would be selected.
2 The maximum total shows the maximum peak daily emissions associated with implementation of either the Commerce or Montebello MSF site options.
3 Emission reductions (beneficial impacts) are shown in parentheses.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

Design Options

Atlantic/Pomona Station Option

The operation of the base Alternative 1 would result in a net reduction in operational regional criteria air pollutant emissions of CO, NOx, SO_2, PM_{10}, and $PM_{2.5}$ and a small net increase in operational regional criteria air pollutant emissions of VOC, and impacts with respect to operational regional criteria pollutant emissions would be less than significant. Implementation of Alternative 1 with the Atlantic/Pomona Station Option would result in no meaningful change to operational regional criteria air pollutant emissions as compared to the base Alternative 1 (identified in **Table 3.2-9**). Therefore, impacts of Alternative 1 with the Atlantic/Pomona Station Option with respect to operational regional criteria pollutant emissions would be less than significant.

Montebello At-Grade Option

The operation of the base Alternative 1 would result in a net reduction in operational regional criteria air pollutant emissions of CO, NOx, SO_2, PM_{10}, and $PM_{2.5}$ and a small net increase in operational regional criteria air pollutant emissions of VOC, and impacts with respect to operational regional

criteria pollutant emissions would be less than significant. Implementation of Alternative 1 with the Montebello At-Grade Option would result in no meaningful change to operational regional criteria air pollutant emissions as compared to the base Alternative 1 (identified in **Table 3.2-9**). Therefore, impacts from the operation of Alternative 1 with the Montebello At-Grade Option with respect to operational regional criteria pollutant emissions would be less than significant.

Construction Impacts

Construction criteria air pollutant emission sources under Alternative 1 include exhaust from construction worker motor vehicles traveling to and from the Project, exhaust from delivery and hauling trucks traveling to and from the Project construction site, exhaust from heavy-duty construction equipment operating on-site, and fugitive construction emissions. As presented in **Table 3.2-10**, construction of Alternative 1 with construction of either MSF site option would result in peak daily regional emissions that would be less than the SCAQMD regional significance thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant.

Table 3.2-10. Alternative 1 Construction Regional Criteria Pollutant Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Montebello Segment Only – Base Alternative 1 and Design Option[1]						
Base Alternative 1 (aerial)	1.5	12.2	11.9	<0.1	1.0	0.6
At-Grade Option	1.5	15.2	13.2	<0.1	2.3	1.3
MSF Site Options Only[2]						
Commerce MSF[2]	6.7	15.3	11.2	<0.1	1.9	0.8
Montebello MSF[2]	6.7	15.3	11.2	<0.1	1.9	0.8
Alternative 1 Overall Construction (including all Project elements and an MSF)[3]						
Total[3]	21.2	130.6	89.4	0.3	11.7	6.4
SCAQMD Threshold	75	550	100	150	150	55
Exceeds Threshold	No	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Peak daily emissions associated with construction of the Montebello segment of the alignment.
2 Only one MSF site option would be selected.
3 Totals represent the peak day (maximum overlapping) construction emissions for all Project-elements, including an MSF, the greater of any staging area options, and the greater of any design options or their corresponding portion of the base Alternative. See Attachment A for daily construction emissions associated with each Project element.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

The emissions presented in **Table 3.2-10**, **Table 3.2-12**, and **Table 3.2-14** were estimated using default CalEEMod emission factors with no mitigation applied. Reductions in fugitive dust emissions (affecting PM_{10} and $PM_{2.5}$ emissions) associated with three-times per day watering as required by SCAMQD Rule 403 were included in the emission calculations. SCAQMD thresholds would not be exceeded by construction activities under Alternative 1. Nonetheless, additional construction BMPs set forth in Metro's Green Construction Policy would further reduce construction-related emissions

beyond what is presented. Since certain construction details have not yet been determined, the following BMPs were not accounted for in the construction emission estimates. These BMPs include, but are not limited to: the required use of renewable diesel fuel in construction equipment; the required use of Tier 4 off-road emission standard equipment as regionally available; the required use of USEPA 2007 on-road emission standard compliant trucks; the limitation of vehicle idling to 5 minutes or fewer when not in use; and the use of grid-power in lieu of diesel generators where available. In particular, the use of Tier 4 off-road emission standard equipment would result in reduced emissions of NOx, since the Tier 3 (next highest after Tier 4) emission standard is an order of magnitude higher than the Tier 4 standard (i.e., use of exclusively Tier 4 equipment could reduce direct NOx emissions by up to 90 percent).

Design Options

Atlantic/Pomona Station Option

Implementation of Alternative 1 with the Atlantic/Pomona Station Option would result in daily construction regional criteria pollutant emissions that would be the same as those of the base Alternative 1. While the Atlantic/Pomona Station Option would be located at a different position along the alignment and approximately 50 additional feet of underground alignment would be required to complete its construction, that excavation would be completed with the electrically powered TBM and would not result in a change in project peak day emissions. Moreover, the magnitude of excavation activity which would be required to implement the Atlantic/Pomona Station Option would be essentially the same as that required under the base Alternative 1 for the excavation of the TBM receiving pit and underground-to-at-grade transition of the alignment. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in daily construction regional emissions that would be less than the SCAQMD thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant.

Montebello At-Grade Option

Implementation of Alternative 1 with the Montebello At-Grade Option would result in daily construction regional criteria pollutant emissions that would be greater than those of the base Alternative 1 as presented in **Table 3.2-10**. Construction of the at-grade segment in Montebello under the Montebello At-Grade Option has a higher peak day emission than an aerial configuration at this location due to a larger count of heavy-duty equipment needed during the peak day. This additional equipment is associated with the greater amount of roadway demolition, modification, or reconstruction necessary for the at-grade construction as compared to aerial construction. However, construction of the Montebello At-Grade Option is not expected to overlap with other Project elements to contribute to overall peak day regional emissions of VOC, NO_X, CO, SO_2, PM_{10}, or $PM_{2.5}$. Therefore, as presented in **Table 3.2-10**, construction of Alternative 1 with the Montebello At-Grade Option would result in daily construction regional emissions that would be less than the SCAQMD thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant.

3.2.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would result in a net reduction in operational regional criteria air pollutant emissions. As presented in **Table 3.2-11**, there would be a net reduction in operational regional emissions of CO, NO_X, SO_2, PM_{10}, and $PM_{2.5}$ and a slight increase in emissions of VOC under the base Alternative 2. However, emissions of VOC would be less than the SCAQMD threshold and impacts with respect to operational regional criteria pollutant emissions would be less than significant. Implementation of Alternative 2 with the Atlantic/Pomona Station Option would result in no meaningful change to operational regional criteria air pollutant emissions as compared to the base Alternative 2. Emission reductions would be driven by the reduction in motor vehicle VMT associated with ridership of the Metro L (Gold) Line extension. Therefore, impacts of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option with respect to operational regional criteria pollutant emissions would be less than significant.

Table 3.2-11. Build Alternative 2 Operational Regional Criteria Pollutant Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Alternative 2 (2042)						
Regional Traffic	34,734	1,005,445	154,407	3,180	445,301	121,802
MSF Operations – Commerce Site Option	4.0	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Total	34,738	1,005,445	154,407	3,180	445,301	121,802
2042 without Project Conditions						
Regional Traffic	34,734	1,005,454	154,409	3,180	445,304	121,803
Maximum Total	34,734	1,005,454	154,409	3,180	445,304	121,803
Alternative 2 (2042) compared to 2042 without Project Conditions						
Net Project Emissions[1]	4	(9)	(1)	(<1)	(4)	(1)
SCAQMD Threshold	55	550	55	150	150	55
Exceeds Threshold	No	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Emission reduction (beneficial impacts) are shown in parentheses.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

Construction Impacts

Base Alternative and Design Option

As presented in **Table 3.2-12**, construction of the base Alternative 2 would result in peak daily regional emissions that would be less than the SCAQMD regional significance thresholds. Implementation of Alternative 2 with the Atlantic/Pomona Station Option would result in daily construction regional criteria pollutant emissions that would be the same as those of the base Alternative 2. Additional construction BMPs set forth in Metro's Green Construction Policy would further reduce construction-related emissions beyond what is presented. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in daily construction regional emissions that would be less than the SCAQMD thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant.

Table 3.2-12. Alternative 2 Construction Regional Criteria Pollutant Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
MSF Site Options Only						
Commerce MSF	6.7	15.3	11.2	<0.1	1.9	0.8
Alternative 2 Overall Construction (including all Project elements and an MSF)[1]						
Maximum Total[1]	11.2	93.5	81.8	0.2	7.3	4.1
SCAQMD Threshold	75	550	100	150	150	55
Exceeds Threshold	No	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Totals represent the peak day (maximum overlapping) construction emissions for all Project-elements including the MSF and the greater of any staging area options. See Attachment A for daily construction emissions associated with each Project element.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

3.2.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative with Design Option

The operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a net reduction in operational regional criteria air pollutant emissions. As presented in **Table 3.2-13**, there would be a net reduction in operational regional emissions of CO, NOx, SO_2, PM_{10}, and $PM_{2.5}$ and a slight increase in emissions of VOC under the base Alternative 3. However, emissions of VOC would be less than the SCAQMD threshold and impacts with respect to operational regional criteria pollutant emissions would be less than significant. Implementation of Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in no meaningful change to operational regional criteria air pollutant emissions as compared to the base Alternative 3. Emission reductions would be driven by the reduction in motor vehicle VMT associated with ridership of the Metro L (Gold) Line extension.

Therefore, impacts of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with respect to operational regional criteria pollutant emissions would be less than significant.

Table 3.2-13. Build Alternative 3 Operational Regional Criteria Pollutant Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NOx	SO_2	PM_{10}	$PM_{2.5}$
Build Alternative 3 (2042)						
Regional Traffic	34,734	1,005,440	154,406	3,180	445,298	121,801
MSF Operations – Commerce Site Option[1]	4.0	<0.1	<0.1	<0.1	<0.1	<0.1
MSF Operations – Montebello Site Option[1]	4.0	<0.1	<0.1	<0.1	<0.1	<0.1
Parking Facility Maintenance and Parked Vehicle Fuel Evaporation	0.1	--	--	--	--	--
Maximum Total[2]	34,738	1,005,440	154,406	3,180	445,298	121,801
2042 without Project Conditions						
Regional Traffic	34,734	1,005,454	154,409	3,180	445,304	121,803
Maximum Total	34,734	1,005,454	154,409	3,180	445,304	121,803
Build Alternative 3 (2042) compared to 2042 without Project Conditions						
Net Project Emissions[3]	4	(14)	(2)	(0)	(6)	(2)
SCAQMD Threshold	55	550	55	150	150	55
Exceeds Threshold	No	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Only one MSF site option would be selected.
2 The maximum total shows the maximum peak daily emissions associated with implementation of either the Commerce or Montebello MSF site options.
3 Emission reductions (beneficial impacts) are shown in parentheses.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

Construction Impacts

Base Alternative and Design Options

As presented in **Table 3.2-14**, construction of the base Alternative 3 would result in peak daily regional emissions that would be less than the SCAQMD regional significance thresholds. Implementation of Alternative 3 with the Atlantic/Pomona Station Option would result in daily construction regional criteria pollutant emissions that would be the same as those of the base Alternative 3. Implementation of Alternative 3 with the Montebello At-Grade Option would result in daily construction regional criteria pollutant emissions that would be greater than those of the base Alternative 3 due to a larger count of heavy-duty equipment needed during the peak day to construct the at-grade segment. This additional equipment is associated with the greater amount of roadway demolition, modification, or reconstruction necessary for the at-grade construction as compared to aerial construction. However,

construction of the Montebello At-Grade Option is not expected to overlap with other project elements to contribute to overall peak day regional emissions of VOC, NO_x, CO, SO_2, PM_{10}, or $PM_{2.5}$. Additional construction BMPs set forth in Metro's Green Construction Policy would further reduce construction-related emissions beyond what is presented. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in daily construction regional emissions that would be less than the SCAQMD thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant.

Table 3.2-14. Build Alternative 3 Construction Regional Criteria Pollutant Emissions

Emission Source	Daily Emissions (lbs/day)					
	VOC	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$
Montebello Segment Only – Base Alternative 3 and Design Option[1]						
Base Alternative (aerial)	1.5	12.2	11.9	<0.1	1.0	0.6
At-Grade Option	1.5	15.2	13.2	<0.1	2.3	1.3
MSF Site Options Only[2]						
Commerce MSF	6.7	15.3	11.2	<0.1	1.9	0.8
Montebello MSF	6.7	15.3	11.2	<0.1	1.9	0.8
Alternative 3 Overall Construction (including all Project elements and an MSF)						
Maximum Total[3]	15.1	96.5	81.8	0.2	7.3	4.1
SCAQMD Threshold	75	550	100	150	150	55
Exceeds Threshold	No	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Peak daily emissions associated with construction of the Montebello segment of the alignment.
2 Only one MSF site option would be selected.
3 Totals represent the peak day (maximum overlapping) construction emissions for all Project-elements including an MSF, the greater of any staging area options, and the greater of any design options or their corresponding portion of the base Alternative. See Attachment A for daily construction emissions associated with each Project element.
Key:
CO = carbon monoxide; g/mi = grams per mile; lbs/day = pounds per day; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compounds

3.2.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

As described above, the operation of the Project, including the operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option, would not result in regional criteria pollutant emissions that would exceed SCAQMD thresholds. Operation of an MSF is essential in maintaining a reliable light rail system and MSF emissions were included in the assessment of regional criteria pollutant emissions. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in regional criteria pollutant emissions that would exceed SCAQMD thresholds and impacts with respect to regional criteria pollutant emissions would be less than significant.

Construction Impacts

MSF Site Options and Design Option

As described above, the construction of the Project, including the construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in regional criteria pollutant emissions that would exceed SCAQMD thresholds and impacts with respect to regional criteria pollutant emissions would be less than significant.

3.2.6.3 Impact AQ-3: Localized Pollutant Concentrations

Impact AQ-3: Would a Build Alternative expose sensitive receptors to substantial pollutant concentrations?

3.2.6.3.1 Alternative 1 Washington

Operational Impacts

Operational criteria air pollutant emission sources under Alternative 1 with the potential to result in substantial pollutant concentrations include exhaust from motor vehicle VMT. Within the Project's urban setting, the primary localized operational pollutant of concern is CO.

The highest CO concentrations are typically found close to congested roadways. These CO points of peak concentrations, known as CO Hot Spots, are a function of roadway congestion and hourly traffic volumes along local roadway segments, particularly at intersections. Although the Project would reduce regional VMT, and therefore reduce traffic volumes at roadway intersections in the DSA, certain local roadway intersections would see increased traffic volumes as a result of the Project. The highest-volume intersections identified in the DSA under Alternative 1 are the intersection of Pioneer Boulevard and Washington Boulevard with 6,070 vehicles per hour, and the intersection of Norwalk Boulevard and Washington Boulevard with 6,046 vehicles per hour. In the 2017 update to the *BAAQMD CEQA Guidelines*, BAAQMD indicated that intersections with traffic volumes less than 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadways), would not result in substantial CO concentrations. Since the highest-volume intersections identified in the DSA would have traffic volumes below that of the BAAQMD screening threshold, the operation of Alternative 1 would not expose sensitive receptors to substantial CO concentrations and impacts with respect to operational localized criteria pollutant emissions would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would result in no meaningful change to operational localized criteria air pollutant emissions as compared to the base Alternative 1. Since the highest-volume intersections identified in the DSA would have traffic volumes below that of the BAAQMD screening threshold, the operation of Alternative 1 with the Atlantic/Pomona Station

Option would not expose sensitive receptors to substantial CO concentrations and impacts with respect to operational localized criteria pollutant emissions would be less than significant.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would result in no meaningful change to operational localized criteria air pollutant emissions as compared to the base Alternative 1. Since the highest-volume intersections identified in the DSA would have traffic volumes below that of the BAAQMD screening threshold, the operation of Alternative 1 with the Montebello At-Grade Option would not expose sensitive receptors to substantial CO concentrations and impacts with respect to operational localized criteria pollutant emissions would be less than significant.

Construction Impacts

Construction criteria air pollutant emission sources under Alternative 1 with the potential to result in substantial pollutant concentrations include exhaust from heavy-duty construction equipment operating on-site and fugitive construction emissions. Consistent with SCAQMD LST guidance, off-site emissions, such as those from worker vehicle and hauling or delivery vehicle exhaust, would be distributed over the DSA and were not considered in the evaluation of localized impacts.

As shown in **Table 3.2-15**, construction of Alternative 1 would result in peak daily on-site emissions that would be less than the SCAQMD LSTs and impacts with respect to construction localized criteria pollutant concentrations would be less than significant.

Table 3.2-15. Build Alternative 1 Construction Localized Emissions

Emission Source	Daily On-Site Emissions (lbs/day)			
	CO	NO_x	PM_{10}	$PM_{2.5}$
Montebello Segment – Base Alternative and Design Option[1]				
Base Alternative 1 (aerial)	9.7	11.1	0.5	0.4
At-Grade Option	13.6	11.4	1.8	1.1
MSF Site Options[2]				
Commerce MSF	12.3	10.4	1.1	0.5
Montebello MSF	12.3	10.4	1.1	0.5
Alternative 1 Overall Construction				
Maximum Total[3]	107.8	82.3	6.6	4.8
SCAQMD LST[4]	1,480	172	14.0	7.0
Exceeds Threshold	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Localized emissions associated with construction of the Montebello segment of the alignment.
2 Only one MSF site option would be selected.
3 Totals represent the maximum overlapping construction emissions for all Project-elements that may overlap the overall construction peak day, including staging area options and the Montebello At-Grade Option that has greater localized construction emissions than the base Alternative 1. See Attachment D for hot spots calculations.
4 Thresholds are for the Southeast Los Angeles County SRA assuming a 25-meter receptor distance and a 5-acre site.
Key:
CO = carbon monoxide; lbs/day = pounds per day; LST = localized significance threshold; MSF = maintenance and storage facility; NO_x = nitrogen oxides; $PM_{2.5}$ = fine particulate matter; PM_{10} = inhalable particulate matter; SRA = source receptor area

Design Options

Atlantic/Pomona Station Option

Implementation of Alternative 1 with the Atlantic/Pomona Station Option would result in daily construction localized criteria pollutant emissions that would be the same as those of the base Alternative 1. While the Atlantic/Pomona Station Option would be located at a different position along the alignment and approximately 50 additional feet of underground alignment would be required to complete its construction, that excavation would be completed with the electrically powered TBM and would not result in a change in project peak day emissions. Moreover, the magnitude of excavation activity which would be required to implement the Atlantic/Pomona Station Option would be essentially the same as that required under the base Alternative 1 for the excavation of the TBM receiving pit and underground-to-at-grade transition of the alignment. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in daily construction localized emissions that would be less than the SCAQMD thresholds and impacts with respect to construction localized criteria pollutant emissions would be less than significant.

Montebello At-Grade Option

Implementation of the Montebello At-Grade Option would result in localized criteria pollutant emissions that would be greater than those of base Alternative 1. Similar to construction of the base Alternative 1, the Montebello At-Grade Option would be expected to overlap with other project elements to contribute to overall peak day regional emissions of NO_X, CO, PM_{10}, or $PM_{2.5}$. However, as presented in **Table 3.2-15**, construction of Alternative 1 with the Montebello At-Grade Option would result in construction localized emissions that would be less than the SCAQMD thresholds and impacts with respect to construction localized criteria pollutant concentrations would be less than significant.

3.2.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Operational criteria air pollutant emission sources under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option with the potential to result in substantial pollutant concentrations include exhaust from motor vehicle VMT. Within the Project's urban setting, the primary localized pollutant of concern is CO. The CO points of peak concentrations, known as CO Hot Spots, are a function of roadway congestion and hourly traffic volumes along local roadway segments, particularly at intersections. Although the Project would reduce regional VMT, and therefore reduce traffic volumes at roadway intersections in the DSA, certain local roadway intersections would see increased traffic volumes as a result of the project. The highest-volume intersections identified in the DSA were the intersection of Pioneer Boulevard and Washington Boulevard with 6,070 vehicles per hour, and the intersection of Norwalk Boulevard and Washington Boulevard with 6,046 vehicles per hour. In the 2017 update to the *BAAQMD CEQA Guidelines*, BAAQMD indicated that intersections with traffic volumes less than 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadways), would not result in substantial CO concentrations. Operation of Alternative 2 with the Atlantic/Pomona Station Option would result in no meaningful change to operational localized criteria air pollutant emissions as compared to operation of the base Alternative 2. Since the highest-volume intersections identified in the DSA would have traffic volumes

below that of the BAAQMD screening threshold, the operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not expose sensitive receptors to substantial CO concentrations and impacts with respect to operational localized criteria pollutant emissions would be less than significant.

Construction Impacts

Base Alternative and Design Option

Construction criteria air pollutant emission sources under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option include exhaust from heavy-duty construction equipment operating on-site and fugitive construction emissions. Consistent with SCAQMD LST guidance, off-site emissions, such as those from worker vehicle and hauling or delivery vehicle exhaust, would be distributed over the DSA and were not considered in the evaluation of localized impacts.

As presented in **Table 3.2-16,** the construction of the base Alternative 2 would result in construction localized criteria air pollutant emissions that would be less than the SCAQMD thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant. Implementation of Alternative 2 with the Atlantic/Pomona Station Option would result in daily construction localized criteria pollutant emissions that would be the same as those of the base Alternative 2. Excavation for the Atlantic/Pomona Station Option would be completed with the electrically powered TBM and would not result in a change in project peak day emissions. Additionally, the magnitude of excavation required to implement the Atlantic/Pomona Station Option would be essentially the same as the excavation required to implement the base Alternative 2. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in daily construction localized emissions that would be less than the SCAQMD thresholds and impacts with respect to construction localized criteria pollutant emissions would be less than significant.

Table 3.2-16. Build Alternative 2 Construction Localized Emissions

Emission Source	Daily On-Site Emissions (lbs/day)			
	CO	NOx	PM_{10}	$PM_{2.5}$
MSF Site Options				
Commerce MSF	12.3	10.4	1.1	0.5
Alternative 2 Overall Construction				
Maximum Total[1]	80.6	72.7	3.7	3.0
SCAQMD LST[2]	1,480	172	14.0	7.0
Exceeds Threshold	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Totals represent the maximum overlapping construction emissions for all Project-elements including the greater of any alternative staging options, which may overlap the overall construction peak day. See Attachment D for hot spots calculations.
2 Thresholds are for the Southeast Los Angeles County SRA assuming a 25-meter receptor distance and a 5-acre site.
Key:
CO = carbon monoxide; lbs/day = pounds per day; LST = localized significance threshold; MSF = maintenance and storage facility; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SRA = source receptor area

3.2.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operational criteria air pollutant emission sources under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option include exhaust from motor vehicle VMT. Within the Project's urban setting, the primary localized pollutant of concern is CO. The CO points of peak concentrations, known as CO Hot Spots, are a function of roadway congestion and hourly traffic volumes along local roadway segments, particularly at intersections. Although the Project would reduce regional VMT, and therefore reduce traffic volumes at roadway intersections in the DSA, certain local roadway intersections would see increased traffic volumes as a result of the Project. The highest-volume intersections identified in the DSA were the intersection of Pioneer Boulevard and Washington Boulevard with 6,070 vehicles per hour, and the intersection of Norwalk Boulevard and Washington Boulevard with 6,046 vehicles per hour. In the 2017 update to the *BAAQMD CEQA Guidelines*, BAAQMD indicated that intersections with traffic volumes less than 44,000 vehicles per hour, or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadways), would not result in substantial CO concentrations. Operation of Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in no meaningful change to operational localized criteria air pollutant emissions as compared to operation of the base Alternative 3. Since the highest-volume intersections identified in the DSA would have traffic volumes below that of the BAAQMD screening threshold, the operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not expose sensitive receptors to substantial CO concentrations and impacts with respect to operational localized criteria pollutant concentrations would be less than significant.

Construction Impacts

Base Alternative and Design Options

Construction criteria air pollutant emission sources under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option include exhaust from heavy-duty construction equipment operating on-site and fugitive construction emissions. Consistent with SCAQMD guidance, off-site emissions, such as those from worker vehicle and hauling or delivery vehicle exhaust, would be distributed over the DSA and were not considered in the evaluation of localized impacts.

As presented in **Table 3.2-17,** the construction of the base Alternative 3 would result in construction localized criteria air pollutant emissions that would be less than the SCAQMD thresholds and impacts with respect to construction regional criteria pollutant emissions would be less than significant. Implementation of Alternative 3 with the Atlantic/Pomona Station Option would result in daily construction localized criteria pollutant emissions that would be the same as those of the base Alternative 3. Excavation for the Atlantic/Pomona Station Option would be completed with the electrically powered TBM and would not result in a change in project peak day emissions. Additionally, the magnitude of excavation to implement the Atlantic/Pomona Station Option would be essentially the same as excavation required to implement the base Alternative 3. Implementation of the Montebello At-Grade Option would result in localized criteria pollutant emissions that would be

greater than those of the base Alternative 3. However, as presented in **Table 3.2-17**, construction of Alternative 3 with the Montebello At-Grade Option would result in construction localized emissions that would be less than the SCAQMD thresholds. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in daily construction localized emissions that would be less than the SCAQMD thresholds and impacts with respect to construction localized criteria pollutant emissions would be less than significant.

Table 3.2-17. Build Alternative 3 Construction Localized Emissions

Emission Source	Daily On-Site Emissions (lbs/day)			
	CO	NOx	PM_{10}	$PM_{2.5}$
Montebello Segment – Base Alternative and Design Option[1]				
Base Alternative 1 (aerial)	9.7	11.1	0.5	0.4
At-Grade Option	13.6	11.4	1.8	1.1
MSF Site Options[2]				
Commerce MSF	12.3	10.4	1.1	0.5
Montebello MSF	12.3	10.4	1.1	0.5
Alternative 3 Overall Construction				
Maximum Total[3]	85.9	75.0	4.4	3.2
SCAQMD LST[4]	1,480	172	14.0	7.0
Exceeds Threshold	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Localized emissions associated with construction of the Montebello segment of the alignment.
2 Only one MSF site option would be selected.
3 Totals represent the maximum overlapping construction emissions for all Project-elements that may overlap the overall construction peak day, including staging area options and the Montebello At-Grade Option that has greater localized construction emissions than the base Alternative 3. See Attachment D for hot spots calculations.
4 Thresholds are for the Southeast Los Angeles County SRA assuming a 25-meter receptor distance and a 5-acre site.
Key:
CO = carbon monoxide; lbs/day = pounds per day; LST = localized significance threshold; MSF = maintenance and storage facility; NOx = nitrogen oxides; PM_{10} = inhalable particulate matter; $PM_{2.5}$ = fine particulate matter; SRA = source receptor area

3.2.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option, would not result in localized criteria pollutant emissions that would exceed the applicable screening criteria. Operation of an MSF is essential in maintaining a reliable light rail system and MSF emissions were included in the assessment of regional criteria pollutant emissions. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not substantially contribute to localized pollutant concentration impacts. Impacts with respect to localized criteria pollutant concentrations would be less than significant.

Construction Impacts

MSF Site Options and Design Option

The construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in localized criteria pollutant impacts that would exceed SCAQMD LST thresholds and impacts with respect to regional criteria pollutant emissions would be less than significant.

3.2.6.4 Impact AQ-4: Other Emissions

Impact AQ-4: Would a Build Alternative result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

3.2.6.4.1 Alternative 1 Washington

Operational Impacts

Other operational emission sources under Alternative 1 with the potential to adversely affect a substantial number of people include waste from passengers accessing the stations.

SCAQMD has established Rule 402 (Nuisance), which prevents nuisance odor conditions through the establishment of odor complaint tracking systems and other requirements. Typical sources of potentially-nuisance odors include agricultural uses, wastewater treatment facilities, food processing and chemical plants, landfills, and refineries. Trash receptacles at stations would be a relatively unsubstantial source of odors and would be subject to regular servicing, maintenance, and cleaning as to prevent unpleasant odors at the station, and the operation of Alternative 1 would not result in unpleasant odors that would affect a substantial number of people.

Therefore, operation of Alternative 1 would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Design Options

Atlantic/Pomona Station Option

The operation of Alternative 1 with the Atlantic/Pomona Station Option would comply with applicable rules established for the control of odors. Therefore, operation of Alternative 1 with Atlantic/Pomona Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Montebello At-Grade Option

The operation of Alternative 1 with the Montebello At-Grade Option would comply with applicable rules established for the control of odors. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Construction Impacts

Other construction emission sources under Alternative 1 with the potential to adversely affect a substantial number of people include odors from diesel vehicle exhaust.

Diesel vehicle exhaust has a distinctive odor and the use of diesel-fueled equipment during construction would have the potential to generate near-field odors that may be considered unpleasant to certain individuals. Construction of Alternative 1 would occur over a broad area and would be completed in sequential segments, therefore a receptor's exposure to potential unpleasant construction-related near-field odors would be temporary and short-term. Due to the temporary and highly mobile nature of project construction, the construction of Alternative 1 would not result in unpleasant odors that would affect a substantial number of people.

Therefore, construction of Alternative 1 would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Design Options

Atlantic/Pomona Station Option

The construction of Alternative 1 with the Atlantic/Pomona Station Option would result in odors that would be short term, highly mobile, and controlled. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Montebello At-Grade Option

The construction of Alternative 1 with the Montebello At-Grade Option would result in odors that would be short term, highly mobile, and controlled. Thus, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

3.2.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative with Design Option

Other operational emission sources under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option with the potential to adversely affect a substantial number of people include waste from passengers accessing the stations.

SCAQMD has established Rule 402 (Nuisance), which prevents nuisance odor conditions through the establishment of odor complaint tracking systems and other requirements. Trash receptacles at stations would be a relatively unsubstantial source of odors and would be subject to regular servicing, maintenance, and cleaning as to prevent unpleasant odors at the stations, and operations would not result in unpleasant odors that would affect a substantial number of people.

Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Construction Impacts

Base Alternative with Design Option

Other construction emission sources under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option with the potential to adversely affect a substantial number of people include odors from diesel vehicle exhaust.

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would occur over a broad area and would be completed in sequential segments; therefore, a receptor's exposure to potential unpleasant construction-related near-field odors, such as diesel vehicle exhaust, would be temporary and short-term and would not affect a substantial number of people.

Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

3.2.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative with Design Option

Other operational emission sources under base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with the potential to adversely affect a substantial number of people include waste from passengers accessing the stations.

SCAQMD has established Rule 402 (Nuisance), which prevents nuisance odor conditions through the establishment of odor complaint tracking systems and other requirements. Trash receptacles at stations would be a relatively unsubstantial source of odors and would be subject to regular servicing, maintenance, and cleaning as to prevent unpleasant odors at the stations, and operations would not result in unpleasant odors that would affect a substantial number of people.

Thus, operation of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Construction Impacts

Base Alternative with Design Option

Other construction emission sources under base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with the potential to adversely affect a substantial number of people include odors from diesel vehicle exhaust.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would occur over a broad area and would be completed in sequential segments; therefore, a receptor's exposure to potential unpleasant construction-related near-field odors, such as diesel vehicle exhaust, would be temporary and short-term and would not affect a substantial number of people.

Thus, construction of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

3.2.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not be expected to generate substantial odors. Operational activities located at the MSF would include the use of common household cleaners, paints, adhesives, lubricants, and other common materials necessary to maintain LRT vehicles. These materials are not anticipated to generate odors detectable beyond the MSF property line. Therefore, operation of an MSF would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

Construction Impacts

MSF Site Options and Design Option

While construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would generate odors associated with diesel vehicle exhaust, impacts would be temporary and would not be expected to extend beyond the site boundary for substantial periods of time. Thus, construction of an MSF would have less than significant impacts with respect to other emissions (such as those leading to odors) with the potential to adversely affect a substantial number of people.

3.2.6.5 Impact HR-1: Human Health Risks

HR-1: Would a Build Alternative expose sensitive receptors to TAC that would be likely to cause a substantial increase in human health risks?

3.2.6.5.1 Alternative 1 Washington

Operational Impacts

Operational TAC emission sources under Alternative 1 with the potential to cause a substantial increase in human health risks include exhaust from motor vehicle VMT. As indicated in **Section 3.2.6.1.1**, regional emissions of PM_{10} would be reduced under Alternative 1 while regional emissions of VOC would be increased. TAC are classified either as organic (a subset of VOC) or particulate (a subset of PM_{10}) compounds to which exposure can contribute to short-term (acute), long-term (chronic), or carcinogenic human health hazards. Since emissions of PM_{10} would decrease from the operation of the Project, exposure to TAC from PM_{10} for residents living and working within the DSA would also decrease. The primary TAC of concern for this analysis is DPM, a subset of PM_{10} emissions that drives carcinogenic risks throughout the region. Although emissions of VOC would increase from the operation of the Project, exposure to TAC from VOC for residents living and working within the DSA would not substantially increase. VOC emission increases would be driven by the use of low-TAC content consumer products, including cleaners, adhesives, and paints at the MSF. Additionally, the MSF location would be in commercial and industrial areas away from residences and other sensitive receptors. High TAC-content VOC emissions, such as those from vehicle exhaust, would be decreased alongside PM_{10} emissions proportional to the regional reductions in VMT. Therefore, the operation of Alternative 1 would not expose sensitive receptors to TAC that would be likely to cause a substantial increase in human health risks and impacts with respect to operational human health risk would be less than significant.

Design Options

Atlantic/Pomona Station Option

Similar to the base Alternative 1, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a reduction in relevant TAC emissions and impacts with respect to operational human health risk would be less than significant.

Montebello At-Grade Option

Similar to the base Alternative 1, operation of Alternative 1 with the Montebello At-Grade Option would result in a reduction in relevant TAC emissions and impacts with respect to operational human health risk would be less than significant.

Construction Impacts

Construction TAC emission sources under Alternative 1 with the potential to cause a substantial increase in human health risks include exhaust from heavy-duty construction equipment operating on-site and fugitive construction emissions. Off-site emissions, such as those from worker vehicle and hauling or delivery vehicle exhaust, would be distributed over the DSA and only the portion of these emissions that would occur near to sensitive receptors were considered in the evaluation of human health risks.

As explained in **Section 3.2.3.4**, localized TAC pollutant concentrations were evaluated using HRA screening criteria and a Tier 2 assessment was performed to evaluate local project TAC emissions. Tier 2 screening criteria are designed to be conservative and include a variety of assumptions intended to

be protective of the most vulnerable individuals of a population. Moreover, the Alternative 1 Tier 2 HRA considered only construction-related emissions and did not account for the operational reductions to carcinogenic human health risks that would occur as a result of Project implementation as discussed in **Section 3.2.6.5.1**.

As shown in **Table 3.2-18**, construction of Alternative 1 would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure and impacts with respect to construction human health risk would be less than significant.

Table 3.2-18. Build Alternative 1 Tier 2 HRA Screening Results

Affected Organ System	Non-Cancer Health Hazards			Carcinogenic Health Risk	
	Acute HI (1-hr)	Chronic HI (1-yr)	Chronic HI (8-hr)	Resident[1]	Adult Worker
All Affected Organ Systems[2]	0.0016	0.0034	0.0002	N/A	N/A
All Cancer[3]	N/A	N/A	N/A	1.8 in one million	0.1 in one million
Maximum Total[4]	0.0016	0.0034	0.0002	1.8 in one million	0.1 in one million
Tier 2 Risk Threshold	1.0	1.0	1.0	10 in one million	10 in one million
Exceeds Threshold	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Residential cancer risk incorporates the maximum exposure parameters, including age-related breathing rates and exposure factors, for potential residents ages 0 (third trimester) through 30.
2 TAC exposure affects each organ system (nervous, alimentary, cardiovascular, reproductive, etc.) differently. Acute and Chronic HIs are calculated as the combined effect of exposure to all TAC upon each organ system. The sum of HIs across all organ systems is presented.
3 Construction-related exposure to carcinogenic TAC anticipated to occur for two years (the minimum screening exposure duration). In reality, construction of any given alignment segment, and the associated TAC exposure of residents near to that segment, would occur over a period shorter than two years and impacts would be expected to be lower than presented.
4 Totals represent the maximum overlapping construction emissions for all project-elements including the greater of any TAC emissions associated with any design options or alternative staging areas.
Key:
HI = Hazard Index; hr = hour; N/A = not applicable; TAC = toxic air contaminant; yr = year

Design Options

Atlantic/Pomona Station Option

As presented previously in **Section 3.2.6.3.1**, implementation of the Atlantic/Pomona Station Option would result in localized criteria pollutant emissions that would be the same as those of the base Alternative 1. Therefore, as with the base Alternative 1, the construction of Alternative 1 with the Atlantic/Pomona Station Option would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure and impacts with respect to construction human health risk would be less than significant.

Montebello At-Grade Option

As with the base Alternative 1, the construction of Alternative 1 with the Montebello At-Grade Option would result in construction TAC emissions that would be less than the SCAQMD screening criteria

and impacts with respect to construction human health risk would be less than significant. As presented previously in **Section 3.2.6.3.1**, implementation of the Montebello At-Grade Option would result in localized criteria pollutant emissions that would be greater than those of the base alternative. However, similar TAC emission sources and construction activities would be required to complete either the alternative with Montebello At-Grade Option or the base alternative, and the types and relative quantities of TAC emissions would be similar overall. Implementation of Alternative 1 with the Montebello At-Grade Option would be expected to result in greater TAC emissions and greater human health risk impacts as compared to the base alternative. The TAC emissions associated with implementation of the Montebello At-Grade Option are accounted for in the results presented in **Table 3.2-18**. As shown in **Table 3.2-18**, construction of Alternative 1 would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure and impacts with respect to construction human health risk would be less than significant

3.2.6.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

As indicated in **Section 3.2.6.2.1**, regional emissions of PM_{10} would be reduced under the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option while regional emissions of VOC would be increased. TAC are either organic (a subset of VOC) or particulate (a subset of PM_{10}) compounds to which exposure can contribute to short-term (acute), long-term (chronic), or carcinogenic human health hazards. Since emissions of PM_{10} would decrease from the operation of the Project, exposure to TAC from PM_{10} for residents living and working within the DSA would also decrease. The primary TAC of concern for this analysis is DPM, a subset of PM_{10} emissions that drives carcinogenic risks throughout the region. Although emissions of VOC would increase from the operation of the Project, exposure to TAC from VOC for residents living and working within the DSA would not substantially increase. VOC emission increases would be driven by the use of low-TAC content consumer products, including cleaners, adhesives, and paints at the MSF. Additionally, the MSF location would be in commercial and industrial areas away from residences and other sensitive receptors. High TAC-content VOC emissions, such as those from vehicle exhaust, would be decreased alongside PM_{10} emissions proportional to the regional reductions in VMT. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a reduction in relevant TAC emissions and impacts with respect to operational human health risk would be less than significant.

Construction Impacts

Base Alternative and Design Option

As shown in **Table 3.2-19**, construction of the base Alternative 2 would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure. Implementation of the Atlantic/Pomona Station Option would result in localized criteria pollutant emissions that would be the same as those of the base Alternative 2. Therefore, the construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure and impacts with respect to construction human health risk would be less than significant.

Table 3.2-19. Build Alternative 2 Tier 2 HRA Screening Results

Affected Organ System	Non-Cancer Health Hazards			Carcinogenic Health Risk	
	Acute HI (1-hr)	Chronic HI (1-yr)	Chronic HI (8-hr)	Resident[1]	Adult Worker
All Affected Organ Systems[2]	0.0020	0.0043	0.0003	N/A	N/A
All Cancer[3]	N/A	N/A	N/A	2.2 in one million	0.1 in one million
Maximum Total[4]	0.0020	0.0043	0.0003	2.2 in one million	0.1 in one million
Tier 2 Risk Threshold	1.0	1.0	1.0	10 in one million	10 in one million
Exceeds Threshold	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Residential cancer risk incorporates the maximum exposure parameters, including age-related breathing rates and exposure factors, for potential residents ages 0 (third trimester) through 30.
2 TAC exposure affects each organ system (nervous, alimentary, cardiovascular, reproductive, etc.) differently. Acute and Chronic HIs are calculated as the combined effect of exposure to all TAC upon each organ system. The sum of HIs across all organ systems is presented.
3 Construction-related exposure to carcinogenic TAC anticipated to occur for two years (the minimum screening exposure duration). In reality, construction of any given alignment segment, and the associated TAC exposure of residents near to that segment, would occur over a period shorter than two years and impacts would be expected to be lower than presented.
4 Totals represent the maximum overlapping construction emissions for all project-elements including the greater of any TAC emissions associated with alternative staging areas.
Key:
HI = Hazard Index; hr = hour; N/A = not applicable; TAC = toxic air contaminant; yr = year

3.2.6.5.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Option

As indicated in **Section 3.2.6.3.3**, regional emissions of PM_{10} would be reduced under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option while regional emissions of VOC would be increased. TAC are either organic (a subset of VOC) or particulate (a subset of PM_{10}) compounds to which exposure can contribute to short-term (acute), long-term (chronic), or carcinogenic human health hazards. Since emissions of PM_{10} would decrease from the operation of the Project, exposure to TAC from PM_{10} for residents living and working within the DSA would also decrease. The primary TAC of concern for this analysis is DPM, a subset of PM_{10} emissions that drives carcinogenic risks throughout the region. Although emissions of VOC would increase from the operation of the Project, exposure to TAC from VOC for residents living and working within the DSA would not substantially increase. VOC emission increases would be driven by the use of low-TAC content consumer products, including cleaners, adhesives, and paints at the MSFs. Additionally, the MSF location would be in commercial and industrial areas away from residences and other sensitive receptors. High TAC-content VOC emissions, such as those from vehicle exhaust, would be decreased alongside PM_{10} emissions proportional to the regional reductions in VMT. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not expose sensitive receptors to TAC that would be likely to cause a substantial increase in human health risks and impacts with respect to operational human health risk would be less than significant.

Construction Impacts

Base Alternative and Design Options

As shown in **Table 3.2-20**, construction of the base Alternative 3 would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure. Implementation of the Atlantic/Pomona Station Option result in localized criteria pollutant emissions that would be the same as those of the base Alternative 3. Implementation of the Montebello At-Grade Option would result in localized criteria pollutant emissions that would be greater than those of the base Alternative 3. However, similar TAC emission sources and construction activities would be required to complete either the Alternative 3 with the Montebello At-Grade Option or the base Alternative 3, and the types and relative quantities of TAC emissions would also be similar. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure and impacts with respect to construction human health risk would be less than significant.

Table 3.2-20. Build Alternative 3 Tier 2 HRA Screening Results

Affected Organ System	Non-Cancer Health Hazards			Carcinogenic Health Risk	
	Acute HI (1-hr)	Chronic HI (1-yr)	Chronic HI (8-hr)	Resident[1]	Adult Worker
All Affected Organ Systems[2]	0.0017	0.0036	0.0002	N/A	N/A
All Cancer[3]	N/A	N/A	N/A	1.8 in one million	0.1 in one million
Maximum Total[4]	0.0017	0.0036	0.0002	1.8 in one million	0.1 in one million
Tier 2 Risk Threshold	1.0	1.0	1.0	10 in one million	10 in one million
Exceeds Threshold	No	No	No	No	No

Source: CDM Smith/AECOM JV, 2021.
Notes:
1 Residential cancer risk incorporates the maximum exposure parameters, including age-related breathing rates and exposure factors, for potential residents ages 0 (third trimester) through 30.
2 TAC exposure affects each organ system (nervous, alimentary, cardiovascular, reproductive, etc.) differently. Acute and Chronic HIs are calculated as the combined effect of exposure to all TAC upon each organ system. The sum of HIs across all organ systems is presented.
3 Construction-related exposure to carcinogenic TAC anticipated to occur for two years (the minimum screening exposure duration). In reality, construction of any given alignment segment, and the associated TAC exposure of residents near to that segment, would occur over a period shorter than two years and impacts would be expected to be lower than presented.
4 Totals represent the maximum overlapping construction emissions for all project-elements including the greater of any TAC emissions associated with any design options or alternative staging areas.
Key:
HI = Hazard Index; hr = hour; N/A = not applicable; TAC = toxic air contaminant; yr = year

3.2.6.5.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in a reduction to regional TAC emissions and exposure. While the

Project would result in operational TAC emissions from evaporative TOG associated with vehicles parked at Project parking facilities, these emissions would be minimal and would be overwhelmingly offset by the regional reductions in TAC driven by project VMT reductions. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in TAC emissions that would exceed the applicable SCAQMD criteria and impacts with respect to human health risk would be less than significant.

Construction Impacts

MSF Site Options and Design Option

The construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in construction TAC emissions that would be less than the SCAQMD screening criteria, including construction of an MSF. The maximum construction TAC emissions associated with implementation of an MSF site option are included in the assessment of human health risk impacts under Alternative 1, Alternative 2, and Alterative 3 and as shown in tables **Table 3.2-18**, **Table 3.2-19**, and **Table 3.2-20** respectively, construction would result in local exposure to TAC that would be less than the SCAQMD Tier 2 screening criteria for acute, chronic, and carcinogenic exposure and impacts with respect to construction human health risk would be less than significant.

3.2.7 Project Measures and Mitigation Measures

As identified in **Section 3.2.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on air quality under Impact AQ-1 (Air Quality Plan), Impact AQ-2 (Regional Criteria Pollutant Emissions), Impact AQ-3 (Localized Pollutant Concentrations), Impact AQ-4 (Other Emissions), and Impact HR-1 (Human Health Risks). No project measures or mitigation measures would be required for operation or construction. **Table 3.2-21** identifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s). All impacts would be less than significant for all alternatives and design options.

3.2.8 Significance After Mitigation

As identified in **Table 3.2-21**, no mitigation is required for the Build Alternatives and Build Alternatives with the design option(s). Impacts would be less than significant under Impacts AQ-1, AQ-2, AQ-3, and AQ-4.

Table 3.2-21. Summary of Impact Determinations for Build Alternatives and MSF Options

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact AQ-1 Air Quality Plan	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact AQ-2 Regional Criteria Pollutant Emissions	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact AQ-3 Localized Pollutant Concentrations	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact AQ-4 Other Emissions	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact HR-1 Human Health Risks	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.3 Biological Resources

3.3.1 Introduction

This section discusses the Project setting in relation to biological resources. It describes existing conditions, current applicable regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options.

The biological resources specialized study area, known as the biological resources study area (BRSA), for each of the Build Alternatives is the area within a 500-foot buffer of the LRT guideway and includes the station, TPSSs, and MSF site option footprints. The BRSA for each of the Build Alternatives is described further in **Section 3.3.3**. Information in this section is based on the Eastside Transit Corridor Phase 2 Biological Resources Impacts Report (Appendix D).

3.3.2 Regulatory Framework

3.3.2.1 Federal

Biological resources in the BRSAs are protected by federal laws, including the federal Endangered Species Act (ESA), the Migratory Bird Treaty Act (MBTA), and the Clean Water Act (CWA). The federal ESA and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend and is administered by the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA). The Migratory Bird Treaty Act (MBTA) protects all migratory birds and their parts (including eggs, nests, and feathers) and applies to nearly all native North American bird species. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Projects that are likely to result in the taking of birds protected under the MBTA would require the issuance of take permits from the USFWS. Section 404 of the CWA authorizes the United States Army Corps of Engineers (USACE) to issue permits for the discharge of dredged or fill material into waters of the United States of America (U.S.), including wetlands (33 United States Code 1344) if a practicable alternative with less impact on the aquatic environment does not exist. The United States Environmental Protection Agency (USEPA) guidelines (40 Code of Federal Regulations 230 et seq.) and USACE regulatory guidelines (33 Code of Federal Regulations 320 et seq.) are the substantive environmental criteria used to evaluate permit applications submitted to USACE.

3.3.2.2 State

Applicable state laws and regulations include the California ESA and the California Fish and Game Code, which are both administered by the California Department of Fish and Wildlife (CDFW). Under the California ESA, there are no state agency consultation procedures. For projects that affect a species that is both state and federally listed, compliance with the federal ESA will satisfy the California ESA. Projects that result in a take of a state-only listed species require a take permit under the California ESA. The state act also lends protection to species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration. Sections 3500 through 3705 of the California Fish and Game Code prohibit the taking of nesting birds, their nests, eggs, or any portion thereof during the nesting season, which is typically from February 15 through August 15 in southern

California. Section 1600 et seq. of the California Fish and Game Code, mandates that proposed streambed alterations, such as substantial diversions or obstruction of natural flow, must be permitted by CDFW through a Streambed Alteration Agreement. Section 4150 et seq. of the California Fish and Game Code prohibits the "take" of nongame mammals, including common bats. A nongame mammal may not be taken or possessed except as provided in this code or in accordance with regulations adopted by the commission. In addition, bats can often form maternity colonies large enough to be considered significant local breeding populations under CEQA.

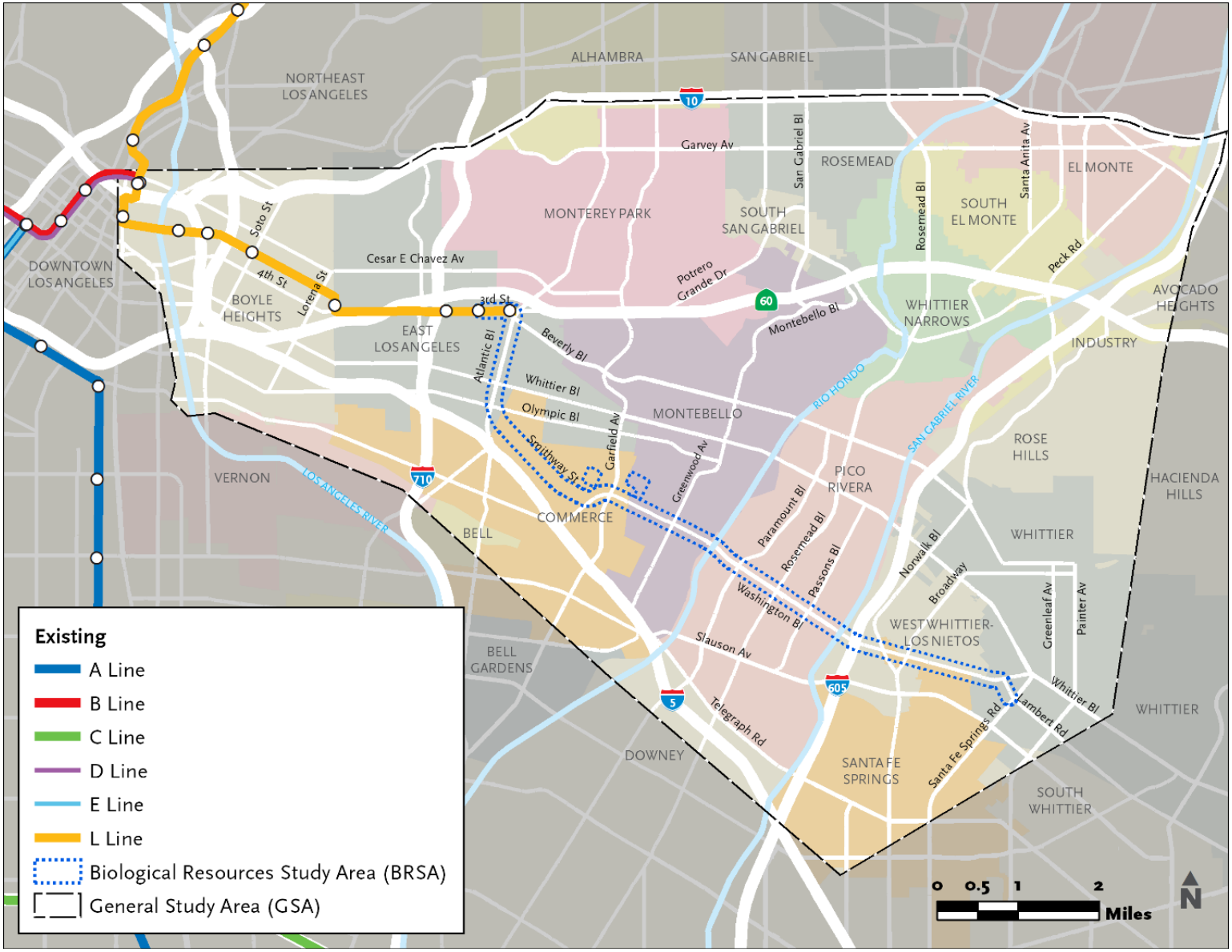
3.3.2.3 Local

Los Angeles County and the cities within the Build Alternative BRSAs have local regulations pertaining to the protection of native or locally important trees and/or street trees in public areas. These regulations include the relevant general plan policies, ordinances, and municipal codes of Los Angeles County, and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. All the various general plan policies and municipal codes are very similar; generally, they all require the protection of street trees and have a permit or review process to evaluate proposed impacts on street trees. More information about these laws and policies, including replacement requirements, is available in Appendix D.

3.3.3 Methodology

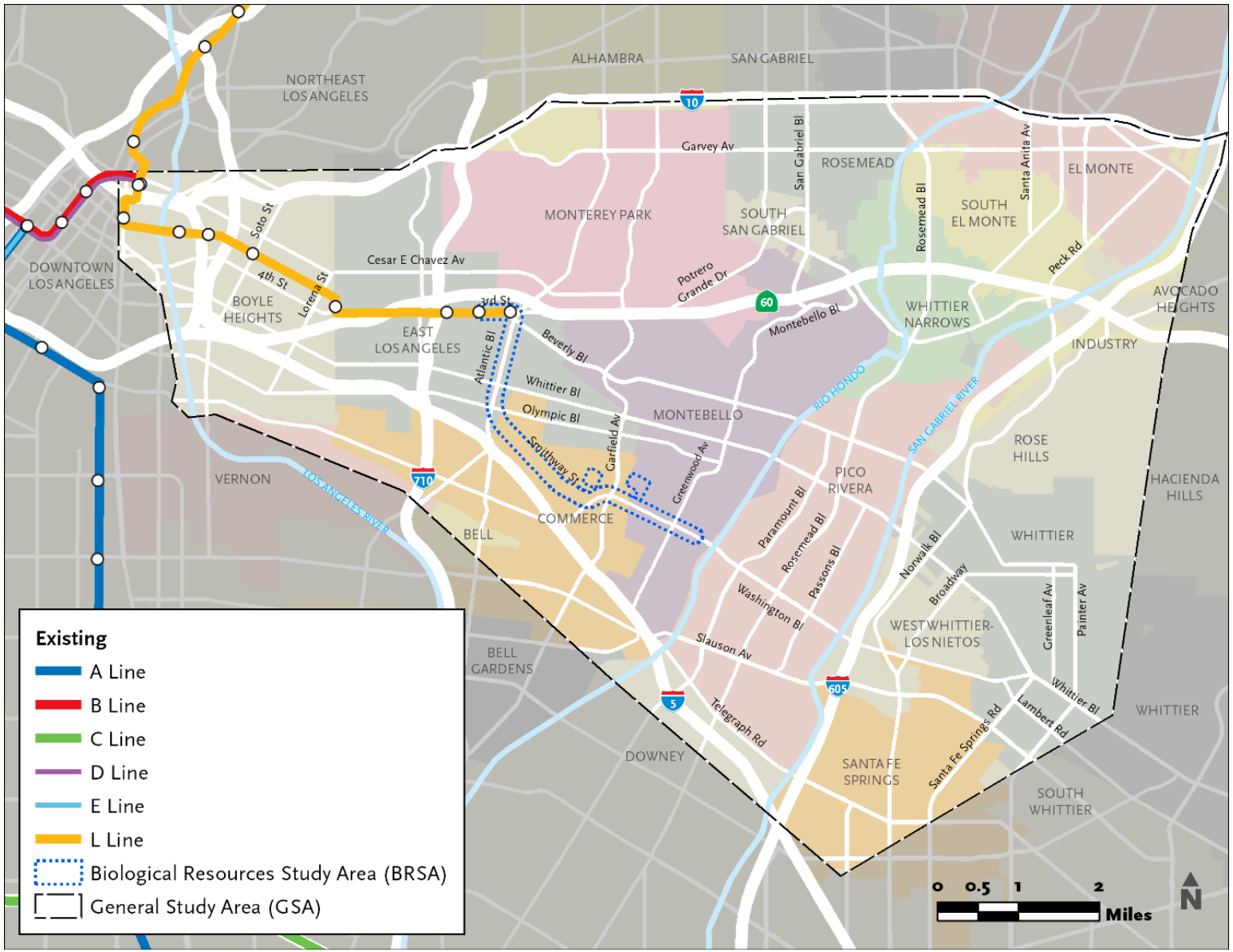
The methodology used to evaluate potential impacts on biological resources consists of several steps starting with a review of existing data sources, followed by field investigations to establish the presence and existing condition of resources within the Build Alternative BRSAs. The BRSA for each Build Alternative encompasses the area within a 500-foot buffer from the proposed alignment and includes the footprints of the stations, TPSS, construction staging, and MSF site options. The BRSA for each Build Alternative is shown in **Figure 3.3.1** and **Figure 3.3.2**. The analysis then evaluated whether operation and/or construction of each Build Alternative would potentially affect any of the identified resources. The analysis is focused on the areas where biological impacts would most likely occur.

Site investigations, consisting of field reviews of parks and other public open spaces within 500 feet of either side of the proposed alignment and stations were conducted in 2010 and 2011. In 2014, CDFW provided comments on the Draft Environmental Impact Statement (EIS)/EIR, which directed additional field investigations, including a focused wetland delineation, rare plant surveys, vegetation community mapping, and bat surveys as described in Appendix D, Section 4.2. Additional field surveys were also completed in 2015 and 2016. CDFW provided additional comments in July 2019, which reiterated the need for the additional field investigations and directed the supplemental impact analysis, which is described in Appendix D. Two site visits were conducted in spring 2021 to collect photo documentation of existing conditions. Methodology is described further below and in greater detail in Appendix D.



Metro; CDM Smith/AECOM JV 2021.

Figure 3.3.1. Alternative 1 Biological Resources Study Area



Metro; CDM Smith/AECOM JV 2021.

Figure 3.3.2. Alternatives 2 and 3 Biological Resources Study Area

3.3.3.1 Desktop Review

The evaluation includes a review of the California Natural Diversity Database (CNDDB) to identify special-status plants and animals with the potential to occur in the BRSAs and a search of the USFWS critical habitat mapper to identify designated critical habitat for federally listed species in the BRSAs (USFWS 2021a). For wetlands, existing data were obtained from the USFWS National Wetlands Inventory (NWI) mapper (USFWS 2021b). The USFWS Information for Planning and Consultation (IPaC) tool was also used to generate a list of federally listed species with potential to occur in the BRSAs (USFWS 2021c).

Other existing sources of information consulted include the *Rio Hondo Watershed Management Plan* (Rivers and Mountains Conservancy 2004), the *State of the Watershed Report for the San Gabriel River Watershed* (Los Angeles Regional Water Quality Control Board 2000), the *San Gabriel River Corridor Master Plan* (Los Angeles County Department of Public Works [LACDPW] 2006), and the *Lower San Gabriel River Watershed Management Program* (Lower San Gabriel River Watershed Group 2015).

3.3.3.2 Field Investigations

Field reviews of parks and other public open spaces within 0.25 mile of either side of the proposed alignment and stations were conducted in 2010 and 2011. Trees located along the proposed alignment and within the footprints of the proposed stations were counted and visually identified by species.

During these reviews, general field reconnaissance work was conducted to identify wetlands and other habitat features within the BRSAs. Aerial photographs were used to evaluate existing mapped wetlands and to help identify potential sensitive habitat areas that were not included on existing wetland maps or inventories. Potential wetlands within 200 feet of either side of the Build Alternatives were assessed to identify wetland resources that may require implementation of avoidance buffers that intersect the BRSAs.

Based on site visits in spring of 2021 (discussed in **Section 3.3.3.2.6**) and a desktop review of existing conditions, there have been no substantial changes to habitats, vegetative conditions, special-status species, wetlands, street trees, or other biological resources in the BRSA since the completion of the previous field surveys as documented in Attachment A of Appendix D.

3.3.3.2.1 Bat Surveys

Daytime and evening bat surveys were conducted in September 2015 at the bridges over the Rio Hondo and San Gabriel River, which are within the Alternative 1 BRSA. See Appendix D for details of the methods used during bat surveys.

3.3.3.2.2 Rare Plant Surveys

A survey for rare plants was conducted in May 2016 when the majority of the plants with potential to occur, based on the desktop evaluation, would be in their blooming periods. During the survey, biologists walked accessible areas of the alignment and potential construction zones that support vegetation. Existing vegetation and habitats were visually observed for the presence of rare plants.

3.3.3.2.3 Vegetation Community Mapping

In May 2016, vegetation communities within 500 feet of the proposed alignment were identified and mapped according to *A Manual of California Vegetation*, Second Edition (Sawyer et al. 2009). This included identification and mapping of any Sensitive Natural Communities (CDFW 2021). In addition, natural communities and wildlife habitats along the proposed alignment were assessed to determine if suitable habitat was present for special-status species. See Appendix D for details of the methods used during vegetation community mapping.

3.3.3.2.4 Focused Wetland Investigation

In May 2016, additional field investigations were conducted to identify and delineate wetlands and other waters that may be affected by the Project. Wetland investigations were focused on areas identified during previous field investigations as having the potential to support wetlands and other waters, including areas with wetland vegetation, depressional areas, and areas with standing water. The delineation methodology conformed to the guidelines presented in the *USACE Wetlands Delineation Manual, Technical Report Y-87-1* (USACE 1987) and the 2008 *USACE Regional Supplement for the Arid West Region* (Version 2.0) (USACE 2008). Based on the focused wetland investigation and subsequent site visits and desktop review of existing conditions, no wetlands occur within the BRSAs of Alternatives 1, 2, or 3.

See Appendix D for details of the methods used during the 2016 wetland investigation as well as documentation of the site visits and desktop review conducted in 2021.

3.3.3.2.5 Street Tree Survey

A survey of street trees was conducted in May 2019 to obtain an updated estimate of the number and species of street trees that may be affected by construction for aerial and at-grade portions of the alignment. The survey was conducted from the pedestrian right-of-way (ROW) and included trees located along the proposed alignment and within the footprints of the proposed stations. Tree counts performed through a desktop review using aerial imagery in 2022 were performed for the proposed below ground segments, areas where the alignment would transition from above ground to below ground, areas where tunnel boring equipment would be used, and the proposed MSF site options.

3.3.3.2.6 Site Visits

Site visits were conducted on March 28, 2021 and April 9, 2021 to document existing conditions with photographs. Site visit activities included driving by the industrial areas proposed for MSFs, walking the San Gabriel River Spreading Grounds and bike trail, walking across and under San Gabriel River bridge (via the trailhead), walking under San Gabriel River bridge via the trailhead, and walking across the Rio Hondo bridge overlooking Rio Hondo Spreading Grounds and bike trail. Photographs were taken at each of these locations.

3.3.3.3 Impact Analysis Methodology

Results of the field investigations and desk survey were used to characterize the biological resources, including wetlands, special-status species, sensitive natural communities, wildlife migratory corridors, street trees, and other protected resources within the BRSAs that could be affected by the Project. If the Project could impact biological resources through effects on species or habitat, there would be a potential for significant impacts to occur, and mitigation measures would be required to reduce or

avoid those impacts if feasible. The assessment of impacts includes both long-term operational effects of the Project and construction effects.

The evaluation includes assessing permanent and temporary impacts on natural communities. Permanent impacts would be limited to areas where there would be permanent loss of habitat from installation of the at-grade LRT tracks, columns to support the aerial guideway, stations, new or replacement bridge supports, structures, and hardscaping. An estimate of permanent and temporary impacts on vegetation communities is based on preliminary conceptual engineering design. Potential impacts on vegetation communities from the introduction and/or spread of invasive plant species are also considered.

For Alternative 1, the evaluation of impacts on biological resources includes assessing impacts associated with crossing the Rio Hondo and the San Gabriel River. The spreading grounds located adjacent to these river channels provide important biological resources, especially for migratory birds. The potential for impacts on bats using the Washington Boulevard bridges over the Rio Hondo and San Gabriel River is also evaluated based on the findings of surveys for bats and bat habitat at the bridges.

The evaluation of potential impacts for all Build Alternatives includes potential disturbance of trees and other vegetation along the alignment and near stations and the MSF site options that may provide potential nesting sites for migratory birds, including raptors. Impacts on street trees located along the alignment and within the footprints of the stations and MSFs are also considered to identify requirements for compliance with local street tree protection ordinances.

3.3.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to Biological Resources if it would:

Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Impact BIO-2: 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 CDFW or USFWS.

Impact BIO-3: 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.

Impact BIO-4: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Appendix G of the State CEQA Guidelines includes a significance criterion for impacts on state or federally protected wetlands. Based on the focused wetland investigation described in **Section 3.3.3.2.4**, no wetlands occur within the BRSAs of Alternatives 1, 2, or 3. Therefore, no impacts on wetlands would occur from operation or construction of the Project and this criterion was not evaluated.

Appendix G of the State CEQA Guidelines also includes a significance criterion for impacts relating to the potential for a project to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The Project is not located within an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan such as a Los Angeles County designated Significant Ecological Area (SEA); therefore, this criterion is not applicable and was not evaluated.

3.3.5 Existing Setting

Existing biological resources within the BRSAs primarily include the trees and shrubs that exist along the streets of the alignment and within the footprints of the proposed stations. This vegetation provides limited habitat for wildlife, primarily migratory birds. Wildlife habitats that exist are mainly associated with the BRSA of Alternative 1 where it crosses the Rio Hondo and the San Gabriel River and the Rio Hondo Spreading Grounds. The remainder of the land within the Build Alternative BRSAs, including the MSF site options, is highly developed and covered with impervious surfaces such as parking lots and buildings. The only natural areas near the Project are the Rio Hondo Coastal Spreading Grounds and the San Gabriel River and San Gabriel River Coastal Spreading Grounds within the Alternative 1 BRSA described below.

The Rio Hondo Coastal Spreading Grounds, located at the Washington Boulevard crossing of the Rio Hondo, consist of approximately 570 acres (LACDPW n.d.a). The Washington Boulevard crossing extends across the concrete-lined river channel west to the adjacent spreading basin, which is unlined and contains some aquatic vegetation and highly permeable soils for groundwater recharge. The Rio Hondo Coastal Spreading Grounds provide aquatic habitat for an abundance of wintering waterbirds and shorebirds. Bird species frequently observed in this area of the spreading grounds include great blue heron, great egret, snowy egret, mallard, gulls, white-faced ibis, and black-necked stilt. Native fish species would not be expected to inhabit the concrete-lined channel of the Rio Hondo. In addition, other aquatic species, including common amphibian species, are unlikely to occur due to the lack of vegetation within the spreading grounds. Special-status riparian bird species are unlikely to occur due to the lack of high-quality riparian vegetation.

Alternative 1 also crosses the San Gabriel River Coastal Spreading Grounds, which are approximately 128 acres in size (LACDPW n.d.b). Although this reach of the San Gabriel River is channelized throughout with concrete banks, it has a soft (mud) bottom. Water levels within this reach of the San Gabriel River are heavily managed using small inflatable dams. At the Washington Boulevard crossing, the San Gabriel River is a wide channel containing grass and other non-native vegetation with some riparian vegetation, including willow, along the concrete-lined sides. Vegetation in this reach is generally of moderate quality in the vicinity of Alternative 1. There is also some low- to medium-quality alluvial sage scrub habitat in this reach (LACDPW 2006). The term “alluvial” refers to soil deposited by a waterway. Non-native fish expected to occur in the reach of the San Gabriel River in the BRSA of Alternative 1 include channel catfish, common carp, red shiner, fathead minnow, rainwater killifish, and western mosquitofish. Common amphibian species expected to occur include the western toad, Pacific treefrog, black-bellied slender salamander, California treefrog, and bullfrog (LACDPW 2006). Riparian bird species may use this area during migration but are not likely to breed there due to a lack of sufficient cover. Further, the river and adjacent floodplain habitats are highly altered and managed and, as such, are unlikely to support alluvial sage scrub species.

3.3.5.1 Special-Status Species

Special-status species include those federally and/or state-listed as threatened, endangered, proposed, and/or candidate wildlife and plant species as well as those identified as species of concern by CDFW (for wildlife) and ranked as rare and/or sensitive by the California Native Plant Society (for plants). Based on the CNDDB and IPaC search, 20 special-status wildlife and plant species have the potential to occur within the 7.5-minute USGS topographic quadrangle associated with the BRSAs (i.e., the Whittier quadrangle). Table 6-1 in Appendix D lists 20 species and their potential to occur based on the habitat present in the project area. The Whittier 7.5-minute quadrangle encompasses approximately 60 square miles and extends outside the BRSAs. Thus, not all species identified by the CNDDB or IPaC for the quadrangle would be expected to occur within the BRSAs. In addition, the CNDDB considers historical sightings as evidence that species still exist; however, many of those historical sightings pre-date significant alteration of the habitat. Given that much of the BRSAs are now highly developed, the rivers have been channelized, and habitats have been altered and degraded, many of these species are not expected to currently occur in the BRSAs.

Of the 20 species listed, 19 have low or very low potential to occur in the BRSAs due to the lack of suitable habitat, as discussed in Table 6-1 in Appendix D. The bank swallow (*Riparia riparia*) has the potential to occur transiently near Rio Hondo and San Gabriel River crossings (BRSA of Alternative 1); however, suitable foraging habitat is limited.

In addition to those species identified in the desktop review, other special-status bird species may occur transiently in the BRSAs (USACE 2009; National Audubon Society 2010). However, no special-status species or rare plants were observed during field investigations. There are no known occurrences of special-status species in the BRSA for Alternative 1, and suitable habitat for special-status species was not observed during field investigations. Cliff swallows were observed nesting under the Washington Boulevard bridge during surveys in May 2016. While not a special-status species, these and other native birds are protected under the MBTA.

3.3.5.2 Bats

Habitat for many bat species occurs within the BRSAs, particularly the BRSA of Alternative 1, including trees, bridges, culverts, buildings, and other structures (Western Bat Working Group 2019). Street trees along urbanized areas would not be expected to support roosting bats; however, bridges over the Rio Hondo and San Gabriel River provide suitable bat roosting habitat.

Surveys for bats and bat habitat were conducted in September 2015 at the Washington Boulevard bridges over the Rio Hondo and San Gabriel River (see Appendix D). During the surveys, suitable bat roosting habitat was observed, including structural elements that provide potential roosting habitat such as expansion joints, weep holes, concrete cracks, and other crevices and openings in the bridges. Swallow nests present on all bridges are also commonly used by bats for roosting when not occupied by birds. In addition, there are several large trees at all three bridges that could also serve as roosting habitat. This habitat could be suitable for both daytime and nighttime roosting.

During the bat surveys, no bats were visually observed; however, four bat calls were detected at the Rio Hondo bridge and four to six bat calls were detected at the San Gabriel River bridge. While none of the bat species positively identified within the Alternative 1 alignment are special-status species (i.e., listed as threatened, endangered, or species of concern), all bat species are protected under state law as nongame mammal species.

3.3.5.3 Sensitive Vegetation Communities

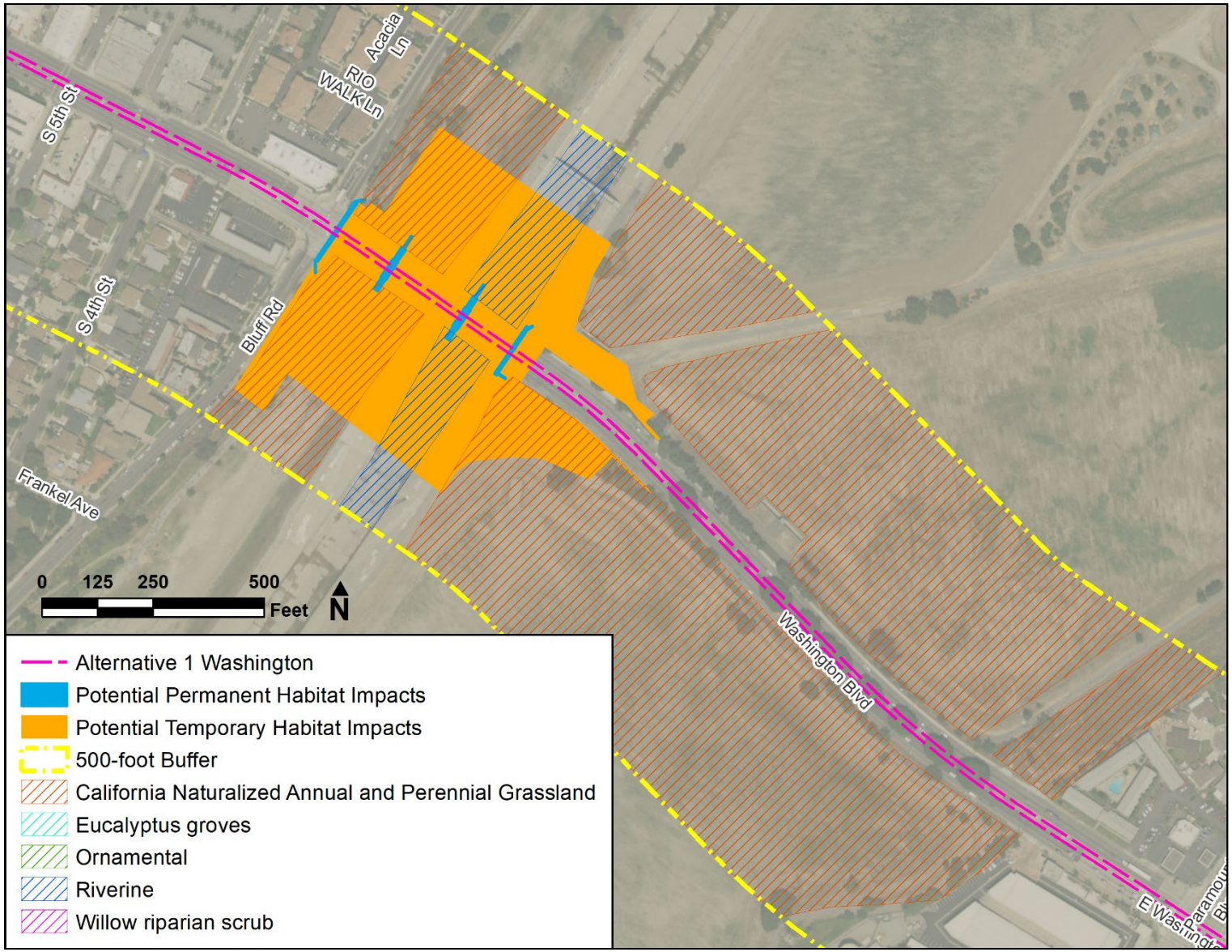
The majority of the areas that could be affected by the Build Alternatives are developed and consist of buildings, structures, roads, parking lots, driveways, sidewalks, and other hardscaped areas. The proposed MSF site options mainly consist of parking lots and buildings and contain limited vegetation, with the exception of a few street trees (as discussed in **Section 3.3.5.5**) and minimal site perimeter landscaping. Individual street trees were not considered a vegetation community unless they were grouped together to form a canopy; in these cases, street trees were counted as ornamental vegetation. The most common vegetation communities are Ornamental, California Naturalized Annual and Perennial Grassland, and Eucalyptus, as shown in **Figure 3.3.3** and **Figure 3.3.4**. Small patches of willow riparian habitat exist along the San Gabriel River at the spreading grounds near the Alternative 1 alignment. These consist of a small number of arroyo willow trees along the channel margin, with numerous non-native and invasive plant species. This community is mapped as willow riparian scrub, as shown on **Figure 3.3.4**. No sensitive vegetation communities were identified along the alignment for Alternatives 1, 2, or 3, or the MSF site options.

3.3.5.4 Wetlands and other Waters

Alternative 1 crosses the Rio Hondo and spreading grounds, and the San Gabriel River. The rivers are channelized, and high flows are directed to the adjacent spreading grounds where the water infiltrates into the ground. The entire Alternative 1 alignment was investigated for the presence of wetlands, waters of the U.S., and waters of the State in May 2016, as described in **Section 3.3.3.2.4**. Waters of the U.S. and waters of the State were only identified at the crossings of the Rio Hondo and San Gabriel River. See Appendix D for additional details of the methods used and additional photos. No wetlands occur within the BRSA of Alternative 1; thus, no wetlands occur in the BRSAs of Alternatives 2 or 3. No wetlands or other waters are located within the BRSAs for Alternative 2 or Alternative 3.

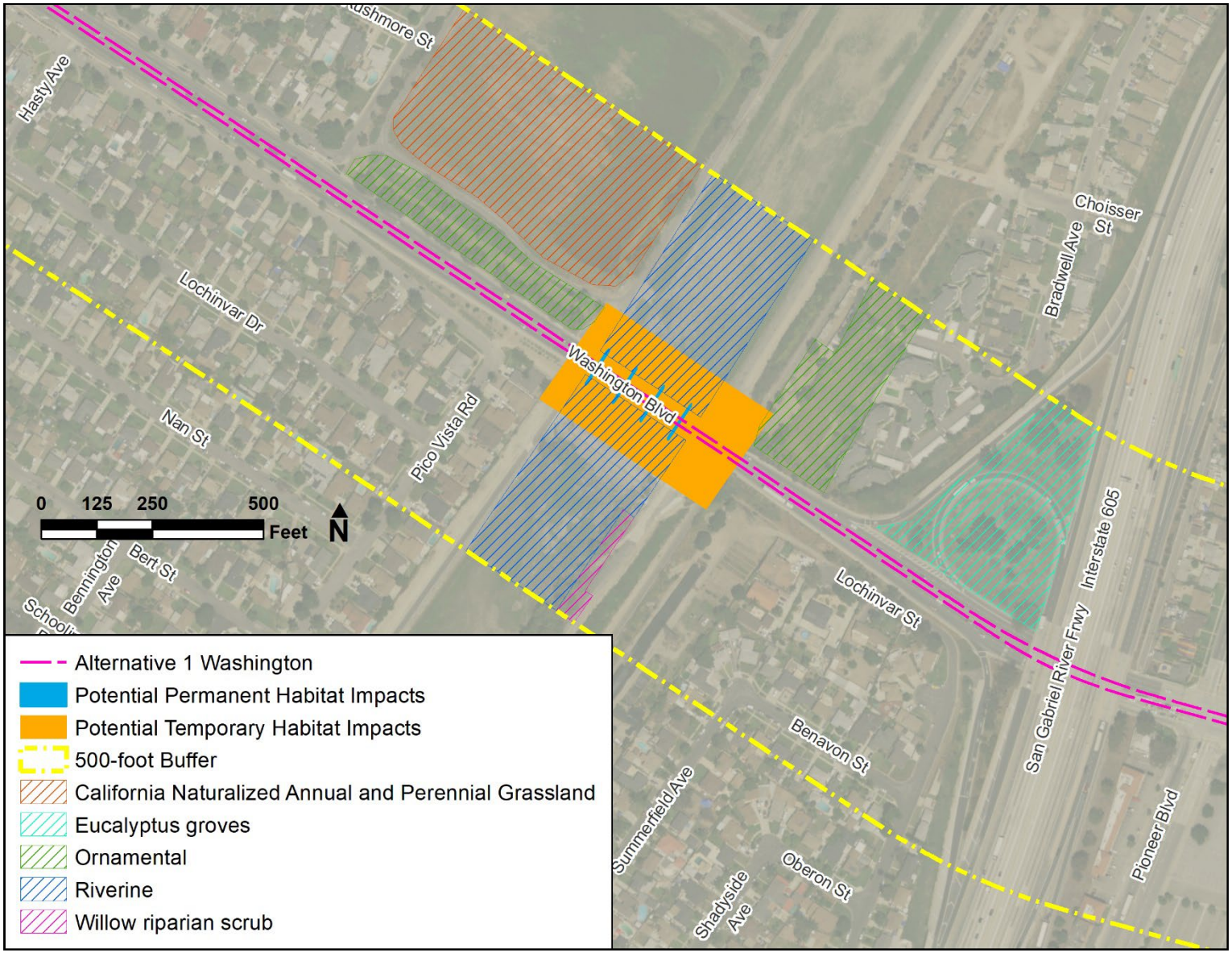
The Rio Hondo at the Washington Boulevard crossing is completely concrete-lined and was mostly dry at the time of the wetland investigation. Waters of the U.S. and waters of the State consist of the active Rio Hondo channel (**Figure 3.3.5**). No wetlands were observed in the river or the associated spreading grounds.

The San Gabriel River at the Washington Boulevard crossing is lined with riprap armor on the banks. The river channel is soft-bottomed (LACDPW 2006) and vegetation consisting of smartweed (Polygonum sp.) was observed within the channel. Water flow through this stretch of the San Gabriel River is controlled by a series of rubber dams. Waters of the U.S. at this location consist of the active San Gabriel River channel. Waters of the State would include the patches of riparian vegetation along the bank (**Figure 3.3.6)**. No wetlands were observed along the river or in the adjacent spreading grounds.



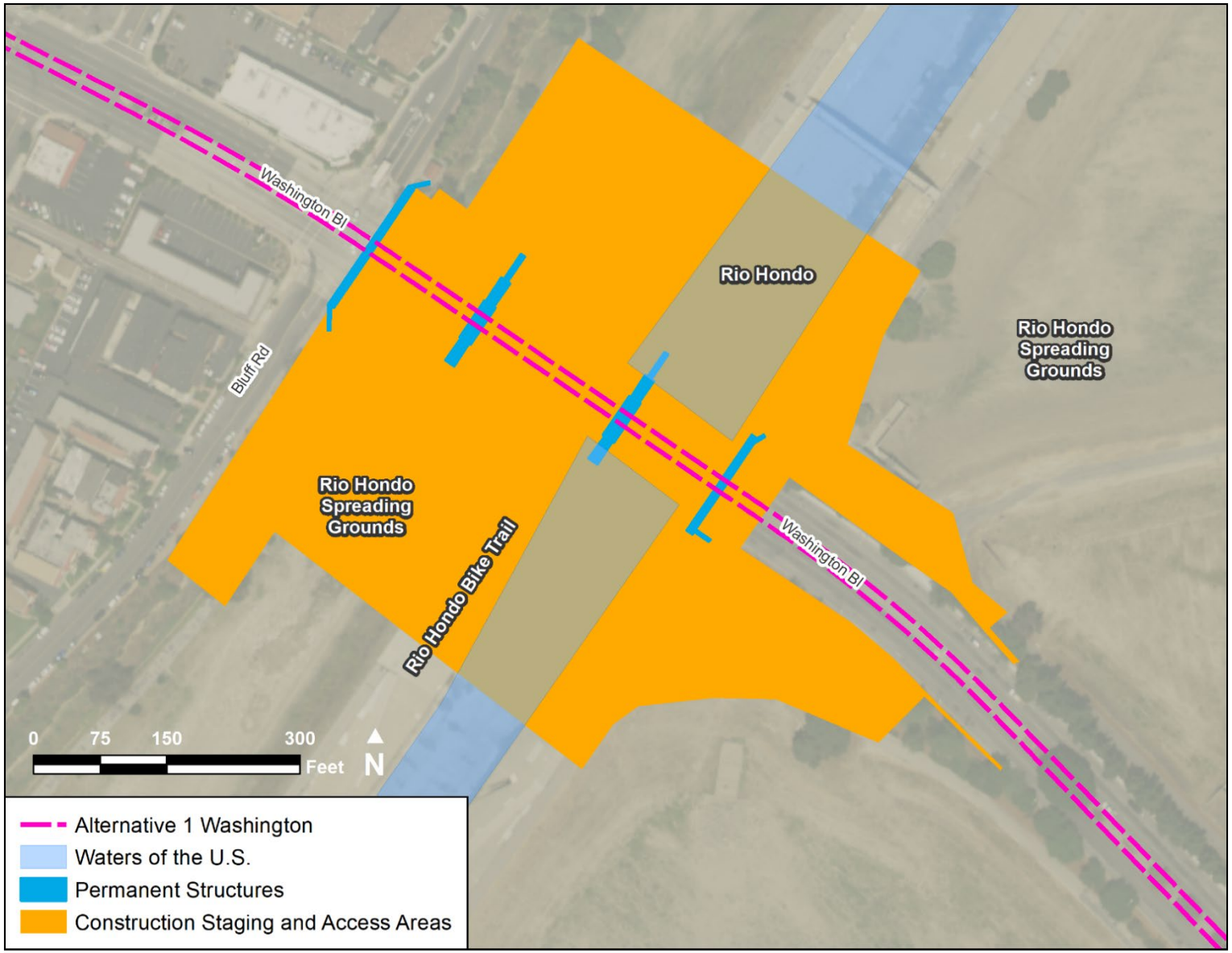
Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.3.3. Vegetation Map of Alternative 1 Crossing of the Rio Hondo and Spreading Grounds



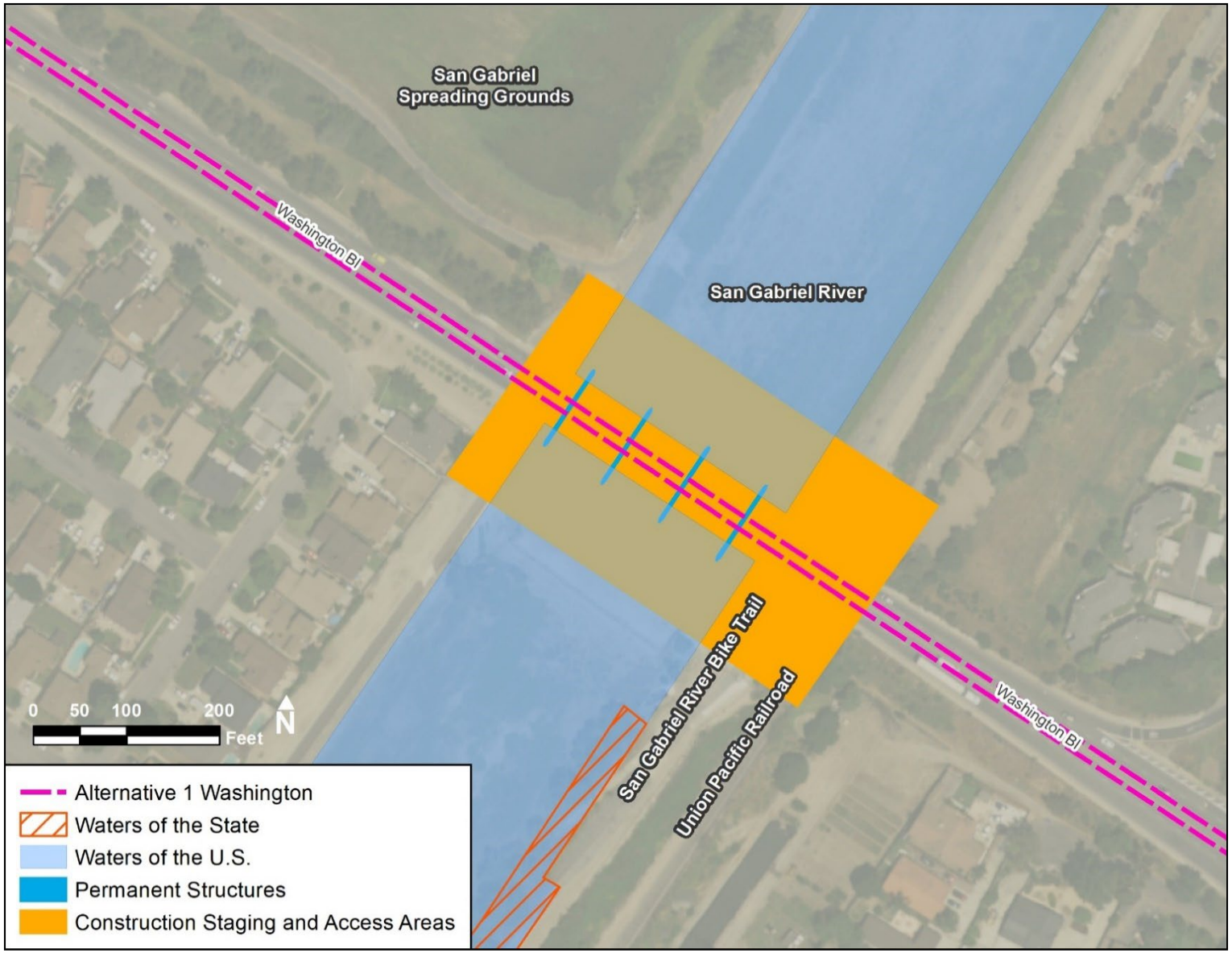
Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.3.4. Vegetation Map of Alternative 1 Crossing of the San Gabriel River



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.3.5. Alternative 1 Crossing of the Rio Hondo



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.3.6. Alternative 1 Crossing of the San Gabriel River

3.3.5.5 Trees Within Proposed Construction Areas

Mature trees that line surface streets along the alignment and within roadway medians provide some limited habitat. Some migratory bird species may use mature trees within the BRSAs during migration or breeding. During the field investigations, trees located along the alignment and within the footprints of the proposed stations were counted and identified by species. An updated estimate of trees potentially affected by construction was conducted in May 2019. In addition to trees located in landscaped areas, naturally vegetated areas were noted, including the relative density and type of trees and shrubs associated with each. Based on the field investigations, the majority of the proposed alignment for all Build Alternatives traverses a highly developed area where biological resources consist only of street trees. In addition to the trees surveyed along the aerial and at-grade alignment and proposed stations in 2019, trees along the underground alignment and the Commerce MSF site option and Montebello MSF site option were counted using aerial imagery. Trees along Alternatives 2 and 3 were estimated based on the tree counts for Alternative 1. A formal survey would be conducted to determine the exact number of trees and tree types that would be affected by the Project. Findings of the field investigations are discussed in more detail in Appendix D and summarized in **Table 3.3-1**.

Table 3.3-1. Tree Counts Along the Build Alternatives and MSF Site Options

Alternative	Total Trees (approximate)
Alternative 1 alignment and station footprints	1,100
Alternative 2 alignment and station footprints	310
Alternative 3 alignment and station footprints	600
Commerce MSF site option	35
Montebello MSF site option	10

As described in **Section 3.3.2.3**, the street trees along Alternatives 1, 2, and 3 and within the Commerce and Montebello MSF site options are protected by local ordinances and municipal codes.

3.3.6 Impact Evaluation

3.3.6.1 Impact BIO-1: Protected Species

Impact BIO-1: Would a Build Alternative have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS?

3.3.6.1.1 Alternative 1 Washington

Operational Impacts

Natural habitat that could support special-status species along Alternative 1 is limited to the Rio Hondo and San Gabriel River and associated spreading grounds. Riparian vegetation associated with the spreading grounds is limited and riparian habitat quality is low. Thus, special-status birds that could occur in the vicinity would not likely nest at the spreading grounds as they require dense, high-quality riparian habitat.

Special-status species associated with aquatic habitats would not be expected to occur within the spreading grounds due to the regular disturbance from water and vegetation management activities that result in water level fluctuations and a lack of permanent areas for refuge. Similarly, special-status plant species are not likely to occur within the Alternative 1 crossings of the Rio Hondo and the San Gabriel River due to the lack of suitable habitat and regular disturbance. Therefore, there would be no impacts on special-status wildlife and plant species from operation of Alternative 1.

Permanent loss of bat roosting sites at bridges over the Rio Hondo and/or San Gabriel River is not anticipated, as the new bridges are likely to have crevices in the substructure of the bridges where bats could roost. Bats roosting in these locations under existing conditions are adapted to the regular noise and vibration from vehicular traffic. Thus, recurring train movement from operation of Alternative 1 would not inhibit bat roosting. In addition, maintenance would likely entail periodic activities such as painting and pressure washing but would not entail replacement of the bridge structures. Therefore, there would be less than significant impacts on bats from operation of Alternative 1.

Operation of the proposed Alternative 1 would not result in noise, vibration, or other disturbance that would alter existing nesting behavior of nesting birds or cliff swallows, which are known to nest directly under the bridges for both the Rio Hondo and San Gabriel River crossings. This is because the alignment would run along existing roads through a highly urbanized environment with limited habitat for nesting birds and noise and vibration levels that likely discourage birds from nesting close to the proposed alignment. Maintenance of LRT facilities is not likely to entail removal of vegetation or of cliff swallow nesting habitat at the bridges but could involve tree trimming along the alignment. Any tree trimming along Alternative 1 during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, which requires nesting bird surveys and avoidance of active nests during the bird nesting season as discussed in **Section 3.3.7,** would ensure that bird nests would be avoided during maintenance activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from operation of Alternative 1 to less than significant.

Design Options

Atlantic/Pomona Station Option

Special-status species are unlikely to occur in or near the Atlantic/Pomona Station Option because of the lack of suitable habitat. Therefore, there would be no impacts on special-status wildlife and plant species from operation of Alternative 1 with the Atlantic/Pomona Station Option.

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect the spreading grounds, rivers, or bridges differently than the base Alternative 1. Therefore, there would be less than significant impacts on bats from operation of Alternative 1 with the Atlantic/Pomona Station Option.

Any tree trimming along Alternative 1 with the Atlantic/Pomona Station Option during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized above and discussed in **Section 3.3.7,** would ensure that bird nests would be avoided during maintenance activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from operation of Alternative 1 with the Atlantic/Pomona Station Option to less than significant.

Montebello At-Grade Option

Special-status species are unlikely to occur at or near the Montebello At-Grade Option because of a lack of suitable habitat. Therefore, there would be no impacts on special-status wildlife and plant species from operation of Alternative 1 with the Montebello At-Grade Option.

Operation of Alternative 1 with the Montebello At-Grade Option would not affect the spreading grounds, rivers, or bridges differently than the base Alternative 1. Therefore, there would be less than significant impacts on bats from operation of Alternative 1 with the Montebello At-Grade Option.

Any tree trimming along Alternative 1 with the Montebello At-Grade Option during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized above and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during maintenance activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from operation of Alternative 1 with the Montebello At-Grade Option to less than significant.

Construction Impacts

As discussed in **Section 3.3.5.1**, there are no known occurrences of special-status species and no suitable habitat for special-status species within the BRSA of Alternative 1. Because of the developed nature of the BRSA of Alternative 1 and lack of suitable habitat**,** there would be no potential to impact special-status species from construction of Alternative 1.

Construction of Alternative 1 would involve the installation of replacement bridges across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. This would require activities such as installing the foundation and pouring the concrete for the superstructure. A total of one bridge column within the Rio Hondo, one column in the Rio Hondo Spreading Grounds, and four columns within the San Gabriel River would be replaced. If groundwater is encountered during excavation for bridge piers, the excavation would be supported with the use of drilling muds, or the "wet method of construction." With this method, the hole is kept filled with a drilling fluid during the entire operation of drilling the hole and placing the reinforcing and concrete. It is anticipated that the cast-in-drilled-hole method would be used for construction of bridge piers, although pile driving would be used if this method is not feasible. As discussed above, no special-status wildlife or plant species have been identified in these locations due to lack of suitable habitat; therefore, there would be no impact on special-status species related construction of the replacement bridges.

As discussed in **Section 3.3.5.2**, suitable bat roosting habitat includes the bridges over the Rio Hondo and San Gabriel River. Replacing the bridges and bridge columns in the rivers and spreading grounds could result in significant impacts on bat species, including temporary loss of bat roosting sites and noise from pile driving if this method is used for construction of bridge piers. Implementation of MM BIO-1 through MM BIO-3, which require pre-demolition bat surveys at each affected bridge site, removal of cliff swallow nests that provide or could provide bat habitat, and the development of alternative bat habitat or implementation of bat exclusion measures as needed, would protect bats from construction activities and ensure that bats have alternative habitat options to the bridges during construction. Thus, the implementation of MM BIO-1 through MM BIO-3, as discussed in **Section 3.3.7**, would reduce impacts on bats from construction of Alternative 1 to less than significant.

As discussed in **Section 3.3.5.5**, some migratory birds could nest in street trees along the Alternative 1 alignment and within station footprints. Cliff swallows were observed nesting under the Washington

Boulevard bridge during surveys in May 2016. Disturbances to vegetation and structures along Alternative 1 that provide bird nesting habitat during the bird nesting season would result in potentially significant impacts on migratory birds. In addition, pile driving near active bird nests would result in potentially significant impacts on nesting migratory birds. Implementation of MM BIO-4, as summarized above and discussed in **Section 3.3.7**, would reduce potential construction impacts on migratory birds from construction of Alternative 1 to less than significant.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, special-status species are unlikely to occur in or near the Atlantic/Pomona Station Option and remainder of Alternative 1 because of the lack of suitable habitat; thus, no impacts on special-status species would occur.

As with the base Alternative 1, suitable bat roosting habitat includes the bridges over the Rio Hondo and San Gabriel River. Replacing the bridges and bridge columns in the rivers and spreading grounds could result in significant impacts on bat species, including temporary loss of bat roosting sites and noise from pile driving if this method is used for construction of bridge piers. Implementation of MM BIO-1 through MM BIO-3, as summarized above and discussed in in **Section 3.3.7**, would protect bats from construction activities and ensure that bats have alternative habitat options to the bridges during construction. Thus, the implementation of MM BIO-1 through MM BIO-3 would reduce impacts on bats from construction of Alternative 1 with the Atlantic/Pomona Station Option to less than significant.

Some migratory birds could nest in street trees along the Atlantic/Pomona Station Option and remainder of Alternative 1. Cliff swallows were observed nesting under the Washington Boulevard bridge during surveys in May 2016. Disturbances to vegetation and structures along the alignment that provide bird nesting habitat during the bird nesting season would result in potentially significant impacts on migratory birds. In addition, pile driving near active bird nests would result in potentially significant impacts on nesting migratory birds. Implementation of MM BIO-4, as summarized above and discussed in **Section 3.3.7**, would reduce potential impacts on migratory birds from construction of Alternative 1 with the Atlantic/Pomona Station Option to less than significant.

Montebello At-Grade Option

As with the base Alternative 1, special-status species are unlikely to occur in or near the Montebello At-Grade Option and remainder of Alternative 1 because of the lack of suitable habitat; thus, no impacts on special-status species would occur.

As with the base Alternative 1, suitable bat roosting habitat includes the bridges over the Rio Hondo and San Gabriel River. Replacing the bridges and bridge columns in the rivers and spreading grounds could result in significant impacts on bat species, including temporary loss of bat roosting sites and noise from pile driving if this method is used for construction of bridge piers. Implementation of MM BIO-1 through MM BIO-3, as summarized above and discussed in in **Section 3.3.7**, would protect bats from construction activities and ensure that bats have alternative habitat options to the bridges during construction. Thus, the implementation of MM BIO-1 through MM BIO-3 would reduce impacts on bats from construction of Alternative 1 with the Montebello At-Grade Option to less than significant.

Some migratory birds could nest in street trees along the Montebello At-Grade Option and remainder of Alternative 1. Cliff swallows were observed nesting under the Washington Boulevard bridge during surveys in May 2016. Disturbances to vegetation and structures along the alignment that provides bird nesting habitat during the bird nesting season would result in potentially significant impacts on migratory birds. In addition, pile driving near active bird nests would result in potentially significant impacts on nesting migratory birds. Implementation of MM BIO-4, as summarized above and discussed in **Section 3.3.7**, would reduce potential impacts on migratory birds from construction of Alternative 1 with the Montebello At-Grade Option to less than significant.

3.3.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impact special-status species because of the developed nature of the BRSA and lack of suitable habitat along the alignment.

As discussed in **Section 3.3.5.2**, suitable bat roosting habitat includes the bridges over the Rio Hondo and San Gabriel River. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations, so no impacts on bats would occur during operation.

As discussed in **Section 3.3.5.5**, migratory birds could nest in street trees. Any tree trimming along the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized in **Section 3.3.6.1** and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during maintenance activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to less than significant.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impact special-status species because of the developed nature of the BRSA and lack of suitable habitat along the alignment.

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations, so no impacts on bats would occur during construction.

Any vegetation disturbance along the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized in **Section 3.3.6.1** and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during construction activities. Thus, the

implementation of MM BIO-4 would reduce impacts on migratory birds from construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to less than significant.

3.3.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impact special-status species because of the developed nature of the BRSA and lack of suitable habitat along the alignment.

As discussed in **Section 3.3.5.2**, suitable bat roosting habitat includes the bridges over the Rio Hondo and San Gabriel River. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations, so no impacts on bats would occur.

As discussed in **Section 3.3.5.5**, migratory birds could nest in street trees. Any tree trimming along the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized in **Section 3.3.6.1** and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during maintenance activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to less than significant.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impact special-status species because of the developed nature of the BRSA and lack of suitable habitat along the alignment.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations, so no impacts on bats would occur during construction.

Any vegetation disturbance along the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized in **Section 3.3.6.1** and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during construction activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to less than significant.

3.3.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are all within a highly developed area that does not contain habitat for special-status species or bats; thus, operations would have no impact on special-status species or bats.

The proposed MSF site options would be in a highly urbanized environment that already experiences noise and vibration levels that likely discourage birds from nesting close to the proposed location. However, there are a few street trees within and along the MSF site options. Any tree trimming within the MSF site options during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized in **Section 3.3.6.1** and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during maintenance activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from operation of MSF site options to less than significant.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are all within a highly developed area that does not contain habitat for special-status species or bats; thus, construction would have no impact on special-status species or bats.

Migratory birds could nest in street trees within the proposed MSF site construction. Vegetation disturbance within the MSF site options during the bird nesting season would result in potentially significant impacts on migratory birds. Implementation of MM BIO-4, as summarized in **Section 3.3.6.1** and discussed in **Section 3.3.7**, would ensure that bird nests would be avoided during construction activities. Thus, the implementation of MM BIO-4 would reduce impacts on migratory birds from construction of the MSF site options to less than significant.

3.3.6.2 Impact BIO-2: Riparian Habitat/Sensitive Natural Communities

Impact BIO 2: Would a Build Alternative have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS?

3.3.6.2.1 Alternative 1 Washington

Operational Impacts

As discussed in **Section 3.3.5.3**, no sensitive vegetation communities exist within the BRSA of Alternative 1; therefore, there would be no impacts on sensitive vegetation communities from operation of Alternative 1.

Equipment used for maintenance activities, such as painting and pressure washing, has the potential to transport invasive plant seeds if used in areas of exposed soil. However, maintenance activities would primarily occur within developed or paved areas. Thus, it is unlikely that operation of Alternative 1 would introduce or spread invasive plants; impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

No sensitive vegetation communities exist within the Atlantic/Pomona Station Option or the remainder of Alternative 1. Thus, there would be no impacts on sensitive vegetation communities from operation of Alternative 1 with the Atlantic/Pomona Station Option.

Equipment used for maintenance activities, such as painting and pressure washing, has the potential to transport invasive plant seeds if used in areas of exposed soil. However, maintenance activities would primarily occur within developed or paved areas. Thus, it is unlikely that operation of Alternative 1 with the Atlantic/Pomona Station Option would introduce or spread invasive plants; impacts would be less than significant.

Montebello At-Grade Option

No sensitive vegetation communities exist within Alternative 1 with the Montebello At-Grade Option; therefore, no impacts on sensitive vegetation communities would occur.

Equipment used for maintenance activities, such as painting and pressure washing, has the potential to transport invasive plant seeds if used in areas of exposed soil. However, maintenance activities would primarily occur within developed or paved areas. Thus, it is unlikely that operation of Alternative 1 with the Montebello At-Grade Option would introduce or spread invasive plants; impacts would be less than significant.

Construction Impacts

As discussed in **Section 3.3.5.3**, no impacts on sensitive vegetation communities would occur during construction as no sensitive vegetation communities exist within the BRSA of Alternative 1. Impacts on non-sensitive vegetation communities are discussed in more detail in Appendix D.

Many species of invasive plants were observed in the areas where construction would occur. Along the underground, at-grade, and aerial portions of the alignment, construction equipment would likely be operated within areas of exposed dirt. The possible introduction or spread of invasive plants during construction from use of equipment, which could spread invasive plant seeds from one area of exposed soil to another, would result in a potentially significant impact on native vegetation communities and habitat. Implementation of MM BIO-5, which requires the contractor to clean

construction vehicles with compressed air or water within a designated containment area and MM BIO-6, which requires the contractor to wash soil and plant material off all equipment tires and tread before moving to areas of exposed soils, as identified in **Section 3.3.7**, would reduce the potential to spread invasive plant seeds and would thus reduce impacts to less than significant.

Design Options

Atlantic/Pomona Station Option

No sensitive vegetation communities exist within Alternative 1 with the Atlantic/Pomona Station Option; therefore, no impacts on sensitive vegetation communities would occur during construction.

As with the base Alternative 1, there would be a potentially significant impact from the possible introduction or spread of invasive plants from use of construction equipment in areas of exposed soil. Implementation of MM BIO-5 and MM BIO-6, as summarized above and identified in **Section 3.3.7**, would reduce the potential to spread invasive plant seeds and would thus reduce impacts to less than significant.

Montebello At-Grade Option

No sensitive vegetation communities exist within Alternative 1 with the Montebello At-Grade Option; therefore, no impacts on sensitive vegetation communities would occur.

As with the base Alternative 1, there would be a potentially significant impact from the possible introduction or spread of invasive plants from use of construction equipment in areas of exposed soil. Implementation of MM BIO-5 and MM BIO-6, as summarized above and identified in **Section 3.3.7**, would reduce the potential to spread invasive plant seeds and would thus reduce impacts to less than significant.

3.3.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

As discussed in **Section 3.3.5.3**, no sensitive vegetation communities exist along the Alternative 2 alignment or within the Atlantic/Pomona Station Option; therefore, there would be no impacts on sensitive vegetation communities from operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option.

Equipment used for maintenance activities, such as painting and pressure washing, has the potential to transport invasive plant seeds if used in areas of exposed soil. However, maintenance activities would primarily occur within developed or paved areas. Thus, it is unlikely that maintenance of LRT facilities would introduce or spread invasive plants; impacts would be less than significant.

Construction Impacts

Base Alternative and Design Option

As discussed in **Section 3.3.5.3**, no sensitive vegetation communities exist along the Alternative 2 alignment or within the Atlantic/Pomona Station Option. Therefore, no impacts on sensitive vegetation communities would occur during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option.

The possible introduction or spread of invasive plants during construction from equipment use would result in a potentially significant impact on native vegetation communities and habitat in surrounding areas. Implementation of MM BIO-5 and MM BIO-6, as summarized in **Section 3.3.6.2.1** and identified in **Section 3.3.7**, would reduce the potential to spread invasive plant seeds and would thus reduce impacts to less than significant.

3.3.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

As discussed in **Section 3.3.5.3**, no sensitive vegetation communities exist along the Alternative 3 alignment or within the Atlantic/Pomona Station Option or the Montebello At-Grade Option. Therefore, no impacts on sensitive vegetation communities would occur during operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option.

Equipment used for maintenance activities, such as painting and pressure washing, has the potential to transport invasive plant seeds if used in areas of exposed soil. However, maintenance activities would primarily occur within developed or paved areas. Thus, it is unlikely that maintenance of LRT facilities would introduce or spread invasive plants; impacts would be less than significant.

Construction Impacts

Base Alternative and Design Options

As discussed in **Section 3.3.5.3**, no sensitive vegetation communities exist along the Alternative 3 alignment or within the Atlantic/Pomona Station Option or the Montebello At-Grade Option; therefore, no impacts on sensitive vegetation communities would occur during construction the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option.

The possible introduction or spread of invasive plants during construction from equipment use would result in a potentially significant impact on native vegetation communities and habitat in surrounding areas. Implementation of MM BIO-5 and MM BIO-6, as summarized in **Section 3.3.6.2.1** and identified in **Section 3.3.7**, would reduce the potential to spread invasive plant seeds and would thus reduce impacts to less than significant.

3.3.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of either the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not impact sensitive vegetation communities, as none exist at or near the MSF site options.

Equipment used for maintenance activities, such as painting and pressure washing, has the potential to transport invasive plant seeds if used in areas of exposed soil. However, because the proposed MSF site options are mostly paved, it is unlikely that maintenance occurring at any MSF site option would introduce or spread invasive plants; impacts would be less than significant.

Construction Impacts

MSF Site Options and Design Option

The construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not directly impact sensitive vegetation communities, as none exist at or near the MSF site options.

Equipment used for construction activities has the potential to transport invasive plant seeds if used in areas of exposed soil. Because the proposed MSF site options are mostly paved, it is unlikely that construction of any MSF site option would introduce or spread invasive plants from equipment use; impacts would be less than significant.

3.3.6.3 Impact BIO-3: Movement of Fish and Wildlife Species

Impact BIO 3: Would a Build Alternative 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?

3.3.6.3.1 Alternative 1 Washington

Operational Impacts

The Rio Hondo and San Gabriel River may provide for movement of fish and other aquatic or semi-aquatic native wildlife species. Operation of Alternative 1 would not include in-water work or restrict fish and wildlife movement within rivers beyond existing conditions. Additionally, no established terrestrial wildlife corridors are located along the Alternative 1 alignment. Thus, there would be no impact on the movement of fish and wildlife species from operation of Alternative 1.

Design Options

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option is in a developed area without any aquatic areas or terrestrial wildlife corridors. As with the base Alternative 1, operation of Alternative 1 with the Atlantic/Pomona Station Option would not include in-water work and would not restrict movement of fish and wildlife beyond exiting conditions. Thus, there would be no impact on the movement of fish and wildlife species from operation of Alternative 1 with the Atlantic/Pomona Station Option.

Montebello At-Grade Option

The Montebello At-Grade Option is in a developed area without any aquatic areas or terrestrial wildlife corridors. As with the base Alternative 1, operation of Alternative 1 with the Montebello At-Grade Option would not include in-water work and would not restrict movement of fish and wildlife. Thus, there would be no impact on the movement of fish and wildlife species from operation of Alternative 1 with the Montebello At-Grade Option.

Construction Impacts

Construction of Alternative 1 would involve construction across the Rio Hondo or San Gabriel River or the Rio Hondo Spreading Grounds. As set forth in PM HWQ-3 (**Section 3.3.7.1**), to the extent feasible, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water and the common aquatic species mentioned in **Section 3.3.5** would be unlikely to be present. If work occurs when water is present in the Rio Hondo and spreading grounds or the San Gabriel River, common aquatic species present in the water bodies would be able to readily move away from the in-water work. Therefore, there would be less than significant impacts on the movement of fish and wildlife species from construction of Alternative 1. The implementation of MM HWQ-1, which would require the work area to be isolated so that construction does not occur in water as discussed in Section 3.9, Hydrology and Water Quality, and Appendix J, would further reduce impacts on fish and wildlife movement.

Design Options

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option is in a developed area without any aquatic areas or terrestrial wildlife corridors. Overall, Alternative 1 with the Atlantic/Pomona Station Option would require the same construction across the Rio Hondo and spreading grounds and the San Gabriel River as the base Alternative 1, and impacts would be the same. As set forth in PM HWQ-3 (**Section 3.3.7.1**), to the extent feasible, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water and the common aquatic species mentioned in **Section 3.3.5** would be unlikely to be present. If work occurs when water is present in the Rio Hondo and spreading grounds or the San Gabriel River, common aquatic species present in the water bodies would be able to readily move away from the in-water work. Therefore, there would be less than significant impacts on the movement of fish and wildlife species from construction of Alternative 1 with the Atlantic/Pomona Station Option. The implementation of MM HWQ-1, which would require the work area to be isolated so that construction does not occur in water

as discussed in Section 3.9, Hydrology and Water Quality, and Appendix J, would further reduce impacts on fish and wildlife movement.

Montebello At-Grade Option

The Montebello At-Grade Option is in a developed area without any aquatic areas or terrestrial wildlife corridors. Alternative 1 with the Montebello At-Grade Option would require the same construction across the Rio Hondo and spreading grounds and the San Gabriel River as the base Alternative 1, and impacts would be the same. As set forth in PM HWQ-3 (**Section 3.3.7.1**), to the extent feasible, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water and the common aquatic species mentioned in **Section 3.3.5** would be unlikely to be present. If work occurs when water is present in the Rio Hondo and spreading grounds or the San Gabriel River, common aquatic species present in the water bodies would be able to readily move away from the in-water work. Therefore, there would be less than significant impacts on the movement of fish and wildlife species from construction of Alternative 1 with the Montebello At-Grade Option. The implementation of MM HWQ-1, which would require the work area to be isolated so that construction does not occur in water as discussed in Section 3.9, Hydrology and Water Quality, and Appendix J, would further reduce impacts on fish and wildlife movement.

3.3.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option do not cross the Rio Hondo, San Gabriel River, other aquatic corridors, or established terrestrial wildlife corridors. Thus, there would be no impacts on the movement of fish and wildlife species from operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option.

Construction Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option do not cross the Rio Hondo, San Gabriel River, other aquatic corridors, or established terrestrial wildlife corridors. Thus, there would be no impacts on the movement of fish and wildlife species from construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option.

3.3.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option do not cross the Rio Hondo, San Gabriel River, other aquatic corridors, or

established terrestrial wildlife corridors. Thus, there would be no impacts on the movement of fish and wildlife species from operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option.

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option do not cross the Rio Hondo, San Gabriel River, other aquatic corridors, or established terrestrial wildlife corridors. Thus, there would be no impacts on the movement of fish and wildlife species from construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option.

3.3.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not impact the movement of fish and wildlife species because there are no aquatic or terrestrial corridors within the MSF site options.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not impact the movement of fish and wildlife species because there are no aquatic or terrestrial wildlife corridors within the MSF site options.

3.3.6.4 Impact BIO-4: Policies and Ordinances

Impact BIO 4: Would a Build Alternative conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

3.3.6.4.1 Alternative 1 Washington

Operational Impacts

Trees along the Alternative 1 alignment and within proposed stations would be protected by local tree protection policies discussed in **Section 3.3.2.3** and Appendix D. Trees within the Alternative 1 alignment and station footprints are discussed in **Sections 3.3.5.5**. Any maintenance that requires tree trimming would comply with local policies and municipal codes protecting both native trees and street trees. Thus, Alternative 1 would not conflict with tree protection policies or other local policies or ordinances protecting biological resources; no impact would occur.

Design Options

Atlantic/Pomona Station Option

Under Alternative 1 with the Atlantic/Pomona Station Option, maintenance activities, such as tree trimming, would be conducted in accordance with tree protection policies and would not conflict with policies or ordinances protecting trees or other biological resources; no impact would occur.

Montebello At-Grade Option

Under Alternative 1 with the Montebello At-Grade Option, maintenance activities, such as tree trimming, would be conducted in accordance with tree protection policies and would not conflict with policies or ordinances protecting trees or other biological resources; no impact would occur.

Construction Impacts

As discussed in **Section 3.3.5.5**, approximately 1,100 trees are located along the alignment and within the station footprints of Alternative 1. It is unknown exactly how many trees would be affected by construction of Alternative 1, but not all trees along the alignment would be affected. Where the proposed alignment is in an aerial configuration, column placement could require tree removal and the overhead guideways may also require both tree removal and trimming to keep them clear of vegetation. At-grade segments would require tree removal from medians and could require both tree removal and tree trimming along sidewalks as streets are widened or sidewalks are reconfigured. Therefore, not all the trees along a block would be affected. As project design progresses and construction plans are finalized it may be possible to minimize the number of affected trees by avoidance or fencing. Prior to construction, local policies and municipal codes regarding protection of both native trees and street trees, as described in Appendix D, would be considered to ensure compliance requirements are met. Thus, construction of Alternative 1 would not conflict with tree protection policies or other local policies or ordinances protecting biological resources. There would be less than significant impacts from construction of Alternative 1.

Design Options

Atlantic/Pomona Station Option

Approximately 1,100 trees are located along the alignment and within the station footprints of Alternative 1 with the Atlantic/Pomona Station Option. As with the base Alternative 1, not all trees would be affected by construction. Construction of Alternative 1 with the Atlantic/Pomona Station Option would be conducted in accordance with local tree protection policies. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would not conflict with tree protection policies or other local policies or ordinances protecting biological resources and impacts would be less than significant.

Montebello At-Grade Option

Approximately 1,100 trees are located along the alignment and within the station footprints of Alternative 1 with the Montebello At-Grade Option. As with the base Alternative 1, not all trees would be affected by construction. Construction of Alternative 1 with the Montebello At-Grade Option would be conducted in accordance with local tree protection policies. Thus, construction of Alternative 1 with

the Montebello At-Grade Option would not conflict with tree protection policies or other local policies or ordinances protecting biological resources and impacts would be less than significant.

3.3.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Any maintenance of LRT facilities that entails tree trimming would be conducted in accordance with local policies and municipal codes that protect both native trees and street trees, as outlined in **Section 3.3.2**. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict with local policies and municipal codes protecting trees or other biological resources and there would be no impact.

Construction Impacts

Base Alternative and Design Option

As discussed in **Section 3.3.5.5**, approximately 310 trees are located along the alignment and within the station footprints of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option may require tree removal or trimming. It is not expected that all the trees along the alignment or within station footprints would be affected by construction. This work would be conducted in accordance with local policies and municipal codes that protect both native trees and street trees. Tree protection policies typically require tree removal permits and tree replacement or relocation under a plan prepared in compliance with these policies. Therefore, the construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict with local policies and municipal codes protecting trees or other biological resources and the impact would be less than significant.

3.3.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Any maintenance of LRT facilities that entails tree trimming would be conducted in accordance with local policies and municipal codes that protect native trees and street trees. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with local policies and municipal codes protecting trees or other biological resources and there would be no impact.

Construction Impacts

Base Alternative and Design Options

As discussed in **Section 3.3.5.5**, approximately 600 trees would be located along the alignment and within the station footprints of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Construction of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option may require tree removal or trimming. It is not expected that all the trees along the alignment or within station footprints would be affected by construction. This work would be conducted in accordance with local policies and municipal codes that protect both native trees and street trees. Therefore, the construction of Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with local policies and municipal codes protecting trees or other biological resources and the impact would be less than significant.

3.3.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Any maintenance of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option that entails tree trimming would be conducted in accordance with policies and codes protecting trees, as outlined in **Section 3.3.2.3**. Thus, operation would not conflict with local policies and municipal codes protecting trees and there would be no impact.

Construction Impacts

MSF Site Options and Design Option

As discussed in **Section 3.3.5.5**, approximately 35 trees are within the Commerce MSF site option and 10 tree are within the Montebello MSF site option. Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option may require tree removal or trimming. This work would be conducted in accordance with policies and codes protecting trees. Tree protection policies typically require tree removal permits and tree replacement or relocation under a plan prepared in compliance with these policies. Thus, construction would not conflict with local policies and municipal codes protecting trees or other biological resources and impacts would be less than significant.

3.3.7 Project Measures and Mitigation Measures

3.3.7.1 Project Measures

Project measures are design features, best management practices, or other measures required by law and/or permit approvals. The project measure listed below is a component of the Project that is applicable to the base Alternative 1 or Alternative 1 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option.

PM HWQ-3: Avoidance of In-Water Work (Applies to Alternative 1 only). In-water work is discussed in more detail in Section 3.9, Hydrology and Water Quality.

- To the extent feasible, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River shall be scheduled to occur in the dry season when there is no water.

3.3.7.2 Mitigation Measures

As identified in **Section 3.3.6**, the Build Alternatives and Build Alternatives with the design option(s) would have potentially significant impacts on biological resources under Impact BIO-1 (Protected Species) and Impact BIO-2 (Riparian Habitat/Sensitive Natural Communities), and the MSF site options would have significant impacts under Impact BIO-1 (Protected Species). Mitigation measures to reduce the impacts are presented herein. MM BIO-1 through MM BIO-3 apply only to Alternative 1 and Alternative 1 with the design options. MM BIO-4 through MM BIO-6 apply to all Build Alternatives and Build Alternatives with the design option(s).

Following the mitigation measures, **Table 3.3-2** identifies applicable measures and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM BIO-1: Up to a year prior to demolition work occurring at bridges, and in coordination with CDFW, bat emergence surveys and nighttime surveys shall be conducted at each affected bridge site to confirm whether bats are roosting on or within 100 feet of any of the bridges affected by construction activities. Surveys shall be scheduled by Metro or the contractor. Surveys shall be conducted using ultrasonic detectors and night vision technology in order to capture species and emergence locations. Surveys shall include species classification of detected bat calls to help identify bat species roosting within 100 feet of the construction area. If it is determined that bat species are roosting on or within 100 feet of the bridges affected by construction activities, MM BIO-3 shall be implemented.

MM BIO-2: Prior to demolition work occurring at bridges and outside of the bird nesting season for cliff swallows (February 15 to August 31), inactive swallow nests on or within 100 feet of the affected bridges shall be surveyed by a qualified biologist to determine whether they are occupied by roosting bats. If the nests are unoccupied, they shall be removed under the direction of a qualified biologist. Any nests occupied by bats shall be removed under supervision of a qualified biologist in consultation with CDFW during nighttime hours following the evening emergence of occupying bats.

MM BIO-3: If it is determined that bat species are roosting on or within 100 feet of the affected bridges, consultation with CDFW shall be conducted prior to initiating construction, a CDFW-approved bat exclusion plan shall be developed, and the following measures shall be implemented along with any additional measures required by CDFW to avoid impacts on bat species:

- At least six months prior to construction at the affected bridges, alternative roosting sites shall be researched and surveyed by a qualified biologist, and alternative bat habitat (e.g., concrete Oregon wedge enclosure, bat houses, etc.) shall be developed and installed, in coordination with CDFW, at nearby locations to provide alternative habitat for bats displaced by project construction.

- Bat exclusion measures shall be explored and implemented on the bridges and within 100 feet of the affected bridges, or as determined by a qualified bat biologist, to the maximum extent feasible to reduce the potential for bat presence during construction. Bat exclusionary measures could include expandable foam placed in expansion joints and crevices, and sheet plastic fitted with one-way exits in areas where bats are potentially roosting. Bat exclusion shall only be installed during the fall and winter seasons, generally after September 30, to avoid impacts on maternal and juvenile bats. No less than six weeks prior to construction, a qualified biologist shall survey the area to confirm that exclusionary measures have been successful and that no bats remain in the exclusion area. If any bats remain within the exclusion area, appropriate measures shall be developed and implemented, in coordination with CDFW prior to construction at the affected bridges, to prevent impacts on bats.

MM BIO-4: Prior to the implementation of construction activities (e.g., demolition of structures, excavation, grading, construction of access roads) that would result in removal of or disturbances to vegetation and structures providing bird nesting habitat, and prior to pile driving near active bird nests and maintenance activities (e.g., tree trimming) during the bird nesting season, which generally runs from January 1 through September 1, the following shall occur:

- One biological survey shall be conducted 72 hours prior to construction or maintenance that shall remove or disturb suitable nesting habitat during the breeding season. The survey shall be performed by a biologist with experience conducting breeding bird surveys. The biologist shall prepare a survey report within 24 hours of conducting the survey, documenting the presence or absence of any active nest of a migratory bird. If an active nest is located, an appropriate no-work buffer shall be established by CDFW and vegetation removal within the buffer shall be postponed until the nest is vacated and juveniles have fledged (minimum of six weeks after egg-laying) and when there is no evidence of a second attempt at nesting. Buffers may be as large as 300 feet for migratory bird nests and 500 feet for raptor nests.

MM BIO-5: To minimize the introduction of invasive plant species into construction areas, construction vehicles and equipment shall be cleaned with compressed water or air within a designated containment area to remove pathogens, invasive plant seeds, or plant parts and dispose of them in an appropriate disposal facility.

MM BIO-6: The contractor shall wash soil and plant material off all equipment tires and treads before moving from one construction area, or area of exposed soil, to another (or moving to and from the staging area to the area of exposed soil).

3.3.8 Significance After Mitigation

As identified in **Table 3.3-2,** with implementation of mitigation measures MM BIO-1 through MM BIO-6, impacts related to protected species (Impact BIO-1) and Riparian Habitat/Sensitive Natural Communities (Impact BIO-2), all impacts would be reduced to less than significant for all alternatives and design options.

Only Alternative 1 involves implementation of an additional water quality-related mitigation measures (MM HWQ-1) applicable to movement of fishes/wildlife species (Impact BIO-3) regardless of the MSF and station options. While impacts would be less than significant without mitigation, implementation of MM HWQ-1 would further reduce impacts.

Table 3.3-2. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
BIO-1 Protected Species	Applicable Mitigation	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4	MM BIO-4
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
BIO-2 Riparian Habitat/ Sensitive Natural Communities	Applicable Mitigation	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6	MM BIO-5 MM BIO-6
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
BIO-3 Movement of Fish and Wildlife Species	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
BIO-4 Policies/ Ordinances	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.4 Cultural Resources

3.4.1 Introduction

This section discusses the Project setting in relation to cultural resources. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. (See Public Resource Code (PRC), § 5020.1, subd.(b).) The section describes existing conditions, current applicable regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options.

The cultural resources study area is the Area of Potential Effects (APE), which is described in **Section 3.4.3**. Information in this section is based on the Eastside Transit Corridor Phase 2 Cultural Resources Impacts Report (Appendix E).

3.4.2 Regulatory Framework

3.4.2.1 Federal

Cultural resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (54 United States Code [U.S.C.] 300101 et seq.), and the implementing regulations, Protection of Historic Properties (36 Code of Federal Regulations [CFR] Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. Prior to implementing an "undertaking" (e.g., issuing a federal permit), the NHPA (54 U.S.C. 306108) requires federal agencies to consider the effects of the undertaking on historic properties and to afford the Advisory Council on Historic Preservation and the State Historic Preservation Officer (SHPO) a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (NRHP). The NRHP recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels. Unless the property possesses exceptional significance, it must be at least 50 years old to be eligible for NRHP listing. SHPO involvement extends to projects receiving federal funding or located on state-owned property. SHPO does not otherwise have jurisdiction over locally funded projects. Under the NHPA, properties of traditional religious and cultural importance to a Tribe are eligible for inclusion in the NRHP (54 U.S.C. 302706). Also, under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 CFR 60.4. Because the Project is not receiving federal funding and does not require a federal permit, it is not subject to SHPO review or to the provisions of the NHPA.

3.4.2.2 State

Applicable state laws and regulations include CEQA, Health and Safety Code Sections 7052 and 7050.5., the California Native American Historical, Cultural, and Sacred Sites Act, PRC Section 5097, and Assembly Bill (AB) 52 (PRC Sections 21080.3.4, 21080.3.2, and 21082.3). Section 21084.1 of CEQA requires the lead agency to determine whether a project could have a significant effect on historical resources and equates a substantial adverse change in the significance of an historical resource with a significant effect on the environment. Section 7052 of the Health and Safety Code states that the

disturbance of Native American cemeteries is a felony. Section 7050.5 of the Code and the California Native American Historical, Cultural, and Sacred Sites Act require that construction or excavation be stopped in the vicinity of discovered human remains until the coroner can determine whether the remains are Native American. If determined to be Native American, the coroner must contact the California Native American Heritage Commission (NAHC). AB 52 establishes a new class of resources under CEQA: "tribal cultural resources" (or TCRs). The evaluation of TCRs is provided in Section 3.15, Tribal Cultural Resources.

3.4.2.3 Local

The Build Alternative APE includes the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier, and the unincorporated communities of East Los Angeles and Whittier-Los Nietos in Los Angeles County. Los Angeles County and the cities of Commerce and Whittier have local preservation ordinances. These regulations include the relevant general plan policies, ordinances, and municipal codes. All of the jurisdictions' general plan policies and municipal codes require the protection of designated historic buildings, landmarks, neighborhoods and works of art. The Los Angeles Historic Preservation Ordinance (Los Angeles County Code, Title 22, Part 28, Chapter 22.52) applies to all private property in the unincorporated county area and to county-owned landmarks, and provides a process to nominate a landmark or historic district at the county level. The Board of Supervisors may designate any county-owned property as a landmark if it determines that the property satisfies applicable criteria, which are similar to the eligibility criteria for the state's register of historic resources. More detailed information regarding the local preservation ordinances is included in Appendix E.

3.4.3 Methodology

This analysis is undertaken to determine if the Project may have a significant impact to cultural resources, specifically historical resources, archaeological resources, and human remains, thus requiring the consideration of mitigation measures or alternatives in accordance with Section 15063 of the State CEQA Guidelines. The analysis covers all program components that could result in a physical change to the environment.

3.4.3.1 Area of Potential Effects

The specialized study area for this cultural resource assessment is referred to as the APE. Following federal guidelines, an APE is defined in 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." For archaeological resources, the APE is typically the three-dimensional limits of proposed ground disturbance, including temporary ground disturbance, also known as the Area of Direct Impact (ADI). The ADI includes the ROW and any areas of direct ground disturbance during project construction, including staging areas.

For built environment/architectural resources, the APE includes all proposed ROW and acquisition and construction areas, and all parcels adjacent to permanent site improvements and facilities, including at-grade and grade-separated alignments; stations and power substations; parking facilities; and maintenance yards and buildings. For elevated alignments, the APE includes any additional

parcels where the elevated structure may alter the character, use, or setting of a potential historical resource. Typically, the APE extends out from the alignment approximately 150 to 350 feet, or a depth of from one to three parcels, depending on parcel sizes, intervening landscape and buildings, and whether the historic land use is sensitive to the proposed change in setting. The APE is documented on a series of maps provided in Attachment A of Appendix E.

3.4.3.2 Interested Parties Consultation

Metro sought information, as appropriate, from individuals and organizations likely to have knowledge of or concerns about historical resources in the APE to identify issues related to potential impacts on historical resources. Letters were sent to the parties listed below describing the detailed study area (DSA) and the United States Geological Survey (USGS) topographic maps of the Build Alternatives. The full contact information and addresses can be found in Appendix E and copies of the letters sent to interested parties and a summary of Native American consultation may be found in Attachment B of Appendix E. No responses have been received to date.

- Government Agencies
  - Los Angeles County Historic Landmarks and Records Commission
  - Los Angeles County Department of Regional Planning
  - Pico Rivera Community Development Department Planning Division
  - Santa Fe Springs Planning and Development Department
  - Commerce Community Planning Department
  - Montebello Planning Division
  - Whittier Planning Services
- Historical Societies, Museums, and Libraries
  - Historical Society of Southern California
  - California State Railroad Museum
  - Commerce Central Library
  - Sanchez Adobe/Montebello Historical Society
  - Pico Rivera Historical Museum
  - Santa Fe Springs Parks and Recreation
  - Heritage Park
  - Hathaway Ranch Museum
  - Santa Fe Springs City Library
  - Whittier Historical Society

- Preservation Organizations
  - Los Angeles Conservancy
  - Friends of the Los Angeles River
  - California Preservation Foundation
  - Society of Architectural Historians - Southern California Chapter
  - Southern Pacific Historical and Technology Society
  - Pacific Railroad Society

3.4.3.3 Identification of Potential Historic Properties

3.4.3.3.1 Records Search

Archaeologists, historians, and architectural historians who meet the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) and are familiar with resources within the APE and research considerations conducted the cultural resources study.

A records search for the project was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS), California State University, Fullerton in 2010. An update was conducted on October 22 and November 4, 2019. The search included a review of all recorded prehistoric archaeological sites within a 1-mile radius of the APE and a review of all recorded historic archaeological and architectural sites and cultural resource reports on file within a 0.5-mile radius of the APE. In addition, the California Points of Historical Interest (PHI), the California Historical Landmarks (CHL), the CRHR, the NRHP, the California State Historic Resources Inventory (HRI), and local registers were reviewed. Historical USGS quadrangle maps were also reviewed. Results of the SCCIC records search are provided in Confidential Attachment C of Appendix E (this attachment is not part of the EIR pursuant to PRC Section 21082.3(c)(1)).

The records search identified 134 previous cultural resources studies within a 0.5-mile radius of the APE, including 32 studies that intersect the APE. The records search identified 258 previously recorded built environment resources within the APE, which include 246 found ineligible for listing and one that was unevaluated. One resource, the Golden Gate Theater (P-19-176524), is listed in the NRHP. Ten other resources were identified as eligible for listing in the NRHP. **Table 3.4-1** lists the 11 previously recorded resources listed in or eligible for listing in the NRHP and/or CRHR in the APE.

Table 3.4-1. Previously Recorded Significant Built Environment Resources in the APE

Primary No.	Address	Date	Description	OHP Status Code
19-176524	5170 East Whittier Boulevard	1927	Golden Gate Theater/Vega Building	1S; 3S
19-190999	2187 Garfield Avenue	1955	Pacific Metals Company/Rolled Steel Products	3S
19-191000	2353 Garfield Avenue	1952	Goodyear Tire and Rubber Company Warehouse	3S
19-191003	900 South Greenwood Avenue	1947	Greenwood Elementary School	3S
19-191004	860 Washington Boulevard	1937	Spanish Colonial Revival-style single-family residence	3S
19-191005	864 Washington Boulevard	1940	South Montebello Irrigation District	3S
19-191098	6751 Lindsey Avenue	1954	Ranch-style single-family residence	3S
19-191099	9023 Washington Boulevard	1951	Dal Rae Restaurant	3S
19-191100	12000 Washington Boulevard	1951	Rheem Manufacturing Company	3S
19-191102	11605 Washington Boulevard	1965	Steak Corral restaurant	3S
19-191105	9122 E. Washington Boulevard	1886	Atchison, Topeka & Santa Fe Railway Depot	3S

Key:
1S = Listed in the NRHP; 3S = Eligible for listing in the NRHP

The records search also identified five previously recorded archaeological resources (**Table 3.4-2**), including three historic-period archaeological sites and two multicomponent sites within a 0.5-mile radius of the ADI. One additional historical resource and potential archaeological resource, the Site of the Battle of Rio San Gabriel (CHL #385) is marked north of the ADI on Bluff Road near the intersection with Washington Boulevard. The battle, which occurred during the Mexican-American War, stretched along Rio Hondo in the vicinity of the CHL marker.

Table 3.4-2. Previously Recorded Archaeological Resources within a 0.5-mile Radius of the ADI

Primary No.	Trinomial	Description	Author and Year	Location
19-000858	CA-LAN-858	Sparse historic refuse scatter	Jones et al., 1976	Outside of the ADI
19-001009	CA-LAN-1009	Multicomponent habitation site	Sayles, 1955; Denmark, 1979	Outside of the ADI
19-001311	CA-LAN-1311	Prehistoric lithic scatter and historic refuse scatter	Brock et al., 1986	Outside of the ADI
19-003813	CA-LAN-3813	Montebello Oil Field, including historic refuse scatters	Fulton et al., 2008	Outside of the ADI
19-003814	CA-LAN-3814	Sparse historic refuse scatter	Long et al., 2008	Outside of the ADI

Key:
ADI = Area of Direct Impact

The California Department of Transportation (Caltrans) Historic Highway Bridge Inventory (for both local and state agency bridges) was reviewed to identify historic bridges in the APE. Bridges listed on these inventories are placed in one of the five numeric categories as follows: (1) Listed in the NRHP; (2) Eligible for NRHP listing; (3) May be eligible for NRHP listing; (4) Unevaluated; generally, Category 4 bridges constructed before 1965 are associated with properties that have not yet been evaluated, such as railroads, canals, or potentially eligible historic roads; and (5) Ineligible for NRHP listing. Five historic-period bridges that are in the APE, including the Washington Boulevard bridges over the Rio Hondo and San Gabriel River that would be replaced under the Project, received an NRHP status designation of Category (5), ineligible for NRHP listing.

3.4.3.3.2 Field Survey

From December 16 through 19, 2019, cultural resources surveys were undertaken to identify cultural resources in portions of the APE that were accessible and/or visible from the public ROW. The broad pool of cultural resources identified are categorized as historic and architectural resources, and archaeological resources. This study also incorporates a previous survey of the built environment conducted in 2010.

The survey identified 384 historic and architectural resources that were more than 45 years old. Of the 384 resources, 258 were previously recorded and revisited, and 126 were newly identified, recorded, and evaluated for eligibility for listing in the NRHP and CRHR. Of the newly recorded 126 resources, 38 were found eligible for listing in the NRHP and CRHR as contributors to a potential historic district (Vail Field Industrial Addition). The remaining 88 resources were found ineligible for listing in the NRHP and CRHR. Detailed identification and evaluation information for all 384 historical and architectural resources in the APE is provided on California Department of Parks and Recreation (DPR) 523 forms in Attachment D of Appendix E.

On December 18 and 19, 2019, a pedestrian survey of the accessible portions of the ADI was conducted to identify archaeological resources. The only portions of the ADI that were accessible were in the public ROW. Approximately 95 percent of the ADI is paved; these areas were inspected, but not transected. Unpaved areas with exposed soils were surveyed using 10-meter intervals. Of the remaining 5 percent of the ADI with exposed soils, only about 10 percent of the ground surface was visible due to thick vegetation cover.

Three historic-period cultural resources were identified during the pedestrian survey that include one culvert (PD-1) and two sets of railroad tracks (PD-2 and PD-3):

- PD-1 is a historic-period culvert located under bridge 53C0471 on Washington Boulevard in Alternative 1. The culvert contains modern alterations and additions to its original form. PD-1 no longer retains historic integrity and does not have the potential to yield important scientific or historical information or data.

- PD-2 consists of two parallel railroad tracks approximately 80 feet long set perpendicular across Saybrook Avenue in Alternative 1. The ROW for these features is still present, however, the tracks have been removed except where they are embedded within Saybrook Avenue. The ROW was not surveyed beyond the ADI. PD-2 no longer retains historic integrity and does not have the potential to yield important scientific or historical information or data.

- PD-3 consists of a second set of two parallel railroad tracks approximately 80 feet long set perpendicular across Saybrook Avenue in Alternative 1. The ROW for these features is present, however, the tracks have been removed except where they are embedded within Saybrook Avenue. The ROW was not surveyed beyond the ADI. PD-3 no longer retains historic integrity and does not have the potential to yield important scientific or historical information or data.

No potential historical resources or unique archaeological resources were identified as a result of the archaeological pedestrian survey. Newly recorded resources PD-1, PD-2, and PD-3 are in the ADI but do not appear eligible for listing on the NRHP or CRHR. These resources are not addressed further.

3.4.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to Cultural Resources if it would:

Impact CUL-1: Cause a substantial adverse change in the significance of a historical resource pursuant to 15064.5

Impact CUL-2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5.

Impact CUL-3: Disturb any human remains, including those interred outside of formal cemeteries.

3.4.5 Existing Setting

3.4.5.1 Context

The general study area (GSA) is in a relatively flat area of the Los Angeles Basin formed by the Santa Monica Mountains to the northwest, the San Gabriel Mountains to the north, and the San Bernardino and San Jacinto Mountains to the east. The GSA has the potential to contain buried archaeological resources based on the age of the landforms and its proximity to the Rio Hondo and San Gabriel River that have historically deposited sediment in the GSA. Most Pleistocene-age or older landforms have little potential for harboring buried archaeological resources because they developed prior to human migration to North America. However, buried soils in Holocene-age landforms or beneath Holocene deposits represent formerly stable surfaces that have a potential for preserving archaeological deposits.

Industrial development within the DSA was heavily influenced by the railroads, the discovery of oil, and the rise of the industrial park at the turn of the 20th century. This industrial development was made possible by the extensive network of Union Pacific, Southern Pacific, and Atchison, Topeka & Santa Fe Railway (AT&SF) main lines and spur tracks that served the region. The Central Manufacturing District spans approximately 5,000 acres and is partially located within the cities of Commerce, Bell, and Vernon, eastward from Soto Street to Garfield Avenue; the southern edge is bordered partly by Fruitland Avenue and Randolph Street; on the northern edge are Washington Boulevard and the Santa Ana Freeway route, partially extending north beyond the freeway line (**Figure 3.4.1**) (LAPL 2020). The new industrial tracts of East Los Angeles contained a variety of industrial building types, including warehouses, manufacturing facilities, and combination office/factories with designs ranging from the utilitarian (concrete, brick, or corrugated metal) to popular architectural styles of the day (e.g., Spanish Colonial Revival, Streamline Moderne).

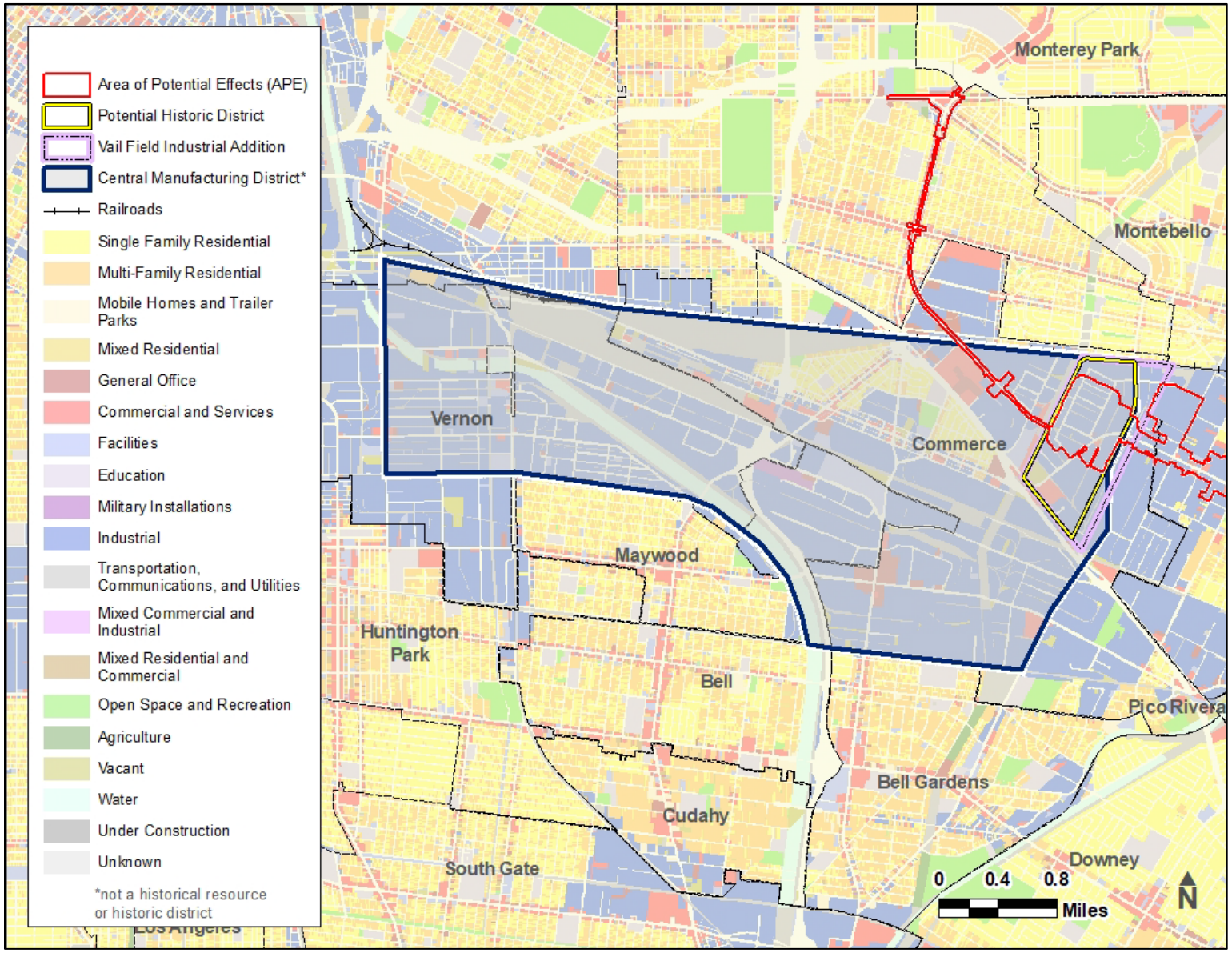
While the Central Manufacturing District of Los Angeles continued to grow, industrial parks multiplied until railroad shipping declined in favor of automotive trucking in the post-World War II era (Preservation Chicago 2020). By the late 1940s, advances in mechanical refrigeration technology for trucks and the implementation of the Interstate Highway Act of 1956, spurred a trucking industry boom (United States Department of Transportation [USDOT] 2006). Planned industrial districts of the 1960s and 1970s prioritized truck access, grander scale, uniformity, and proximity to highways.

Vail Field Industrial Addition was a planned industrial development, in addition to the regional Central Manufacturing District of Los Angeles, that roughly spanned from the city of Vernon in the west to the city of Commerce in the east (see **Figure 3.4.1**). (The city of Vernon is outside of the Project APE, ADI, and the DSA.) The Vail Field Industrial Addition is located in the easternmost portion of the Central Manufacturing District and was primarily developed between 1951 and 1960, with some later infill construction and redevelopments from 1960 to 2015. Refer to Appendix E for historic details about East Los Angeles and the of cities of Montebello, Commerce, Pico Rivera, Santa Fe Springs, and Whittier.

3.4.5.2 Historical Resources in the APE

The cultural resources study identified 49 historic and architectural resources, one CHL site, and one potential historic district, for a total of 51 historical resources (**Table 3.4-3**). Resources are identified by reference numbers on the APE map (see Attachment A of Appendix E). No unique archaeological resources were identified in the APE.

The Vail Field Industrial Addition is a potential historic district identified by the survey that contains at least 40 contributing resources; two of these 40 contributing resources are also individually eligible for listing in the NRHP and CRHR. Nine of the 50 significant cultural resources are individually eligible historical resources are industrial properties, commercial properties, a railroad property, and a single-family residence. One of the 51 historical resources is the Site of the Battle of San Gabriel, which is a CHL and is automatically listed in the CRHR. For detailed information on the evaluation of these resources, see Attachment D of Appendix E. The historical resources, including the potential historic district and 12 individually eligible historical resources, are described in the following sections.



Source: Los Angeles County Assessor, 2021.

Figure 3.4.1. Overview of Central Manufacturing District

Table 3.4-3. Historical Resources in the APE

Reference No.	Primary No.	Address	Date	Description	OHP Status Code
1	19-176524	5176 Whittier Boulevard	1927	Golden Gate Theater	1S; 1CS
2	Not assigned	Vail Field Industrial Addition - Commerce	1951-1960	Planned industrial park – potential historic district	3S; 3CS
3	Not assigned	2343 Saybrook Avenue*	1956	Alpha Metals Inc., Modern-style industrial building	3D; 3CD
4	Not assigned	2401 Saybrook Avenue*	1955	Taylor Forge & Pipe Works, Modern-style industrial building	3D; 3CD
5	Not assigned	2424 Saybrook Avenue*	1955	Premium Autoware Company, Modern-style industrial building	3D; 3CD
6	Not assigned	2425 Saybrook Avenue*	1955	Art Steel Company, Modern-style industrial building	3D; 3CD
7	Not assigned	2444 Saybrook Avenue*	1954	Colorado Fuel & Iron Corporation, Modern-style industrial building	3D; 3CD
8	Not assigned	6409 Gayhart Street*	1957	Merck, Sharp & Dohme pharmaceuticals, Modern-style industrial building	3D; 3CD
9	Not assigned	6414 Gayhart Street*	1956	Diamond Match Company, Modern-style industrial building	3D; 3CD
10	Not assigned	6433 Gayhart Street*	1959	Morgan & Sampson Inc., Modern-style industrial building	3D; 3CD
11	Not assigned	6466 Gayhart Street*	1953	Marwais Steel Company, Modern-style industrial building	3D; 3CD

Reference No.	Primary No.	Address	Date	Description	OHP Status Code
12	Not assigned	6505 Gayhart Street*	1956	Sylvania Electric Products, Inc., Modern-style industrial building	3D; 3CD
13	Not assigned	6541 East Washington Boulevard*	1954	Ingram Paper Company, Modern-style industrial building	3D; 3CD
14	Not assigned	6565 East Washington Boulevard*	1954	Admiral Distributors, Inc., Modern-style industrial building	3D; 3CD
15	Not assigned	6625 East Washington Boulevard*	1953	Hoffman Hardware Company, Modern-style industrial building	3D; 3CD
16	Not assigned	2200 Saybrook Avenue*	1956	Sues, Young & Brown Inc., Modern-style industrial building	3D; 3CD
17	Not assigned	6400 Corvette Street*	1956	National Electric Products Corp., Modern-style industrial building	3D; 3CD
18	Not assigned	6415-6435 Corvette Street*	1955	Eddie Kane Steel, Modern-style industrial building	3D; 3CD
19	Not assigned	6436 Corvette Street*	1956	E. A. Wilcox Company, Modern-style industrial building	3D; 3CD
20	Not assigned	6440 Corvette Street*	1955	Glenmart Company, Modern-style industrial building	3D; 3CD
21	Not assigned	6460 Corvette Street*	1957	Jim Western Manufacturing Company, Modern-style industrial building	3D; 3CD
22	Not assigned	6465 Corvette Street*	1954	Titanium Metals Corporation of America, Modern-style industrial building	3D; 3CD

Reference No.	Primary No.	Address	Date	Description	OHP Status Code
23	Not assigned	6474 Corvette Street*	1956	Hild Floor Machine Company, Modern-style industrial building	3D; 3CD
24	Not assigned	6480 Corvette Street*	1956	Bralco Metals, Modern-style industrial building	3D; 3CD
25	Not assigned	6489 Corvette Street*	1954	Bralco Metals Inc., Modern-style industrial building	3D; 3CD
26	Not assigned	6400 Fleet Street*	1954	Myrurgia Perfumes Inc., Modern-style industrial building	3D; 3CD
27	Not assigned	6415 Fleet Street*	1954	Metal Prits Inc., Modern-style industrial building	3D; 3CD
28	Not assigned	6440 Fleet Street*	1954	W. P. Wooldridge Company, Modern-style industrial building	3D; 3CD
29	Not assigned	6444 Fleet Street*	1954	Harbison-Walker Refractories Company, Modern-style industrial building	3D; 3CD
30	Not assigned	6445 Fleet Street*	1955	Durand Door Supply Company, Modern-style industrial building	3D; 3CD
31	Not assigned	6459 Fleet Street*	1954	Insul-Therm Inc., Modern-style industrial building	3D; 3CD
32	Not assigned	6466 Fleet Street*	1954	Triangle Conduit & Cable Company, Modern-style industrial building	3D; 3CD
33	Not assigned	6490 Fleet Street*	1954	Triangle Conduit & Cable Company, Modern-style industrial building	3D; 3CD
34	Not assigned	2211 Davie Avenue*	1956	Kelvinator Appliances, Modern-style industrial building	3D; 3CD

Reference No.	Primary No.	Address	Date	Description	OHP Status Code
35	Not assigned	2041 Davie Avenue*	1956	Lubrication Systems Chainveyor Corporation, Modern-style industrial building	3D; 3CD
36	Not assigned	2040 Davie Avenue*	1955	Tiffany Stand and Furniture warehouse, Modern-style industrial building	3D; 3CD
37	Not assigned	2054 Davie Avenue*	1954	Ward Cut-Rate Drug Company, Modern-style industrial building	3D; 3CD
38	Not assigned	2110 Davie Avenue*	1954	AMVAC Chemical Corporation, Modern-style industrial building	3D; 3CD
39	Not assigned	2140 Davie Avenue*	1956	Starbright Stainless Steel, Ryder-Elliot, Inc., Modern-style industrial building	3CD
40	Not assigned	2210 Davie Avenue*	1955	Tiffany Stand and Furniture, Modern-style industrial building	3CD
41	19-190999	2187 Garfield Avenue*	1955 1952	Pacific Metals Company	3B; 3CB
42	19-191000	2353 Garfield Avenue*	1952	Goodyear Tire and Rubber Company Warehouse	3B; 3CB
43	19-191003	900 South Greenwood Avenue	1947	Greenwood Elementary School	3S; 3CS
44	19-191005	864 Washington Boulevard	1940	South Montebello Irrigation District Building	3S; 3CS
45	19-191004	860 Washington Boulevard	1937	William and Florence Kelly House	3S; 3CS
46	19-191009	NE corner of Bluff Road and Washington Boulevard	--	Site of the Battle of San Gabriel	1CL
47	19-191099	9023 Washington Boulevard	1951	Dal Rae Restaurant	3S; 3CS

Reference No.	Primary No.	Address	Date	Description	OHP Status Code
48	19-191105	9122 Washington Boulevard	1886	Atchison, Topeka & Santa Fe Railway Depot	3CS
49	19-191098	6751 Lindsey Avenue	1954	Cliff May-designed Ranch House	3S; 3CS
50	19-191102	11605 Washington Boulevard	1965	Steak Corral Restaurant	3S; 3CS
51	19-191100	12000 Washington Boulevard	1951	Rheem Laboratory	3S; 3CS

Note:
*Contributor to the Vail Field Industrial Addition.
Key:
1S = Individual property listed in the NRHP
1CS = Individual property listed in the CRHR
1CL = Automatically listed in the CRHR (California Historical Landmark)
3B = Appears eligible for NR both individually and as a contributor to a NR eligible district through survey evaluation
3CB = Appears eligible for CR both individually and as a contributor to a CR eligible district through a survey evaluation
3D = Appears eligible for NR as a contributor to a NR eligible district through survey evaluation
3CD = Appears eligible for CR as a contributor to a CR eligible district through a survey evaluation
3S = Appears eligible for NR as an individual property through survey evaluation
3CS = Appears eligible for CR as an individual property through survey evaluation

3.4.5.2.1 Golden Gate Theater, 5176 Whittier Boulevard (Reference No. 1)

The Golden Gate Theater (also known as the Vega Building) (P-19-176524) was constructed in 1927 (see **Figure 3.4.2**). The building complex originally included large two- and three-story buildings, comprised of offices, shops, apartments, and a theater designed by the Balch Brothers architectural firm. The property was listed in the NRHP in 1982 (National Register Information System 82002192) under NRHP Criterion A for its social interrelationship with the surrounding community and under NRHP Criterion C as an excellent example of Art Deco and Spanish Churrigueresque styles. However, the Vega Building was damaged by the 1987 Whittier earthquake and was demolished in 1991, leaving only the detached Spanish Churrigueresque-style Golden Gate Theater building. Between 2007 and 2012, the Golden Gate Theater building underwent a restoration project and now functions as a retail location for CVS Pharmacy. The building is a historical resource for the purposes of CEQA.

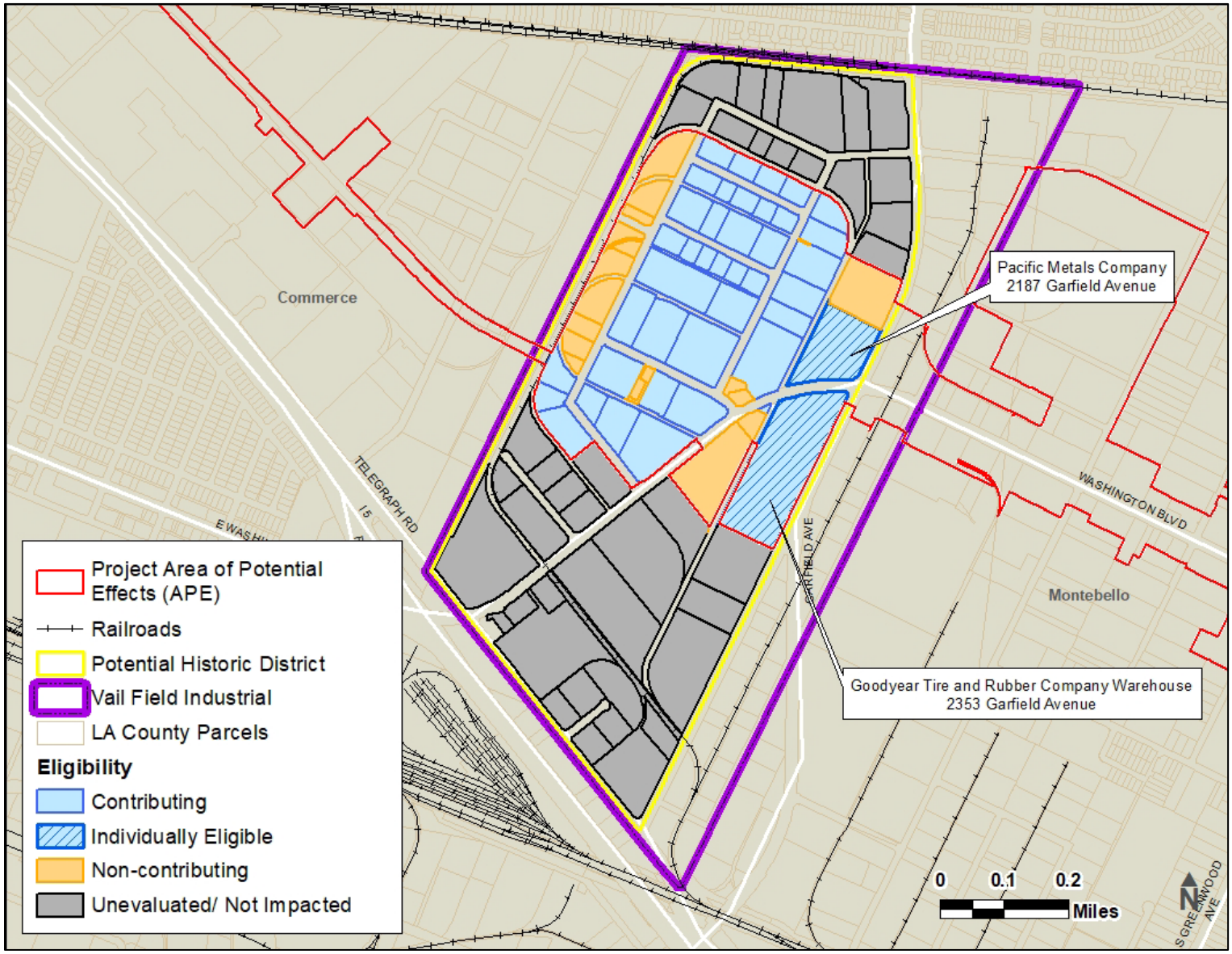
Figure 3.4.2. Golden Gate Theater Constructed 1927 (5176 Whittier Boulevard)
(View southwest)

3.4.5.2.2 Vail Field Industrial Addition, Commerce (Reference No. 2)

The Vail Field Industrial Addition is a planned industrial park in Commerce that is roughly bounded by the Union Pacific Railroad to the north, Yates Avenue to the east, Telegraph Road to the south, and a transmission line ROW to the west (see **Figure 3.4.3**). It is a cohesive, intact, geographical district that is distinctive for its Mid-Century Modern industrial facilities, intentional landscape elements, and truck and rail access plan. The industrial park was built around a post-World War II shipping system that was designed for the transfer of manufactured goods via localized railways. The Vail Field Industrial Addition was primarily developed between 1951 and 1960, with some, minor, later infill construction and redevelopments from 1960 to the present. These include seven buildings constructed between 1970 and 1990 (6350 East Washington Boulevard [1977]; 6550 East Washington Boulevard [1979]; 2161 Saybrook Avenue [1981]; 2151 Saybrook Avenue [1983]; 2267 Saybrook Avenue [1990]; 6460 Gayhart Street [1995], 6605 East Washington Boulevard [1991]), and three buildings constructed between 2009 and 2015 (6340 East Washington Boulevard [2009]; 6333 Telegraph Road [2009]; 6320 East Washington Boulevard [2015]) (**Figure 3.4.4**). Part of the larger, regional Central Manufacturing District that roughly spans from Vernon in the west to Commerce in the east, the setting of the Vail Field Industrial Addition is suburban industrial. Visually, the Vail Field Industrial Addition is characterized as an industrial park with large, sprawling buildings featuring diverse modernistic architectural influences as well as deliberate landscape features to accentuate the unconventional industrial aesthetic. Washington Boulevard is the main thoroughfare that bisects the district, with Telegraph Road and Malt Avenue/ Garfield Avenue providing major freight access to the south and east.

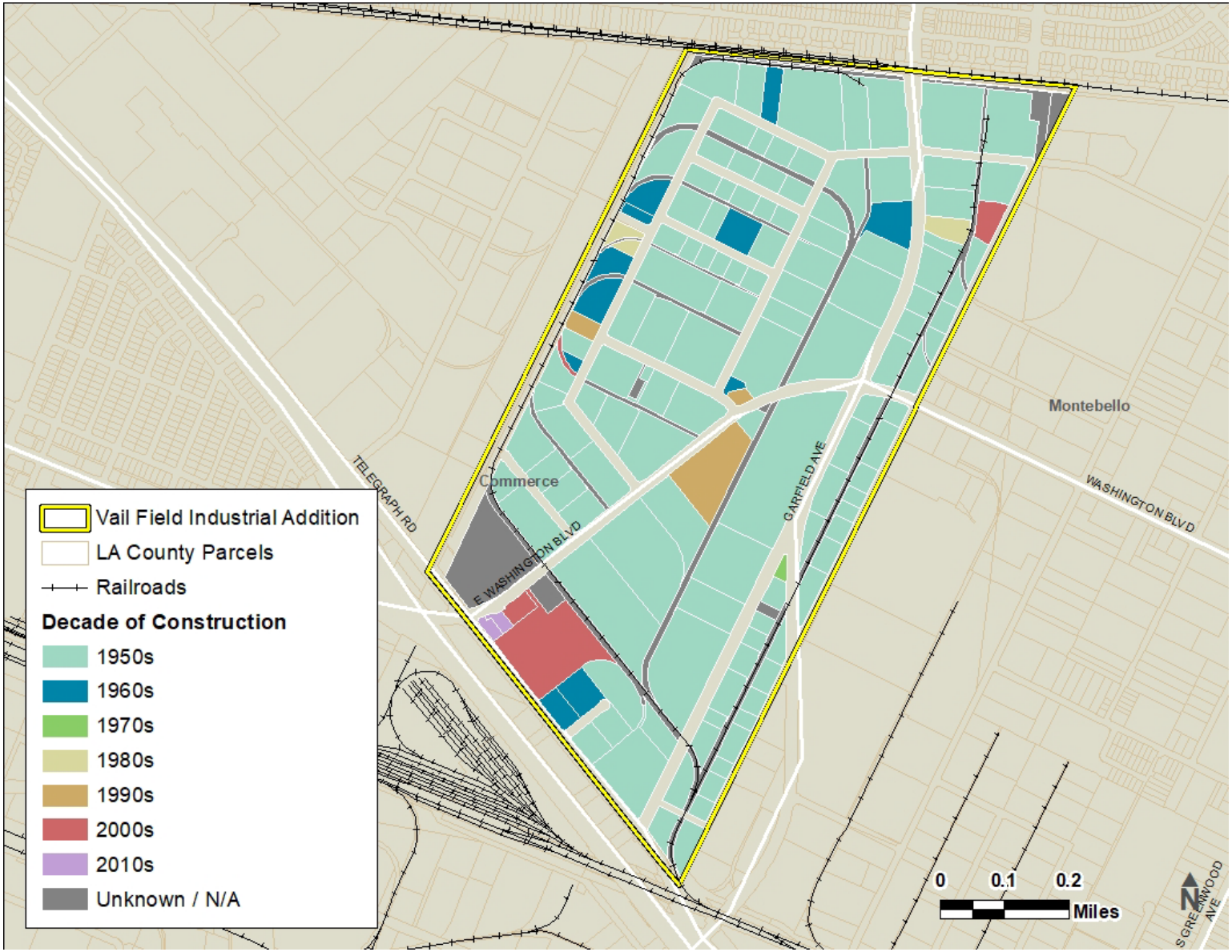
As a result of the survey, the Vail Field Industrial Addition was identified as a potential historic district with at least 40 contributors (see **Table 3.4-3**), 20 noncontributors, and 41 potential contributors that were identified via desktop survey but require further investigation and evaluation. The Vail Field Industrial Addition potential historic district boundary is bounded by the Union Pacific Railroad ROW to the north; Garfield Avenue and South Malt Avenue to the east; Telegraph Road to the south; and the transmission line ROW to the west (see **Figure 3.4.3**). The boundary was determined based on the historical pattern of development associated with the Vail Field Industrial Addition. Historically, Vail Field was bounded by Yates Avenue to the east. Due to non-period infill construction, geographical separation, and lack of rail and truck access, the potential historic district boundary was determined to only include properties west of Garfield Avenue. Refer to Appendix E for additional building styles within the Vail Field Industrial Addition.

The Vail Field Industrial Addition is potentially eligible for listing in the NRHP/CRHR as a historic district and is significant at the local level under NRHP Criterion A/CRHR Criterion 1 in the area of industrial community planning and development in the growing Los Angeles metropolitan area during the period of significance from 1951 to 1960. It is also significant under NRHP Criterion C/CRHR Criterion 3 in the area of Mid-Century Modern industrial architecture as it represents a significant and distinguishable entity whose components may lack individual distinction. The district is significant in the area of industrial community planning and development because it represents a mid-century industrial park with suburban qualities and the last vestiges of railroad dominance in commercial transportation. The district is also significant in the area of industrial architecture because it has several excellent local examples of industrial architecture from the 1950s that are notable for their eclectic Mid-Century Modern style. The period of significance is 1951 to 1960, beginning with the establishment of the Vail Field Industrial Addition to the Central Manufacturing District and ending with its subsequent decline by 1960 as a result of the ascendancy of suburban manufacturing locations in Orange and Riverside Counties. It is a historical resource eligible for the CRHR as determined by Metro for the purposes of CEQA.



Source: Metro; CDM Smith/AECOM JV, 2022.

Figure 3.4.3. Vail Field Industrial Addition Potential Historic District



Source: Metro; CDM Smith/AECOM JV, 2022.

Figure 3.4.4. Vail Field Industrial Addition Construction Timeline

3.4.5.3 Pacific Metals Company, 2187 Garfield Avenue (Reference No. 41)

The Pacific Metals Company (also known as the Rolled Steel Company) is a one-story, approximately 30-foot-tall reinforced concrete specialty metals warehouse/office building in the International Style constructed in 1955 (**Figure 3.4.5**). Although minor reversible alterations have occurred (i.e., replacement entrance doors, security lighting of incompatible design), the building retains a high level of design integrity. The Pacific Metals Company Building is individually eligible under NRHP Criterion A/CRHR Criterion 1 at the local level of significance because of its association with noteworthy events in the history of industry as well as community planning and development in Southern California during the post–Korean War period of significance from 1953 to 1960. The building was constructed in 1955, during a time of major expansion in the construction and metal fabrication sector and exploding demand for specialty metal products from Southern California consumers. The Pacific Metals Company Building is also individually eligible under NRHR Criterion C/CRHR Criterion 3 at the local level of significance for its distinctive architectural design and qualities.

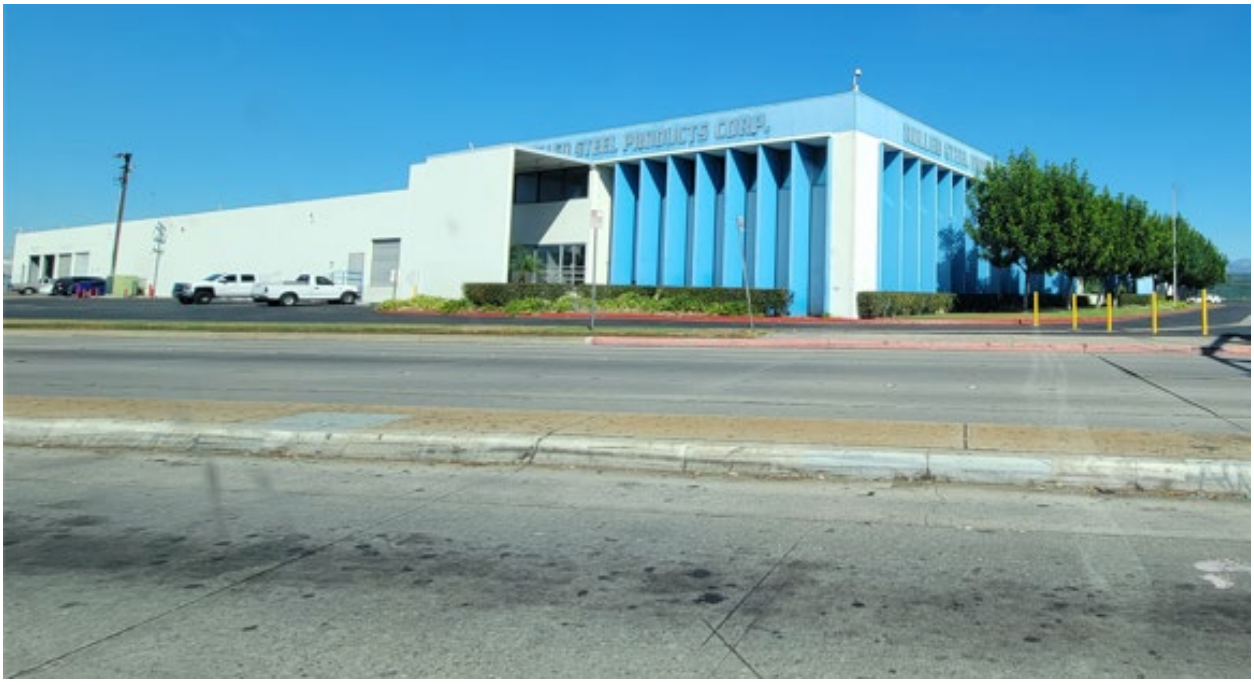


Figure 3.4.5. Pacific Metals Company Building Constructed 1955 (2187 Garfield Avenue)
(View northwest)

The Pacific Metals Company Building also contributes to the Vail Field Industrial Addition potential historic district. The construction of this building directly contributes to the significance at the local level of the Vail Airfield Industrial Addition under NRHP Criterion A/CRHR Criterion 1 as a planned industrial park due to its manufacturing function and under NRHP Criterion C/CRHR Criterion 3 due to its distinctive International Style design for the period of significance from 1951 to 1960. The Pacific Metals Company Building is a historical resource for the purposes of CEQA.

3.4.5.4 Goodyear Tire and Rubber Company Warehouse, 2353 Garfield Avenue (Reference No. 42)

The Goodyear Tire and Rubber Company Warehouse is an approximately 300,000-square-foot, one-story reinforced concrete bow truss-roofed warehouse with an attached one-story flat-roof office ell along the north (Washington Boulevard) elevation (**Figure 3.4.6**). Although minor reversible alterations have occurred, the building retains a high level of design integrity. The Goodyear Tire and Rubber Company warehouse is eligible under NRHP Criterion A/CRHR Criterion 1 at the local level of significance for its association with significant events in the history of industry in Southern California as well as community planning and development during the post-war period. Its significance is tied to its important role as a supplier of tires for the rapidly growing automobile industry in Southern California after World War II.

Figure 3.4.6. Goodyear Tire and Rubber Company Warehouse Constructed 1952 and Existing Rail Alignment Facing Washington Boulevard (2353 Garfield Avenue)
(View east)

The Goodyear Tire and Rubber Company warehouse also contributes to the Vail Field Industrial Addition potential historic district. The construction of this building directly contributes to the significance at the local level of the district under NRHP Criterion A/CRHR Criterion 1 as a planned industrial park due to its manufacturing function for the period of significance from 1951 to 1960. One of the reasons Vail Field was chosen as the location for a new planned industrial park was that its proximity to the new Santa Ana Freeway would provide exceptionally convenient truck access to an important transportation route. For this reason, Goodyear specifically chose the Vail Field tract as the

location for its new truck-oriented (versus rail-oriented) warehouse. The Goodyear Tire and Rubber Company warehouse building is a historical resource for the purposes of CEQA.

3.4.5.5 Greenwood Elementary School, 900 South Greenwood Avenue (Reference No. 43)

Greenwood Elementary School is eligible under NRHP Criterion A/CRHR Criterion 1 at the local level in the area of education and for its significant contribution to the patterns of school building in Southern California during the period of significance, 1947–1948 (see **Figure 3.4.7**). The school's innovative design reflected a new approach to school planning in the context of the exploding population and economic growth in suburban south Los Angeles immediately after the World War II. The Greenwood Elementary School is a historical resource for the purposes of CEQA.

Figure 3.4.7. Greenwood Elementary School Constructed 1947 (900 South Greenwood Avenue)
(View east)

3.4.5.6 South Montebello Irrigation District Building, 864 Washington Boulevard (Reference No. 44)

The South Montebello Irrigation District building, located at 864 Washington Boulevard in Montebello, is eligible under NRHP Criterion A/CRHR Criterion 1 at the local level of significance for its association with the distribution of water to the rapidly growing city of Montebello and with agriculture (**Figure 3.4.8**). Although the South Montebello Irrigation District was established in 1921, the subject property dates to 1941 when Montebello's agricultural uses were giving way to industrial and residential uses. The irrigation district supplies an approximately 860-acre area with water pumped from an on-site well, in addition to several wells located throughout the district. Although the

property consists of several buildings, only the administration building, located at the front (south end) of the parcel, dates to the period of significance. The symmetrically composed administration building is one-story in height and rectangular in plan. The wall cladding is red brick. The roof incorporates simple side gables without overhanging eaves. The roof is clad in red clay tile. Multi-light rolled-steel windows sheltered by metal awnings are arranged in a regular pattern. The South Montebello Irrigation District building is a historical resource for the purposes of CEQA.

Figure 3.4.8. South Montebello Irrigation District Building Constructed 1940 (864 Washington Boulevard)
(View north)

3.4.5.7 William and Florence Kelly House, 860 Washington Boulevard (Reference No. 45)

The residence located at 860 Washington Boulevard in Montebello is eligible under NRHP Criterion A/CRHR Criterion 1 at the local level of significance, and for the CRHR under Criterion 1, for its association with the residential development of Montebello in the pre–World War II era. Constructed in 1937 in the Spanish Colonial Revival style, the residence located at 860 Washington Boulevard represents a now-rare example of pre–World War II residential development in the El Carmel tract area of Montebello and is considered a historical resource for the purposes of CEQA.

3.4.5.8 Site of the Battle of Rio San Gabriel (Reference No. 46)

The resource is the Site of the Battle of Rio San Gabriel. Located at the northeast corner of Bluff Road and Washington Boulevard, on the border of Montebello and Pico Rivera, is the approximate Site of the Battle of Rio San Gabriel, which occurred on January 8, 1847, during the Mexican-American War. To mark the battle site, a structure was erected in 1944 to shelter a plaque, which is flanked by two commemorative cannons that face the river (see **Figure 3.4.9**). The structure sits on a concrete slab foundation at the top of the natural bluffs. The Battle of Rio San Gabriel is extremely significant because it was one of the last major battles in California and led to the end of the war with the signing of the treaty at Campo de Cahuenga. The property is eligible under NRHP Criterion A/CRHR Criterion 1 and is significant for its association with the history of the Mexican-American War in California. Furthermore, the property has the potential to meet NRHP Criterion D/CRHR Criterion 4, if any archaeological artifacts are still extant. Although the structure erected to mark the battlefield site is more than 50 years old, its purpose is only to note the importance of this historic site; it does not have associated historic significance with the 1847 battle. The battlefield site was dedicated as CHL No. 385 in 1945. The battlefield site retains integrity of location, setting, feeling, and association. The structure does not appear to have experienced any modifications and exhibits a particularly high level of integrity of design and materials, and is a historical resource for the purposes of CEQA.

Figure 3.4.9. Site of the Battle of Rio San Gabriel Commemorative Shelter
(View northeast)

3.4.5.9 Dal Rae Restaurant, 9023 Washington Boulevard (Reference No. 47)

The Dal Rae Restaurant appears eligible under NRHP Criterion A/CRHR Criterion 1 at the local level of significance in the areas of post–World War II suburbanization, dining, and entertainment and for its associations with social history as an important and increasingly rare example of a fine dining restaurant and cocktail lounge from the post–World War II era (**Figure 3.4.10**). It is an important and increasingly rare example of a fine dining restaurant and cocktail lounge from the post–World War II era that retains a high level of integrity The period of significance for the property is 1958–1970, corresponding with the era of greatest popularity for fine dining restaurants of this type in the Los Angeles region; therefore, the Dal Rae Restaurant is a historical resource for the purposes of CEQA.

Figure 3.4.10. Dal Re Restaurant Constructed 1951 (9023 Washington Boulevard)
(View southwest)

3.4.5.10 Atchison, Topeka & Santa Fe Railway, 9122 Washington Boulevard (Reference No. 48)

The former Atchison, Topeka & Santa Fe Railway Depot located at 9122 Washington Boulevard was constructed in 1886 (see **Figure 3.4.11**). The property currently functions as the Pico Rivera Historical Museum. The Gothic Revival-style building is the last surviving example of an early railroad depot located in the city of the Pico Rivera. The property was moved to its current location in 1973. The

resource is eligible under CRHR Criterion 1 for its association with early transportation, agriculture and settlement and CRHR Criterion 3 for its architectural style and as a rare example of its type. The period of significance is identified as 1886, the date of construction. The former Atchison, Topeka & Santa Fe Railway Depot located at 9122 East Washington Boulevard is a historical resource for the purposes of CEQA.

Figure 3.4.11. Atchison, Topeka & Santa Fe Railway Depot Constructed 1886 (9122 Washington Boulevard)
(View east)

3.4.5.11 Cliff May-Designed Ranch House, 6751 Lindsey Avenue (Reference No. 49)

The property located at 6751 Lindsey Avenue in Pico Rivera is eligible under NRHP Criterion C/CRHR Criterion 3 as an excellent example of the Ranch style and as the work of seminal designer and purveyor of the Ranch style, Cliff May (see **Figure 3.4.12)**. Originally constructed in 1953 with 1,100 square feet, the property, which was based on May's standard Model No. 3211, exhibits all the major character-defining features of the Ranch style as well as May's own personal and particular design vision. The 6751 Lindsey Avenue property is a historical resource for the purposes of CEQA.

Figure 3.4.12. Cliff May-Designed Ranch House Constructed 1953 (6751 Lindsey Avenue)
(View northwest)

3.4.5.12 Steak Corral Restaurant, 11605 Washington Boulevard (Reference No. 50)

The one-story Steak Corral restaurant is designed in the Ranch style (see **Figure 3.4.13**). The Steak Corral at 11605 Washington Boulevard is an intact presentation of a theme restaurant, an important chapter in the pop-culture history of the United States in the two decades following World War II. It was erected in 1965, at the end of the theme restaurant era, and is the last location of the nine-outlet Steak Corral chain still in operation. Its historic importance is enhanced by the loss of the majority of themed establishments in general and western-themed restaurants in particular in greater Los Angeles, and exhibits a high level of physical integrity. Thus, the property meets NRHP Criterion A/CRHR Criterion 1 for its embodiment of the theme restaurant trend in post-war Los Angeles. In addition, the Steak Corral is a rare, intact example of a Western-style themed restaurant, exhibiting the style's key character-defining features (e.g., board-and-batten siding, wood-framed divided-light windows, and decorative elements such as horseshoes and cow horns). Therefore, the building is also eligible under NRHP Criterion C/CRHR Criterion 3 at the local level of significance as an important example of its style and type. The Steak Corral at 11605 Washington Boulevard is a historical resource for the purposes of CEQA.

Figure 3.4.13. Steak Corral Restaurant Constructed 1965 (11605 Washington Boulevard)
(View northwest)

3.4.5.13 Rheem Laboratory, 12000 Washington Boulevard (Reference No. 50)

Rheem Laboratory includes a group of one-story brick buildings that are currently operated by the Salvation Army as a Transitional Living Center. The property is eligible under NRHP Criterion A/CRHR Criterion 1 for its significant role in the development of manufacturing equipment and scientific research associated with Southern California's important oil extraction industry and for its role in the development of manufacturing and scientific research in the Whittier/Santa Fe Springs area. Both the office building and the Sound Studio have retained substantial integrity. The Sound Studio is a rare example of an intact purpose-built building with structural and spatial design elements that convey its significance in enabling manufacturing and research activities. The buildings are eligible at the local level of significance with a period of significance from 1951 to 1959. The resource is a historical resource for the purposes of CEQA.

3.4.6 Impact Evaluation

3.4.6.1 Impact CUL-1: Historical Resources

Impact CUL-1: Would a Build Alternative cause a substantial adverse change in the significance of a historical resource pursuant to 15064.5?

3.4.6.1.1 Alternative 1 Washington

Operational Impacts

Project operations would be limited to the operation and maintenance of the LRT. Potential operational impacts on historical resources would be indirect (i.e., visual, audible, or atmospheric intrusions) and related to new LRT traffic within the ROW. Operation of Alternative 1 would not physically demolish, destroy, relocate, or alter any historical resources. The immediate surroundings, or setting, of the historical resources in the APE would not be altered by the addition of LRT traffic within the ROW, either underground, on aerial structures, or at-grade within an existing street.

Section 3.11, Noise and Vibration, and the Eastside Transit Corridor Phase 2 Noise and Vibration Impacts Report (Appendix L) found that corridor-wide project noise levels along Alternative 1 are predicted to exceed the Federal Transit Administration (FTA) moderate impact criteria at 28 residences (none are historic resources) and Greenwood Elementary School (a historical resource). Moderate noise levels at Greenwood Elementary School would not affect the resource's significance or alter its character-defining features. Noise impacts would not exceed the FTA moderate noise impact criteria at any historical resources under Alternative 1. Therefore, operational noise would not cause a substantial adverse change in the significance of a historic resource.

The vibration assessment in the same report found that Project vibration levels are predicted to exceed the FTA frequent impact criteria at 85 residences and two schools due to the proximity to proposed switches and the tunnel section of the alignment. None of the impacted properties are historic resources. Maximum vibration levels at historic resources along the proposed Alternative 1 are predicted to range from 67 vibration decibels (VdB) at the Golden Gate Theater to 71 VdB at the Steak Corral Restaurant along Washington Boulevard, which is below the FTA frequent impact criteria. Therefore, because the switches are not located in close proximity to historical resources, none of the vibration levels predicted at historical resources are predicted to exceed the FTA frequent impact criteria along Alternative 1. Therefore, operational vibration would not cause a substantial adverse change in the significance of a historic resource.

The visual assessment for the Project in Section 3.1, Aesthetics, and the Eastside Transit Corridor Phase 2 Visual and Aesthetics Impacts Report (Appendix B) found that the visual character of the corridor would change slightly under Alternative 1, but that the operational impacts would not have significant impacts on the surrounding visual character, and would have no effect with respect to light and glare. As discussed further in the evaluation of construction impacts below, the aerial structure and aerial Greenwood station would introduce a new visual element in proximity to several historic buildings (the Pacific Metals Company Building [if the Montebello MSF site option is selected], the Goodyear Warehouse, Greenwood Elementary School, the South Montebello Irrigation District Building, and the William and Florence Kelly House). These resources are located in an setting that has already been extensively modified and includes modern infrastructure. While the aerial structure

and station would introduce a permanent element to the visual environment, it would not change the historic character of the buildings or substantially degrade the existing visual character or quality of public views of the buildings and their surroundings. Because the aboveground setting already features modern structures, traffic activities, and infrastructure, none of the historical resources in the APE would be materially impaired by operation of Alternative 1. Operational activities of the LRT would blend with the existing traffic pattern along Washington Boulevard. Therefore, visual changes would not cause a substantial adverse change in the significance of a historic resource.

As described above, direct and indirect impacts on historical resources (i.e., visual, audible, or atmospheric intrusions) would not cause a substantial adverse change in the significance of a historic resource. Operational impacts on historical resources would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect historical resources differently than the base Alternative 1. Operation of Alternative 1 with the Atlantic/Pomona Station Option would have no direct or indirect impacts on any historical resources or their immediate surroundings due to the distance of the alignment from historical resources in the APE. There are no historical resources within the vicinity of the Atlantic/ Pomona Station Option; the nearest historical resource, the Golden Gate Theater, is located over 0.5 miles away from the Atlantic/Pomona Station Option along the underground portion of the alignment. and it would not be directly or indirectly affected. Operation of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant noise, vibration, and visual impacts and would not cause a substantial adverse change to a historic resource. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact on historical resources.

Montebello At-Grade Option

Greenwood School, the South Montebello Irrigation District Building, and the William and Florence Kelly House are located within the vicinity of the Montebello At-Grade Option. As with the base Alternative 1, these resources would not be physically demolished, destroyed, relocated, or altered. The at-grade alignment would introduce new visual, audible, and atmospheric elements within the immediate surroundings; however, the setting of the buildings is modern and adjacent to a major road within existing sources of noise and vibration. Noise and vibration impacts would not exceed the FTA moderate noise impact criteria (noise) or FTA frequent impact criteria (vibration) at these historical resources, and thus, these resources would not be susceptible to significant noise or vibration impacts that could cause a substantial adverse change to a historic resource. Further, the at-grade alignment and station would follow the existing transportation corridor and would not limit views of the resources. Operation of The Montebello At-Grade Option segment of the alignment would not have significant impacts on any historical resources. Operation of the remainder of Alternative 1 would also have less than significant noise, vibration, and visual impacts and would not cause a substantial adverse change to a historic resource. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts on historical resources.

Construction Impacts

Project activities during construction of the alignment would include property acquisitions, demolition of historical resources, and new construction of permanent Project features. Potential construction impacts on historical resources would be direct or indirect (i.e., visual, audible, or atmospheric intrusions) and related to the construction of new infrastructure that would demolish or alter historical resources and/or their immediate surroundings.

Golden Gate Theater, 5176 Whittier Boulevard

Alternative 1 would construct the guideway and the Atlantic/Whittier station within roughly 80 feet of the Golden Gate Theater. Construction methods may use heavy equipment, including excavators, cranes, tractor trailer rigs, loaders, earthmovers asphalt milling machines, asphalt paving machines, tunnel boring machines (TBMs), loaders, bulldozers, dump trucks, compactors/rollers, and concrete trucks. During construction of Alternative 1, the Golden Gate Theater would not be physically demolished, destroyed, relocated, or altered. Due to the underground nature of the improvements, no permanent visual impacts on this historical resource or its setting are anticipated from the guideway and station.

Construction of the guideway and station has the potential to cause vibrations and ground settlement adjacent that could impact the Golden Gate Theater. Vibration levels from construction activities along Alternative 1 would include the use of TBMs, bulldozers, dump trucks, and vibratory rollers. The use of impact pile drivers would be avoided whenever possible to eliminate the potential of vibration impacts (such as minor cosmetic structural damage) at nearby sensitive receptors. As a result of the preliminary construction vibration estimates identified in Section 3.11, Noise and Vibration, and Appendix L, construction activities are predicted to exceed the FTA impact criteria at the closest residences and commercial properties (none are historic resources). Therefore, a significant impact would occur. MM CUL-1, as identified in **Section 3.4.7**, would require building protection measures to be put in place, such as ground improvements and/or use of lower vibration-generating construction equipment, as identified in a pre-construction survey. Implementation of MM CUL-1 would reduce the potential for vibration generated during construction activities to damage the Golden Gate Theater and would reduce impacts to less than significant.

Vail Field Industrial Addition

The alignment would be located beneath and adjacent to the southeast portion of the potential historic district after transitioning from a tunnel configuration to an aerial configuration. Construction of Alternative 1 would acquire and potentially demolish six properties containing historical resources that contribute to the potential historic district listed below. Of the six resources, only the Pacific Metals Company Building is an individually eligible historical resource.

- 2343 Saybrook Avenue (Assessor's parcel number [APN] 6336-011-007)
- 2401 Saybrook Avenue (APN 6336-010-013)
- 6466 Gayhart Street (APN 6336-011-012)
- 6565 Washington Boulevard (APN 6336-011-013)

- 6625 East Washington Boulevard (APN 6336-013-012)
- 2187 Garfield Avenue (APN 6336-013-014) (Pacific Metals Company, see additional information below)

The six contributing resources would be acquired primarily as ROW acquisition to enable construction of the guideway and would potentially be demolished. Physical demolition of these district contributors would impair the significance of the potential historic district, by removing in an adverse manner some of the physical characteristics of the historical resource that conveys its significance. However, the demolition of these peripheral contributors would leave the core of the potential historic district intact with a sufficient number of contributors with characteristics to convey its historical significance (not including proposed changes related to the Commerce MSF site option). The potential historic district, with a reduced boundary, would still convey its historical significance and would be eligible for listing in the CRHR; therefore, construction of Alternative 1 would not have a substantial adverse change on the Vail Field Industrial Addition and would result in a less than significant impact.

The transition from the guideway to an aerial structure would be within the boundary and setting of the Vail Field Industrial Addition. The district is an entity of various industrial facilities and its setting is industrial. The aerial structure would generally follow existing transportation corridors and would not limit views within or of the district. The alteration of the setting with the new visual element of the aerial structure would not change the district's historic character or materially impair its significance and would result in a less than significant impact.

Pacific Metals Company, 2187 Garfield Avenue

If the Commerce MSF site option is selected, Alternative 1 would acquire the Pacific Metals Company Building and demolish the building for the construction of an aerial structure parallel to Washington Boulevard. Physical demolition would materially impair the significance of the historical resource; thus, construction of Alternative 1 with the Commerce MSF site option would result in a significant impact. MM CUL-2 and MM CUL-3, as identified in **Section 3.4.7,** would require historical archival documentation and an interpretive program that identify the historical significance of the building. MM CUL-2 and MM CUL-3 would ensure that documentation and educational materials about the historic resource are developed and archived, which would reduce impacts by preserving information about the building; however, impacts would remain significant and unavoidable.

If the Montebello MSF site option is selected, the aerial structure would be located in the median of Washington Boulevard between Gayhart Street and Yates Avenue, approximately 60 feet from the southeast corner of the Pacific Metals Company Building. The Pacific Metals Company Building would not be acquired, and it would not be physically demolished, destroyed, relocated, or altered. The historical resource's setting is industrial. The aerial structure would generally follow existing transportation corridors and would not limit views of the resource. The new aerial structure would introduce a new visual element but would not change the historic character of the building. The alteration of the setting with the new visual element of the aerial structure would not materially impair its significance; thus, construction of Alternative 1 with the Montebello MSF site option would result in a less than significant impact.

Goodyear Warehouse, 2353 Garfield Avenue

Alternative 1 would construct an aerial structure parallel to Washington Boulevard, approximately 110 feet from the northwest corner of the Goodyear Warehouse if the Commerce MSF site option is selected. If the Montebello MSF site option is selected, the Alternative 1 would construct an aerial structure in the median of Washington Boulevard approximately 50 feet from the northwest corner of the Goodyear Warehouse. The Goodyear Warehouse would not be physically demolished, destroyed, relocated, or altered. The historical resource's setting is industrial. The aerial structure would generally follow existing transportation corridors and would not limit views of the resource. The new aerial structure would introduce a new visual element but would not change the historic character of the building. The new aerial structure would not limit views within the property or primary views of its character defining features. Further, the building is located in setting that has already been extensively modified and the alteration of the setting with the new visual element of the aerial structure would not materially impair the building's significance; thus, construction of Alternative 1 would result in a less than significant impact.

Greenwood Elementary School, 900 South Greenwood Avenue

Near Greenwood Elementary School, Alternative 1 would construct an aerial alignment in the center of Washington Boulevard, that includes the aerial guideway and its foundations, aerial station, utility relocations, overhead catenary systems, restriping, curb-and-gutter/sidewalk reconstruction, roadway improvements, reconstruction of parking facilities, and lighting and traffic signal modifications. The station would include a side platform station located in the median of Washington Boulevard east of Greenwood Avenue and a surface parking facility along Greenwood Avenue and Washington Boulevard. The alignment would be approximately 450 feet from the school and separated by the proposed parking facility.

Under Alternative 1, the Greenwood Elementary School would not be physically demolished, destroyed, relocated, or altered during construction. Due to the considerable distance between the Greenwood Elementary School and Washington Boulevard, no visual impacts on this historical resource or its setting are anticipated from the at-grade alignment or station. The lot adjacent to the school to the south is already paved, serves a similar use, and would be minimally altered to serve as a parking facility. Thus, construction of Alternative 1 would result in a less than significant impact.

South Montebello Irrigation District Building, 864 Washington Boulevard

Alternative 1 would be aerial in the center of Washington Boulevard near the South Montebello Irrigation District Building and the Greenwood station. The construction would include the aerial guideway and its foundations, aerial station, utility relocations, overhead catenary systems, restriping, curb-and-gutter/sidewalk reconstruction, roadway improvements, reconstruction of parking facilities, and lighting and traffic signal modifications. The station would include a side platform station located in the median of Washington Boulevard east of Greenwood Avenue and a parking facility along Greenwood Avenue and Washington Boulevard. The Greenwood station would be approximately 60 feet in front of the building. Under Alternative 1, the South Montebello Irrigation District building would not be physically demolished, destroyed, relocated, or altered. The Greenwood station and the parking facilities adjacent to the building would introduce new visual, audible, and atmospheric elements within its immediate surroundings. However, the setting of the building has already been extensively modified and includes modern infrastructure and uses. Although the proposed station would introduce a permanent visual element directly in front of the building, the relative height of the

raised platform would not block significant views of the historical resource, such as the view of the façade from the sidewalk or the westbound side of Washington Boulevard. The existing setting would be left largely intact. The lots adjacent to the school to the north and west are already paved, serve a similar use, and would be minimally altered to serve as a surface parking facility. Because the setting of the building is already compromised by modern development and activities, the significance of the historical resource would not be materially impaired; therefore, construction of Alternative 1 would result in a less than significant impact.

William and Florence Kelly House, 860 Washington Boulevard

Near the William and Florence Kelly House, Alternative 1 would construct an aerial alignment in the center of Washington Boulevard, including the aerial guideway and its foundations, aerial station, utility relocations, overhead catenary systems, restriping, curb-and-gutter/sidewalk reconstruction, roadway improvements, reconstruction of parking facilities, and lighting and traffic signal modifications. The station would include a side platform station located in the median of Washington Boulevard east of Greenwood Avenue and a parking facility along Greenwood Avenue and Washington Boulevard. The Greenwood station would be approximately 60 feet in front of the building.

Under Alternative 1, the William and Florence Kelly House would not be physically demolished, destroyed, relocated, or altered. The aerial structure, Greenwood station, and the parking facility to the north would introduce new visual, audible, and atmospheric elements within its immediate surroundings. However, the setting of the building has already been extensively modified and includes modern infrastructure and uses. Although the proposed station would introduce a permanent visual element directly in front of the building, the relative height of the raised platform will not block any significant views of the historical resource, such as the view of the façade from the sidewalk or the westbound side of Washington Boulevard. The existing setting would be left largely intact. The lot adjacent to the building to the north is already paved, serves a similar use, and would be minimally altered to serve as a surface parking facility. Because the setting of the building is already compromised by modern development and activities, the significance of the historical resource would not be materially impaired; therefore, construction of Alternative 1 would result in a less than significant impact.

Site of the Battle of Rio San Gabriel

Alternative 1 would construct the alignment at-grade in the center of Washington Boulevard and would replace the existing bridge over Rio Hondo to carry both the LRT facility and the four-lane roadway. Excavation related to the proposed bridge replacement and the partial property acquisition has the potential to encounter archaeological artifacts associated with the battle. Disturbance of these resources would result in potentially significant impacts as identified under Impact CUL-2.

Changes to the Metro ROW and the new at-grade alignment would introduce new visual, audible, and atmospheric elements within its immediate surroundings. The setting has been altered by channelization of the river and the construction of Washington Boulevard, modern buildings, and other infrastructure. Because the setting is already compromised by modern development and activities, the significance of the historical resource would not be materially impaired; therefore, construction of Alternative 1 would result in a less than significant impact.

Dal Rae Restaurant, 9023 Washington Boulevard

Alternative 1 would construct the alignment at-grade in the center of Washington Boulevard, including the Rosemead station, an aerial, side platform station located in center of Washington Boulevard west of Rosemead Boulevard. The Rosemead station would be approximately 440 feet west of the Dal Rae Restaurant, an historical resource.

Under Alternative 1, the Dal Rae Restaurant building would not be physically demolished, destroyed, or relocated. However, a sliver property acquisition for restriping and curb-and-gutter/sidewalk reconstruction would occur. The sliver property acquisition would alter the parcel by reconfiguring the existing curb, sidewalk, and landscaping along Washington Boulevard. The curb, sidewalk, and landscaping do not contribute to the significance of the historical resource and are not a character-defining features. Adjacent to the sliver property acquisition is the two-sided neon pole sign, which is a character-defining feature of the historical resource. The sliver property acquisition would not alter the sign or any other significant features of the historical resource, but adjacent construction could disturb the feature. Thus, a significant impact would occur during construction. Implementation of MM CUL-4, which requires avoidance of the Dal Rae Restaurant sign to prevent damage to the historical significance of the Dal Rae Restaurant as identified in **Section 3.4.7**, would reduce impacts to less than significant.

The new at-grade alignment would introduce new visual, audible, and atmospheric elements within the immediate surroundings of the Dal Rae Restaurant. The setting of the building is modern and adjacent to a major road. The at-grade alignment would follow the existing transportation corridor and would not limit views of the resource. The alteration of the setting with the new visual element of the at-grade alignment would not materially impair its significance and would result in a less than significant impact.

Additional Resources East of Rosemead Boulevard

With the vicinity of the Atchison, Topeka & Santa Fe Railway Depot (9122 Washington Boulevard), Cliff May-Designed Ranch House (6751 Lindsey Avenue), Steak Corral Restaurant (11605 Washington Boulevard), and Rheem Laboratory (12000 Washington Boulevard). Alternative 1 would construct the alignment at-grade in the center of Washington Boulevard, including overhead catenary systems, restriping, curb-and-gutter/sidewalk reconstruction, utility relocation, roadway improvements, and lighting and traffic signal modifications. Under Alternative 1, the Atchison, Topeka & Santa Fe Railway Depot, Cliff May-Designed Ranch House, Steak Corral Restaurant, and Rheem Laboratory would not be physically demolished, destroyed, relocated, or altered. The new at-grade alignment would introduce new visual, audible, and atmospheric elements within the immediate surroundings. The at-grade alignment would follow the existing transportation corridor and would not limit views of the resources. The alteration of the setting with the new visual element of the at-grade alignment would not materially impair its significance and would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect historical resources differently than the base Alternative 1. No historical resources are within the vicinity of the Atlantic/Pomona Station Option. The Atlantic/Pomona Station Option segment of the alignment

would have no direct or indirect impacts on any historical resources or their immediate surroundings due to the significant distance of from historical resources in the APE.

However, as with the base Alternative 1, construction of other portions of Alternative 1 would result in significant impacts on historical resources, including Golden Gate Theater, Pacific Metals Company with the Commerce MSF site option, and Dal Rae Restaurant. Therefore, although construction of the Atlantic/Pomona Station Option segment would not have a significant impact on historical resources, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a significant impact on historical resources. Implementation of MM CUL-1, which requires building protection measures to be put in place to reduce potential vibration damage to the Golden Gate Theater and MM CUL-4, which requires avoidance of the Dal Rae Restaurant sign to prevent damage to the historical significance of the Dal Rae Restaurant, as identified in **Section 3.4.7,** would reduce impacts to less than significant if the Montebello MSF site option is selected. If the Commerce MSF site option is selected, MM CUL-1 and MM CUL-4, as explained above, and MM CUL-2 and MM CUL-3, which require preparation of historical archival documentation and an interpretive program for historical resources to be demolished to ensure that information is preserved, would be implemented to reduce impacts. However, with the selection of the Commerce MSF site option, impacts of Alternative 1 with the Atlantic/Pomona Station Option would remain significant and unavoidable due to the acquisition and demolition of the Pacific Metals building.

Montebello At-Grade Option

Greenwood School, the South Montebello Irrigation District Building, and the William and Florence Kelly House are located within the vicinity of the Montebello At-Grade Option. As with the base Alternative 1, these resources would not be physically demolished, destroyed, relocated, or altered. The at-grade alignment would introduce new visual, audible, and atmospheric elements within the immediate surroundings. The setting of the buildings is modern and adjacent to a major road. The at-grade alignment and station would follow the existing transportation corridor and would not limit views of the resources. The Montebello At-Grade Option segment of the alignment would not have a significant impact on any historical resources.

However, as with the base Alternative 1, construction of other portions of Alternative 1 would result in significant impacts on historical resources, including the Golden Gate Theater, Pacific Metals Company with the Commerce MSF site option, and Dal Rae Restaurant. Therefore, although construction of the Montebello At-Grade Option segment would not have a significant impact on historical resources, construction of Alternative 1 with the Montebello At-Grade Option would result in a significant impact. Implementation of MM CUL-1, which requires building protection measures to be put in place to reduce potential vibration damage to the Golden Gate Theater and MM CUL-4, which requires avoidance of the Dal Rae Restaurant sign to prevent damage to the historical significance of the Dal Rae Restaurant, as identified in **Section 3.4.7**, would reduce impacts to less than significant if the Montebello MSF site option is selected. If the Commerce MSF site option is selected, MM CUL-1 and MM CUL-4, as explained above, and MM CUL-2 and MM CUL-3, which require preparation of historical archival documentation and an interpretive program for historical resources to be demolished to ensure that information is preserved, would be implemented to reduce impacts. However, with the selection of the Commerce MSF site option, impacts of Alternative 1 with the Montebello At-Grade Option would remain significant and unavoidable due to the acquisition and demolition of the Pacific Metals building.

3.4.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not physically demolish, destroy, relocate, or alter any historical resources. No severe noise impacts are predicted, and no severe noise impacts would occur on historical resources. Vibration levels would not impact any vibration sensitive historical resources. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant noise and vibration impacts and would not cause a substantial adverse change in the significance of a historical resource.

The visual character of the corridor would change slightly under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option as discussed in Section 3.1, Aesthetics; however, operations would have a less than significant effect on the surrounding visual character and with respect to light and glare. Because the aboveground setting already features modern traffic activities, none of the historical resources in the APE would be materially impaired by operation of the LRT. Operational activities would blend with the existing traffic pattern along Washington Boulevard. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cause a substantial adverse change in the significance of a historical resource. Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact on historical resources.

Construction Impacts

Base Alternative and Design Option

Construction of the guideway and the Atlantic/Whittier station has the potential to cause vibration and ground settlement that could impact the Golden Gate Theater, which would result in significant impacts. Alternative 2 would acquire five contributing resources to the Vail Field Industrial Addition. Physical demolition of these district contributors would impair the significance of the potential historic district, by removing in an adverse manner some of the physical characteristics of the historical resource that conveys its significance. However, the demolition of these peripheral contributors would leave the core of the potential historic district intact with a sufficient number of contributors with characteristics to convey its historical significance (not including proposed changes related to the Commerce MSF site option discussed below in **Section 3.4.6.1.4**). The potential historic district, with a reduced boundary, would still convey its historical significance and would be eligible for listing in the CRHR; therefore, Alternative 2 would not have a substantial adverse change on the Vail Field Industrial Addition and would result in a less than significant impact. In addition, the alteration of the setting with the new visual element of the transition from the guideway to an aerial structure within the Vail Field Industrial Addition would not change the district's historic character or materially impair its significance and would result in a less than significant impact. Overall, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a significant impact on the Golden Gate Theater. Implementation of MM CUL-1, which requires building protection measures to be put in place to reduce potential vibration damage to the Golden Gate Theater as described in **Section 3.4.7**, would reduce impacts to less than significant.

3.4.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not physically demolish, destroy, relocate, or alter any historical resources. The immediate surroundings, or setting, of the historical resources in the APE will be altered by the addition of LRT traffic within the ROW, either underground, on aerial structures, or at-grade within an existing street.

Project noise levels of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are predicted to exceed the FTA moderate impact criteria at 28 residences (none are historic resources) and Greenwood Elementary School (a historical resource). Moderate noise levels at Greenwood Elementary School would not affect the resource's significance or alter its character-defining features. Noise impacts would not exceed the FTA moderate noise impact criteria at any historical resources. Because switches are not sited in close proximity to historical resources, none of the vibration levels predicted at historical resources are predicted to exceed the FTA frequent impact criteria along the alignment. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant noise and vibration impacts and would not cause a substantial adverse change in the significance of a historical resource.

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant effect on the surrounding visual character, and no effect with respect to light and glare. Because the aboveground setting already features modern traffic activities, none of the historical resources in the APE would be materially impaired by operation of the LRT. Operational activities would blend with the existing traffic pattern along Washington Boulevard. Therefore, visual changes associated with operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cause a substantial adverse change in the significance of a historical resource. Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact on historical resources.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option has the potential to cause vibrations and ground settlement that could impact the Golden Gate Theater, which would result in a significant impact.

Alternative 3 would acquire six contributing resources to the Vail Field Industrial Addition. Physical demolition of these district contributors would impair the significance of the potential historic district; however, the demolition of these peripheral contributors would leave the core of the potential historic district intact with a sufficient number of contributors with characteristics to convey its historical significance.

If the Commerce MSF is selected, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would acquire and demolish the Pacific Metals Company Building, which would be a significant impact.

Overall, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a significant impact on the Golden Gate Theater and the Pacific Metals Company Building if the Commerce MSF site option is selected. Implementation of MM CUL-1, which requires building protection measures to be put in place to reduce potential vibration damage to the Golden Gate Theater, would reduce impacts on the Golden Gate Theater to less than significant. If the Commerce MSF is selected, implementation of MM CUL-1, MM CUL-2, and MM CUL-3, which require preparation of historical archival documentation and an interpretive program for historical resources to be demolished to ensure that information is preserved, as identified in **Section 3.4.7**, would be implemented. Implementation of mitigation would reduce impacts associated with construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option if the Commerce MSF is selected; however, impacts on the Pacific Metals Company Building would remain significant and unavoidable.

3.4.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would be limited to the MSF operations. Operation of the MSF site options would not physically demolish, destroy, relocate, or alter any historical resources and thus no direct impacts would occur. Potential operational impacts on historical resources would be indirect (i.e., visual, audible, or atmospheric intrusions), such as changes in the character of the property's use or of physical features within the property's setting.

After construction, the Commerce MSF site option within the boundary of the Vail Field Industrial Addition potential historic district (a historical resource under existing conditions) would not retain sufficient integrity for eligibility for listing in the NRHP or CRHR, and it would no longer be considered a historical resource. Therefore, because the Vail Field Industrial Addition would no longer be a historic resource, operation of the MSF would not cause indirect impacts that would cause a substantial adverse change in the significance of a historical resource.

No historical resources are within the vicinity of the Montebello MSF site option or the Montebello MSF At-Grade Option. Operation of the Montebello MSF site option or the Montebello MSF At-Grade Option would have no direct or indirect impacts on any historical resources or their immediate surroundings. Operation of the MSF site options would not physically demolish, destroy, relocate, or alter any historical resources. Therefore, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would have no impact on historical resources.

Construction Impacts

Commerce MSF Site Option

Under Alternative 2, 16 properties in the Vail Field Industrial Addition historic district would be acquired and demolished. Under the base Alternative 1 and base Alternative 3 and Alternative 1 and Alternative 3 with one or both design options, 16 properties in the Vail Field Industrial Addition historic district and the Pacific Metals Company Building would be acquired and demolished to construct the Commerce MSF site option. The physical demolition would materially impair the significance of the historical resources; thus, construction of the Commerce MSF site option would result in a significant impact on historic resources. MM CUL-2, MM CUL-3, MM CUL-5 and MM CUL-6 would be implemented for Alternative 1 or Alternative 3, including the design options, and MM CUL-5 and MM CUL-6 would be implemented for Alternative 2, including the design option. MM CUL-2, MM CUL-3, MM CUL-5 and MM CUL-6, as identified in **Section 3.4.7**, would reduce impacts by requiring preparation of historical archival documentation and an interpretive program for historical resources to be demolished to ensure that information is preserved. With implementation of mitigation, impacts would be reduced; however, impacts resulting from demolition or alterations would remain significant and unavoidable.

Montebello MSF and Design Option

No historical resources are within the footprint of the Montebello MSF site option or the Montebello MSF At-Grade Option. The guideway alignment with the Montebello MSF site option or Montebello MSF At-Grade Option would be located near the Pacific Metals Company Building in the median of Washington Boulevard. The Pacific Metals Company Building would not be physically demolished, destroyed, relocated, or altered. The guideway alignment would generally follow existing transportation corridors and would not limit views of the resource. The new guideway alignment would introduce a new visual element but would not change the historic character of the building. Additionally, the Pacific Metals Company Building is approximately 1,000 feet from the Montebello MSF site option or Montebello MSF At-Grade Option, and approximately 2,000 feet from the lead tracks into the site. The Montebello MSF site option or Montebello MSF At-Grade Option would not limit views of the resource or change the historic character of the building. The alteration of the setting and the new visual element of the guideway alignment would not materially impair the historic significance of the Pacific Metals Company Building; thus, construction of the Montebello MSF site option or the Montebello MSF At-Grade Option would result in a less than significant impact on historical resources.

3.4.6.2 Impact CUL-2: Archaeological Resources

Impact CUL-2: Would a Build Alternative cause a substantial adverse change in the significance of a unique archaeological resource pursuant to 15064.5?

3.4.6.2.1 Alternative 1 Washington

The CHRIS records search, additional archival research, outreach, and field survey failed to identify any archaeological sites within the ADI. However, it is possible that unknown archaeological resources lay buried within the ADI. The project DSA has been used by Native American peoples for thousands of years and was used with increasing intensity throughout the historic period.

Operational Impacts

Operation of Alternative 1 would not physically demolish, destroy, relocate, or alter any archaeological resources and would thus have no impact on archaeological resources.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not physically demolish, destroy, relocate, or alter any archaeological resources and would thus have no impact on archaeological resources.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not physically demolish, destroy, relocate, or alter any archaeological resources and would thus have no impact on archaeological resources.

Construction Impacts

Significant buried archaeological resources may exist within the ADI, and it is possible these archaeological materials could be unearthed during project excavation activities. The alignment for this alternative is largely within the public ROW that has been disturbed with utility and street construction, but these disturbances are relatively shallow. Shallow construction work, such as for the at-grade portions of the alignment, has limited potential to encounter intact archaeological resources due to prior disturbance, but other proposed construction activities have the potential to encounter intact archaeological resources. A significant discovery of an unknown archaeological resource at the Site of the Battle of Rio San Gabriel or elsewhere on the alignment could result in a significant impact.

As discussed in greater detail in Section 3.15, Tribal Cultural Resources, tunnel boring would occur through areas that may have unknown archaeological resources. The TBM does not allow for discovery of intact archaeological resources because the method of construction limits observation of impacted soils. However, the TBM would only be used at depths containing soils deposited prior to human occupation, and thus archaeological resources are not anticipated to be present where the TBM would be operated. Therefore, because the TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown archaeological resources and impacts associated with tunnel boring are less than significant.

Construction of the bridges over the Rio Hondo and San Gabriel River has the potential to impact archaeological resources that have been buried by recent or historical sediment deposition. Deeper impacts within Holocene soils, such as the installation of piles for aerial structures and the mass

excavation required for tunnel construction have the potential to encounter deeply buried resources. Therefore, construction of Alternative 1 has the potential to disturb and destroy a significant unknown archaeological resource and would result in a significant impact. MM CUL-7, which requires monitoring during ground disturbance at the Site of the Battle of Rio San Gabriel to ensure that appropriate treatment measures are put in place to protect and document any resource(s) if encountered, and MM CUL-8, which requires that construction workers receive training on how to proceed if cultural resources are inadvertently discovered and that a Cultural Resources Monitoring and Mitigation Plan (CRMMP) be prepared as identified in **Section 3.4.7**, would be implemented. These mitigation measures would establish protections for unanticipated discoveries of archaeological resources and would reduce impacts to less than significant.

Design Options

Atlantic/Pomona Station Option

The CHRIS records search, additional archival research, outreach, and field survey failed to identify any archaeological sites within the ADI. However, it is possible that significant buried archaeological resources may exist within the ADI and that these archaeological materials could be unearthed during project excavation activities. Due to the deep excavations associated with the Atlantic/Pomona Station Option, there would be potential to encounter deeply buried resources at this location. Therefore, excavation associated with the Atlantic/Pomona Station Option and elsewhere along Alternative 1 has the potential to disturb and destroy a significant archaeological resource. If unmitigated, this disturbance of a significant archaeological resource would result in a significant impact. MM CUL-7, which requires monitoring during ground disturbance at the Site of the Battle of Rio San Gabriel to ensure that appropriate treatment measures are put in place to protect and document the resource(s) if any significant resources are encountered, and MM CUL-8, which requires that construction workers receive training on how to proceed if cultural resources are inadvertently discovered and that a CRMMP be prepared as identified in **Section 3.4.7**, would be implemented. These mitigation measures would establish protections for unanticipated discoveries of archaeological resources and would reduce impacts to less than significant.

Montebello At-Grade Option

The CHRIS records search, additional archival research, outreach, and field survey failed to identify any archaeological sites within the ADI. However, it is possible that significant buried archaeological resources may exist within the ADI and these archaeological materials could be unearthed during project excavation activities. Due to the shallower construction associated with the Montebello At-Grade Option as opposed to installation of piles for the aerial structures, there would be less potential to encounter deeply buried resources as compared to the base Alternative 1 at this location. However, excavation associated with the Montebello At-Grade Option and elsewhere along Alternative 1 has the potential to disturb and destroy a significant archaeological resource. If unmitigated, this disturbance of a significant archaeological resource would result in a significant impact. MM CUL-7, which requires monitoring during ground disturbance at the Site of the Battle of Rio San Gabriel to ensure that appropriate treatment measures are put in place to protect and document the resource(s) if any significant resources are encountered, and MM CUL-8, which requires that construction workers receive training on how to proceed if cultural resources are inadvertently discovered and that a CRMMP be prepared as identified in **Section 3.4.7**, would be implemented. These mitigation measures would establish protections for unanticipated discoveries of archaeological resources and would reduce impacts to less than significant.

3.4.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not physically demolish, destroy, relocate, or alter any archaeological resources and would have no impact on archaeological resources.

Construction Impacts

Base Alternative and Design Option

Project excavation activities during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could unearth significant buried archaeological resources that may exist within the ADI. Shallow construction work, such as for the at-grade portions of the alignment, has limited potential to encounter intact archaeological resources due to prior disturbance, but other proposed construction activities have the potential to encounter intact archaeological resources. The TBM would only be used at depths containing soils deposited prior to human occupation, and thus archaeological resources are not anticipated to be present where the TBM would be operated. However, impacts within Holocene soils, such as the installation of piles for the aerial structure leading to the Commerce MSF and the excavation required for the TBM launch pit and extraction pit, could encounter deeply buried resources. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option has the potential to disturb and destroy a significant archaeological resource, and would result in a significant impact. Implementation of MM CUL-8, which requires that construction workers receive training on how to proceed if cultural resources are inadvertently discovered and that a CRMMP be prepared, as identified in **Section 3.4.7**, would establish protections for unanticipated discoveries of archaeological resources and would reduce impacts to less than significant.

3.4.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not physically demolish, destroy, relocate, or alter any archaeological resources and would have no impacts on archaeological resources.

Construction Impacts

Base Alternative and Design Options

Significant buried archaeological resources may exist within the ADI, and it is possible these archaeological materials could be unearthed during project excavation activities. Shallow construction work, such as for the at-grade portions of the alignment, has limited potential to encounter intact

archaeological resources due to prior disturbance. Further, the TBM would only be used at depths containing soils deposited prior to human occupation, and thus archaeological resources are not anticipated to be present where the TBM would be operated. However, other proposed construction activities have the potential to encounter intact archaeological resources. Deeper impacts within Holocene soils, such as the installation of piles for aerial structures and the excavation required for the TBM launch pit and extraction pit, have the potential to encounter deeply buried resources. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option has the potential to disturb and destroy a significant archaeological resource, which would result in a significant impact. Implementation of MM CUL-8 as identified in **Section 3.4.7** would be required for construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Implementation of MM CUL-8, which requires that construction workers receive training on how to proceed if cultural resources are inadvertently discovered and that a CRMMP be prepared, as identified in **Section 3.4.7**, would establish protections for unanticipated discoveries of archaeological resources and would reduce impacts to less than significant.

3.4.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not physically demolish, destroy, relocate, or alter any archaeological resources. Therefore, no impacts on archaeological resources would occur.

Construction Impacts

MSF Site Options and Design Option

Significant buried archaeological resources may exist within the footprint of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option, and it is possible these archaeological materials could be unearthed during project excavation activities. Shallow construction work for the MSF site options has limited potential to encounter intact archaeological resources due to prior disturbance, but deeper construction activities have the potential to encounter intact archaeological resources. Therefore, construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option has the potential to disturb and destroy a significant archaeological resource, which would result in a significant impact. Implementation of MM CUL-8, which requires that construction workers receive training on how to proceed if cultural resources are inadvertently discovered and that a CRMMP be prepared, as identified in **Section 3.4.7**, would establish protections for unanticipated discoveries of archaeological resources and would reduce impacts to less than significant.

3.4.6.3 Impact CUL-3: Disturbance of Human Remains

Impact CUL-3: Would a Build Alternative disturb any human remains, including those interred outside of formal cemeteries?

Alternative 1 Washington

Operational Impacts

There are no known cemeteries or archaeological sites including human remains within the ADI for Alternative 1. Operational activities would not involve excavation and would not have the potential to disturb any human remains, including those interred outside of formal cemeteries. Therefore, operation of Alternative 1 would have no impacts on human remains.

Design Options

Atlantic/Pomona Station Option

Operational activities would not involve excavation and would not have the potential to disturb any human remains, including those interred outside of formal cemeteries. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have no impacts on human remains.

Montebello At-Grade Option

Operational activities would not involve excavation and would not have the potential to disturb any human remains, including those interred outside of formal cemeteries. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have no impacts on human remains.

Construction Impacts

There are no known cemeteries or archaeological sites including human remains within the ADI. However, unknown human burials may exist within the ADI, and it is possible these burials could be unearthed during project excavation activities. Therefore, construction of Alternative 1 has the potential to disturb and destroy an unknown burial. Disturbance of unknown burial sites would result in a significant impact. Implementation of MM CUL-9, which establishes procedures for consultation and treatment if human remains are discovered, as identified in **Section 3.4.7,** would ensure proper treatment of human remains would occur and would thus reduce impacts to less than significant.

Design Options

Atlantic/Pomona Station Option

There are no known cemeteries or archaeological sites including human remains within the ADI. However, unknown human burials may exist within the ADI, and it is possible these burials could be unearthed during excavation activities. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option has the potential to disturb and destroy an unknown burial. Disturbance of unknown burial sites would result in a significant impact. Implementation of MM CUL-9, which establishes procedures for consultation and treatment if human remains are discovered, as

identified in **Section 3.4.7**, would ensure proper treatment of human remains would occur and would thus reduce impacts to less than significant.

Montebello At-Grade Option

There are no known cemeteries or archaeological sites including human remains within the ADI. However, unknown human burials may exist within the ADI, and it is possible these burials could be unearthed during excavation activities. Therefore, construction of Alternative 1 with the Montebello At-Grade Option has the potential to disturb and destroy an unknown burial. Disturbance of unknown burial sites would result in a significant impact. Implementation of MM CUL-9, which establishes procedures for consultation and treatment if human remains are discovered, as identified in **Section 3.4.7**, would ensure proper treatment of human remains would occur and would thus reduce impacts to less than significant.

3.4.6.3.1 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

There are no known cemeteries or archaeological sites including human remains within the ADI for Alternative 2. Operational activities would not involve excavation and would not have the potential to disturb any human remains, including those interred outside of formal cemeteries. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no impacts on human remains.

Construction Impacts

Base Alternative and Design Option

There are no known cemeteries or archaeological sites including human remains within the ADI. However, unknown human burials may exist within the ADI, and it is possible these burials could be unearthed during project excavation activities. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option has the potential to disturb and destroy an unknown burial. Disturbance of unknown burial sites would result in a significant impact. Implementation of MM CUL-9, which establishes procedures for consultation and treatment if human remains are discovered, as identified in **Section 3.4.7**, would ensure proper treatment of human remains would occur and would thus reduce impacts to less than significant.

3.4.6.3.2 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

There are no known cemeteries or archaeological sites including human remains within the ADI for Alternative 3. Operational activities would not involve excavation and would not have the potential to disturb any human remains, including those interred outside of formal cemeteries. Therefore,

operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have no impacts on human remains.

Construction Impacts

Base Alternative and Design Options

There are no known cemeteries or archaeological sites including human remains within the ADI. Unknown human burials may exist within the ADI, and it is possible these burials could be unearthed during project excavation activities. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option has the potential to disturb and destroy an unknown burial. Disturbance of unknown burial sites would result in potentially significant impacts. Implementation of MM CUL-9, which establishes procedures for consultation and treatment if human remains are discovered, as identified in **Section 3.4.7**, would ensure proper treatment of human remains would occur and would thus reduce impacts to less than significant.

3.4.6.3.3 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not involve excavation and would not have the potential to disturb any human remains, including those interred outside of formal cemeteries. Therefore, operation of the MSF site options would have no impact on human remains.

Construction Impacts

MSF Site Options and Design Option

There are no known cemeteries or archaeological sites including human remains within the ADI. However, unknown human burials may exist within the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option, and it is possible these burials could be unearthed during project excavation activities. Therefore, construction of either of the MSF site options have the potential to disturb and destroy an unknown burial. Disturbance of unknown burial sites would be a significant impact. Implementation of MM CUL-9, which establishes procedures for consultation and treatment if human remains are discovered, as identified in **Section 3.4.7**, would ensure proper treatment of human remains would occur and would thus reduce impacts to less than significant.

3.4.7 Project Measures and Mitigation Measures

As identified in **Section 3.4.6**, the Build Alternatives and Build Alternatives with the design option(s) would have significant impacts on cultural resources under Impact CUL-1 (Historical Resources), Impact CUL-2 (Archaeologic Resources), and Impact CUL-3 (Disturbance of Human Remains). No project measures would apply. Mitigation measures to reduce the impacts are presented herein. MM

CUL-1, MM CUL-8, and MM CUL-9 apply to all Build Alternatives and Build Alternatives with the design option(s). MM CUL-5 and MM CUL-6 apply to all Build Alternatives, including the design option(s), if the Commerce MSF site option is selected. MM CUL-2 and MM CUL-3 apply to Alternative 1 and Alternative 3, including the design options, if the Commerce MSF site option is selected. MM CUL-4 and MM CUL-7 apply to the base Alternative 1 and Alternative 1 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option.

Following the mitigation measures, **Table 3.4-4** identifies applicable measures and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the Build Alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM CUL-1: Protection Measures – Differential Settlement/Vibration/TBM Specifications for Golden Gate Theater. Metro shall conduct a pre-construction baseline survey, implement building protection measures, and conduct a post-construction survey of the Golden Gate Theater in relation to Guideway Alignment construction adjacent to the historical resource. Building protection measures shall be implemented in conjunction with MM NOI-1 through NOI-15

- Metro shall conduct a pre-construction survey to establish baseline, preconstruction conditions and to assess the building category and the potential for ground borne vibration to cause damage. Geotechnical investigations shall be undertaken to evaluate soil, groundwater, seismic, and environmental conditions along the alignment. This analysis shall inform the development of appropriate support mechanisms for cut and fill construction areas or areas that could experience differential settlement as a result of using a TBM in close proximity to the historical resource. An architectural historian or historical architect who meets the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) shall review final design documents prior to implementation of measures.

- Metro shall implement building protection measures such as underpinning, soil grouting, or other forms of ground improvement, as well as lower vibration equipment and/or construction techniques. If the historical resource has the potential to be impacted by differential settlement caused by TBM construction, Metro shall require the use of an earth pressure balance or slurry shield TBM.

- A post-construction survey shall also be undertaken to ensure that no significant impacts had occurred to historical resources. An architectural historian or historical architect who meets the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) shall prepare an assessment of the implementation of the mitigation measures.

MM CUL-2: Historical Resource Archival Documentation. This mitigation measure applies to Alternative 1 Washington Boulevard and Alternative 3 Atlantic to Greenwood IOS if the Commerce MSF site option is selected. Documentation for the Pacific Metals Company Building shall be undertaken if the Pacific Metals Company Building is acquired and demolished. Metro shall provide archival documentation of the historical resource(s) following the guidelines of the National Park Service's Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) program. At a minimum, the documentation shall consist of:

- Large-format photography including negatives and archival prints
- Written narrative following the HABS/HAER/HALS short format
- Site plan

Metro shall provide copies of the documentation to the City of Commerce for archival purposes. Large-format photography shall be completed prior to any demolition activities that would affect the contributors to the Pacific Metals Company Building. The documentation shall be prepared so that the original archival-quality documentation could be donated for inclusion in the Library of Congress if the National Park Service accepts these materials. Copies of documentation shall also be offered to the Commerce Public Library and local historical societies upon request.

MM CUL-3: Interpretive Program. This mitigation measure applies to Alternative 1 Washington Boulevard and Alternative 3 Atlantic to Greenwood IOS if the Commerce MSF site option is selected. An interpretive program for the Pacific Metals Company Building shall be undertaken if the Pacific Metals Company Building is acquired and demolished. Metro shall provide interpretive materials in the form of an exhibit, pamphlet, website, or similar, that describe and/or illustrate the historic significance of the Pacific Metals Company Building. The interpretive materials shall include a discussion of industrial activities related to the district and its role in the development of Commerce and a description of the construction history of the district during its period of significance. Interpretive materials shall be provided to the city of Commerce for public education purposes. Copies of interpretive materials shall also be offered to the Commerce Public Library and local historical societies upon request.

MM CUL-4: Protection Measures – Avoidance for the Dal Rae Restaurant Sign. If Alternative 1 is selected, Metro shall conduct a pre-construction baseline survey, implement building protection measures, and conduct a post-construction survey of the Dal Rae Restaurant Sign in relation to at-grade alignment construction with a sliver property acquisition adjacent to the historical resource.

- Metro shall conduct a pre-construction survey to establish baseline, preconstruction conditions and to assess the potential for damage related to improvements within the sliver property acquisition. An architectural historian or historical architect who meets the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) shall review proposed protection measures.
- Metro shall implement building protection measures such as fencing or sensitive construction techniques based on final project design.
- A post-construction survey shall be undertaken to ensure that no significant impacts had occurred to the historical resource. An architectural historian or historical architect who meets the Secretary of the Interior's Professional Qualification Standards (36 CFR Part 61) shall prepare an assessment of the implementation of the mitigation measure.

MM CUL-5: Historical Resource Archival Documentation. If the Commerce MSF site option is selected, documentation for the Vail Field Industrial Addition shall be undertaken. Metro shall provide archival documentation of the historical resource(s) following the guidelines of the National Park Service's Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) program. At a minimum, the documentation shall consist of:

- Large-format photography including negatives and archival prints
- Written narrative following the HABS/HAER/HALS short format
- Site plan

Metro shall provide copies of the documentation to the city of Commerce for archival purposes. Large-format photography shall be completed prior to any demolition activities that would affect the contributors to the Vail Field Industrial Addition. The documentation shall be prepared so that the original archival-quality documentation could be donated for inclusion in the Library of Congress if the National Park Service accepts these materials. Copies of documentation shall also be offered to the Commerce Public Library and local historical societies upon request.

MM CUL-6: Interpretive Program. If the Commerce MSF site option is selected, an interpretive program for the Vail Field Industrial Addition shall be undertaken. Metro shall provide interpretive materials in the form of an exhibit, pamphlet, website, or similar, that describe and/or illustrate the historic significance of the Vail Field Industrial Addition. The interpretive materials shall include a discussion of industrial activities related to the district and its role in the development of Commerce and a description of the construction history of the district during its period of significance. Interpretive materials shall be provided to the city of Commerce for public education purposes. Copies of interpretive materials shall also be offered to the Commerce Public Library and local historical societies upon request.

MM CUL-7: Site of the Battle of Rio San Gabriel. Archaeological monitoring during ground disturbance shall be conducted at the Site of the Battle of Rio San Gabriel, in accordance with the project Cultural Resources Monitoring and Mitigation Plan (CRMMP). The project alignment between Bluff Road in the east and the eastern boundary of the Rio Hondo Spreading Grounds in the west are within the territory through which the Battle of Rio San Gabriel took place and are considered sensitive for cultural resources related to the battle. If monitoring does not reveal any archaeological artifacts, then there would be no effect on the Site of the Battle of Rio San Gabriel. If archaeological artifacts are discovered, then work shall be halted in the immediate vicinity of the find and a qualified archaeologist shall assess the significance of the find and, if necessary, develop appropriate treatment measures. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation.

MM CUL-8: Unknown Archaeological Resources. Prior to any ground-disturbing activities, all construction personnel involved in ground-disturbing activities shall be provided with appropriate cultural resources training. The training shall instruct the personnel regarding the legal framework protecting cultural resources, typical kinds of cultural resources that may be found within the project area, and proper procedures and notifications for if cultural resources are inadvertently discovered.

In addition, a project–wide CRMMP shall be developed and implemented by Metro. This document shall address areas where potentially significant prehistoric and historic archaeological deposits are likely to be located within the ADI based on background research and a geoarchaeological analysis. Preparation of the CRMMP shall necessitate the completion of pedestrian survey of the private property parcels in the ADI that were not accessible during the preparation of the Eastside Transit Corridor Phase 2 Cultural Resources Impacts Report.

The CRMMP shall include a detailed prehistoric and historic context that clearly demonstrates the themes under which any identified subsurface deposits would be determined significant. Should significant deposits be identified during earth-moving activities, the CRMMP shall address methods for data recovery, anticipated artifact types, artifact analysis, report writing, repatriation of human remains and associated grave goods, and curation.

The CRMMP shall also require that an archaeologist qualified in prehistoric and historical archaeology be retained prior to ground-disturbing activities. The CRMMP will be a guide for monitoring activities. If buried cultural resources, such as flaked or ground stone, historic debris, building foundations, or non-human bone, are discovered during ground-disturbing activities, work will stop in that area and within 50 feet of the find until a qualified archaeologist can assess the significance of the find and, if necessary, develop appropriate treatment measures. As detailed in TCR-1, a Native American monitor shall be retained if treatment involved work at a prehistoric site, or at other locations determined appropriate during tribal consultation. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation. If during cultural resources monitoring the qualified archaeologist determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist can specify that monitoring be reduced or eliminated.

MM CUL-9: Unanticipated Discovery of Human Remains. If human remains are discovered, work in the immediate vicinity of the discovery shall be suspended and the Los Angeles County Coroner contacted. If the remains are deemed Native American in origin, the Coroner shall contact the NAHC and identify a Most Likely Descendant (MLD) pursuant to PRC Section 5097.98 and CEQA Guidelines Section 15064.5. The MLD may inspect the site within 48 hours of being notified and issue recommendations for scientific removal and nondestructive analysis. If the MLD fails to make recommendations, then Metro and/or the landowner may rebury the remains in a location not subject to further disturbance at their discretion. Work may be resumed at the landowner's discretion but will only commence after consultation and treatment have been concluded. Work may continue on other parts of the project while consultation and treatment are conducted.

3.4.8 Significance After Mitigation

As identified in **Table 3.4-4**, implementation of MM CUL-1 and MM CUL-4 would reduce impacts related to Historical Resources (CUL-1) to less than significant under Alternative 1 if the Montebello MSF site option is selected and MM CUL-1 would reduce impacts to less than significant under Alternative 3 if the Montebello MSF site option is selected.

If the Commerce MSF site option is selected, MM CUL-1 through MM CUL-6 would be implemented under Alternative 1; MM CUL-1, MM CUL-5, and MM CUL-6 would be implemented under Alternative 2; and MM CUL-1, MM CUL-2, MM CUL-3, MM CUL-5, and MM CUL-6 would be implemented under Alternative 3. Mitigation would reduce impacts, but if the Commerce MSF site option is selected, impacts would be **significant and unavoidable** for all alternatives and design options.

With implementation of MM CUL-7 through MM CUL-9, impacts related to Archaeological Resources (Impact CUL-2), and Disturbance of Human Remains (Impact CUL-3) would be reduced to less than significant for all alternatives and design options.

Table 3.4-4. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact CUL-1: Historical Resources	Applicable Mitigation	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-4 MM CUL-5 MMCUL-6	MM CUL-1 MM CUL-4	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-4 MM CUL-5 MM CUL-6	MM CUL-1 MM CUL-4	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-4 MM CUL-5 MM CUL-6	MM CUL-1 MM CUL-4	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-4 MM CUL-5 MM CUL-6	MM CUL-1 MM CUL-4	MM CUL-1 MM CUL-5 MM CUL-6	MM CUL-1 MM CUL5 MM CUL-6	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-5 MM CUL-6	MM CUL-1	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-5 MM CUL-6	MM CUL-1	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-5 MM CUL-6	MM CUL-1	MM CUL-1 MM CUL-2 MM CUL-3 MM CUL-5 MM CUL-6	MM CUL-1
	Impacts After Mitigation	SU	LTS	SU	LTS	SU	LTS	SU	LTS	SU	SU	SU	LTS	SU	LTS	SU	LTS	SU	LTS
Impact CUL-2: Archaeological Resources	Applicable Mitigation	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-7 MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8	MM CUL-8
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact CUL-3: Disturbance of Human Remains	Applicable Mitigation	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9	MM CUL-9
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.5 Energy

3.5.1 Introduction

This section discusses the Project setting in relation to energy. It describes existing conditions, the current regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options.

The utilities and service system study area encompasses the GSA and DSA. Information in this section is based on the Eastside Transit Corridor Phase 2 Energy Conservation and Utilities Service/Systems Impacts Report (Appendix F).

3.5.2 Regulatory Framework

3.5.2.1 Federal

Energy resources are protected by federal law including the Energy Policy and Conservation Act of 1975 and Alternative Motor Fuels Act of 1988, Moving Ahead for Progress in the 21st Century Act (MAP-21), Energy Policy Acts of 1992 and 2005, Energy Independence and Security Act of 2007, and Safer Affordable Fuel-Efficient Vehicles Rule Part One: One National Program. The laws are summarized below and discussed in more detail in Appendix F.

- The Energy Policy and Conservation Act of 1975 promotes energy conservation when feasible, including mandating vehicle economy standards. The Alternative Motor Fuels Act of 1988 amends a portion of the Energy Policy and Conservation Act to encourage the use of alternative fuels, including electricity.

- MAP-21 incorporates energy conservation as a core consideration in surface transportation development and included, in surface transportation development funding, the funding of a public transportation research program with a focus on energy efficiency, system capacities, and other surface transportation factors.

- The Energy Policy Act of 1992 established regulatory and voluntary measures to encourage the use of alternative fuels. The act was followed up in 2005 with amended fuel economy testing procedures and other regulations and requirements to establish to tax incentives, grant programs, and demonstration and testing initiatives intended to promote the adoption of alternative fueled vehicles.

- The Energy Independence and Security Act of 2007 consists of various provisions to enhance energy efficiency and the availability and adoption of renewable energy and alternative fuel.

- Safer Affordable Fuel-Efficient Vehicles Rule Part One amends existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide (CO_2) emissions standards for light-duty vehicles On August 10, 2021, new CAFÉ standards were proposed for 2024-2026 model year light-duty vehicles, and on December 21, 2021, the NHTSA repealed the SAFE I Rule preemption on state fuel efficiency and GHG standards.

3.5.2.2 State

Energy resources are protected by the California Energy Commission (CEC) and state laws and programs including the Alternative and Renewable Fuel and Vehicle Technology Program, Assembly Bill 1007, Alternative Fuels Plan, Assembly Bill 1493, California Advanced Clean Cars Program, California Advanced Clean Cars II Program, Executive Order B-16-12, Senate Bills 350 and 100, and the California Code of Regulations Energy Efficiency Standards.

The CEC is responsible for, among other things, forecasting future energy needs for the state and to prepare a biennial integrated energy policy report that includes assessments and forecasts of energy supply, production, transportation, delivery and distribution, demand and price, as well as assessing major energy trends and issues facing the state's electricity, natural gas, and transportation fuel sectors. The assessments and forecasts are used to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety.

The Alternative and Renewable Fuel and Vehicle Technology Program was established under Assembly Bill (AB) 118 and administered by the CEC. The program establishes measures including grant awards, revolving loans, and loan guarantees to develop and deploy new fuel and vehicle technologies to help achieve California's target petroleum reductions, air quality, and climate change goals. The program was amended in 2008 and 2013 to allow the CEC to develop and deploy alternative and renewable fuels, alternative and renewable fueled vehicles, and other advanced transportation technologies to meet the state goals.

Assembly Bill 1007, Alternative Fuels Plan, AB 1007, (Pavley, Chapter 371, Statutes of 2005) requires the CEC to prepare an alternative fuels plan to increase the use of alternative fuels in California. The State Alternative Fuels Plan, approved by the CEC on November 2, 2007, aims to clean the state's air, diversify fuel sources, and protect the state from oil spikes that affect prices, the economy, and jobs. Additionally, the plan indicates that significant efforts would be needed to reduce vehicle miles travelled by all Californians through more effective land use and transportation planning and greater mass movement of people and goods.

Assembly Bill 1493 (2002), California Advanced Clean Cars Program, requires the California Air Resources Board (CARB) to develop and adopt GHG emission standards for automobiles. CARB, in coordination with the USEPA and NHTSA, developed a set of regulations that are collectively known as the Advanced Clean Cars Program. The Low-Emission Vehicle III Regulation for GHG (LEV III GHG) builds upon AB 1493, which established GHG emission standards for 2009 through 2016 model year passenger vehicles, by requiring further reductions in passenger vehicle GHG emissions for 2017 and subsequent model years. The LEV III GHG regulation is projected to reduce GHG emissions by 40 percent in 2025 when compared to 2012 model year vehicles. The ZEV regulation also requires auto manufacturers to offer for sale specific numbers of full battery-electric, hydrogen fuel cell, and plug-in hybrid-electric vehicles.

On September 16, 2020, CARB held the first public workshop to solicit input on the development of the Advanced Clean Cars II (ACC II) regulations. These regulations will seek to reduce criteria and GHG emissions from new light- and medium-duty vehicles beyond the 2025 model year and increase the number of zero emission vehicles (ZEV) for sale. The proposed Advanced Clean Cars II regulations establish the next set of LEV and ZEV requirements. The regulations are scheduled to go to the CARB Board in summer of 2022.

Executive Order B-16-12 sets aggressive targets to meet certain goals in 2015, 2020, and 2025 and supports the rapid commercialization of clean vehicles and advances two long-term environmental and energy goals for the transportation section: (1) decrease transportation section GHG emissions to 80 percent below 1990 levels by 2050; and (2) reduce at least 1.5 billion gallons of petroleum fuels by 2025 through the use of clean and efficient vehicles (Office of Governor Edmund G. Brown Jr. 2013).

Senate Bill (SB) 350 (2015) increases the state's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. In addition, the state is required to double statewide energy efficiency savings in electricity and natural gas end uses by 2030. SB 100 (2018) increases the renewable electricity procurement goal set by SB 350 from 50 percent to 60 percent by 2030. SB 100 requires renewable energy and zero-carbon electricity system to supply 100 percent of electric retail sales by 2045.

California Code of Regulations (CCR) Energy Efficiency Standards Title 24, Part 6, Chapter 2-53 applies to all newly constructed residential and nonresidential buildings in the State of California and regulates minimum energy efficiencies for cooler, heating, ventilation, water heating, and lighting. CCR, Title 24, Part 11 (also referred to as CALGreen) identifies mandatory building measures and voluntary measures that may be incorporated into the design of buildings. Relative to energy usage, CALGreen contains requirements for cool roofs, exterior lighting, bicycle parking, and electric vehicle charging. In addition, CALGreen requires mandatory inspections of energy systems (e.g., heat furnace, air conditioner, and mechanical equipment) for non-residential buildings larger than 10,000 square feet to ensure that all are working at their maximum capacity and according to their design efficiencies.

3.5.2.3 Regional

Regional agencies involved in the use of energy resources include the California Association of Governments (SCAG) and Air Quality Management Districts.

SCAG is required by state and federal mandates to prepare a Regional Transportation Plan (RTP) every three years that also includes a Sustainable Communities Strategies (SCS). The most recent RTP (*Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* [2020 RTP/SCS], adopted on September 3, 2020) establishes goals that relate to the Project and energy efficiency and conservation including (1) Preserve and ensure a sustainable regional transportation system; (2) Maximize the productivity of our transportation system; (3) Actively encourage and create incentives for energy efficiency, where possible; and (4) Encourage and use and growth patterns that facilitate transit and active transportation

The South Coast Air Quality Management District (SCAQMD) is responsible for contributing to the development of State Implementation Plans (SIPs) in compliance with the Federal Clean Air Act (CAA) and California CAA by indicating how air quality standards will be met through the development of air quality management plans. Among other strategies, these plans promote reductions in vehicle miles traveled (VMT) through the development of transportation alternatives.

3.5.2.4 Local

Metro has adopted plans, policies, and strategies that address energy efficiency, including both general goals focused on sustainability, as well as specific actions designed to reduce energy consumption and expenditures. The most applicable plans and strategies include the Energy Conservation and Management Plan, Sustainable Rail Plan, Climate Action and Adaptation Plan, and

First/Last Mile Strategic Plan. Metro's adopted policies that support energy efficiency include the following:

- **Energy and Sustainability Policy** (2007) – Established to aid Metro in controlling energy consumption and encouraging energy efficiency, conservation, and sustainability.
- **Environmental Policy** (2009) – A comprehensive policy that provides guidance on such aspects as mitigating potential environmental impacts generated by development activities and reducing consumption of natural resources. Specific commitments related to energy include promoting renewable energy sources to address energy and environmental challenges.
- **Renewable Energy Policy** (2011) – Calls for renewable energy solutions while minimizing non-renewable energy use and also calls for a review of technical feasibility for renewable power projects on Metro property and infrastructure.
- **Green Construction Policy** (2011) – Adopted to reduce emissions from construction equipment and includes a commitment by Metro that all on-road and off-road vehicles used in construction of a project will be greener and less polluting, and that best practices will be implemented to meet or exceed air quality emission standards. Measures related to energy use include limiting idling, maintaining equipment to manufactures' specifications, and using electric power in lieu of diesel power where available.
- **Complete Streets Policy** (2014) – Establishes design and planning guidelines to promote walking, bicycling, transit use, and public health, and to promote an integrated, sustainable transportation system that serves all users within the community.

The *Los Angeles County 2035 General Plan* includes Elements which address energy consumption and needs. The county identified a high transportation and non-transportation energy demand and projected growth in the region will continue to strain the mineral supply. Energy consumption patterns demonstrate that residents in Los Angeles County consume proportionally more energy for transportation than the rest of California and that the low-density, automobile-dependent communities place high demand on such resources (Los Angeles County 2015).

- The Mineral and Energy Resources Section in the Conservation and Natural Resources Element: addresses the use and management of valuable energy and mineral resources.
- The Conservation and Natural Resources Element sets forth goals and policy direction to promote efficient and sustainable use of renewable and non-renewable energy resources.
- The Mobility Element of the general plan includes policy guidance and strategies to reach long-term transportation goals, including the promotion of alternatives to the single-occupant automobile. Specifically, Goal M4 promotes an efficient multimodal transportation system that serves the needs of all residents. Goal M5 promotes land use planning and transportation management that facilitates the use of transit.

The cities within the Build Alternative DSAs have local regulations related to energy resources and energy conservation These regulations include the relevant general plan policies, ordinances, and municipal codes of the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. Not all of the local jurisdictions that could be affected by the Project have specific general plan policies

related to energy resources; however, other policies contained in those general plans, such as those related to improving air quality, improving traffic flow, supporting public transit, and reducing VMT also support energy conservation and efficiency. Generally, all the various general plan policies and municipal codes focus on conservation of nonrenewable resources.

3.5.3 Methodology

Potential impacts to energy resources were assessed based on the amount of energy consumed during construction of the Build Alternatives, as well as the operational energy consumption associated with stations, LRVs, parking facilities, and MSFs, and projected changes in regional VMT for highway/major road vehicle traffic. The analysis also includes an evaluation of the alternatives relative to energy conservation through the wise and efficient use of energy as identified in Appendix F of the State CEQA Guidelines. The purpose of Appendix F is to ensure that energy implications are considered in project decisions. Specific emphasis is given to reducing inefficient, wasteful, and unnecessary consumption of energy.

Analysis of potential impacts to energy resources includes consideration of the following elements:

- Construction-related energy consumption for each of the Build Alternatives
- Energy operating costs required to operate each the Build Alternatives (including the energy required to operate rail lines)
- Changes to energy consumption from mobile sources in the area as a result of regional changes in the VMT of cars, trucks, and other highway vehicles operating in the regional area
- Energy consumption related to the operation of stations, parking facilities, and MSFs
- Net project operating energy impacts including both energy resource savings and costs as a result of the Project investment in rail infrastructure
- Project impacts on local and regional energy supplies and on requirements for additional capacity
- The degree to which the Project complies with existing energy standards

Additionally, CEQA Guidelines Appendix F states that the means of achieving the goal of energy conservation include the following:

- Decreasing overall per capita energy consumption
- Decreasing reliance on fossil fuels such as coal, natural gas and oil
- Increasing reliance on renewable energy sources

These conservation factors are considered in the impact discussion of Impact ENG-1.

3.5.3.1 Construction Energy Analysis

Energy consumption during construction was determined by analyzing the energy requirements of construction equipment, worker commute vehicles, material hauling and delivery vehicles, and construction processes. The energy demands of construction associated with the at-grade, aerial, and underground components of the Build Alternatives were each analyzed using the following methodology.

The estimate of construction-related energy use was calculated by applying United States Energy Information Administration (USEIA)-derived CO_2 emissions per energy unit factors to total carbon dioxide equivalent (CO_2e) emissions estimated using the California Emissions Estimator Model (CalEEMod) for the Eastside Transit Corridor Phase 2 Climate Change and Greenhouse Gases Impacts Report (Appendix H), and the Eastside Transit Corridor Phase 2 Air Quality Impacts Report (Appendix C), prepared for the Project. Construction energy demand was quantified in units of gallons for fuels and kilowatt-hours (kWh) for electricity. USEIA unit conversion factors were also used to convert energy consumption to metric million British thermal units (MMBTU) for comparison to other Project energy usage.

Only direct energy consumption was evaluated for Project construction. Indirect energy consumption would occur as part of Project construction associated with grid-based energy demand of construction equipment and lighting. Use of grid-based electricity during construction would reduce the need for diesel fueled portable generators included in construction energy use estimates; thus, this small amount of indirect energy consumption would decrease Project reliance on fossil fuels and would be consistent with the goals of Appendix F of the State CEQA Guidelines and was not quantified.

3.5.3.2 Operational Energy Analysis

The methodology for determining operation-related impacts is the same for each Build Alternative.

3.5.3.2.1 Vehicle Miles Traveled and Fuel Consumption Energy Analysis

Project-related operational emissions of CO_2 associated highway VMT were calculated as part of Appendix H, Climate Change and Greenhous Gases Impacts Report, and Appendix C, Air Quality Impacts Report, using the motor vehicle emissions model, Emission Factor Model for On-road Motor Vehicles (EMFAC) 2017 and predicted regional highway traffic VMT. By applying USEIA-derived CO_2 emissions per energy unit factors to CO_2 emissions from gasoline-fueled and diesel-fueled sources respectively, highway VMT energy consumption was quantified in units of gallons of gasoline and diesel fuel. USEIA unit conversion factors were also used to convert energy consumption to MMBTU for comparison to other Project energy usage.

3.5.3.2.2 Light Rail Transit, Station, and MSF Operations

The energy that would be used by stations, MSFs, and parking facilities was determined following the same methodology used in the separate Appendix H, Climate Change and Greenhouse Gases Impacts Report. Electricity needed to operate the LRVs was estimated from the route distance, headway between trains, and the average energy intensity for the train operation. The Federal Transit Administration's National Transit Database (2019) was used to estimate the average energy intensity for Metro's LRT service. Annual energy demand was estimated by applying the 8.4 kWh per mile

energy intensity factor for Metro LRT operations to the projected LRV operations along the length of the alignment for each alternative. Vehicles were assumed to operate on weekdays every 5 minutes between the hours of 4:00 AM and 12:00 PM, every 10 minutes between the hours of 12:00 PM and 8:00 PM, and every 15 minutes between the hours of 8:00 PM and 2:00 AM, and operate on weekends every 20 minutes between the hours of 4:00 AM and 7:00 AM and between the hours of 7:30 PM and 2:00 AM, every 15 minutes between the hours of 7:00 AM and 9:00 AM and the hours of 6:30 PM and 7:30 PM, every 10 minutes between the hours of 9:00 AM and 6:30 PM.

Chester and Horvath (2008) published various fundamental environmental factors for rail. These factors, combined with electricity usage factors from San Francisco Municipal Railway (Muni) (San Francisco), Massachusetts Bay Transportation Authority (MBTA) Green Line (Boston), and Bay Area Rapid Transit (BART) (San Francisco) were used to estimate from train control operations.

Energy demand associated with operation of the parking facilities, stations and MSFs were calculated based on total building area using CalEEMod default energy consumption factors. Annual energy demand for the LRT stations were estimated using CalEEMod default energy demand parameters for the most appropriate surrogate land use present in the model (i.e., enclosed parking structure with elevator for underground stations; unenclosed parking structure with elevator for aerial stations; and unenclosed parking structure for at-grade stations) based on the size, in square feet, of the station and the type of structure. All stations were estimated based on a footprint of approximately 14,000 square feet. Underground stations were estimated to consume 75,000 kWh; aerial stations were estimated to consume 26,800 kWh; and at-grade stations were estimated to consume 24,200 kWh. Annual energy demand from parking facilities were estimated using the CalEEMod default energy demand parameter for the parking lot land use, which is 140 kWh per year per parking space. Annual energy demand for an MSF was estimated using CalEEMod default energy demand parameters for the most appropriate surrogate land use present in the model (i.e., unrefrigerated warehouse with rail for the MSF facility structure and parking lot for the remainder of the MSF site). An MSF facility structure with a footprint of 177,000 square feet based on preliminary site designs was assumed for both MSF site options.

Because local and regional bus routes would not be altered as part of the Project, energy consumption from buses were not included in the analysis.

3.5.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to energy if it would:

Impact ENG-1: Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Impact ENG-2: Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

3.5.5 Existing Setting

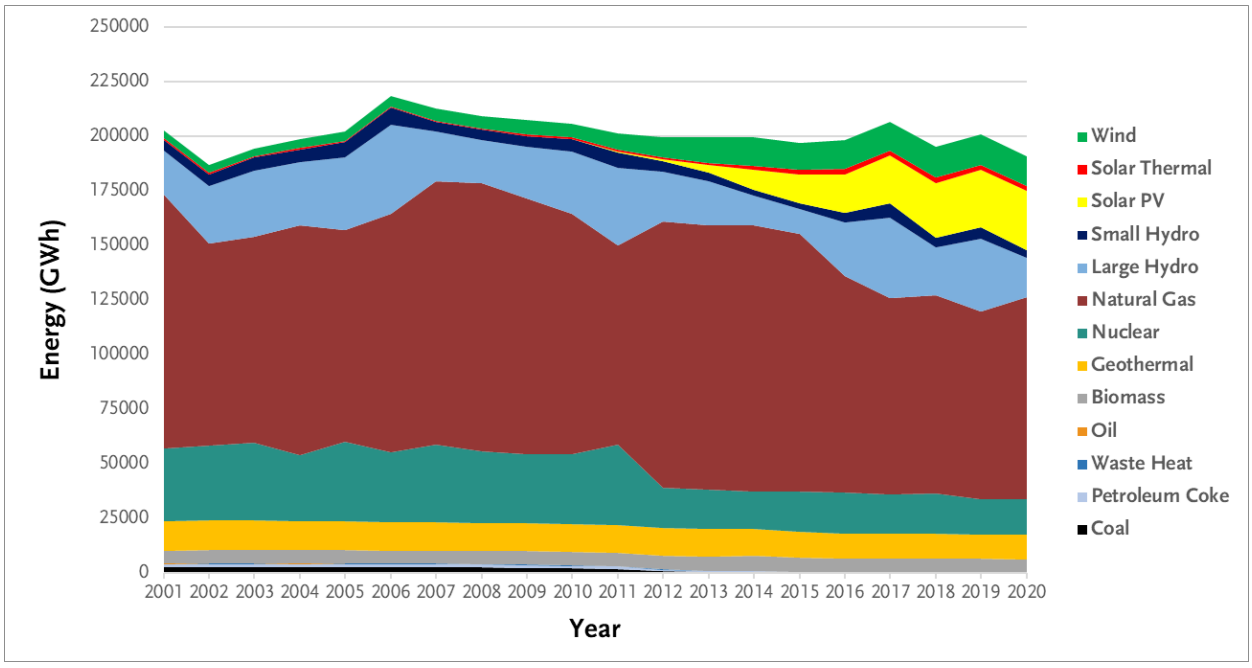
Existing conditions of the state's energy and electricity supply and demand were developed from the two most recent CEC Integrated Energy Policy Reports (2017 and 2019) (CEC 2018a and CEC 2020a) and the CEC's Energy Almanac (CEC 2021).

3.5.5.1 Electricity Sector Study Area

In 2020, total system electric generation for California was 272,576 gigawatt-hours (GWh), which is reduction of two percent, or 5,356 GWh, from 2019 levels (CEC 2021). This reduction is consistent with the downward or flat trend in energy demand that has been occurring over recent years as a result of energy efficiency programs and installation of behind-the-meter solar photovoltaic (PV) systems[1] that directly displace utility-supplied generation.

The CEC's 2019 *Integrated Energy Policy Report* identifies that the state's electricity sector is rapidly changing in response to climate policy and market changes. This includes a transition away from fossil natural gas, which is being replaced by resources including renewables, transmission upgrades, energy storage, energy efficiency, and demand response to meet air quality, climate, and other environmental goals. Over the last decade, renewable capacity in the state increased from 9,313 megawatts (MW) in 2009 to 23,313 MW in 2018 moving towards achieving the state's renewable procurement requirements, including the requirement that 33 percent of retail electricity sales must be served with renewable resources by 2020, and 60 percent by 2030 as identified in SB 100. In 2020, the state of California achieved an estimated 33 percent of total system electricity generation from renewable resources (CEC 2021).

Figure 3.5.1 depicts the change in the state's electricity system generation supply mix from 2001 to 2020, including a doubling of renewable supplies (CEC 2020a).



Source: CEC, 2020a.

Figure 3.5.1. In-State Electric Generation by Fuel Type

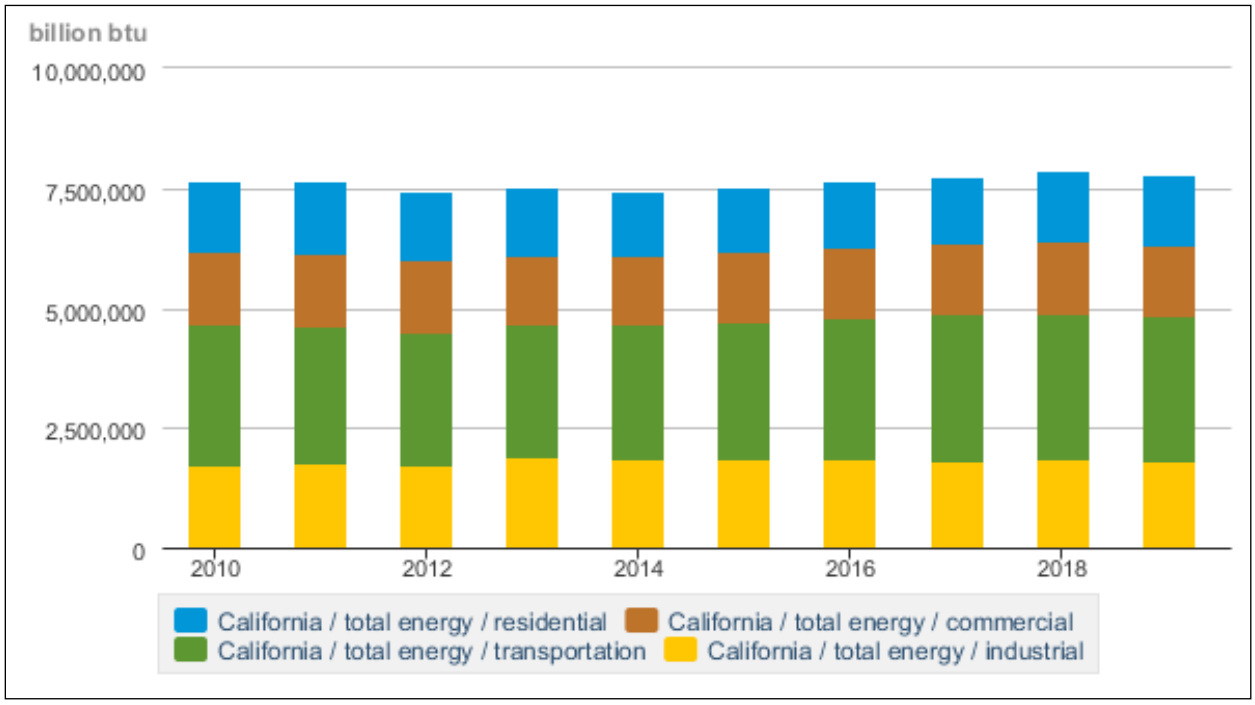
Note: California uses both in-state and out-of-state sources of electricity generation. In 2020, in-state electricity generation accounted for 190,222 GWh or approximately 70 percent of total network power generation, which is an approximately 5 percent decline as compared to 2019, due in part, to reduced generation from hydroelectric power plants resulting from dry conditions.

[1] Behind-the-meter PV systems provide a single building or facility with direct power, without passing through an electric meter.

3.5.5.2 Transportation Sector

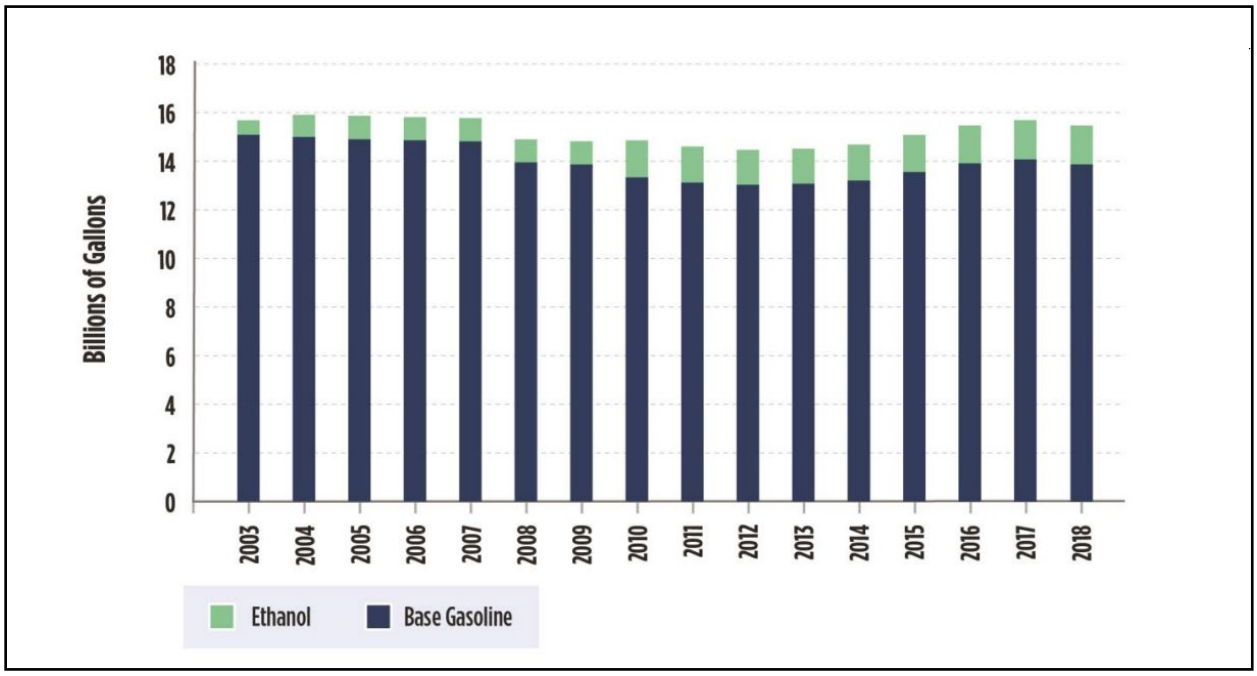
As shown in **Figure 3.5.2** the transportation sector in California consumes a relatively large amount of the energy in the state (approximately 50 percent). and is the largest source of the state's GHG emissions, accounting for approximately 41 percent (CEC 2020a).

Gasoline remains the dominant fuel within the transportation sector, followed by diesel and aviation fuels. California is one of the largest consumers of gasoline in the world. However, California has implemented a range of regulations and incentives to advance its clean transportation goals, and as shown in **Figure 3.5.3** and **Figure 3.5.4**, the use of alternative fuels, including ethanol, biodiesel, and renewable diesel have increased in recent years (CEC 2020a). Further, as shown in **Figure 3.5.5**, there is an increasing use of electricity as a transportation fuel. The distribution among different fuels will change over time, depending on the changes in vehicle sales trends. While petroleum-based fuels are anticipated to continue to represent the largest shares of transportation energy demand through 2030, improvements in fuel efficiency and increased electrification are expected to result in a future decline in gasoline demand over the coming decades (CEC 2020a).



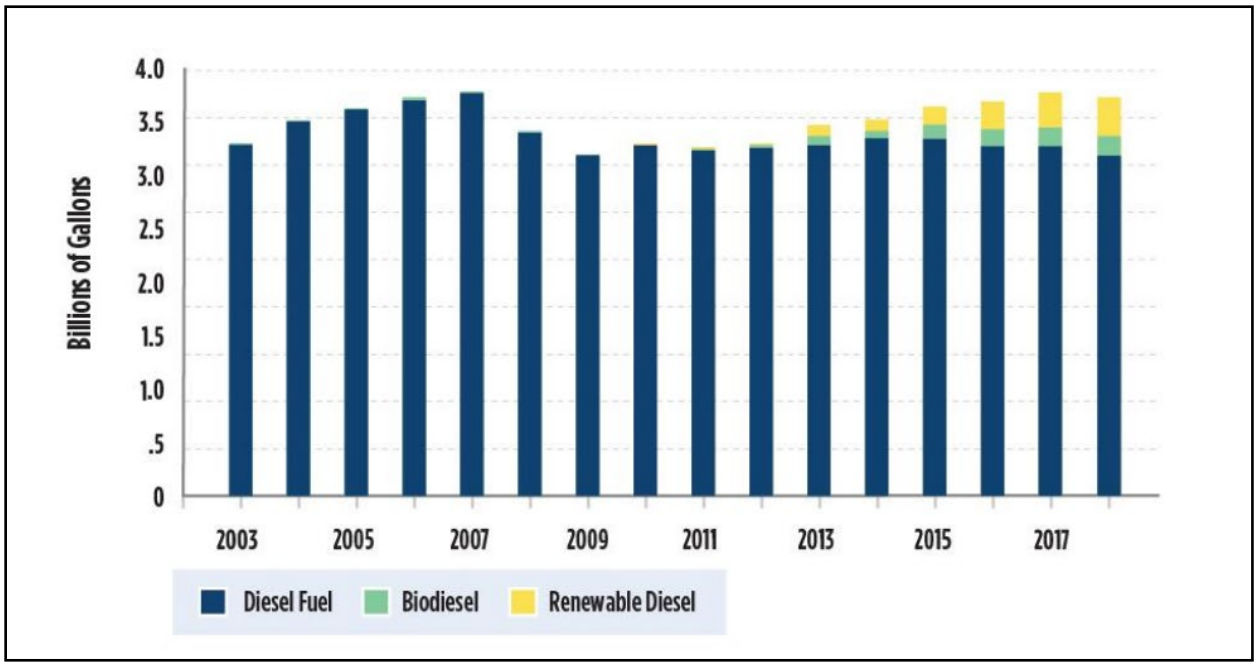
Source: USEIA, 2021a.
Key: BTU – British Thermal Units

Figure 3.5.2. California Energy Use by Sector (2010-2019)



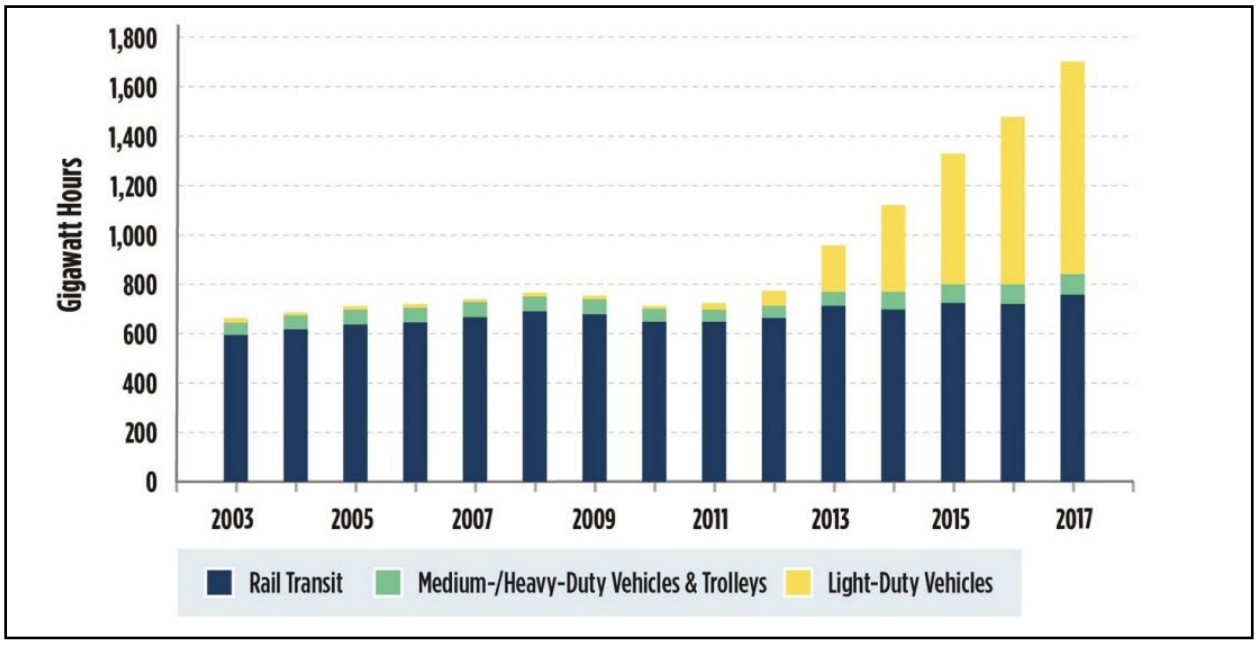
Source: CEC, 2020a.

Figure 3.5.3. California Gasoline and Ethanol Consumption (2003-2018)



Source: CEC, 2020a.

Figure 3.5.4. California Diesel Fuel, Biodiesel, and Renewable Diesel Consumption (2003-2018)



Source: CEC, 2020a.

Figure 3.5.5. California Transportation Electricity Consumption (2003-2017)

The CEC's 2017 *Integrated Energy Policy Report (CEC 2018a)* and *California Energy Demand 2018-2030 Revised Forecast* (CEC 2018b) presents gasoline and diesel demand forecasts for both a low petroleum price case (high-demand) scenario and a high petroleum price case (low-demand) scenario. The high-demand scenario projects peak gasoline demand to be 12.3 billion gallons in 2030 (25 percent below 2014 levels). The low-demand scenario projects a peak demand of 12.7 billion gallons in 2030 (a decrease of 19 percent below 2014 levels). Greater numbers of zero-emission vehicles and increasing fuel economy of light-duty gasoline vehicles are largely responsible for the decrease in gasoline demand (CEC 2018b). Diesel demand is expected to increase moderately, following the growth of California's economy. Under all demand scenarios total diesel demand is projected at 4.6 billion gallons in 2030.

Transportation in Los Angeles County continues to be dominated by single-occupancy automobiles (Metro 2008). High percentages of single-occupancy vehicles result in higher VMT throughout the region. In turn, high VMT translates into high energy use and increased air quality pollutants in the SCAG region. Subsequently, high VMT translates into high energy use and increased air quality pollutants.

As shown in **Table 3.5-1**, existing conditions data for regional traffic energy consumption was modeled for the existing conditions year of 2019. [2] The annual automobile energy consumption data for the region was developed as part of the Project transportation model. Highway traffic in the region was estimated to consume approximately 6.28 billion gallons of gasoline and 239 million gallons of diesel fuel under the Existing Conditions, equating to approximately 787,613 billion BTUs. No LRT operates within the GSA under the existing conditions.

[2] As described in Section 3.14, Transportation and Traffic, the base year data in Metro's regional travel demand forecasting model (the Corridor Based Model 2018 [CBM18]) is from 2017 and represents the data that was most recently available when the model was created in 2018. This data has been used to represent 2019, the base year in this study.

Table 3.5-1. Annual Regional Transportation Energy Use, Existing Conditions

Vehicle Class	Gasoline Demand (thousand gallons)	Diesel Demand (thousand gallons)	Electrical Demand (kWh)	Natural Gas Demand (billion BTU)	Total Operational Energy Demand (billion BTU)
Regional Highway Traffic[1]	6,274,509	238,829	n/a	n/a	787,613

Source: CDM Smith/AECOM JV, 2021.
Note:
1 Regional highway traffic accounts for all vehicular traffic in the region which would be affected by the Project.
Key:
BTU = British thermal unit per mile kWH = kilowatt-hour

Typically, in a CEQA analysis, project-related impacts are compared to existing (without project) conditions. However, pursuant to CEQA Guidelines Section 15125(a)(2), a lead agency has the discretion to exclusively use a future conditions baseline for the purposes of determination of significance under CEQA in instances where showing an existing conditions analysis would be misleading or without informational value. Use of an existing conditions baseline would be misleading for the Project because it ignores the regional background growth in population, traffic, and transportation infrastructure that would occur between the existing conditions baseline year of 2019 and Project build-out (i.e., the 2019 existing conditions will be substantially altered by regional growth that will occur independent of the Project, which, in turn, would mask the impacts that are attributable to the Project and would not provide the reader with an accurate and meaningful delineation of Project-related impacts). Use of existing conditions would further inappropriately attribute regional energy reductions associated with future engine efficiency standards, which do not exist under existing conditions, to the project.

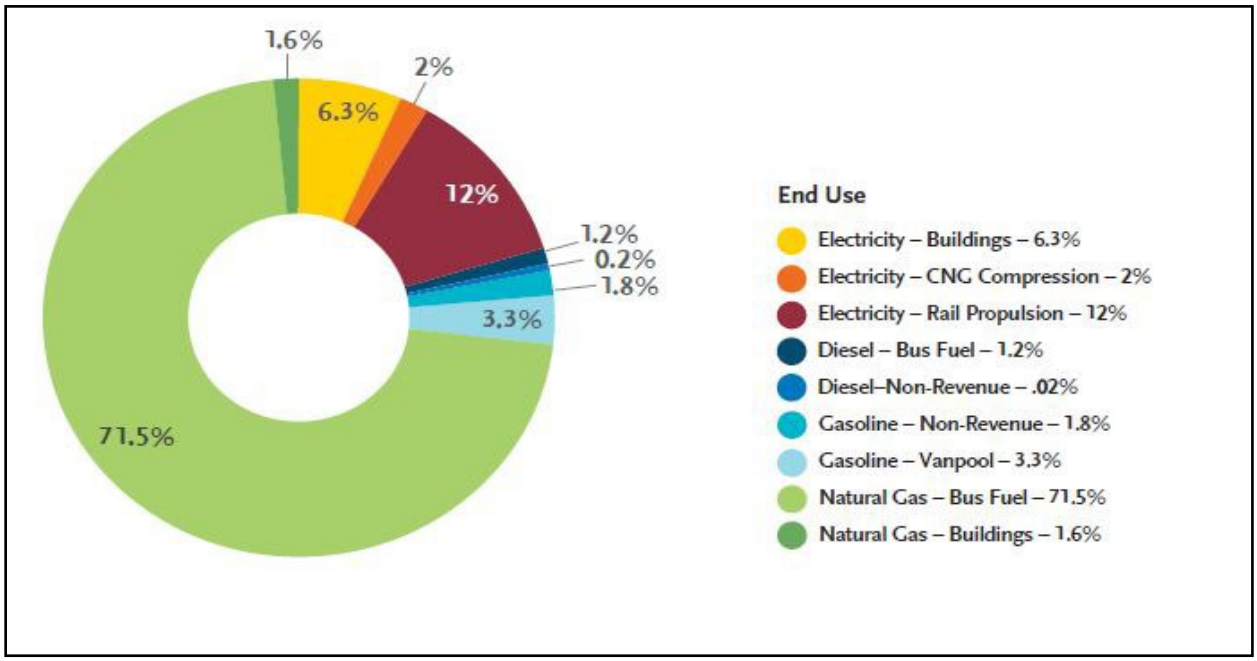
Therefore, for the quantification of energy emissions, Project energy demand will be defined as the difference between a Build Alternative (2042) and the existing conditions in 2019 adjusted for regional growth (i.e., the projected future conditions baseline) that would occur by 2042 (2042 without Project Conditions). Fuel consumption factors for highway vehicles (the preeminent energy use affected by this Project) decrease as engine technology improves and vehicle manufacturers meet more stringent state and federal engine efficiency standards. Since all alternatives would reduce VMT associated with highway traffic as compared to 2042 without Project Conditions, using 2042 highway traffic emission rates would result in less fuel reduced associated with VMT reductions as compared to reductions which might be achieved under existing conditions. Therefore, evaluation of Project impacts during the 2042 design year would conservatively evaluate the energy impacts of operations.

3.5.5.3 Metro Energy Use and Fuel Consumption

Metro's 2019 *Energy and Resource Report* indicates that Metro has experienced a decline in passenger trips (bus, rail, and vanpool) from 2013 to 2018, in line with the national trend. An important factor in the decline of transit ridership includes increased personal vehicle ownership and increased driving in recent years (Metro 2019).

2011 was the last year Metro operated diesel buses. Currently, Metro operates the largest compressed natural gas bus fleets in the nation. In July 2017, the Metro Board of Directors voted to transition the entire Metro bus fleet to zero-emissions by 2030 (Metro 2018).

Metro's implementation of energy conservation measures and building design and fuel efficiency measures has resulted in reduced energy consumption since 2013. In 2018, Metro reduced overall energy use by 7.9 percent compared to 2017 through reduced vehicle fuel use by buses and support vehicles (Metro 2019). In 2017, 30 percent of Metro's electricity came from renewable sources (Metro 2018). In 2018, 31 percent of Metro's electricity came from renewable energy sources (Metro 2019). **Figure 3.5.6** shows a breakdown of Metro's energy by end use in 2017. Metro's electricity use is split between powering the rail and bus system (92 percent) and transit facilities (8 percent) (Metro 2018).



Source: Metro, 2018.

Figure 3.5.6. 2017 Metro Energy by End Use

3.5.5.4 Electric Power

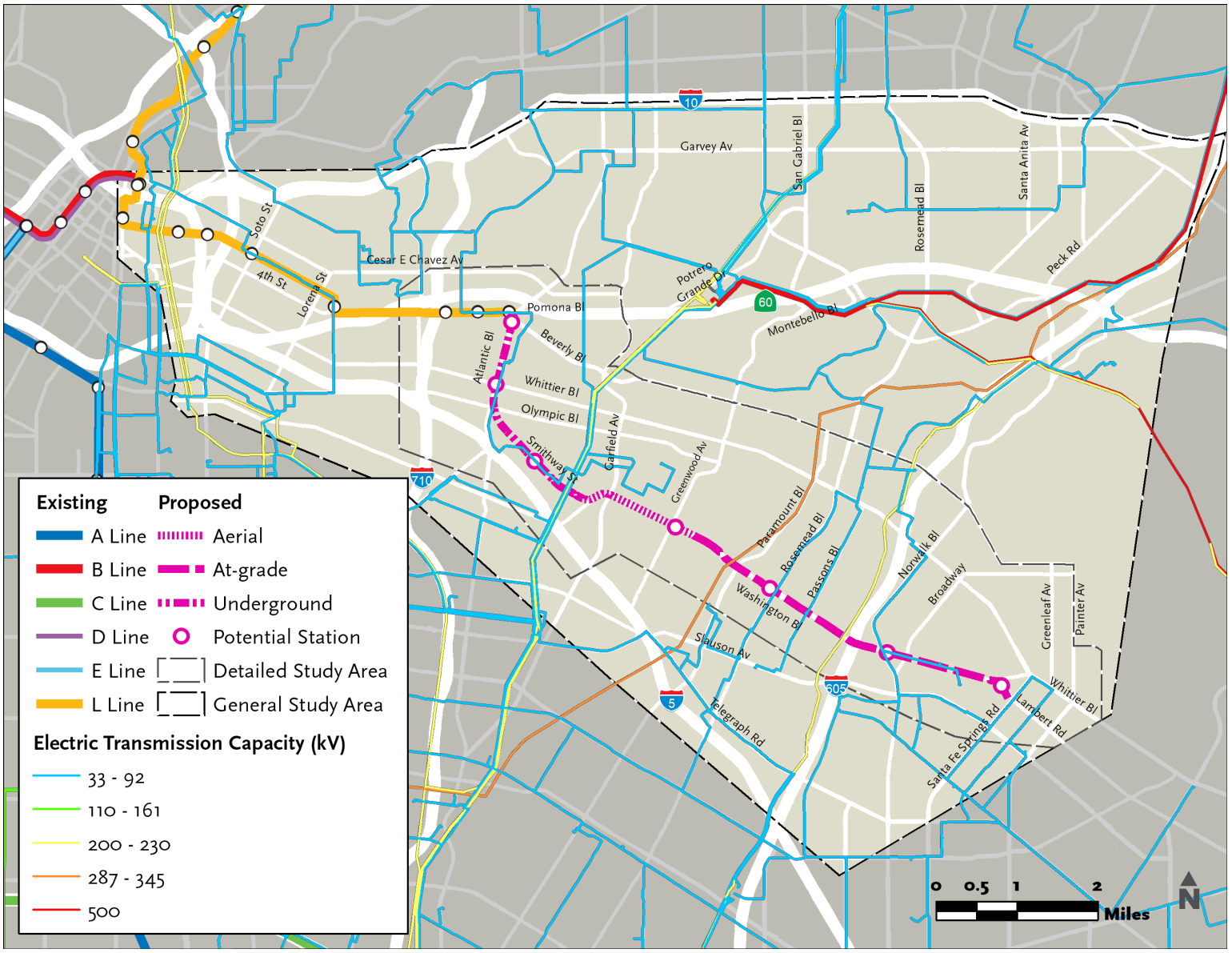
Southern California Edison (SCE) is an electric utility company and subsidiary of Edison International. SCE provides energy to approximately 15 million people in California and is one of the largest electric utilities in the United States (SCE 2019). The CEC reports on electricity consumption by planning area annually. The total electricity usage in the SCE planning area in 2018 was 104,406.6 million kWh (CEC 2019b). For planning purposes, this number can be compared to the CEC's most recent estimate of energy production in the planning area. For 2018, their report, *California Energy Demand 2018-2030 Staff Revised Forecast,* projects the net energy consumed as 110,000 million kWh (CEC 2018). As outlined in the 2020 Sustainability Report, the SCE aims to deliver 100 percent carbon-free power to retail-sales customers by 2045 (SCE 2020). Sources for carbon-free energy include solar, geothermal, wind, hydro, biomass and biowaste, and nuclear energy.

Figure 3.5.7 illustrates SCE's electric transmission grid in the GSA. Transmission lines can carry alternating current or direct current with voltages typically ranging from 110 kV to 765 kV. Transmission lines can be overhead and underground; underground transmission lines are more often found in urban areas. Sub-transmission lines generally carry voltages ranging from 33 kV to 100kV. These sub-transmission lines transmit power from higher voltage lines or other bulk power sources to local distribution network substations. An overhead power line can be single or double circuit. A single-circuit transmission line carries conductors for only one circuit.

3.5.5.5 Natural Gas

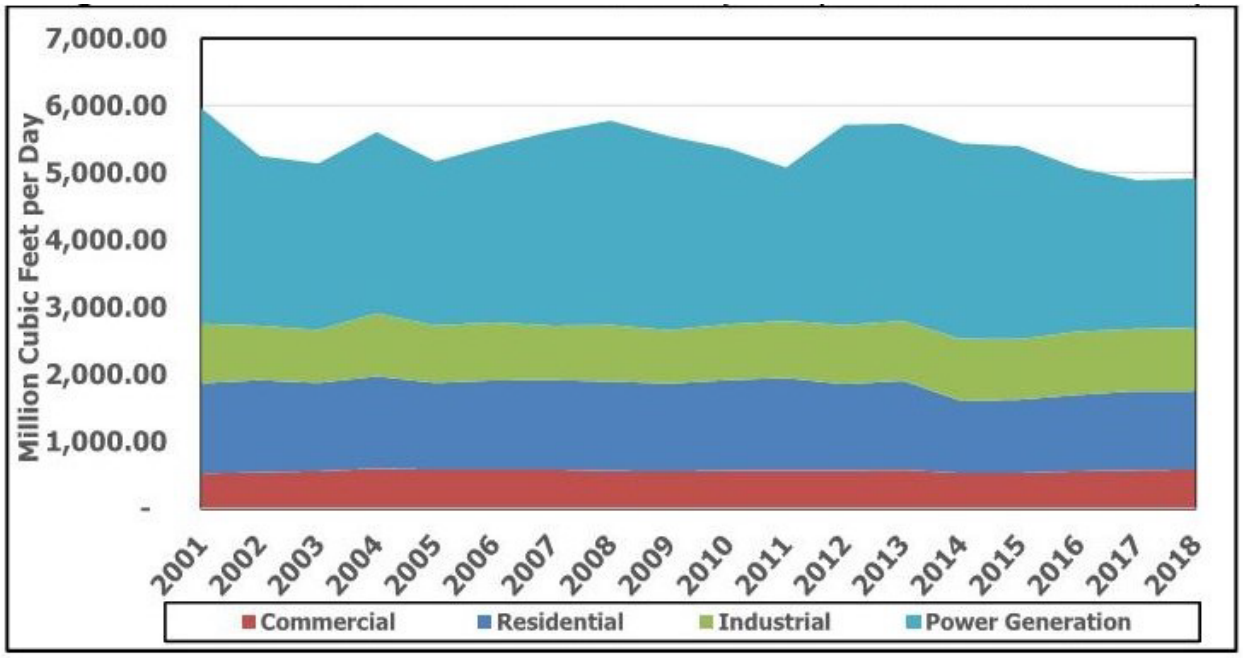
The Southern California Gas Company (SoCalGas) is a natural gas provider and subsidiary of Sempra Energy. SoCal Gas pipelines may be located anywhere, including under streets and sidewalks and on private property. Low pressure and other smaller distribution lines are connected to gas meters at homes and businesses. The California DigAlert database provided information regarding the presence of underground pipeline infrastructure.

Natural gas supplies more than 10.5 million homes, approximately 445,000 buisnesses, and about 37,000 factories and industruial consumers, and more than 640 electric generating units throughout California (CEC 2018a). California is one of the largest natural gas consumers in the United States. Approximately 85 to 90 percent of the natural gas used in California comes from out of state sources as in-state production declines. **Figure 3.5.8** illustrates California's natural gas consumption for the major sectors between 2001 and 2018. As shown, the power generation sector consumes the largest share, accounting for 45 percent in 2018. In 2018, residential and commercial sectors accounted for approximately 36 percent of the state's natural gas demand, while the industrial sector accounted for approximately 19 percent. **Figure 3.5.9** shows the historic statewide natural gas consumption and the forecasted high, mid, and low consumption for natural gas consumption through 2030 (CEC 2020a). As shown, the latest demand forecast anticipated a lower demand as compared to the 2017 forecast.



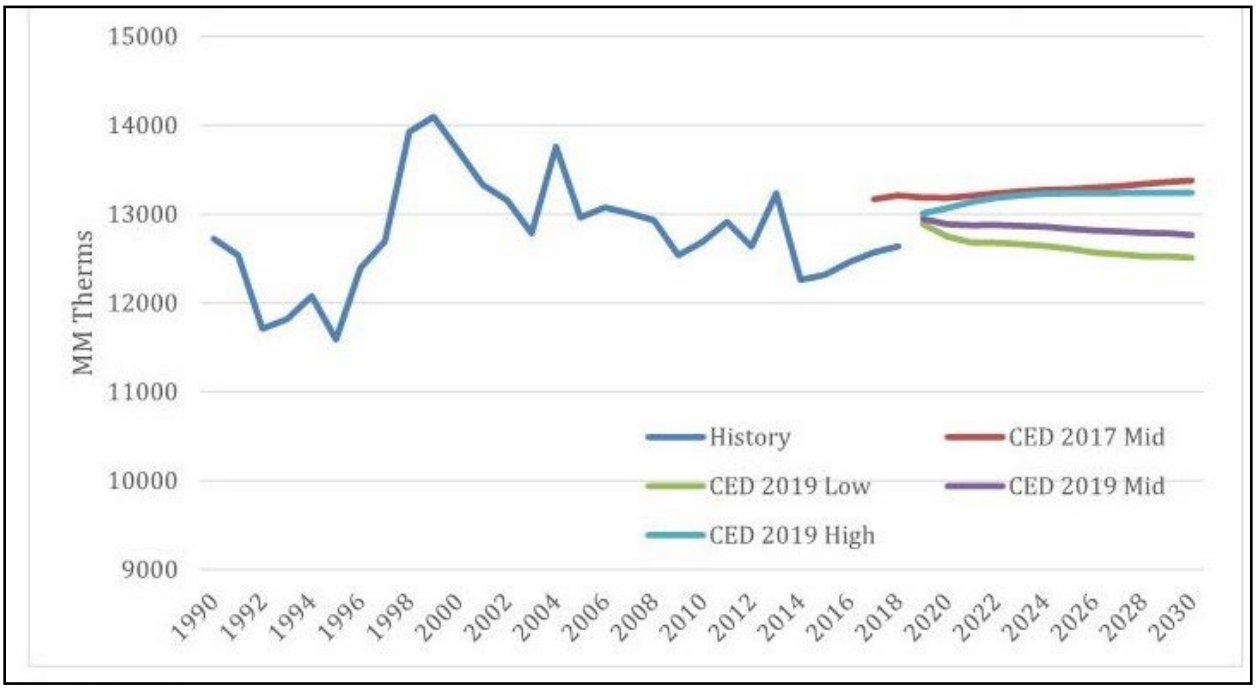
Source: CEC, 2021.

Figure 3.5.7. Southern California Edison Electric Transmission Lines



Source: CEC, 2020a.

Figure 3.5.8. California Natural Gas Consumption - All Sectors (2000-2018)



Source: CEC, 2020a.
Key:
CED = California Energy Demand

Figure 3.5.9. Statewide Natural Gas Historic and Forecasted Consumption

3.5.6 Impact Evaluation

3.5.6.1 Impact ENG-1: Energy Consumption

Impact ENG-1: Would a Build Alternative result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Virtually every aspect of Alternative 1 construction and operation requires the consumption of some form of energy resources. This section analyzes the potential for significant environmental impacts from the wasteful, inefficient, or unnecessary consumption of energy resources under the base alternatives and design options.

3.5.6.1.1 Alternative 1 Washington

Operational Impacts

Operational energy use was estimated for Alternative 1 including the energy demand of project elements, such as LRVs, six new stations, parking facilities, and an MSF which is essential in maintaining a reliable light rail system; MSF operations are also discussed in **Section 3.5.6.1.4**. The energy use estimates also include the energy demand of regional elements whose energy use would be altered by the Project, such as regional traffic.

Light Rail and Station Operations

As shown in **Table 3.5-2** and **Table 3.5-3**, annual operations of the approximate 9.0 miles of new LRT guideway under this alternative would consume approximately 4.3 million kWh of electricity, equivalent to 14.7 billion BTUs. Annual operation of the LRT stations would require an additional 0.8 million kWh of electricity, equivalent to 2.6 billion BTUs.

Parking Facilities

Annual operations of parking facilities to be constructed under Alternative 1 would consume 0.3 million kWh of electricity, equivalent to 0.9 billion BTUs, assuming surface parking facilities at Greenwood station, Rosemead station, Norwalk station, and Lambert station.

Regional Traffic

Operation of Alternative 1 would reduce annual highway VMT within the region by approximately 3.2 million VMT compared to 2042 without Project Conditions. This decrease would result in annual regional reduction in consumption of approximately 89 thousand gallons of gasoline and four thousand gallons of diesel fuel from highway vehicles. This reduction is equivalent to 11.3 billion BTUs of energy. Reduction in vehicle energy consumption would result in a beneficial impact to energy resources in the region and would reduce regional reliance on fossil fuels.

Maintenance and Storage Facility

As shown in **Table 3.5-2**, annual operation of the Commerce MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.7 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year.

As shown in **Table 3.5-3**, annual operation of the Montebello MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.8 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year.

Total Operational Energy Consumption

As shown in **Table 3.5-2** and **Table 3.5-3**, total operational energy consumption under Alternative 1 would be greater than the energy consumption under 2042 without Project Conditions. This increase would result from increased electrical demand associated with operation of the LRT guideway, stations, and an MSF. This alternative would reduce highway VMT and as such, fossil fuel energy demand would decrease as compared to 2042 without Project Conditions. When considering only non-renewable energy demand (i.e., fossil fuel combustion in highway vehicles and the portion of grid power provided by non-renewable sources), regional energy consumption under Alternative 1 would be reduced as compared to 2042 without Project Conditions. Alternative 1 would result in a net annual reduction in non-renewable energy consumption of approximately 7.8 billion BTUs with the Commerce MSF site option or 7.9 billion BTUs with the Montebello MSF site option relative to 2042 without Project Conditions.

Alternative 1 would result in a shift of 11.3 billion BTUs of fossil fuel energy demand from highway vehicles to regional electricity demand. Regional electricity supplies are becoming increasingly renewable, with a minimum 60 percent renewables energy portfolio (RPS) required to be achieved for public energy providers in the State of California by 2030 and a 100 percent RPS (e.g., fully renewable grid energy supply) required by 2045. Alternative 1 would result in long-term beneficial impacts to energy resources through decreased reliance on non-renewable fossil fuels and increased reliance on the renewable grid energy supplies. Therefore, operation of Alternative 1 would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and would have less than significant impacts on energy consumption.

Regional energy demand under Alternative 1 would be less than that under the 2019 existing conditions. As presented for information purposes in **Table 3.5-2** and **Table 3.5-3**, fuel consumption in the GSA would decrease by over 1 million gallons of gasoline and would increase by less than 15 thousand gallons of diesel. This change in fuel consumption would be driven by regional growth and improvements to vehicle fuel efficiencies that will occur independent of the Project. Electricity demand would increase by a total of 6.1 million kWh associated with operation of the Project facilities. Overall energy demand under Alternative 1 would be 126,345 billion BTUs less than that under the 2019 existing conditions, with the difference driven by non-project vehicle engine efficiency standards.

Operational energy impacts are summarized in **Table 3.5-2** and **Table 3.5-3**.

Table 3.5-2. Estimated Energy Consumption from Operation – Alternative 1 with Commerce MSF Site Option

Operational Component	Gasoline Demand (Thousand Gallons)	Diesel Demand (Thousand Gallons)	Electrical Demand (kWh)	Natural Gas Demand (Billion BTU)	Operational Energy Total (Billion BTU)[1]
Light Rail Guideway	n/a	n/a	4,296,555	n/a	14.7
Stations	n/a	n/a	770,938	n/a	2.6
Parking Facilities	n/a	n/a	254,800	n/a	0.9
Commerce MSF	n/a	n/a	753,899	0.2	2.7
Regional Highway Traffic	5,207,869	252,980	n/a	n/a	661,248
2042 Total Alternative 1 Energy Demand	5,207,869	252,980	6,076,191	0.2	661,268
2019 Existing Conditions Energy Demand	6,274,509	238,829	n/a	n/a	787,613
2042 Alternative 1 minus 2019 Existing Conditions Energy Demand[2]	(1,066,640)	14,151	6,076,191	0.2	(126,345)
2042 without Project Conditions Energy Demand	5,207,958	252,984	n/a	n/a	661,259
2042 Alternative 1 minus 2042 without Project Conditions Net Energy Demand[2]	(89)	(4)	6,076,191	0.2	9.6
2042 Alternative 1 minus 2042 without Project Conditions Non-Renewable Net Energy Demand[2,3]	(89)	(4)	972,191	0.2	(7.9)

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline; 3,412 BTU per kilowatt-hour. (USEIA 2021c).
2 Energy reductions (beneficial impacts) are shown in parentheses.
3 Non-renewable energy includes electricity after accounting for 84 percent clean energy, consistent with the 2030 target in SCE's 2020 *Integrated Resource Plan, 38 MMT Preferred Conforming Portfolio and Action Plan*.
Key:
BTU = British thermal unit kWh = kilowatt-hours

Table 3.5-3. Estimated Energy Consumption from Operation – Alternative 1 with Montebello MSF Site Option

Operational Component	Gasoline Demand (Thousand Gallons)	Diesel Demand (Thousand Gallons)	Electrical Demand (kWh)	Natural Gas Demand (Billion BTU)	Operational Energy Total (Billion BTU)[1]
Light Rail Guideway	n/a	n/a	4,296,555	n/a	14.7
Stations	n/a	n/a	770,938	n/a	2.6
Montebello MSF	n/a	n/a	776,768	0.2	2.8
Regional Highway Traffic	5,207,869	252,980	n/a	n/a	661,248
2042 Total Alternative 1 Energy Consumption	5,207,869	252,980	6,099,061	0.2	661,269
2019 Existing Conditions Energy Demand	6,274,509	238,829	n/a	n/a	787,613
2042 Alternative 1 minus 2019 Existing Conditions Energy Demand[2]	(1,066,640)	14,151	6,099,061	0.2	(126,345)
2042 without Project Conditions Energy Demand	5,207,958	252,984	n/a	n/a	661,259
2042 Alternative 1 minus 2042 without Project Conditions Net Energy Demand[2]	(89)	(4)	6,099,061	0.2	9.6
2042 Alternative 1 minus 2042 without Project Conditions Non-Renewable Net Energy Demand[2,3]	(89)	(4)	975,850	0.2	(7.8)

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline; 3,412 BTU per kilowatt-hour. (USEIA 2021c).
2 Energy reductions (beneficial impacts) are shown in parentheses.
3 Non-renewable energy includes electricity adjustments to account for 84 percent clean energy, consistent with the 2030 target in SCE's *2020 Integrated Resource Plan, 38 MMT Preferred Conforming Portfolio and Action Plan.*
Key:
BTU = British thermal unit kWh = kilowatt-hours

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Implementation of Alternative 1 with the Atlantic/Pomona Station Option would not result in any appreciable change to the Project's operational energy consumption as compared to the base Alternative 1. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in less than significant impacts on energy consumption.

Montebello At-Grade Option

As with the base Alternative 1, operation of Alternative 1 with the Montebello At-Grade Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Implementation of Alternative 1 with the Montebello At-Grade Option would not result in any appreciable change to the Project's operational energy consumption as compared to the base Alternative 1. Thus, operation of Alternative 1 with the with the Montebello At-Grade Option would result in less than significant impacts on energy consumption.

Construction Impacts

Base Alternative and Design Options

To determine construction-related energy consumption, the analysis used construction GHG emissions and USEIA CO_2 energy factors. Construction energy impacts are summarized in **Table 3.5-4**, **Table 3.5-5** and **Table 3.5-6**. See also Appendix F.

Table 3.5-4. Estimated Total Energy Consumption from Construction – Alternative 1 with Commerce MSF

Project Component[1]	Construction GHG Emissions ($MTCO_2e$)	Diesel Fuel Demand (Thousand Gallons)	Gasoline Fuel Demand (Thousand Gallons)	Energy Consumption (Billion BTUs)[2]
Light Rail Guideway	3,690	289	88	50.3
Stations	2,601	233	27	35.2
Parking Facilities	86	5	4	1.2
Commerce MSF	1,099	68	48	15.1
Street Widening and TPSS	1,162	100	17	15.8
Total	8,639	694	184	117.6

Source: CDM Smith/AECOM, JV 2021.
Note:
1 GHG emissions associated with off-site vehicle trips (vendor trips, hauling trips, and worker commuting) are included in GHG emissions for each component of Project construction.
2 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline. (USEIA 2021c).
Key:
BTU = British thermal unit MSF = maintenance and storage facility $MTCO_2e$ = metric tons carbon dioxide equivalents
TPSS = traction power substations

Table 3.5-5. Estimated Total Energy Consumption from Construction – Alternative 1 with Montebello MSF

Project Component[1]	Construction GHG Emissions ($MTCO_2e$)	Diesel Fuel Demand (Thousand Gallons)	Gasoline Fuel Demand (Thousand Gallons)	Energy Consumption (Billion BTUs)[2]
Light Rail Guideway	3,690	289	88	50.3
Stations	2,601	233	27	35.2
Parking Facilities	86	5	4	1.2
Montebello MSF	1,374	85	60	18.9
Street Widening and TPSS	1,162	100	17	15.8
Total	8,914	711	196	121.3

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 GHG emissions associated with off-site vehicle trips (vendor trips, hauling trips, and worker commuting) are included in GHG emissions for each component of Project construction.
2 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline. (USEIA 2021c).
Key:
BTU = British thermal unit MSF = maintenance and storage facility $MTCO_2e$ = metric tons carbon dioxide equivalents
TPSS = traction power substations

Table 3.5-6. Estimated Energy Consumption from Construction – Montebello At-Grade Option

Project Component[1]	Construction GHG Emissions ($MTCO_2e$)	Diesel Fuel Demand (Thousand Gallons)	Gasoline Fuel Demand (Thousand Gallons)	Energy Consumption (Billion BTUs)
Montebello Aerial Option (Base Alternative)	399	32	9	5.4
Montebello At-Grade Option	211	16	6	2.9

Source: CDM Smith/AECOM, JV 2021.
Note:
1 GHG emissions associated with off-site vehicle trips (vendor trips, hauling trips, and worker commuting) are included in GHG emissions for each component of Project construction.
Key:
BTU = British thermal unit MSF = maintenance and storage facility $MTCO_2e$ = metric tons carbon dioxide equivalents

Construction of Alternative 1 would result in a temporary energy demand of 117.6 billion BTUs with the Commerce MSF site option and 121.3 billion BTUs with the Montebello MSF site option. This impact would be temporary, whereas the Project would result in long-term, beneficial impacts to energy resources in the region (e.g., decreased dependence on fossil fuels).

Specific energy conservation measures would be confirmed in final design consistent with Metro's 2011 ECMP and 2013 *Sustainable Rail Plan*, as well as Metro's energy and environmental policies. Additional BMPs set forth in Metro's Green construction policy would further reduce energy consumption during construction. These BMPs include, but are not limited to: the required use of renewable diesel fuel in construction equipment; the required use of Tier 4 off-road emission standard

equipment as regionally available; the required use of USEPA 2007 on-road emission standard compliant trucks; the limitation of vehicle idling to 5 minutes or fewer when not in use; and the use of grid-power in lieu of diesel generators where available. Therefore, construction of Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option, and Alternative 1 with the Montebello At-Grade Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and would have less than significant impacts on energy consumption.

Design Options

Atlantic/Pomona Station Option

As described above, the construction of Alternative 1 would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. While the Atlantic/Pomona Station, the TBM receiving pit, and the alignment north of the proposed Atlantic/Whittier station would be located at a different position from the base Alternative 1, comparable construction and excavation activities would be performed for Atlantic/Pomona Station Option. Substantial additional construction is not anticipated for the Atlantic/Pomona Station Option and construction GHG emissions would not materially differ from the base Alternative 1. Therefore, implementation of the Atlantic/Pomona Station Option would not result in a meaningful change to the consumption of energy resources. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in less than significant impacts on energy consumption.

Montebello At-Grade Option

As described above, the construction of Alternative 1 would not result in the wasteful, inefficient, or unnecessary consumption of energy resources. Implementation of Alternative 1 with the Montebello At-Grade Option would result in a less than one 2.5 billion BTU difference in construction energy consumption compared to the base Alternative 1, less than one five percent of total construction energy consumption. **Table 3.5-6** presents the energy demand associated with the Montebello At-Grade Option and corresponding portion of the base alternative. Thus, construction of Alternative 1 with the Montebello At-Grade Option would result in less than significant impacts on energy consumption.

3.5.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operational energy use was estimated for the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option including the energy demand of project elements, such as LRVs, three new stations, and an MSF which is essential in maintaining a reliable light rail system. MSF operations are discussed in **Section 3.5.6.1.4**. Similar to Alternative 1, implementation of the Atlantic/Pomona Station Option would not result in a material change to Alternative 2 operational energy demand. The energy use estimates also include the energy demand of regional elements whose energy use would be altered by the Project, such as regional traffic.

Light Rail and Station Operations

As shown in **Table 3.5-7, a**nnual operations of the approximate 3.2 miles of new LRT guideway would consume approximately 1.1 million kWh of electricity, equivalent to 3.9 billion BTUs. Annual operation of the LRT stations would require an additional 0.3 million kWh of electricity, equivalent to 1.2 billion BTUs.

Parking Facilities

No new parking facilities would be constructed as part of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option.

Regional Traffic

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would reduce annual highway VMT within the region by approximately 1.6 million VMT compared to the Project Alternative. This decrease would result in annual regional reduction in consumption of approximately 45 thousand gallons of gasoline and two thousand gallons of diesel fuel from highway vehicles. This reduction is equivalent to 5.7 billion BTUs of energy. Reduction in vehicle energy consumption would result in a beneficial impact to energy resources in the region and would reduce regional reliance on fossil fuels.

Maintenance and Storage Facility

Annual operation of the Commerce MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.7 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year.

Total Operational Energy Consumption

As shown in **Table 3.5-7**, total operational energy consumption under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be greater than the energy consumption under 2042 without Project Conditions. This increase would result from increased electrical demand associated with operation of the LRT guideway, stations, and MSF. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would reduce highway VMT and as such, fossil fuel energy demand would decrease as compared to 2042 without Project Conditions. When considering only non-renewable energy demand (i.e., fossil fuel combustion in highway vehicles and the portion of grid power provided by non-renewable sources), regional energy consumption under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be reduced as compared to 2042 without Project Conditions. The base Alternative 2 with the Commerce MSF site option would result in a net annual reduction in non-renewable energy consumption of 4.3 billion BTUs relative to 2042 without Project Conditions. Alternative 2 with the Atlantic/Pomona Station Option would not result in any appreciable change to the Project's operational energy consumption.

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a shift of 5.7 billion BTUs of fossil fuel energy demand from highway vehicles to regional electricity demand. Regional electricity supplies are becoming increasingly renewable, with a minimum 60 percent RPS required to be achieved for public energy providers in the State of California by 2030 and a 100 percent RPS (i.e., fully renewable grid energy supply) required by 2045. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in long-term beneficial impacts to energy resources through decreased reliance on non-renewable fossil fuels and increased reliance on the renewable grid energy supplies. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and would have less than significant impacts on energy consumption.

Regional energy demand under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be less than that under the 2019 existing conditions. As presented for information purposes in **Table 3.5-7**, fuel consumption in the study area would decrease by over 1 million gallons of gasoline and would increase by less than 14 thousand gallons of diesel. This change in fuel consumption would be driven by regional growth and improvements to vehicle fuel efficiencies that will occur independent of the Project. Electricity demand would increase by a total of 2.2 million kWh associated with operation of the Project facilities. Overall energy demand under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be 126,352 billion BTUs less than that under the 2019 existing conditions, with the difference driven by non-project vehicle engine efficiency standards.

Operational energy impacts are summarized in **Table 3.5-7.**

Table 3.5-7. Estimated Energy Consumption from Operation – Alternative 2 with Commerce MSF

Operational Component	Gasoline Demand (Thousand Gallons)	Diesel Demand (Thousand Gallons)	Electrical Demand (kWh)	Natural Gas Demand (Billion BTU)	Operational Energy Total (Billion BTU)[1]
Light Rail Guideway	n/a	n/a	1,130,672	n/a	3.9
Stations	n/a	n/a	342,716	n/a	1.2
Commerce MSF	n/a	n/a	753,899	0.2	2.7
Regional Highway Traffic	5,207,914	252,982	n/a	n/a	661,253
2042 Total Alternative 2 Energy Consumption	5,207,914	252,982	2,227,287	0.2	661,261
2019 Existing Conditions Energy Demand	6,274,509	238,829	n/a	n/a	787,613
2042 Alternative 2 minus 2019 Existing Conditions Energy Demand[2]	(1,066,595)	14,153	2,227,287	0.2	(126,352)
2042 without Project Conditions Energy Demand	5,207,958	252,984	n/a	n/a	661,259
2042 Alternative 2 minus 2042 without Project Conditions Net Energy Demand[2]	(45)	(2)	2,227,287	0.2	2.1
2042 Alternative 2 minus 2042 without Project Conditions Non-Renewable Net Energy Demand[2,3]	(45)	(2)	356,366	0.2	(4.3)

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline; 3,412 BTU per kilowatt-hour. (USEIA 2021c).
2 Energy reductions (beneficial impacts) are shown in parentheses.
3 Non-renewable energy includes electricity after accounting for 84 percent clean energy, consistent with the 2030 target in SCE's 2020 Integrated Resource Plan, 38 MMT Preferred Conforming Portfolio and Action Plan.
Key:
BTU = British thermal unit kWh = kilowatt-hours

Construction Impacts

Base Alternative and Design Option

Construction energy impacts are summarized in **Table 3.5-8.** Similar to Alternative 1, implementation of the Atlantic/Pomona Station Option would not result in a material change to Alternative 2 construction energy demand. Construction of the base Alternative 2 would result in a temporary energy demand of 63.9 billion BTUs with the Commerce MSF site option. This impact would be temporary, whereas the Project would result in long-term, beneficial impacts to energy resources in the region (i.e., decreased dependence on fossil fuels).

Construction of Alternative 2 with the Atlantic/Pomona Station Option would not cause a meaningful change to the consumption of energy resources during construction. While the Atlantic/Pomona Station, the TBM receiving pit, and the alignment north of the proposed Atlantic/Whittier station would be located at a different position from the base Alternative 2, comparable construction and excavation activities would be performed for the Atlantic/Pomona Station Option. Substantial additional construction is not anticipated for the Atlantic/Pomona Station Option and construction GHG emissions would not materially differ from the base Alternative 2.

Table 3.5-8. Estimated Total Energy Consumption from Construction – Alternative 2 with Commerce MSF

Project Component[1]	Construction GHG Emissions ($MTCO_2e$)	Diesel Fuel Demand (Thousand Gallons)	Gasoline Fuel Demand (Thousand Gallons)	Energy Consumption (Billion BTUs)[2]
Light Rail Guideway	1,602	129	34	21.8
Stations	1,955	177	18	26.5
Commerce MSF	1,099	68	48	15.1
Street Widening and TPSS	39	3	1	0.5
Total	4,696	377	100	63.9

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 GHG emissions associated with off-site vehicle trips (vendor trips, hauling trips, and worker commuting) are included in GHG emissions for each component of Project construction.
2 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline. (USEIA 2021c).
Key:
BTU = British thermal unit MSF = maintenance and storage facility $MTCO_2e$ = metric tons carbon dioxide equivalents
TPSS = traction power substations

Specific energy conservation measures would be confirmed in final design consistent with Metro's 2011 ECMP and 2013 *Sustainable Rail Plan*, as well as Metro's energy and environmental policies. Additional BMPs set forth in Metro's Green construction policy would further reduce energy consumption during construction. These BMPs include, but are not limited to: the required use of renewable diesel fuel in construction equipment; the required use of Tier 4 off-road emission standard equipment as regionally available; the required use of USEPA 2007 on-road emission standard compliant trucks; the limitation of vehicle idling to 5 minutes or fewer when not in use; and the use of grid-power in lieu of diesel generators where available. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and would have less than significant impacts on energy consumption.

3.5.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operational energy use was estimated for the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option including the energy

demand of project elements, such as includes the energy use of new LRVs, four new stations, regional traffic, parking facilities, and an MSF which is essential in maintaining a reliable light rail system. MSF operations are also discussed in **Section 3.5.6.1.4**. Similar to Alternative 1, implementation of the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in a material change to Alternative 3 operational energy demand. The energy use estimates also include the energy demand of regional elements whose energy use would be altered by the Project, such as regional traffic.

Light Rail and Station Operations

As shown in in **Table 3.5-9** and **Table 3.5-10**, annual operations of the approximately 4.6 miles of new LRT guideway would consume approximately 2.0 million kWh of electricity, equivalent to 6.9 billion BTUs. Annual operation of the LRT stations would require an additional 0.5 million kWh of electricity, equivalent to 1.6 billion BTUs.

Parking Facilities

Annual operations of parking facilities to be constructed under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would consume less than 52 thousand kWh of electricity, equivalent to 0.2 billion BTUs. Parking facilities assumed under this alternative include a surface parking lot at Greenwood station.

Regional Traffic

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would reduce annual highway VMT within the region by approximately 2.5 million VMT compared to 2042 without Project Conditions. This decrease would result in annual regional reduction in consumption of approximately 71 thousand gallons of gasoline and 3 thousand gallons of diesel fuel from highway vehicles. This reduction is equivalent to 9.1 billion BTUs of energy. Reduction in vehicle energy consumption would result in a beneficial impact to energy resources in the region and would reduce regional reliance on fossil fuels.

Maintenance and Storage Facility

As shown in **Table 3.5-9**, annual operation of the Commerce MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.7 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year.

As shown in **Table 3.5-10**, annual operation of the Montebello MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.8 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year.

Total Operational Energy Consumption

As shown in in **Table 3.5-9** and **Table 3.5-10**, total operational energy consumption under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be greater than the energy consumption under 2042 without Project Conditions. This increase would result from increased electrical demand associated with operation of the LRT guideway, stations, and MSF. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would reduce highway VMT and as such, fossil fuel energy demand would decrease as compared to 2042 without Project Conditions. When considering only non-renewable energy demand (i.e., fossil fuel combustion in highway vehicles and the portion of grid power provided by non-renewable sources), regional energy consumption under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be reduced as compared to 2042 without Project Conditions. The base Alternative 3 with either the Commerce MSF or Montebello MSF site option would result in a net annual reduction in non-renewable energy consumption of 7.1 billion BTUs relative to 2042 without Project Conditions. Alternative 3 with the Atlantic/Pomona Station Option and Alternative 3 with the Montebello At-Grade Option would not result in any appreciable change to the Project's operational energy consumption.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a shift of 9.1 billion BTUs of fossil fuel energy demand from highway vehicles to regional electricity demand. Alternative 3 would result in long-term beneficial impacts to energy resources through decreased reliance on non-renewable fossil fuels and increased reliance on the renewable grid energy supplies. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and would have less than significant impacts on energy consumption.

Regional energy demand under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be less than that under the 2019 existing conditions. As presented for information purposes in **Table 3.5-9** and **Table 3.5-10**, fuel consumption in the study area would decrease by over 1 million gallons of gasoline and would increase by less than 14 thousand gallons of diesel. This change in fuel consumption would be driven by regional growth and improvements to vehicle fuel efficiencies that will occur independent of the Project. Electricity demand would increase by a total of 3.3 million kWh associated with operation of the Project facilities. Overall energy demand under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be 126,352 billion BTUs less than that under the 2019 existing conditions, with the difference driven by non-project vehicle engine efficiency standards.

Operational energy impacts are summarized in **Table 3.5-9** and **Table 3.5-10.**

Table 3.5-9. Estimated Energy Consumption from Operation – Alternative 3 with Commerce MSF

Operational Component	Gasoline Demand (Thousand Gallons)	Diesel Demand (Thousand Gallons)	Electrical Demand (kWh)	Natural Gas Demand (Billion BTU)	Operational Energy Total (Billion BTU)[1]
Light Rail Guideway	n/a	n/a	2,035,210	n/a	6.9
Stations	n/a	n/a	463,488	n/a	1.6
Parking Facilities	n/a	n/a	51,800	n/a	0.2
Commerce MSF	n/a	n/a	753,899	0.2	2.7
Regional Highway Traffic	5,207,887	252,981	n/a	n/a	661,250
Total Energy Consumption	5,207,887	252,981	3,304,397	0.2	661,261
2019 Existing Conditions Energy Demand	6,274,509	238,829	n/a	n/a	787,613
2042 Alternative 3 minus 2019 Existing Conditions Energy Demand[2]	(1,066,622)	14,152	3,304,397	0.2	(126,352)
2042 without Project Conditions Energy Demand	5,207,958	252,984	n/a	n/a	661,259
2042 Alternative 3 minus 2042 without Project Conditions Net Energy Demand[2]	(71)	(3)	3,304,397	0.2	2.4
2042 Alternative 3 minus 2042 without Project Conditions Non-Renewable Net Energy Demand[2,3]	(71)	(3)	528,704	0.2	(7.1)

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline; 3,412 BTU per kilowatt-hour. (USEIA 2021c).
2 Energy reductions (beneficial impacts) are shown in parentheses.
3 Non-renewable energy includes electricity after accounting for 84 percent clean energy, consistent with the 2030 target in SCE's *2020 Integrated Resource Plan, 38 MMT Preferred Conforming Portfolio and Action Plan.*
Key:
BTU = British thermal unit kWh = kilowatt-hours

Table 3.5-10. Estimated Energy Consumption from Operation – Alternative 3 with Montebello MSF

Operational Component	Gasoline Demand (Thousand Gallons)	Diesel Demand (Thousand Gallons)	Electrical Demand (kWh)	Natural Gas Demand (Billion BTU)	Operational Energy Total (Billion BTU)[1]
Light Rail Guideway	n/a	n/a	2,035,210	n/a	6.9
Stations	n/a	n/a	463,488	n/a	1.6
Parking Facilities	n/a	n/a	51,800	n/a	0.2
Montebello MSF	n/a	n/a	776,768	0.2	2.8
Regional Highway Traffic	5,207,887	252,981	n/a	n/a	661,250
2019 Existing Conditions Energy Demand	5,207,887	252,981	3,275,466	0.2	661,261
2042 Alternative 3 minus 2019 Existing Conditions Energy Demand[2]	6,274,509	238,829	n/a	n/a	787,613
2042 without Project Conditions Energy Demand	(1,066,622)	14,152	3,327,266	0.2	(126,352)
2042 Alternative 3 minus 2042 without Project Conditions Net Energy Demand[2]	5,207,958	252,984	n/a	n/a	661,259
2042 Alternative 3 minus 2042 without Project Conditions Non-Renewable Net Energy Demand[2,3]	(71)	(3)	3,327,266	0.2	2.4
2019 Existing Conditions Energy Demand	(71)	(3)	532,363	0.2	(7.1)

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline; 3,412 BTU per kilowatt-hour. (USEIA 2021c).
2 Energy reductions (beneficial impacts) are shown in parentheses.
3 Non-renewable energy includes electricity adjustments to account for 84 percent clean energy, consistent with the 2030 target in SCE's *2020 Integrated Resource Plan, 38 MMT Preferred Conforming Portfolio and Action Plan.*
Key:
BTU = British thermal unit kWh = kilowatt-hours

Construction Impacts

Base Alternative and Design Option

Construction energy impacts are summarized in **Table 3.5-11** and **Table 3.5-12**. Similar to Alternative 1, implementation of the Atlantic/Pomona Station Option would not result in a material change to Alternative 3 construction energy demand. Construction of the base Alternative 3 would result in a temporary energy demand of 74.5 billion BTUs with the Commerce MSF site option and 78.3 billion BTUs with the Montebello MSF site option. This impact would be temporary, whereas the Project

would result in long-term, beneficial impacts to energy resources in the region (i.e., decreased dependence on fossil fuels).

Table 3.5-11. Estimated Total Energy Consumption from Construction – Alternative 3 with Commerce MSF

Project Component[1]	Construction GHG Emissions ($MTCO_2e$)	Diesel Fuel Demand (Thousand Gallons)	Gasoline Fuel Demand (Thousand Gallons)	Energy Consumption (Billion BTUs)[2]
Light Rail Guideway	2,001	160	43	27.2
Stations	2,178	198	19	29.5
Parking Facilities	17	1	1	0.2
Commerce MSF	1,099	68	48	15.1
Street Widening and TPSS	182	16	3	2.5
Total	5,477	443	114	74.5

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 GHG emissions associated with off-site vehicle trips (vendor trips, hauling trips, and worker commuting) are included in GHG emissions for each component of Project construction.
2 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline. (USEIA 2021c).
Key:
BTU = British thermal unit MSF = maintenance and storage facility $MTCO_2e$ = metric tons carbon dioxide equivalents
TPSS = traction power substations

Table 3.5-12. Estimated Total Energy Consumption from Construction – Alternative 3 with Montebello MSF

Project Component[1]	Construction GHG Emissions ($MTCO_2e$)	Diesel Fuel Demand (Thousand Gallons)	Gasoline Fuel Demand (Thousand Gallons)	Energy Consumption (Billion BTUs)[2]
Light Rail Guideway	2,001	160	43	27.2
Stations	2,178	198	19	29.5
Parking Facilities	17	1	1	0.2
Montebello MSF	1,374	85	60	18.9
Street Widening and TPSS	182	16	3	2.5
Total	5,752	460	126	78.3

Source: CDM Smith/AECOM, JV 2021.
Notes:
1 GHG emissions associated with off-site vehicle trips (vendor trips, hauling trips, and worker commuting) are included in GHG emissions for each component of Project construction.
2 USEIA energy-unit conversion factors used to convert different project energy consumptions to common energy units (BTU) as follows: 0.137 million BTU per gallon of diesel fuel; 0.120 million BTU per gallon of gasoline. (USEIA 2021c).
Key:
BTU = British thermal unit MSF = maintenance and storage facility $MTCO_2e$ = metric tons carbon dioxide equivalents
TPSS = traction power substations

Construction of Alternative 3 with the Atlantic/Pomona Station Option would not cause a meaningful change to the consumption of energy resources during construction compared to the base Alternative 3. While the Atlantic/Pomona Station Option, the TBM receiving pit, and the alignment north of the proposed Atlantic/Whittier station would be located at a different position from the base Alternative 3, comparable construction and excavation activities would be performed for Atlantic/Pomona Station Option. Substantial additional construction is not anticipated for the Atlantic/Pomona Station Option and construction GHG emissions would not materially differ from the base Alternative 3.

As presented in **Table 3.5-6** in **Section 3.5.6.1.1**, implementation of Alternative 3 with the Montebello At-Grade Option would result in an additional 2.5 billion BTU in construction energy consumption compared to the base Alternative 3, less than five percent of total construction energy consumption. Implementation of the Montebello At-Grade option would not cause a substantial change to the consumption of energy resources during construction.

Specific energy conservation measures would be confirmed in final design consistent with Metro's 2011 ECMP and 2013 *Sustainable Rail Plan*, as well as Metro's energy and environmental policies. Additional BMPs set forth in Metro's Green construction policy would further reduce energy consumption during construction. These BMPs include, but are not limited to: the required use of renewable diesel fuel in construction equipment; the required use of Tier 4 off-road emission standard equipment as regionally available; the required use of USEPA 2007 on-road emission standard compliant trucks; the limitation of vehicle idling to 5 minutes or fewer when not in use; and the use of grid-power in lieu of diesel generators where available. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in the wasteful, inefficient, or unnecessary consumption of energy resources and would have less than significant impacts on energy consumption.

3.5.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

As detailed in **Section 3.5.6.1.1**, **Section 3.5.6.1.2**, and **Section 3.5.6.1.3**, the operation of the Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Each Build Alternative would result in a substantial shift in energy demand from fossil fuel highway vehicles to increasingly renewable regional electricity demand. Operation of an MSF is essential in maintaining a reliable light rail system and was included in the Project energy assessment. Annual operation of the Commerce MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.7 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year. Annual operation of the Montebello MSF site option would require consumption of approximately 0.8 million kWh per year of electricity, equivalent to 2.8 billion BTU per year. It would also consume a small amount of natural gas for comfort heating, totaling approximately 0.2 billion BTU per year. Operation of the Montebello MSF At-Grade Option would not result in any appreciable change to energy consumption as compared to the base Montebello MSF site option.

While operation of an MSF would require a small amount of natural gas for comfort heating, the Project under any of its Build Alternatives would nonetheless represent a substantial shift in energy resource dependence away from fossil fuels. Therefore, operation of the MSF site options would not

result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project operation.

Construction Impacts

MSF Site Options and Design Option

As detailed in **Section 3.5.6.1.1**, **Section 3.5.6.1.2**, and **Section 3.5.6.1.3**, the construction of the Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction. The operation of an MSF is essential in maintaining a reliable light rail system; therefore, construction of an MSF was included in the Project energy assessment. Construction of the Commerce MSF site option would require 68 thousand gallons of diesel fuel and 48 thousand gallons of gasoline, equivalent to 15.1 billion BTUs. Construction of the Montebello MSF site option would require 85 thousand gallons of diesel fuel and 60 thousand gallons of gasoline fuel, equivalent to 18.9 billion BTUs. The energy consumption difference for construction of the Montebello MSF At-Grade Option would be less than 2.5 BTUs, which is less than five percent of total construction energy consumption.

While construction of an MSF would require the short-term consumption of energy resources, primarily in the form of diesel fuel, the Project under any of its Build Alternatives would contribute to a long-term regional shift in energy resource dependence away from fossil fuels. Therefore, construction of an MSF site option would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction.

3.5.6.2 Impact ENG-2: Energy Plans

Impact ENG-2: Would a Build Alternative conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

3.5.6.2.1 Alternative 1 Washington

Operational Impacts

Various state and local plans influence the adoption of renewable energy and energy efficiency requirements in the GSA. Many of the applicable energy plans include components that are larger state or regional regulatory actions with which the Project cannot directly or indirectly comply with or obstruct. Such plans include the California Clean Cars Program which governs emission standards for automobile manufacturers, the Alternative and Renewable Fuel and Vehicle Technology Program which empowers the CEC to incentivize the development of alternative and renewable fuel technologies, and the California RPS which requires 60 percent renewable or zero-carbon grid power by 2030 and 100 percent renewable or zero-carbon grid power by 2045. Other plans and policies have goals which could be directly or indirectly impacted by the project.

The California Alternative Fuels Plan aims to expand alternative fuel adoption and availability to protect the state economy from petroleum pricing variations and spikes but included topics such as conventional vehicle efficiency and other components of the transportation system. The plan concludes that significant reductions to regional VMT, and enhanced land use and transportation planning would be necessary. As stated in **Section 3.5.6.1.1**, Alternative 1 would reduce regional highway travel by 3.2 million VMT and would thus not conflict with the plan.

While SCAG's 2020 RTP/SCS is primarily a transportation and land-use plan, the plan includes transportation policies which would reduce energy and fossil fuel demand and encourage energy efficiency. The Project is identified in the 2020 RTP/SCS as a major transit capital project and is included in the plan's regional growth and transportation projections. Further, the Project, alongside other transit improvement projects planned to be implemented throughout the region, would facilitate broader adoption of mass transit and contribute to regional VMT reductions, as projected in the 2020 RTP/SCS. Therefore, the Project would not conflict with or obstruct the 2020 RTP/SCS.

Metro has established multiple energy-related plans and policies including the *2007 Energy and Sustainability Policy*, *2009 Environmental Policy*, *2011 Renewable Energy Policy*, *2011 Energy Conservation and Management Plan*, *2013 Sustainable Rail Plan*, *2014 Complete Street Policy*, *2016 First/Last Mile Strategic Plan*, *2019 CAAP*, and *2020 Moving Beyond Sustainability Strategic Plan*. While each of these plans addresses a specific aspect of Metro operations or planning, from an operational energy perspective, the plans cumulatively encourage:

- Reductions to natural resources and fossil fuel consumption
- Efficient use of fuels and electricity
- The promotion and procurement of renewable energy sources, such as PV installations, as feasible
- Enhancing community-transit integration through improvements to walking, biking, and other transit-mode connections

Alternative 1 would contribute to a regional shift in transportation energy demand away from fossil fuels toward grid power. Stations, lighting in parking lots, and the MSF would each be designed and constructed to achieve energy efficiency consistent with or exceeding Metro's and CCR Title 24 efficiency requirements. Further, the Project would, by its nature, enhance community access to public transit through the operation of the LRT. Therefore, the Project would not conflict with or obstruct Metro's energy-related plans and policies.

Local plans by the County of Los Angeles and cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whitter establish energy-related requirements and goals. The applicable energy-related aspects of these plans can be summarized as:

- Enhance, promote, and make accessible user-friendly public transit systems
- Encourage the use of alternative fuels and energy sources
- Encourage energy conservation features and reduce energy demand in new development
- Reduce trips and VMT
- Reduce natural resource and fossil fuel consumption

Alternative 1 would, enhance and make public transit systems more accessible in the GSA. Additionally, the Project LRT vehicles would use electricity rather than conventional fossil fuels and would contribute to a regional shift in transportation energy demand away from fossil fuels and onto increasingly renewable grid power. Further, new Project construction would include energy

conservation and efficiency features consistent with Title 24. For these reasons, and the VMT reductions previously discussed, operation of Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option, and Alternative 1 with the Montebello At-Grade Option would be consistent with and would not conflict with or obstruct the applicable local plans for renewable energy or energy efficiency. Thus, operation of Alternative 1 would have a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Operation of the Atlantic/Pomona Station Option would remain consistent with applicable plans. Thus, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

Montebello At-Grade Option

Operation of the Montebello At-Grade Option would remain consistent with applicable plans. Thus, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

Construction Impacts

The CCR Title 24 establishes energy efficiency metrics by which all newly constructed buildings in the State of California must comply. The Project would be constructed in a manner consistent with the regulations and efficiency requirements at the time of construction and would not conflict with Title 24.

Metro's 2011 Green Construction Policy addresses the air quality implications of construction from Metro projects. From a construction energy perspective, the plan encourages the limiting of idling and the use of grid-electric power when feasible during construction. Construction of Alternative 1 would be consistent with Metro's Green Construction Policy. Thus, construction of Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option, and Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Construction of the Atlantic/Pomona Station Option would remain consistent with applicable plans. Thus, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would remain consistent with applicable plans. Thus, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

3.5.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Various state and local plans influence the adoption of renewable energy and energy efficiency requirements in the GSA. Many of the applicable energy plans, such as the California Clean Cars Program, the Alternative and Renewable Fuel and Vehicle Technology Program, and the California Renewables Portfolio Standard, include components that are larger state or regional regulatory actions with which the Project cannot directly or indirectly comply with or obstruct.

California EO B-16-12 established a 1.5-billion-gallon fuel reduction target to be met by 2025. The Project would not be constructed until after this time, therefore the Project would not contribute to or conflict with the achievement of this target.

As stated in **Section 3.5.6.1.2**, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would reduce regional highway travel by 1.6 million VMT compared to 2042 without Project Conditions and would thus not conflict with the California Alternative Fuels Plan.

The Project is identified in the 2020 RTP/SCS as a major transit capital project and is included in the plan's regional growth and transportation projections. Further, the Project, alongside other transit improvement projects planned to be implemented throughout the region, would facilitate broader adoption of mass transit and contribute to regional VMT reductions, as projected in the 2020 RTP/SCS. Therefore, the Project would not conflict with or obstruct the 2020 RTP/SCS.

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would contribute to a regional shift in transportation energy demand away from fossil fuels toward grid power. Stations, lighting in parking lots, and the MSF would each be designed and constructed to achieve energy efficiency consistent with or exceeding Metro's and CCR Title 24 efficiency requirements. Further, the Project would, by its nature, enhance community access to public transit through the operation of the LRT. Therefore, the Project would not conflict with or obstruct Metro's energy-related plans and policies.

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would, by its nature, enhance and make more accessible public transit systems in the GSA. Additionally, the Project LRT vehicles would use electricity rather than conventional fossil fuels and would contribute to a regional shift in transportation energy demand away from fossil fuels and onto increasingly renewable grid power. Further, new Project construction would include energy conservation and efficiency features consistent with Title 24. For these reasons, and the VMT reductions previously discussed, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be consistent with and would not conflict with or obstruct the applicable local plans for renewable energy or energy efficiency. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact.

Construction Impacts

Base Alternative and Design Option

The CCR Title 24 establishes energy efficiency metrics by which all newly constructed buildings in the State of California must comply. The Project would be constructed in a manner consistent with the regulations and efficiency requirements at the time of construction and would not conflict with Title 24.

Metro's 2011 Green Construction Policy addresses the air quality implications of construction from Metro projects. From a construction energy perspective, the policy encourages the limiting of idling and the use of grid-electric power when feasible during construction. Construction would be consistent with Metro's Green Construction Policy during construction. Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact.

3.5.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Various state and local plans influence the adoption of renewable energy and energy efficiency requirements in the GSA. Many of the applicable energy plans, such as the California Clean Cars Program, the Alternative and Renewable Fuel and Vehicle Technology Program, and the California Renewables Portfolio Standard, include components that are larger state or regional regulatory actions with which the Project cannot directly or indirectly comply with or obstruct.

California EO B-16-12 established a 1.5-billion-gallon fuel reduction target to be met by 2025. The Project would not be constructed until after this time, therefore the Project would not contribute to or conflict with the achievement of this target.

As stated in **Section 3.5.6.1.3**, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would reduce regional highway travel by 2.5 million VMT compared to 2042 without Project Conditions and would thus not conflict with the California Alternative Fuels Plan.

The Project is identified in the 2020 RTP/SCS as a major transit capital project and is included in the plan's regional growth and transportation projections. Further, the Project, alongside other transit improvement projects planned to be implemented throughout the region, would facilitate broader adoption of mass transit and contribute to regional VMT reductions, as projected in the 2020 RTP/SCS. Therefore, the Project would not conflict with or obstruct the 2020 RTP/SCS.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would contribute to a regional shift in transportation energy demand away from fossil fuels toward grid power. Stations, lighting in parking lots, and the MSF would each be designed and constructed to achieve energy efficiency consistent with or exceeding Metro's and CCR Title 24 efficiency requirements. Further, the Project would, by its nature, enhance community

access to public transit through the operation of the LRT. Therefore, the Project would not conflict with or obstruct Metro's energy-related plans and policies.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would, by its nature, enhance and make more accessible public transit systems in the GSA. Additionally, the Project LRT vehicles would use electricity rather than conventional fossil fuels and would contribute to a regional shift in transportation energy demand away from fossil fuels and onto increasingly renewable grid power. Further, new Project construction would include energy conservation and efficiency features consistent with Title 24. For these reasons, and the VMT reductions previously discussed, operations would be consistent with and would not conflict with or obstruct the applicable local plans for renewable energy or energy efficiency. Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact.

Construction Impacts

Base Alternative and Design Options

The CCR Title 24 establishes energy efficiency metrics by which all newly constructed buildings in the State of California must comply. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be constructed in a manner consistent with the regulations and efficiency requirements at the time of construction and would not conflict with Title 24.

Metro's 2011 Green Construction Policy addresses the air quality implications of construction from Metro projects. From a construction energy perspective, the policy encourages the limiting of idling and the use of grid-electric power when feasible during construction. Construction would be consistent with Metro's Green Construction Policy during construction. Thus, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact.

3.5.6.2.4 Maintenance and Storage Facilities

Operational and Construction Impacts

MSF Site Options and Design Option

As detailed in **Section 3.5.6.2.1, Section 3.5.6.2.2**, and **Section 3.5.6.2.3**, the operation and construction of the Project would not conflict with or obstruct applicable state or local plans for renewable energy or energy efficiency. Moreover, the Project would reduce highway VMT, transition regional transportation energy demand away from natural resources (such as fossil fuels) to increasingly renewable grid electricity and would enhance transit in the GSA – consistent with the goals of the applicable plans. Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option is essential in maintaining a reliable light rail system and was included in the Project energy assessment and energy plan consistency analysis. Therefore, operation and construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not conflict with or obstruct applicable state or local plans for renewable energy or energy efficiency.

3.5.7 Project Measures and Mitigation Measures

As discussed in **Section 3.5.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts under Impact ENG-1 (Energy Consumption) and Impact ENG-2 (Energy Plans). The MSF site options would have less than significant impacts under Impact ENG-1 (Energy Consumption) and Impact ENG-2 (Energy Plans). No project measures or mitigation measures would be required for operation or construction. **Table 3.5-13 i**dentifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s). A**ll impacts would be less than significant for all alternatives and design options.**

3.5.8 Significance After Mitigation

As identified in **Table 3.5-13**, **no mitigation measures are required for** the Build Alternatives and Build Alternatives with the design option(s). Less than significant impacts would remain.

Table 3.5-13. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
ENG-1 Energy Consumption	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
ENG-2 Energy Plans	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.6 Geology, Soils, and Paleontological Resources

3.6.1 Introduction

This section discusses the Project setting in relation to geology, soils, seismicity, and paleontological resources. It describes existing conditions, current applicable regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options. Information in this section is based on the Eastside Transit Corridor Phase 2 Geology, Soils, Seismicity, and Paleontological Resources Impacts Report (Appendix G).

3.6.2 Regulatory Framework

3.6.2.1 Federal

There are no specific federal regulations related to the geologic hazards of soils and seismicity or to paleontological resources.

3.6.2.2 State

The principal state guidance relating to geologic hazards is contained in the Alquist-Priolo Act and the Seismic Hazards Mapping Act of 1990. The Alquist-Priolo Act prohibits the location of most structures for human occupancy across active traces of faults in earthquake fault zones. The Seismic Hazards Mapping Act requires the state to identify areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards.

The California Building Code (CBC), codified in Title 24 California Code of Regulations, encompasses a number of requirements related to geologic issues and sets standards for the investigation and mitigation of the site conditions related to fault movement, liquefaction, landslides, differential compaction/seismic settlement, ground rupture, ground shaking, and seismically-induced flooding. This includes strict requirements to reduce the risks associated with building in seismic areas to the maximum extent practicable. The CBC provides standards for various aspects of construction, including but not limited to: (1) excavation, grading, and earthwork construction; (2) preparation of the site prior to fill placement; (3) specification on fill materials and fill compaction and field testing; (4) retaining wall design and construction; (5) foundation design and construction; and (6) seismic requirements. The CBC also includes requirements to perform site-specific geotechnical investigations and prepare design reports in accordance with CBC methodologies. Various sections of the CBC are applicable, including Chapter 16 which provides structural design requirements governing seismically resistant construction, Chapter 18 which requires that geotechnical evaluations be conducted, and recommended action(s) must be made a condition to the building permit, and Chapter 33 which includes requirements for excavation safeguards so that excavation and cut or fill slopes are stable. CBC requirements applicable to the Project are discussed in greater detail in Appendix G.

The California Public Resources Code prohibits the removal of any paleontological site or feature from public lands without permission of the jurisdictional agency, defines the removal of paleontological sites or features as a misdemeanor, and requires reasonable mitigation of adverse impacts to paleontological resources from developments on public (state, county, city, district) lands.

The National Pollutant Discharge Elimination System (NPDES) administered through the California State Water Resources Control Board regulates stormwater discharges and is discussed in more detail in Section 3.9, Hydrology and Water Quality and Appendix J.

3.6.2.3 Regional

Los Angeles Regional Water Quality Control Board is responsible for issuing the Los Angeles County Municipal Storm Water Permit which covers the permittees for contributions to discharges of stormwater and urban runoff from municipal separate storm sewer systems (MS4s). The current MS4 permit imposes basic programs, or minimum control measures, that mitigate stormwater quality issues. To illustrate, the implementation of temporary construction BMPs, such as erosion control and spill management and safe storage of fluids, are required under the development construction program. Post-construction stormwater BMPs are required for most public and private development under the planning and land development program. Compliance with the MS4 permit is discussed in more detail in Section 3.9, Hydrology and Water Quality, and Appendix J.

3.6.2.4 Local

Metro, through the Metro Rail Design Criteria (MRDC), establishes the design criteria and specifications for Metro transit projects, including LRT guideways and facilities (Metro 2018). The MRDC incorporates various design specifications from the Federal Highway Administration (FHWA), California Department of Transportation (Caltrans), the State of California, the County of Los Angeles, and other sources by reference. Section 5 of the MRDC provides specifications for structural and geotechnical work. Section 5 governs all matters pertaining to the design of Metro-owned facilities including bridges, aerial guideways, cut-and-cover subway structures, tunnels, passenger stations, earth-retaining structures, surface buildings, miscellaneous structures such as culverts, sound walls, and equipment enclosures, and other non-structural and operationally critical components and facilities supported on or inside Metro structures. These criteria also establish the design parameters for temporary structures. The main reference document controlling the seismic design of Metro facilities under these criteria is Section 5 Appendix, Metro Supplemental Seismic Design Criteria.

Section 5.3 of the MRDC provides specifications for aerial guideways and structures, including bridges. Specifications include wind load, vertical vibration, fatigue, uplift, friction, sound barriers, bearings, camber growth and deflection, longitudinal tension stresses, structure deformation and settlement, precast segmental guideway construction, and crack control. For bridges and aerial structures that support rail transit loadings, the MRDC requires using the current American Association of State Highway and Transportation Officials (AASHTO) *Load and Resistance Factor Design (*LRFD) Bridge Design Specifications with California Amendments (AASHTO-CA LRFD BDS) and Caltrans technical publications and guidelines (including the latest the latest version of the Caltrans Bridge Design Specifications, Caltrans Seismic Design Criteria, and Metro-specified rail transit loading for bridges supporting rail.) This includes applying Caltrans geotechnical investigation and design of bridge foundations. Compliance with the American Railway Engineering and Maintenance-of-Way Association (AREMA) specifications are also required to be used for various applications.

Section 5.4 of the MRDC provides specifications for underground structures used for rail transit. The design of tunnel linings is not addressed in standard design codes. This section established the procedure for the design of tunnel linings utilizing the FHWA FHWA-NHI-09-010, Chapter 10, Tunnel Lining, current edition which incorporates load and LRFD. LRFD is a design philosophy that takes into account the variability in the prediction of loads and the variability in the behavior of structural elements. The MRDC provides instruction on applying the LRFD specification to tunnel lining design and provides a uniform interpretation of the FHWA document as it applies to tunnel linings. Specifications include tunnel lining, structural design (including loads, concrete design criteria, ventilation shafts, tunnel break-outs, portals and u-sections, underground stations and cut-and-cover sections, retaining walls, shafts, water and gas proofing, and materials), surface facility specifications, pedestrian areas, and seismic design (supplemented by MRDC Section 5 Appendix).

Section 5.6 of the MRDC requires subsurface investigation and laboratory testing, geotechnical reporting and temporary excavation, and detailed foundation design requirements that would address the hazards discussed in this section. All new structures must be designed to resist the earthquake forces and ground displacement defined in the MRDC. Specifically, MRDC Section 5.6.2.1 requires preparation of a Geotechnical Planning Report to define the engineering and design approach to develop the most cost-effective and technically and environmentally acceptable foundations, cut and fill slopes, retaining structures, and geotechnical designs for the aerial/bridge, underground, and at-grade portions of the project. As described in MRDC Section 5.6.2, further geotechnical investigations are required to follow, including subsurface investigations, geotechnical data report, and a geotechnical design report.

The MRDC Section 5 Appendix, Metro Supplemental Seismic Design Criteria, dictates the required seismic performance criteria for structures. For structures other than above ground and below ground guideway and structures, the MRDC requires conformance with the Los Angeles County Building Code (which is based on the CBC). The Supplemental Seismic Design Criteria provides seismic design requirements for the Build Alternatives using a two-level design approach for aerial and underground structures. Over the design life of the project (typically 100 years for Metro rail projects), an operating design earthquake (ODE) and a maximum design earthquake (MDE) are used to define the performance scenarios. Structures are designed to respond without significant structural damage to the ODE with a 150-year average return period, and to respond with repairable damage and maintaining life safety to the MDE with a 2,500-year average return period. The Supplemental Seismic Design Criteria also requires the following:

- Bridges, aerial, and underground structures would be designed in accordance with the Metro MDE (as described above), which has a 2,500-year average return period.
- Surface structures not covered by the Caltrans seismic design criteria would be designed in accordance with the Los Angeles County Building Code, which uses the Maximum Considered Earthquake, with a 2,500-year average return period.
- Bridges supporting railroad loads would be designed in accordance with the requirements of the applicable railroad, or in accordance with AREMA standards in lieu of specific railroad requirements.

Los Angeles County and the cities within the Build Alternative DSAs have local regulations related to geology, soils, seismicity, and paleontological resources. These regulations include the relevant general plan policies, ordinances, and municipal codes of Los Angeles County and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. Generally, these policies and

ordinances aim to protect the public from geological and seismic hazards, establish low impact development (LID) practices to improve stormwater management and minimize erosion and sedimentation into water bodies, and protect paleontological resources. More information about these laws and policies can be found in Appendix G.

3.6.3 Methodology

The following documentation was reviewed and evaluated in preparation of the discussion of the environmental setting and evaluate the geologic hazards and potential for paleontological resources to occur:

- Reports and data collected during previous geotechnical investigations of the GSA
- *Eastside Transit Corridor Phase 2 Washington Boulevard Alternative Preliminary Geotechnical Design Report* prepared by Diaz Yourman and Associates (2021)
- Available published and unpublished literature, and consultants' reports within the GSA for known geologic hazards. Documents reviewed included:
    - The safety elements of the general plans for Los Angeles County and cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier
    - The official Alquist-Priolo Earthquake Fault Zone Maps; official Seismic Hazard Zone Maps, geologic and topographic maps, and other publications by the California Geological Survey (CGS), United States Geological Survey (USGS), and California Division of Oil and Gas)
    - The as-built drawings for the bridge crossings along the Rio Hondo and San Gabriel River along Washington Boulevard
- Paleontological records search report from the Natural History Museum of Los Angeles County
- Available published and unpublished literature, and consultants' reports within the GSA for known paleontological resources
- Available descriptions of details of construction of the Build Alternatives

Geologic and seismic impacts pertain to both construction and operational activities. The potential impacts during construction are generally related to failure of temporary structures and safety concerns related to soil stability. The potential for erosion and loss of topsoil is primarily related to the potential for soil disturbance during construction activities but can also be related to operations if soils are exposed following completion of construction. The potential impacts during operations are generally associated with the safety of built elements relative to geologic stability, including safety impacts resulting from an earthquake and exposure to secondary seismic hazards such as ground settlement or liquefication.

Paleontological impacts pertain to ground disturbance activities occurring in paleontologically sensitive geologic units and are therefore primarily associated with construction activities. Generally, for project sites that are underlain by paleontologically sensitive geologic units, the greater the amount

of ground disturbance associated with the project, the higher the potential for impacts to significant paleontological resources to occur. A significant paleontological resource includes any identifiable fossil that is unique, unusual, rare, uncommon, diagnostically or stratigraphically important, and/or those that add to an existing body of knowledge in specific areas – stratigraphically, taxonomically, and/or regionally. The Society of Vertebrate Paleontology (2010) asserts that any identifiable vertebrate fossil is a significant paleontological resource. Direct impacts to paleontological resources primarily concern the potential destruction of nonrenewable paleontological resources and the loss of information associated with these resources. This includes the unauthorized collection of fossil remains. If potentially fossiliferous bedrock or surficial sediments are disturbed, the disturbance could result in the destruction of paleontological resources and subsequent loss of information.

3.6.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to geology and seismology under the following conditions:

Impact GEO-1: Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42)**
- **Strong seismic ground shaking**
- **Seismic-related ground failure, including liquefaction**
- **Landslides**

Impact GEO-2: Result in substantial soil erosion or the loss of topsoil.

Impact GEO-3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Impact GEO-4: Be located on expansive soil, as defined in Section 1803.5.3 of the CBC,[1] creating substantial direct or indirect risks to life or property.

Impact GEO-5: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Appendix G of the State CEQA Guidelines also includes a significance criterion for impacts relating to the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater. The Build Alternatives are in an urban area with an established sewer

1 Appendix G of the CEQA Guidelines refers to Table 18-1-B of the Uniform Building Code. That provision no longer exists. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils.

system. There are no existing or proposed septic tanks or other alternative wastewater disposal system associated with the Build Alternatives; therefore, this criterion is not applicable.

3.6.5 Existing Setting

This section provides an overview and general information for the GSA and DSAs, including regional and local geology, faulting and seismicity, and paleontological resources.

3.6.5.1 Regional Setting

The Build Alternatives are located near the northwest boundary of the Los Angeles Basin in the general vicinity of the Whittier Narrows, a prominent gap in the Puente Hills. The Build Alternatives traverse the physiographic features known as the Montebello Plain and Montebello Hills, the Rio Hondo, and the San Gabriel River. Topography along the Washington Boulevard corridor consists of gentle slopes along the side of the valley. The elevation ranges from 150 to 260 feet along the Build Alternatives.

3.6.5.1.1 Topography and Drainage

The ground surface along the Build Alternatives is generally flat except where it crosses the Rio Hondo and San Gabriel River. Drainage along the Build Alternatives is typically controlled by engineered infrastructure including curbside storm drains and gutters. The two major surface water drainages within the GSA are the Rio Hondo river channel and spreading grounds and the San Gabriel River. The Rio Hondo and San Gabriel River are in the DSA for Alternative 1 and would be crossed by the alignment. The Rio Hondo and San Gabriel River are not in the DSA for Alternative 2 or Alternative 3 and would not be crossed by the alignment for these two Build Alternatives.

3.6.5.1.2 Regional Geology

On a regional scale, the GSA lies within the Peninsular Ranges geomorphic province, which is bounded by the San Jacinto fault zone to the east, the Pacific Ocean coastline to the west, and the Transverse Ranges geomorphic province to the north. The Peninsular Ranges province is characterized by northwest-trending mountain ranges and hills separated by sub-parallel, sediment-filled valleys.

Bedrock in the GSA consists of silty sandstone of the Pliocene Fernando Formation, one of the uppermost units of the marine sedimentary units filling the Los Angeles Basin. Bedrock is overlain by unconsolidated Quaternary alluvial fan and fluvial deposits. The regional geology in the GSA is shown on **Figure 3.6.1** (the GSA is the same for all three Build Alternatives, and the figure identifying the geology within the GSA that shows Alternative 1 is applicable to all three Build Alternatives).

Historic high groundwater levels along the Build Alternatives range from approximately 110 feet below ground surface (bgs) on the northwest at Atlantic Boulevard, to 50 to 60 feet bgs at the end of Washington Boulevard. To the west of Montebello Boulevard, the historical high groundwater is generally deeper than 50 feet bgs. Groundwater becomes shallower, as shallow as approximately 15 feet bgs, in the vicinity of the Rio Hondo and the San Gabriel River. Fluctuations in the groundwater levels could occur due to changes in seasons, precipitation, irrigation, groundwater pumping in the vicinity, and other factors.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.6.1. GSA Geology Map

3.6.5.1.3 GSA Geologic Units

The main geologic units along the Build Alternatives are discussed below and shown on **Figure 3.6.1** (Bedrosian and Roffer 2012). Geotechnical work for the Build Alternatives indicates bedrock is a few hundred to several hundred feet deep in the GSA and is unlikely to be encountered (Diaz-Yourman & Associates 2021).

Landslide deposits (Qls) (late Holocene) are slope-failure deposits that consist of displaced bedrock blocks and/or chaotically mixed rubbles. These deposits exist near the toe of hills the east boundary of the GSA. Most deposits are likely active or recently active

Wash deposits (Qw) are associated with the action of active or recently active stream beds and include some debris flow deposits. These areas are frequently exposed to episodes of bank-full stream flow and support heavy vegetation. The hydrologic actions of the streams or rivers result in deposits of unconsolidated gravel, sand, and silt which are present in active or recently active reaches. Wash deposits are anticipated in the immediate vicinity of the Rio Hondo and the San Gabriel River.

Young alluvial fan deposits (Qyf) (Holocene and late Pleistocene) generally consist of unconsolidated to slightly consolidated boulder, cobble, gravel, sand, and silt deposits issued from a confined valley or canyon. These deposits include all soils in the project vicinity east of the Rio Hondo.

Young deposits of axial valley floors (Qya) (Holocene and late Pleistocene) consist of slightly to moderately consolidated sand and pebble-cobble gravel. These deposits exist near the west portion of the northern boundary of the GSA in small areas.

Old alluvial fan deposits (Qof) (late to middle Pleistocene) consist of slightly to moderately consolidated silt, sand, and gravel deposits. These deposits are anticipated along Washington Boulevard extending near Rio Hondo to the west and essentially covering the Build Alternatives west of Rio Hondo.

Tertiary sandstone (Tss), the bedrock represented by the Fernando Formation, exists in the portion of the Montebello Hills north of the Build Alternatives and in the portion of the Hacienda Hills east of the Build Alternatives. Bedrock is a few hundred to several hundred feet deep along the Build Alternatives and is unlikely to be encountered.

Tertiary shale and siltstone (Tsh), the bedrock also represented by the Fernando Formation, exist in the portion of the Hacienda Hills east of the Build Alternatives. The bedrock is deep near the Build Alternatives and is unlikely to be encountered.

3.6.5.1.4 GSA Geologic Conditions

Based on the review of the data available, the subsurface soils along the Build Alternatives mainly consist of layers or mixtures of sands, silts, and clays.

Collapsible soils are generally unsaturated soil that goes through a radical rearrangement of particles and great decrease in volume upon wetting, additional loading, or both. Based on review of the data currently available, there are no known collapsible soils along the Build Alternatives.

Expansive soils are clay-rich soils that swell and shrink with wetting and drying. The shrink-swell capacity of expansive soils can result in differential movement below or adjacent to a structure. This

differential movement can result in significant damage to pavements, as well as foundations and associated structures. Clay-rich soils may exist locally within alluvial soils present in the GSA.

Consolidation is the soil settlement due to expulsion of pore water in saturated clay resulting in rearrangement of soil particles. Consolidation settlement occurs in clay, especially in unconsolidated or normally consolidated soft clay when the soil is loaded. Although clay-rich soils may exist locally in the GSA, consolidation settlement may occur within the GSA.

A limited number of corrosion tests were performed from samples collected from the limited field exploration conducted for the design phase of the Project. The on-site soils at the site-specific boring locations do not pose a corrosive environment.

In California, most of the large area land subsidence is a result of excessive groundwater pumping. Based on the map illustrating areas of recorded subsidence — historical and current — across California, the Build Alternatives are not located within a subsidence area (USGS 2022).

3.6.5.2 Faulting and Seismicity

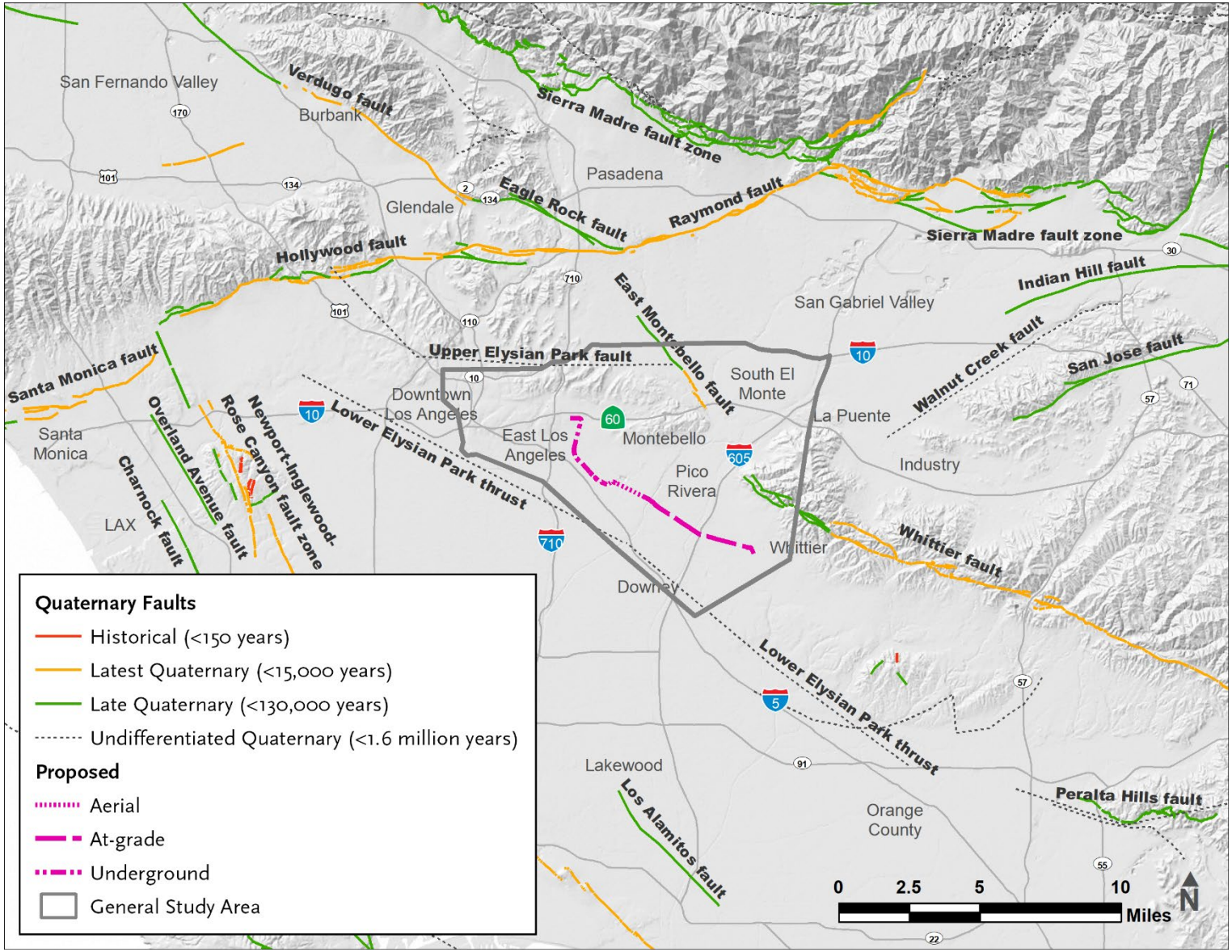
3.6.5.2.1 General Setting

The primary impacts that could result from faulting and seismicity are surface rupture of the earth along fault traces and seismically-induced ground shaking. There are numerous faults in Southern California including active, potentially active, and inactive faults. Criteria adopted by the CGS for the Alquist-Priolo Earthquake Zoning Program classify active faults as faults that have had surface displacement within Holocene time (about the last 11,700 years) and potentially active faults as faults that has demonstrated surface displacement of Quaternary age deposits (last 1.6 million years). Inactive faults have not moved in the last 1.6 million years. Active faults that are located within 20 miles of the Build Alternatives are discussed below.

The location of the GSA and the Build Alternatives in relation to known regional fault systems is shown in **Figure 3.6.2**. There is one Alquist-Priolo Earthquake Fault zone within the GSA, which includes the East Montebello Fault approximately four miles northeast, as shown on **Figure 3.6.3**.

3.6.5.2.2 Active Faults

Holocene active faults within 20 miles from the closest point of the Build Alternatives are presented in Appendix G. The Holocene active fault with surface expression that is closest to the Build Alternatives is the Whittier Fault, which is one of the two upper branches of the Elsinore fault zone, located within the GSA and approximately 2.8 miles northeast of the eastern terminus of the Build Alternatives.



Source: Metro; USGS, 2019; CDM Smith/AECOM JV, 2021.

Figure 3.6.2. Regional Faults

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.6.3. Alquist-Priolo Earthquake Fault Zone for the East Montebello Fault

3.6.5.2.3 Potentially Active Faults

The inferred trace of the MacArthur Park Fault is in the Los Angeles downtown area approximately five miles northwest of the western terminus of the Build Alternatives. The fault has not been definitively proven to exist, but it is inferred west of downtown Los Angeles (Dolan and Sieh 1992). The Eagle Rock Fault, a late Pleistocene active fault, is located approximately 10 miles to the north of the Build Alternatives.

3.6.5.2.4 Blind Thrust Fault Zones

Blind thrust faults are faults that do not rupture all the way up to the Earth's surface and do not show evidence on the ground. They are buried under the uppermost layers of rock in the Earth's crust; consequently, they are typically characterized as fault zones or fault systems without designation of specific mapped fault lines. Several blind thrust faults underlie the Los Angeles Basin at depth. These faults are not exposed at the ground surface and are typically identified at depths greater than three kilometers (1.86 miles). These faults do not present a potential surface fault rupture hazard; however, they are considered active and potential sources for future earthquakes. The Build Alternatives sit atop the Puente Hills blind thrust fault system, which is the source of the 1987 Whittier Narrows earthquake. Additionally, the Elysian Park Thrust is believed to underlie the central Los Angeles Basin north of the SR 60 Freeway.

3.6.5.2.5 Seismic Hazards

The potential to experience substantial seismic ground shaking is a common hazard for every project in Southern California. Structures (aerial, at-grade, and underground) have been and continue to be successfully designed and constructed based on mandatory design criteria. During a moderate to severe earthquake occurring on the nearby faults, strong ground shaking within the GSA would likely occur. In addition to ground shaking, effects of seismic activity on a project site may include surface fault rupture, soil liquefaction, and seismically induced differential settlement of structures, and landslides.

Ground Shaking

Seismic hazards that could affect the Build Alternatives include ground shaking from an earthquake along one of the several active faults in the region. The MRDC requires a two-level seismic evaluation approach to seismic design based on earthquake statistical probability. The two-level approach requires the design to provide a high-level of assurance that the overall system will continue to operate during and after an earthquake event anticipated to occur once during the design life; this is referred to as an operating design earthquake (ODE). Design for the ODE would enable safe shut down and inspection before returning to operation. Furthermore, the system design will provide a high-level of assurance that public safety will be maintained during and after an earthquake event with a low probability of occurring during the design life, where structures are designed to withstand the earthquake with repairable damage, thereby maintaining life safety; this is referred to as a maximum design earthquake (MDE). See **Section 3.6.2.4** for additional information on the two-level seismic evaluation.

Liquefaction

Liquefaction-induced ground failure has historically been a major cause of earthquake damage in Southern California. In portions of the GSA, sediments susceptible to liquefaction comprise the young (Holocene to late Holocene age) alluvial fan deposits and the wash sediments. When liquefaction occurs, the strength of the soil decreases, and the ability of the soil to support structures is reduced. The potential impacts of liquefaction may include settlement of the ground surface, additional forces pushing down on foundation piles as a result of soil settlement above the liquefied layers (downdrag), lateral spreading (similar to a landslide), and reduction of the shear strength of the liquefied soil, resulting in reduced load-carrying capacity. Liquefied soils can also exert additional dynamic pressures on retaining walls, which can cause them to tilt or slide. Liquefaction-induced ground failure has historically been a major cause of earthquake damage in Southern California.

The CGS has prepared seismic hazard maps for the Los Angeles Basin that delineate liquefaction zones where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacement. The CGS hazard map identifies the Holocene sediments along Alternative 1 between South Bluff Road and the eastern terminus at Lambert Road as a potential liquefaction zone as shown on **Figure 3.6.4.** Alternatives 2 and 3 and the MSF site options are not within the liquefaction zone.

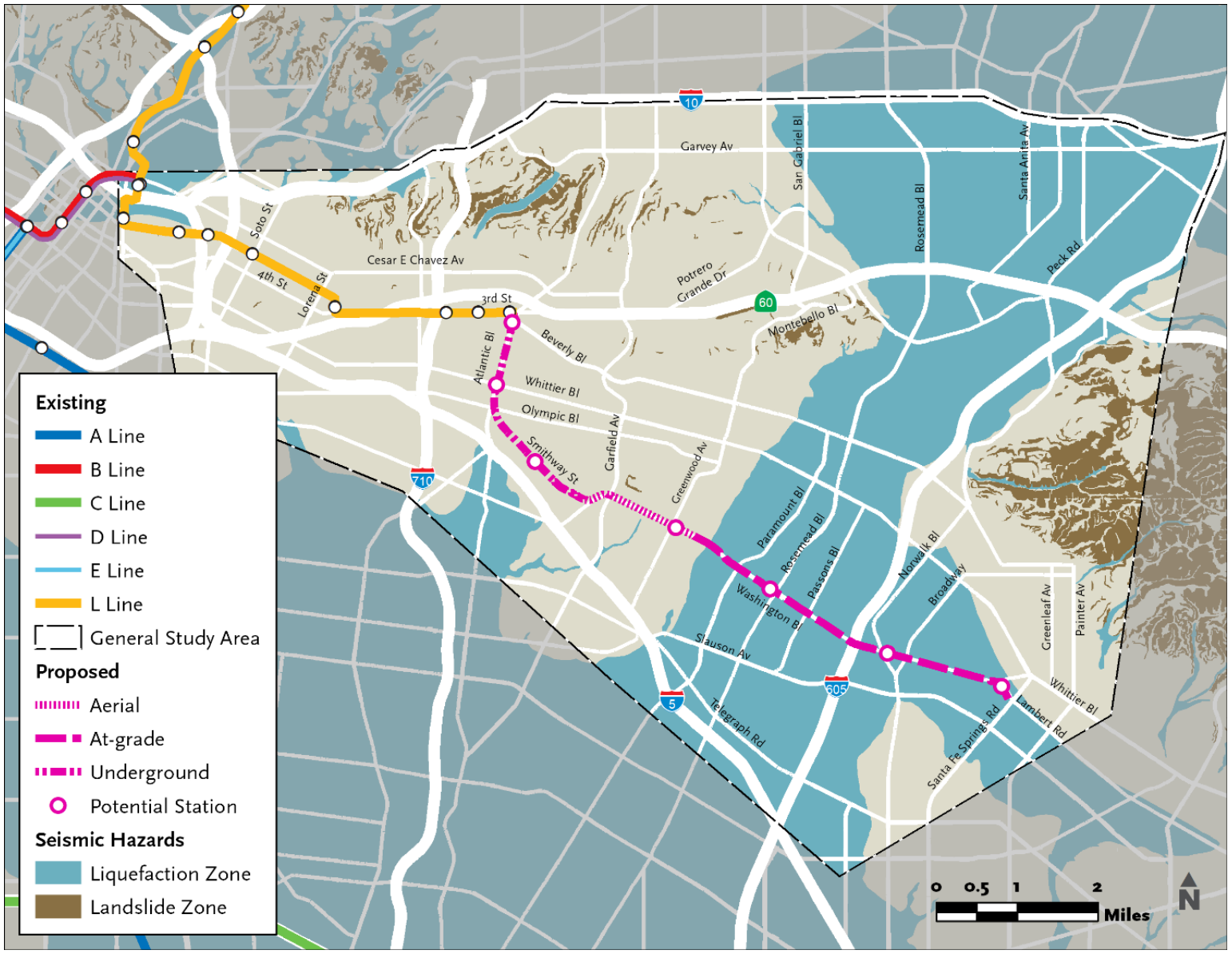
Settlement

Seismically-induced settlement consists of compression of the dry soils above groundwater and liquefaction-induced settlement of the liquefiable soils below groundwater. These settlements occur primarily within the loose to moderately dense sandy soils due to volume reduction during or shortly after an earthquake event. Such settlement can result in structural distress as the ground settles. The portion of Alternative 1 that is mapped within the liquefiable zone and underlain by wash deposits and the young alluvial fan deposits has the potential to experience seismically-induced settlement.

Additionally, the upper soils along the at-grade segment of Alternative 1 consist of predominately young alluvial fan deposits, which could be subject to settlement. Alternative 2 and Alternative 3 are not located in the area mapped to have the potential to experience liquefaction and seismically-induced settlement.

Landslides

The Build Alternatives are not located within a mapped earthquake-induced landslide zone as shown on **Figure 3.6.4.** In general, the Build Alternatives are located on relatively level ground and the potential for landslides to affect the Build Alternatives is low. However, for Alternative 1, the potential for lateral spread landslide may exist within the liquefaction-susceptible area nearby the Rio Hondo and San Gabriel River, as ground surfaces consist of gentle slopes at these two locations. Lateral spreading of the ground surface can occur during a seismic activity when potentially liquefiable soil is present in conjunction with a sloping ground surface and a “free” face (i.e., retaining wall, slope, or channel). When the soil undergoes a temporary loss of strength, and if the liquefiable soil is not contained laterally, it may result in deformation or translation of the slope. Lateral spread potential may also exist in the vicinity of open faces.



Source: Source: CDMG, Seismic Hazard Zone Maps for El Monte, Los Angeles, South Gate, and Whittier 7.5 Minute Quadrangles, Details below.

Figure 3.6.4. Liquefaction and Landslide Hazard Zone Map

3.6.5.3 Paleontological Resources

3.6.5.3.1 Paleontological Potential

Paleontological potential is defined by the Society of Vertebrate Paleontology (SVP) Uniform Guidelines rank geologic units according to Paleontological Potential (SVP 2010). Rock units are described as having (a) high, (b) undetermined, (c) low, or (d) no potential for containing significant paleontological resources.

Only three geologic units occur along the Build Alternatives (**Figure 3.6.1**). These are old alluvial fan deposits (Qof), the young alluvial fan deposits (Qyf), and wash deposits (Qw).

3.6.5.3.2 Paleontological Records Search

A paleontological records search was solicited from the Natural History Museum of Los Angeles County. Of the three most pertinent localities from that report, two are west and northwest of the Build Alternatives between Atlantic station (relocated/reconfigured) and Commerce/Citadel station. These are at a depth of 20 to 35 feet. Two localities are in the Qof. They produced mastodon, horse, deer, sabretooth cat, and turkey fossils. The third locality is south-southwest of the Build Alternatives and lies in the Qyf. At a level of 30 feet bgs, it produced fish, snake, rodent, and rabbit fossils. All fossils from these localities are of Pleistocene age.

3.6.5.3.3 Paleontological Literature Search

A search of paleontological literature yielded no published records of localities near the Build Alternatives. However, there was one recent unpublished report of a fossil bison just north of Beverly Boulevard on the west bank of the San Gabriel River (ESA 2020). It was found at 18 feet bgs within the Qyf, north of the proposed Norwalk station.

3.6.5.3.4 Assignment of Paleontological Potential to Units

There have been relatively few projects in the GSA that were monitored for paleontological resources. One of the fossil localities in the Qyf produced microbertebrate fossils as a result of sediment screening. The sparse localities which can be demonstrated to have produced significant paleontological resource in the GSA do not necessarily indicate that fossils are rare in the GSA.

Paleontological Potential by Geologic Unit

Alluvial wash deposits (Qw) are encountered where Washington Boulevard crosses the Rio Hondo and San Gabriel River. There is no evidence of significant paleontological resources having been found in alluvial wash deposits. Therefore, this area represents a low paleontological potential.

Young alluvial fan deposits (Qyf) (Holocene and late Pleistocene) include all soils in the project vicinity east of the Rio Hondo (with the exception of Qw sediments in the San Gabriel River). Paleontological potential would increase with depth (as depth approaches Pleistocene levels). This unit is assigned a low paleontological potential near the surface, but a high potential below 10 feet.

Old alluvial fan sediments (Qof) (late to middle Pleistocene) are anticipated along Garfield Avenue (including the tunnel section) and along Washington Boulevard extending from Garfield Avenue to

South Bluff Road. Even the near-surface sediments are of Pleistocene age and the entire unit, including undisturbed sediments near the surface, should be assigned a high paleontological potential.

Potential by Project Section

The following describes the paleontological potential by sections of the Build Alternatives.

Atlantic to Citadel Section: This section is entirely within Qof and is ranked high sensitivity. The tunnel location is likely to be entirely within previously undisturbed sediments.

Citadel to Greenwood Avenue: This section is entirely within Qof and is ranked high sensitivity.

Greenwood Avenue to Santa Fe Springs Road: The western portion of this section (from Greenwood Avenue to the Rio Hondo) lies within Qof which has high potential for paleontological resources. The remainder of this section, from the west bank of Rio Hondo to Santa Fe Springs Road, lies within Qyf sediments, and has low paleontological potential near the surface, increasing to high potential below a depth of 10 feet.

3.6.6 Impact Evaluation

3.6.6.1 Impact GEO-1: Exposure to Seismic Hazards

Impact GEO-1: Would a Build Alternative directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

- **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42)**
- **Strong seismic ground shaking**
- **Seismic-related ground failure, including liquefaction**
- **Landslides**

3.6.6.1.1 Alternative 1 Washington

Operational Impacts

Rupture of a Known Earthquake Fault and Seismic Shaking

Alternative 1 would not cross any known Holocene active faults. As discussed in **Section 3.6.5**, the Whittier fault is closest Holocene active fault with surface expression; it is approximately 2.8 miles northwest of the eastern terminus of the Alternative 1. Because there are no known active faults capable of ground rupture under the alignment, fault rupture would not present a risk, including the risk of loss, injury, or death. Alternative 1 is located in a seismically active area, thus, operation of Alternative 1 would potentially be subject to seismic ground shaking. Seismic shaking could result in

damage to structures or human injury or death. For Alternative 1, this could include damage to aerial structures and stations, at-grade guideway and stations, and underground tunnel guideway sections and stations. Seismic shaking could also injure humans using the system from falls to the ground or structural collapse. The potential to experience substantial seismic ground shaking is a common hazard for every project in Southern California. Structures have been and continue to be successfully designed and constructed based on mandatory design criteria as described below.

To address potential seismic hazards, including development of site-specific design parameters to account for seismic shaking, Alternative 1 would be designed and constructed in conformance with the MRDC as set forth in project measure PM GEO-1, identified in **Section 3.6.7**. Additionally, Alternative 1 would be designed and constructed in conformance with applicable portions of building and seismic code requirements including the most recent edition of the CBC, Metro's standard specifications, and industry standards. Consistent with MRDC requirements, Project structures would be designed to perform in accordance with the two-level seismic evaluation approach based on the MDE and ODE. Aerial, at-grade, and underground structures would be designed and would perform in accordance with federal, state, and local thresholds for seismicity. Compliance with the latest earthquake-resistant building design standards and other seismic safety parameters would substantially reduce potential structural damage and the risk to public safety from seismic events.

Structural engineering standards to address geological conditions are part of standard construction requirements and standard construction practices. Additionally, PM GEO-1 sets forth project compliance with MRDC Section 5, Structural, which dictates that during final design, a geotechnical investigation must be conducted, including a detailed and site-specific evaluation of geotechnical hazards. The resulting final geotechnical engineering recommendations and any additional recommendations that come out of the review process would be incorporated into the final design plans consistent with MRDC requirements and standard practice to address any unstable geologic and related conditions present along the alignment. The Project would be designed to perform in accordance with the MDE and ODE thresholds as described in **Section 3.6.2**. As described, the seismic design criteria (MRDC, Caltrans Seismic Design Criteria, LA County Building Code/CBC) provide the design framework, including to address the average return period and shaking intensity. Compliance with these requirements and industry standards would ensure that strong seismic ground shaking would not cause potential substantial adverse effects, including the risk of loss, injury, or death.

Seismic-Related Ground Failure, Liquefaction, and Landslides

Seismic-related ground failure, liquefaction, and landslides could result in damage to structures and human injuries where the soil undergoes a temporary loss of strength. Ground instability could impact structural stability which in turn could damage structures or injure humans occupying structures on unstable ground. The aerial portion and the underground portion of the alignment are predominately in the old alluvium where the potential for adverse impact due to liquefaction is considered low. Further, the aerial portion of the alignment would be supported on a deep foundation system to minimize risk. There would be potential for adverse effects from liquefaction and seismically-induced settlement along the at-grade configuration and stations underlain by young alluvial fan deposits from South Bluff Road to the eastern terminus of the alignment.

Project measure PM GEO-1, identified in **Section 3.6.7**, would be implemented. This project measure identifies that the Project would be designed in accordance with design standards specific to ground stability. As set forth in PM GEO-1, a geotechnical investigation would be performed during final design in compliance with the MRDC; the required design-level geotechnical investigation would

provide information pertaining to the depths and areal extents of potential liquefaction, lateral spread, and seismically induced settlement. During the design process, if it is determined that these hazards could result in an unacceptable soil or structural response, ground improvements such as dynamic compaction, stone columns, jet grouting, and cement deep soil mixing and compaction grouting or deep foundation support to account for liquefaction, lateral spread, or seismically induced settlement potential would be implemented, consistent with the recommendations contained in the geotechnical investigation and design standards.

While Alternative 1 is on relatively level ground with a low potential for landslides, lateral spread landslide potential may exist near the Rio Hondo and San Gabriel River where ground surfaces consist of gentle slopes. Lateral spreading would be further investigated during the design phase when site-specific data and final geometry of improvements are available consistent with local requirements. The preliminary geotechnical design report has identified that shallow foundations would likely not be suitable at the site for the replacement of the Rio Hondo and San Gabriel River Bridges, and that similar to the existing bridges, the bridges would be supported on deep foundations (Diaz-Yourman & Associates 2021). The foundation types would be determined as part of the required geotechnical investigation conducted during the final design phase and would ensure that the potential for lateral spread landslide would not cause potential for substantial adverse effects, including the risk of loss, injury, or death. Foundation types may include deep foundation cast-in-drilled-hold (CIDH) concrete piles for drilled foundations and steel H-piles for driven piles for aerial structures, steel driven H-piles or CIDH piles for bridge supports, mat foundations with a 50- to 60-foot excavation for underground stations, embedded track on structure slab for track work, and CIDH concrete piles or other shallow foundation designs specific to the structure type for other miscellaneous structures.

Summary

Alternative 1 would be designed in compliance with regulatory requirements, industry standards, and the MRDC as identified in PM GEO-1; compliance with these regulatory and design requirements would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards. Operation of Alternative 1 would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would not have seismic risks that differ from the base Alternative 1. The Atlantic/Pomona Station Option would potentially be subject to seismic ground shaking, but it is not located within a liquefaction zone. As identified in PM GEO-1, the Atlantic/Pomona Station Option would be designed in compliance with regulatory requirements and the MRDC and would be the subject of a site-specific geotechnical evaluation during the final design phase that would include specific structural engineering recommendations. Because of compliance with these regulatory and design requirements and engineering standards, operation of Alternative 1 with the Atlantic/Pomona Station Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would not have seismic risks that differ from the base Alternative 1. Alternative 1 with the Montebello At-Grade Option would be potentially subject to seismic ground shaking, but it is not located within a liquefaction zone. As identified in PM GEO-1, the Montebello At-Grade Option would be designed in compliance with regulatory requirements and the MRDC and would be the subject of a site-specific geotechnical evaluation during the final design phase that would include specific structural engineering recommendations. Because of compliance with these regulatory and design requirements and engineering standards, operation of Alternative 1 with the Montebello At-Grade Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Construction Impacts

Rupture of a Known Earthquake Fault and Seismic Shaking

Construction activities for Alternative 1 would involve temporary excavation shoring, foundation support installation and earthwork along the alignment. Additionally, cut-and-cover excavation, roadway decking, temporary shoring, mass excavation, and underground construction would occur along Smithway Street at the Tunnel Boring Machine (TBM) launching pit and then the TBM receiving pit west of Atlantic Boulevard and south of Pomona Boulevard. Alternative 1 would not cross any known active faults. As discussed in **Section 3.6.5**, the Whittier fault is the Holocene active fault with surface expression that is closest to the Build Alternatives; it is approximately 2.8 miles northwest of the eastern terminus of the Alternative 1.

Alternative 1 is located in a seismically active area, thus, construction of Alternative 1 would potentially be subject to seismic ground shaking which could result in damage to structures and human injury. To address potential seismic hazards, Alternative 1 would be constructed in compliance with the MRCD as identified in project measure PM GEO-1 (see **Section 3.6.7**), applicable portions of building and seismic code requirements including the most recent edition of the CBC, Metro's standard specifications, and industry standards. These requirements include development of site-specific design parameters to account for seismic shaking. Adherence with the latest seismic safety parameters would substantially reduce potential structural damage and the risk to public safety from seismic events.

Seismic-Related Ground Failure, Liquefaction, and Landslides

In the portion of the proposed alignment within a mapped liquefiable zone, including the proposed stations at Rosemead Boulevard, Norwalk Boulevard, and Lambert Road, there would be potential for adverse effects from liquefaction and seismically-induced settlement. Additionally, lateral spread landslide potential may exist nearby the Rio Hondo and San Gabriel River where ground surfaces consist of gentle slopes. Consequently, construction of the Build Alternatives could subject people and structures to unstable ground where the soil undergoes a temporary loss of strength which would result in damage to structures or human injury.

Project measure PM GEO-1 identifies that the Build Alternatives would be designed and constructed in accordance with design standards and regulatory requirements, including state regulations and the

MRDC, to account for the potential effects of liquefaction and seismic settlement. As identified in PM GEO-1, a geotechnical investigation would be performed during final design in compliance with the MRDC; the geotechnical investigation would include structural engineering standards and recommendations for temporary construction activities to address geological conditions, including recommendations on sloping or shoring to ensure stability of temporary excavations. The investigation would provide information pertaining to the depths and extent of liquefaction and an estimate of the anticipated ground deformation associated with liquefaction, lateral spread, and induced settlement. Depending on the findings of the investigation, various ground improvements would be implemented to minimize risks consistent with design standards, including dynamic compaction, stone columns, jet grouting, cement deep-soil mixing, and compaction grouting. The results of the geotechnical investigation would inform the design parameters for structural integrity and ground stability and thereby minimize risks associated seismic-related ground failure, liquefaction, and landslides.

Summary

Compliance with requirements and industry standards as described in PM GEO-1 would ensure that Alternative 1 would not cause potential substantial adverse effects, including the risk of loss, injury, or death during construction. Construction of Alternative 1 would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would not have seismic risks that differ from the base Alternative 1. The Atlantic/Pomona Station Option would be potentially subject to seismic ground shaking, but it is not located within a liquefaction zone. The Atlantic/Pomona Station Option would be designed and constructed in compliance with regulatory requirements, industry standards and the MRDC, and would be the subject of a site-specific geotechnical evaluation during the final design phase that would include specific structural engineering recommendations. Compliance with regulatory and design requirements as identified in PM GEO-1 and described under the base Alternative 1 would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards. Construction of Alternative 1 with the Atlantic/Pomona Station Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would not have seismic risks that differ from the base Alternative 1. Alternative 1 with the Montebello At-Grade Option would be potentially subject to seismic ground shaking, but it is not located within a liquefaction zone. The Montebello At-Grade Option would be designed and constructed in compliance with regulatory requirements, industry standards and the MRDC, and would be the subject of a site-specific geotechnical evaluation during the final design phase that would include specific structural engineering recommendations. Compliance with regulatory and design requirements as identified in PM GEO-1 and described under

the Alternative 1 would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards. Construction of Alternative 1 with the Montebello At-Grade Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

3.6.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Rupture of a Known Earthquake Fault and Seismic Shaking

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross any known faults capable of ground rupture. Thus, there is no potential for ground rupture due to known active faulting.

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is located in a seismically active area; thus, operation would potentially be subject to seismic ground shaking that could result in damage to structures or human injury or death. As described in greater detail in **Section 3.6.6.1.1** and identified in project measure PM GEO-1, to address potential risks associated with seismic hazards, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed and constructed in conformance with the MRDC**,** applicable portions of building and seismic code requirements including the most recent edition of the CBC, Metro's standard specifications, and industry standards. Additionally, as further identified in PM GEO-1, during final design, a geotechnical investigation would be conducted, including detailed and site-specific evaluation of geotechnical hazards. The resulting final geotechnical engineering recommendations would be incorporated into the final design plans consistent with standard practice to address any unstable geologic and related conditions present along the alignment. Compliance with these requirements and industry standards would ensure that strong seismic ground shaking would not cause potential substantial adverse effects, including the risk of loss, injury, or death.

Seismic-Related Ground Failure, Liquefaction, and Landslides

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is not within in a liquefaction zone and is located in an area of generally flat topography and on stable soils. Thus, operations would not result in exposure to seismic-related ground failure, including liquefaction, or landslides. While these conditions are not expected to occur, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed in compliance with regulatory requirements, industry standards, and the MRDC, as described in greater detail in **Section 3.6.6.1.1** and identified in project measure PM GEO-1. Compliance with these regulatory and design requirements would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards.

Summary

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed in compliance with regulatory requirements, industry standards, and the MRDC as identified in PM GEO-1; compliance with these regulatory and design requirements would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards. Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Construction Impacts

Base Alternative and Design Option

Rupture of a Known Earthquake Fault and Seismic Shaking

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross any known active faults.

Like Alternative 1, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is located in a seismically active area, thus, construction of Alternative 1 would potentially be subject to seismic ground shaking which could result in damage to structures and human injury. To address potential seismic hazards, Alternative 2 would be constructed in compliance with the MRCD as identified in project measure PM GEO-1 (see **Section 3.6.7**), applicable portions of building and seismic code requirements including the most recent edition of the CBC, Metro's standard specifications, and industry standards. These requirements include development of site-specific design parameters to account for seismic shaking. Adherence with the latest seismic safety parameters would substantially reduce potential structural damage and the risk to public safety from seismic events.

Seismic-Related Ground Failure, Liquefaction, and Landslides

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is not within in a liquefaction zone and is located in an area of generally flat topography and on stable soils. Thus, construction would not result in exposure to seismic-related ground failure, including liquefaction, or landslides. While these conditions are not expected to occur, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed and constructed in accordance with regulatory requirements, industry standards, and the MRDC, as described in project measure PM GEO-1. As identified in the PM GEO-1, in compliance with the MRDC, a geotechnical investigation would be performed during final design; the geotechnical investigation would include structural engineering standards and recommendations for temporary construction activities to address geological conditions, including recommendations on sloping or shoring to ensure stability of temporary excavations. The results of the geotechnical investigation will inform the design parameters for structural integrity and ground stability, and ensure impacts associated seismic-related ground failure, liquefaction, and landslides would be less than significant.

Summary

Compliance with requirements and industry standards as identified in PM GEO-1 would ensure that the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death associated with seismic hazards during construction. Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

3.6.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Rupture of a Known Earthquake Fault and Seismic Shaking

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross any known faults capable of ground rupture. Thus, there is no potential for ground rupture due to known active faulting.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is located in a seismically active area, thus, operation would potentially be subject to seismic ground shaking that could result in damage to structures or human injury or death. As described in greater detail in **Section 3.6.6.1.1** and identified in project measure PM GEO-1, to address potential risks associated with seismic hazards, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be designed and constructed in conformance with the MRDC**,** applicable portions of building and seismic code requirements including the most recent edition of the CBC, Metro's standard specifications, and industry standards. Consistent with MRDC requirements, Project structures would be designed to perform in accordance with the two-level seismic evaluation approach based on the MDE and ODE. At-grade and underground structures would be designed and would perform in accordance with federal, state, and local thresholds for seismicity.

Additionally, as further identified in PM GEO-1 and in compliance with the MRDC, a geotechnical investigation would be conducted, including detailed and site-specific evaluation of geotechnical hazards. The resulting final geotechnical engineering recommendations and any additional recommendations that come out of the review process would be incorporated into the final design plans consistent with standard practice to address any unstable geologic and related conditions present along the alignment. Compliance with these requirements and industry standards would ensure that strong seismic ground shaking would not cause potential substantial adverse effects, including the risk of loss, injury, or death.

Seismic-Related Ground Failure, Liquefaction, and Landslides

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is not within a liquefaction zone and is located in an area of generally flat topography

and on stable soils. Operations would not result in exposure to seismic-related ground failure, including liquefaction, or landslides. While these conditions are not expected to occur, as with Alternative 1, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would be designed in compliance with regulatory requirements, industry standards, and the MRDC, as identified in project measure PM GEO-1. Compliance with these regulatory and design requirements would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards.

Summary

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would be designed in compliance with regulatory requirements, industry standards, and the MRDC as described in PM GEO-1; compliance with these regulatory and design requirements would reduce impacts by ensuring that development is designed to withstand seismic or other geologic hazards. Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Construction Impacts

Base Alternative and Design Options

Rupture of a Known Earthquake Fault and Seismic Shaking

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not cross any known active faults.

Like Alternative 1, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option is located in a seismically active area, thus, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would potentially be subject to seismic ground shaking which could result in damage to structures and human injury. To address potential seismic hazards, Alternative 3 would be constructed in compliance with the MRCD as identified in project measure PM GEO-1 (see **Section 3.6.7**), applicable portions of building and seismic code requirements including the most recent edition of the CBC, Metro's standard specifications, and industry standards. These requirements include development of site-specific design parameters to account for seismic shaking. Adherence with the latest seismic safety parameters would substantially reduce potential structural damage and the risk to public safety from seismic events.

Seismic-Related Ground Failure, Liquefaction, and Landslides

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option is not within in a liquefaction zone and is located in an area of generally flat topography and on stable soils. Thus, construction would not result in exposure to seismic-related ground failure, including liquefaction, or landslides. While these conditions are not expected to occur, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade

Option would be designed and constructed in accordance with regulatory requirements, industry standards, and the MRDC, as described in project measure PM GEO-1. As identified in the PM GEO-1, in compliance with the MRDC, a geotechnical investigation would be performed during final design; the geotechnical investigation would include structural engineering standards and recommendations for temporary construction activities to address geological conditions, including recommendations on sloping or shoring to ensure stability of temporary excavations. The results of the geotechnical investigation will inform the design parameters for structural integrity and ground stability, and ensure impacts associated seismic-related ground failure, liquefaction, and landslides would be less than significant.

Summary

Compliance with requirements and industry standards as described in PM GEO-1 would ensure that the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from seismic hazards during construction. Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

3.6.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are not located on any known faults capable of ground rupture. Because there are no known active faults capable of ground rupture under the MSF site options, there is no potential for ground rupture due to known active faulting. The proposed MSF site options are not within a liquefaction zone and are located in an area of generally flat topography and on stable soils. Operations would not result in exposure to seismic-related ground failure, including liquefaction, or landslides.

The MSF site options would be designed in compliance with regulatory requirements, industry standards and the MRDC, as identified in project measure PM GEO-1, and would be the subject of a site-specific geotechnical evaluation during the final design phase that would include structural engineering recommendations. Compliance with these regulatory and design requirements would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards. Operation of the MSF site options would not cause substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure including liquefaction, and landslides. Therefore, the impact would be less than significant.

Construction Impacts

MSF Site Options and Design Options

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are not located on any known faults capable of ground rupture. Because there are no known active faults capable of ground rupture under the MSF site options, there is no potential for ground rupture due to known active faulting. The proposed MSF site options are not within a liquefaction zone and are located in an area of generally flat topography and on stable soils. Construction would not cause potential substantial adverse effects related to seismic-related ground failure, including liquefaction, or landslides.

The potential to experience substantial seismic ground shaking is a common hazard for projects in Southern California. The proposed MSF site options would be designed and constructed in compliance with regulatory requirements, industry standards and the MRDC, as identified in project measure PM GEO-1, and would be the subject of a site-specific geotechnical evaluation during the final design phase that would include specific structural engineering recommendations. Compliance with these regulatory and design requirements would reduce potential impacts by ensuring that development is designed to withstand seismic or other geologic hazards. The proposed MSF site options would not cause potential substantial adverse effects, including the risk of loss, injury, or death from known earthquake fault rupture, strong seismic ground shaking, seismic-related ground failure, including liquefaction, and landslides. Therefore, the impact would be less than significant.

3.6.6.2 Impact GEO-2: Soil Erosion

Impact GEO-2: Would a Build Alternative result in substantial soil erosion or the loss of topsoil?

3.6.6.2.1 Alternative 1 Washington

Operational Impacts

Alternative 1 is located in an urbanized area that is primarily impervious with no exposed soil. There are some areas of pervious surfaces associated with the Rio Hondo Spreading Grounds and San Gabriel River and to a minimal extent, landscaped medians and setbacks, parks, and residential yards within the DSA. Operation of Alternative 1 would not result in ground disturbance or an increase in the amount of exposed soil as compared to existing conditions. Furthermore, operations would not change the amount of erosion in the Rio Hondo and spreading grounds or the San Gabriel River compared to existing conditions. Alternative 1 would comply with post-construction measures in applicable NPDES permits and LID standards required by Los Angeles County and other local jurisdictions, which aim to minimize erosion impacts from development projects. NPDES Permits and LID standards are discussed in more detail in Appendix J of this EIR. Thus, operation of Alternative 1 would not result in substantial soil erosion or the loss of topsoil and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in ground disturbance or a change in the amount of exposed soil as compared to existing conditions. Furthermore, operations would not change the amount of erosion in the Rio Hondo and spreading grounds or the San Gabriel River as compared to existing conditions. Alternative 1 with the Atlantic/Pomona Station Option would comply with post-construction measures in applicable NPDES permits and LID standards required by Los Angeles County and other local jurisdictions, which aim to minimize erosion impacts from development projects. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in substantial soil erosion, or the loss of topsoil and impacts would be less than significant.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not result in ground disturbance or a change in the amount of exposed soil as compared to existing conditions. Furthermore, operations would not change the amount of erosion in the Rio Hondo and spreading grounds or the San Gabriel River as compared to existing conditions. Alternative 1 with the Montebello At-Grade Option would comply with post-construction measures in applicable NPDES permits and LID standards required by Los Angeles County and other local jurisdictions, which aim to minimize erosion impacts from development projects. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not result in substantial soil erosion or the loss of topsoil and impacts would be less than significant.

Construction Impacts

Ground disturbing activities occurring during construction would temporarily expose surficial soils to wind and water erosion, increasing the potential for soil erosion and loss of topsoil compared to existing conditions. During a storm event, soil erosion and loss of topsoil could occur at an accelerated rate. However, construction activities would be required to comply with existing regulatory requirements, including implementation of BMPs and other erosion and sedimentation control measures that would ensure grading, excavation, and other earth-moving activities would avoid a significant impact. For example, a SWPPP and erosion and sediment control plan would be prepared in compliance with applicable NPDES Permits. The implementation of erosion control BMPs would help to keep exposed soils in place and reduce the occurrence of substantial soil erosion or the loss of topsoil, including within the Rio Hondo Spreading Grounds and San Gabriel River have soft, dirt bottoms with more potential for erosion. Erosion control BMPs may include, but would not be limited to, use of detention ponds or infiltration pits to collect and reduce erosion, using barriers to slow the rate of runoff, or controlling the use of water irrigation. These and other potential BMPs are discussed and identified as project measure PM HWQ-2 in Section 3.9, Hydrology and Water Quality.

At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Construction of Alternative 1 would result in the localized and temporary movement of soils during construction; however, given compliance with regulatory requirements, substantial erosion of soils or loss of topsoil is not expected. Therefore, the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Because ground disturbing construction activities have the potential to increase erosion and loss of topsoil, a SWPPP and erosion and sediment control plan would be prepared in compliance with applicable NPDES Permits. Compliance with these requirements, including the implementation of erosion control BMPs, would help to keep exposed soils in place and reduce the occurrence of substantial soil erosion or the loss of topsoil as discussed further in Section 3.9, Hydrology and Water Quality. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Construction of Alternative 1 with the Atlantic/Pomona Station Option would result in the localized and temporary movement of soils during construction; however, given compliance with regulatory requirements, substantial erosion of soils or loss of topsoil is not expected. Therefore, the impact would be less than significant.

Montebello At-Grade Option

Because ground disturbing construction activities have the potential to increase erosion and loss of topsoil, a SWPPP and erosion and sediment control plan would be prepared in compliance with applicable NPDES Permits. Compliance with these requirements, including the implementation of erosion control BMPs, would help to keep exposed soils in place and reduce the occurrence of substantial soil erosion or the loss of topsoil as discussed further in Section 3.9, Hydrology and Water Quality. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Construction of Alternative 1 with the Montebello At-Grade Option would result in the localized and temporary movement of soils during construction; however, given compliance with regulatory requirements, substantial erosion of soils or loss of topsoil is not expected. Therefore, the impact would be less than significant.

3.6.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are in an urbanized area that is primarily impervious with no exposed soil. Operations would not result in ground disturbance or an increase in the amount of exposed soil as compared to existing conditions. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would comply with post-construction measures in applicable NPDES permits and LID standards required by Los Angeles County and other local jurisdictions, which aim to minimize erosion impacts from development projects. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial soil erosion or the loss of topsoil and impacts would be less than significant.

Construction Impacts

Base Alternative and Design Option

Ground disturbing activities occurring during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would temporarily expose surficial soils to wind and water erosion and have the potential to temporarily increase erosion and loss of topsoil. However, construction activities would be required to comply with existing regulatory requirements, including implementation of BMPs and other erosion and sedimentation control measures that would ensure grading, excavation, and other earth-moving activities would avoid a significant impact. Compliance with these requirements would help to keep exposed soils in place and reduce the occurrence of substantial soil erosion or the loss of topsoil as discussed further in Section 3.9, Hydrology and Water Quality. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Construction of the base Alternative 2 of Alternative 2 with the Atlantic/Pomona Station Option would result in the localized and temporary movement of soils during construction; however, given compliance with regulatory requirements, substantial erosion of soils or loss of topsoil is not expected. Therefore, the impact would be less than significant.

3.6.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located in an urbanized area that is primarily impervious with no exposed soil. Operations would not result in ground disturbance or a change in the amount of exposed soil as compared to existing conditions. The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would comply with post-construction measures in applicable NPDES permits and LID standards required by Los Angeles County and other local jurisdictions, which aim to minimize erosion impacts from development projects. Thus, operation of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial soil erosion or the loss of topsoil and impacts would be less than significant.

Construction Impacts

Base Alternative and Design Options

Ground disturbing activities occurring during construction of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would temporarily expose surficial soils to wind and water erosion and have the potential to temporarily increase erosion and loss of topsoil. However, construction activities would be required to comply with existing regulatory requirements, including implementation of BMPs and other erosion and sedimentation control measures that would ensure grading, excavation, and other earth-moving activities would avoid a significant impact. Compliance with these requirements would help to keep exposed soils in place and reduce the occurrence of substantial soil erosion or the loss of topsoil as discussed further in Section 3.9, Hydrology and Water Quality. At the close of construction, areas of exposed soil that

were previously paved would be restored to a paved condition. Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in the localized and temporary movement of soils during construction; however, given compliance with regulatory requirements, substantial erosion of soils or loss of topsoil is not expected. Therefore, the impact would be less than significant.

3.6.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Options

The Commerce MSF site option, Montebello MSF site option, and the Montebello At-Grade Option are in an urbanized area that is primarily impervious with no exposed soil. Operation of the proposed MSF site options would not result in ground disturbance or a change in the amount of exposed soil as compared to existing conditions. The MSF site options would comply with post-construction measures in applicable NPDES permits and LID standards required by Los Angeles County and the cities of Commerce and Montebello that aim to minimize erosion impacts from development projects. Thus, operation of the proposed MSF site options would not result in substantial soil erosion or the loss of topsoil and impacts would be less than significant.

Construction Impacts

MSF Site Options and Design Options

Ground disturbing activities occurring during construction would temporarily expose surficial soils to wind and water erosion and have the potential to temporarily increase erosion and loss of topsoil. However, construction activities would be required to comply with existing regulatory requirements, including implementation of BMPs and other erosion and sedimentation control measures that would ensure grading, excavation, and other earth-moving activities would avoid a significant impact. Compliance with these requirements would help to keep exposed soils in place and reduce the occurrence of substantial soil erosion or the loss of topsoil as discussed further in Section 3.9, Hydrology and Water Quality. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello At-Grade Option would result in the localized and temporary movement of soils during construction; however, given compliance with regulatory requirements, substantial erosion of soils or loss of topsoil is not expected. Therefore, the impact would be less than significant.

3.6.6.3 Impact GEO-3: Soil Stability

Impact GEO-3: Would a Build Alternative be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

3.6.6.3.1 Alternative 1 Washington

Operational Impacts

The underground and aerial segments of Alternative 1 are located on stable soils and not in an area mapped to have the potential to experience liquefaction and settlement. Operations of the underground and aerial segments would not occur on a geologic unit or soil that is unstable, or that would become unstable as a result of Alternative 1.

Conversely, the at-grade segment of Alternative 1 is underlain by young alluvial fan deposits from South Bluff Road to the eastern terminus of the alignment. These soils are potentially loose and compressible and thus have the potential to settle due to traffic loading from the at-grade track, which could affect the overlying operation of the track. Further, this segment of the alignment is within a mapped liquefiable zone. Thus, the at-grade alignment, the proposed stations at Rosemead Boulevard, Norwalk Boulevard, and Lambert Road, and the associated parking facilities have the potential to be adversely affected by liquefaction and seismically-induced settlement. Additionally, existing lateral spread landslide potential may exist nearby the Rio Hondo and San Gabriel River due to the liquefiable soils and gentle slope topography. Ground shaking leading to liquefaction of saturated soil could result in lateral spreading where the soil undergoes a temporary loss of strength, and if the liquefied soil is not contained laterally, it may result in deformation or translation of the slope.

Structural engineering standards to address geological conditions are part of standard construction requirements and standard construction practices. Alternative 1 would be designed in accordance with MRDC Section 5, Structural; Metro's Supplemental Seismic Design Criteria (2017); and the California Seismic Hazards Mapping Act. Further, as identified in PM GEO-1, Alternative 1 would be designed in accordance with recommendations developed in a detailed geotechnical report prepared during final design, which would provide site-specific information pertaining to the depths and areal extents of liquefaction, lateral spread, and settlement. During the design process, if it is determined that these conditions identified in the geotechnical report could result in an unacceptable soil or structural response (to be defined during final design and dependent on the type of structure), the resulting final geotechnical engineering would include recommendations that would be incorporated into the final design plans consistent with standard practice to address any unstable geologic and related conditions present along the alignment. This may include deep foundations and/or ground improvements such as dynamic compaction, stone columns, jet grouting, and cement deep soil mixing and compaction grouting that would be implemented consistent with the design standards provided in **Section 3.6.2.4**.

Alternative 1 would be designed in compliance with MRDC, the California Seismic Hazards Mapping Act, industry standards and recommendations contained in the design level geotechnical report as described in PM GEO-1. Given compliance with these regulatory and design requirements, operation of Alternative 1 would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Design Options

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option portion of the alignment is located on stable soils and is not within a liquefaction zone. Further, as described in PM GEO-1, Alternative 1 with the Atlantic/Pomona

Station Option would be designed in compliance with MRDC, the California Seismic Hazards Mapping Act, industry standards and recommendations contained in the design level geotechnical report. Given compliance with these regulatory and design requirements, operation of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Montebello At-Grade Option

The Montebello At-Grade Option portion of the alignment is located on stable soils and is not within a liquefaction zone. Further, as described in PM GEO-1, Alternative 1 with the Montebello At-Grade Option would be designed in compliance with MRDC, the California Seismic Hazards Mapping Act, industry standards and recommendations contained in the design level geotechnical report. Given compliance with these regulatory and design requirements, operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Construction Impacts

Construction activities for Alternative 1, such as ground excavation, tunneling, and dewatering, could affect soil stability leading to ground movements (both lateral movements and settlements) or subsidence. Excavation and tunneling could impact soil stability by reducing lateral support for soil that is not excavated. Dewatering could affect soil stability by causing subsurface soil compaction and, consequently, sinking or settling of the ground above. Excavation for construction of underground structures, such as station boxes, tunnels, and tunnel portals would be reinforced by shoring systems to protect abutting buildings, utilities and other infrastructure. Tunneling using a TBM would result in ground volume loss and potential ground movements. Dewatering, when performed to create a dry work condition for construction of the underground structures, would result in compaction or consolidation of the subsurface soils and thus result in surface settlements. Without compliance with regulatory and design requirements, these activities described above could result in subsidence or collapse of the ground.

However, as with impact GEO-1: Exposure to Seismic Hazards, discussed under **Section 3.6.6.1** and identified in GEO PM-1, Alternative 1 would be designed in accordance with MRDC Section 5, Structural; Metro's SDC (Metro 2017); and the California Seismic Hazards Mapping Act. These design standards dictate that during final design, a geotechnical investigation be conducted, including detailed evaluation of hazards. The investigation would be part of Metro's comprehensive geologic/geotechnical field investigation program that is being currently developed and would include a detailed evaluation of these hazards and would also include structural engineering standards and recommendations for temporary construction activities as well as project design and engineering to address geological conditions. The design-level geotechnical investigations and evaluations would provide information pertaining to the depths and areal extents of liquefaction, lateral spread, and seismically induced settlement. During the design process, if it is determined that these hazards could result in an unacceptable soil or structural response (to be defined during final design and dependent on the type of structure), the resulting final geotechnical engineering would include recommendations that would be incorporated into the Project's final design plans consistent with standard practice to address any unstable geologic and related conditions present along the alignment during construction. This would include recommendations for foundation construction, groundwater management (groundwater cutoff and/or dewatering), excavation and shoring, consistent with the design standards provided in **Section 3.6.2**.

Alternative 1 would be designed and constructed in compliance with regulatory requirements and the MRDC as identified in PM GEO-1 and as discussed under Impact GEO-1 and in **Section 3.6.2.4**. Given compliance with these regulatory and design requirements, construction of Alternative 1 would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would not have soil stability risks that differ from the base Alternative 1. The Atlantic/Pomona Station Option would be designed and constructed in compliance with regulatory requirements, the MRDC, and recommendations contained in the design level geotechnical report as described for the base Alternative 1 and identified in PM GEO-1. Given compliance with these regulatory and design requirements, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would not have soil stability risks that differ from the base Alternative 1. Alternative 1 with the Montebello At-Grade Option would be designed and constructed in compliance with regulatory requirements, the MRDC, and recommendations contained in the design level geotechnical report as described for the base Alternative 1 and identified in PM GEO-1. Given compliance with these regulatory and design requirements, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

3.6.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be located on stable soils where no liquefaction zones are present. Operations would not occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Further, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed in compliance with MRDC, the California Seismic Hazards Mapping Act, industry standards and recommendations contained in the design level geotechnical report as described in **Section 3.6.6.3.1** and identified in PM GEO-1. Given compliance with these regulatory and design requirements, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Construction Impacts

Base Alternative and Design Option

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are located on stable soils and not present in a liquefaction zone. However, construction activities, such as ground excavation, tunneling, and dewatering, could affect soil stability leading to ground movements (both lateral movements and settlements) or subsidence. Excavation and tunneling could impact soil stability by reducing lateral support for soil that is not excavated. Dewatering could affect soil stability by causing subsurface soil compaction and, consequently, sinking or settling of the ground above. Excavation for construction of underground structures, such as station boxes, tunnels, and tunnel portals would be reinforced by shoring systems to protect abutting buildings, utilities and other infrastructure. Tunneling using a TBM would result in ground volume loss and potential ground movements. Dewatering, when performed to create a dry work condition for construction of the underground structures, would result in compaction or consolidation of the subsurface soils and thus result in surface settlements. Without compliance with regulatory and design requirements, these activities described above could result in subsidence or collapse of the ground.

However, as described in **Section 3.6.6.3.1** and identified in PM GEO-1, the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would be designed and constructed in compliance with regulatory requirements, the MRDC, and recommendations contained in the design level geotechnical report. This would include incorporating recommendations on engineering and design considerations identified in the geotechnical report to ensure soil stability during construction. Thus, given compliance with design requirements as identified in PM GEO-1, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

3.6.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be located on stable soils where no liquefaction zones are present. Operations would not occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be designed in compliance with MRDC, the California Seismic Hazards Mapping Act, industry standards and recommendations contained in the design level geotechnical report as described in **Section 3.6.6.3.1** and identified in PM GEO-1. Given compliance with these regulatory and design requirements, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Construction Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located on stable soils and not in a liquefaction zone. However, construction activities, such as ground excavation, tunneling, and dewatering, could affect soil stability leading to ground movements (both lateral movements and settlements) or subsidence. Excavation and tunneling could impact soil stability by reducing lateral support for soil that is not excavated. Dewatering could affect soil stability by causing subsurface soil compaction and, consequently, sinking or settling of the ground above. Excavation for construction of underground structures, such as station boxes, tunnels, and tunnel portals would be reinforced by shoring systems to protect abutting buildings, utilities and other infrastructure. Tunneling using a TBM would result in ground volume loss and potential ground movements. Dewatering, when performed to create a dry work condition for construction of the underground structures, would result in compaction or consolidation of the subsurface soils and thus result in surface settlements. Without compliance with regulatory and design requirements, these activities described above could result in subsidence or collapse of the ground.

However, as described in **Section 3.6.6.3.1** and identified in PM GEO-1, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be designed and constructed in compliance with regulatory requirements, the MRDC, and recommendations contained in the design level geotechnical report. This would include incorporating recommendations on engineering and design considerations identified in the geotechnical report to ensure soil stability during construction. Thus, given compliance with design requirements as identified in PM GEO-1, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

3.6.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, and the Montebello MSF At-Grade Option would be located on stable soils where no liquefaction zones are present. Operations would not occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the MSF site options, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. As with the Build Alternatives, the MSF site options would be designed in compliance with regulatory requirements, the MRDC, and recommendations contained in the design level geotechnical report, including recommendations on engineering and design considerations as described in in **Section 3.6.6.3.1** and identified in PM GEO-1. Thus, operation of the MSF site options would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are located on stable soil and not within a mapped liquefiable zone. Construction would not occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the MSF site options, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. The MSF site options would be designed and constructed in compliance with regulatory requirements, the MRDC, and recommendations contained in the design level geotechnical report as described in **Section 3.6.6.3.1** and identified in PM GEO-1. This includes incorporating recommendations on engineering and design considerations in the geotechnical report to ensure soil stability during construction. Thus, construction of the MSF site options would have less than significant impacts related to soil stability that could potentially result in landslides, lateral spreading, subsidence, liquefaction, or collapse.

3.6.6.4 Impact GEO-4: Expansive Soils

Impact GEO-4: Would a Build Alternative be located on expansive soil, as defined in Section 1803.5.3 of the CBC, creating substantial direct or indirect risks to life or property?

3.6.6.4.1 Alternative 1 Washington

Operational and Construction Impacts

Clay-rich soils may exist locally within alluvial soils present along Alternative 1 that could swell and shrink with wetting and drying. The change in soil volume is capable of exerting enough force on structures to damage foundations, structures, and underground utilities. Damage can also occur as these soils dry out and contract. Expansive soils could have an impact on project components, including the stations, guideway, tunnel, and other fixed structures; expansive soils do not have distinct construction or operational impacts and are addressed through project design. Alternative 1 would be designed and constructed in accordance with the MRDC, Los Angeles County and other applicable local building codes, CBC, and other applicable design specifications as described in **Section 3.6.2** and identified in PM GEO-1. This includes compliance with MRDC Section 5.6.2 that requires preparation of a geotechnical investigation (MRDC Section 5.6.2) during final design. This design-level geotechnical investigation must include a detailed evaluation of hazards and provide information pertaining to the depths and areal extents of liquefaction, soil expansiveness, lateral spread, and seismically induced settlement. This includes obtaining soil samples and performing tests to assess the potentials for corrosion, consolidation, expansion and collapse. Based on the investigation and test results, design recommendations would address any of these issues, if they exist. Alternative 1 would be designed and constructed in accordance with the recommendations contained in the final design geotechnical investigation, including remediation of expansive soils if required. Expansive soil remediation could include soil removal and replacement, chemical treatment, or structural enhancements. Compliance with regulatory requirements, including compliance with the MRDC and adherence to recommendations identified in the geotechnical investigation as set forth in PM GEO-1, would ensure that construction and operation of Alternative 1 would not create a substantial direct or indirect risk associated with being located on expansive soils. Compliance with

these regulatory and design requirements would ensure that impacts associated with expansive soils would be less than significant.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would not have risks associated with expansive soils that differ from the base Alternative 1. The Atlantic/Pomona Station Option would be designed and constructed in compliance with regulatory requirements discussed in **Section 3.6.2**, including compliance with the MRDC and adherence to recommendations identified in the geotechnical investigation as set forth in PM GEO-1. Compliance with these regulatory and design requirements would ensure that operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would not create a substantial direct or indirect risk associated with being located on expansive soil and the impact would be less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would not have risks associated with expansive soils that differ from the base Alternative 1. Alternative 1 with the Montebello At-Grade Option would be designed and constructed in compliance with regulatory requirements as discussed in **Section 3.6.2**, including compliance with the MRDC and adherence to recommendations identified in the geotechnical investigation as set forth in PM GEO-1. Compliance with these regulatory and design requirements would ensure that operation and construction of Alternative 1 with the Montebello At-Grade Option would not create a substantial direct or indirect risk associated with being located on expansive soil and the impact would be less than significant.

3.6.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational and Construction Impacts

Base Alternative and Design Option

Clay-rich soils that could swell and shrink with wetting and drying may exist locally within alluvial soils present along the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. The change in soil volume is capable of exerting enough force on structures to damage foundations, structures, and underground utilities. Damage can also occur as these soils dry out and contract. Expansive soils could have an impact on project components, including the stations, guideway, tunnel, and other fixed structures; expansive soils do not have distinct construction or operational impacts and are addressed through project design. As with Alternative 1 discussed in **Section 3.6.6.4.1**, the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed and constructed in compliance with regulatory requirements described in **Section 3.6.2** and identified in PM GEO-1. This includes the MRDC and recommendations contained in the design level geotechnical report. Compliance with these regulatory and design requirements would ensure that operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not create a substantial direct or indirect risk associated with being located on expansive soil and the impact would be less than significant.

3.6.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Options

Clay-rich soils that could swell and shrink with wetting and drying may exist locally within alluvial soils present along the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. The change in soil volume is capable of exerting enough force on structures to damage foundations, structures, and underground utilities. Damage can also occur as these soils dry out and contract. Expansive soils could have an impact on project components, including the stations, guideway, tunnel, and other fixed structures; expansive soils do not have distinct construction or operational impacts and are addressed through project design. As with Alternative 1 discussed in **Section 3.6.6.4.1**, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be designed and constructed in compliance with regulatory requirements described in **Section 3.6.2** and identified in PM GEO-1. This includes the MRDC and recommendations contained in the design level geotechnical report as described in PM GEO-1. Compliance with these regulatory and design requirements would ensure that operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not create a substantial direct or indirect risk associated with being located on expansive soil and the impact would be less than significant impact.

3.6.6.4.4 Maintenance and Storage Facilities

Operational and Construction Impacts

MSF Site Options and Design Option

Clay-rich soils that could swell and shrink with wetting and drying may exist locally within the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option. The placement of the MSF structures or other facilities on such soils could result in structural damage or distress. The MSF site options would be designed and constructed in compliance with regulatory requirements described in **Section 3.6.2** and identified in PM GEO-1. This includes the MRDC and recommendations contained in the design level geotechnical report. Compliance with these requirements would ensure that operation and construction of the MSF site options would not create a substantial direct or indirect risk associated with being located on expansive soil and the impact would be less than significant impact.

3.6.6.5 Impact GEO-5: Paleontological Resources

Impact GEO-5: Would a Build Alternative directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

3.6.6.5.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would consist of LRT and would not involve any additional ground disturbance that could have a substantial adverse effect on a paleontological resources. Therefore, no impacts would occur.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would consist of LRT and would not involve any additional ground disturbance that could have a substantial adverse effect on a paleontological resources. Therefore, no impacts would occur.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At/Grade Option would consist of LRT and would not involve any additional ground disturbance that could have a substantial adverse effect on a paleontological resources. Therefore, no impacts would occur.

Construction Impacts

As described in **Section 3.6.5.3**, while few fossil localities have been identified in the GSA, this is not an indication that fossils are rare and several soil types underlying Alternative 1 have a high paleontological potential. Most of Alternative 1 is located in area of high sensitivity for paleontological resources, which means that paleontological resources are likely to be present, and loss of paleontological resources could occur during construction. Construction of Alternative 1 where resources are likely to be present would result in a direct impact to paleontological resources from soil disturbance including excavation, tunneling, and construction of underground stations. Additionally, the aerial and at-grade features would be located in areas that have a high sensitivity for paleontological resources, including undisturbed sediments near the surface. Thus, there would also be direct impacts to paleontological resources associated with installation of supports for the aerial station and aerial guideways, ground disturbance for construction of the at-grade stations and installation of posts to support catenary systems for the at-grade alignment. The direct impacts to paleontological resources would include the loss of significant paleontological specimens and their pertinent stratigraphic and geographic data and would be significant without mitigation measures.

Implementation of MM GEO-1 through MM GEO-4 would reduce the potential impact on paleontological resources from some manual and mechanical construction activities. MM GEO-1 would provide for a qualified paleontologist and paleontological monitor to monitor excavation areas where paleontological resources are likely to occur during construction activities. MM GEO-2 would permit sampling, empower the paleontologist and monitor to temporarily halt construction or modify construction techniques if resources are discovered, and record and preserve any recovered specimens. MM GEO-3 and MM GEO-4 require that any recovered specimens will be prepared, catalogued, and submitted to a professional accredited museum repository. Together, these mitigation measures would reduce the potential impact from construction activities where monitoring is feasible.

Monitoring is feasible during excavation where the excavation site is reasonably accessible and visible, where soil spoils can be reasonably observed, and where construction methods do not completely destroy any potential specimen. Because of the nature of how the TBM operates, monitoring of tunnel boring is not feasible. Consequently, while any ground disturbance in previously undisturbed sediments could encounter resources, the primary construction impact would result from boring the underground section from South La Verne Avenue to Smithway Street.

Given the boring technologies employed in recent Metro projects, there is no known way to monitor or mitigate boring impacts on paleontological resources because the TBM grinds the material as it moves forward, making it impossible to preserve fossils or bones. There is no fossil record for the area in which the TBM would operate that would provide a basis for determining how many paleontological resources could be impacted or the magnitude of the impact. The conclusion that there would be a significant impact is based on the sediment type alone and evidence that this sediment type has a high sensitivity for paleontological resources. Thus, construction using TBM would result in significant direct impacts on paleontological resources.

As described above, ground disturbance associated with construction of Alternative 1 would result in significant impacts on paleontological resources. MM GEO-1 through MM GEO-4 as identified in **Section 3.6.7** would be implemented to reduce impacts; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would have similar paleontological impacts as the base Alternative 1. The Atlantic/Pomona Station Option is located within old alluvial fan deposits which have a high sensitivity for paleontological resources, including undisturbed sediments near the surface. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option could disturb significant paleontological resources. Significant impacts on paleontological resources would occur. MM GEO-1 through MM GEO-4 which require monitoring for resources and cataloging any finds as described under the base Alternative 1 above and identified in **Section 3.6.7** would be implemented to reduce impacts; however, because monitoring TBM operations is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would have similar paleontological impacts as the base Alternative 1. The Montebello At-Grade Option is located within old alluvial fan deposits which have a high sensitivity for paleontological resources, including undisturbed sediments near the surface. Therefore, construction of Alternative 1 with an at-grade guideway and an at-grade station at this location could disturb significant paleontological resources. Significant impacts on paleontological resources would occur. MM GEO-1 through MM GEO-4 which require monitoring for resources and cataloging any finds as described under the base Alternative 1 above and identified in **Section 3.6.7** would be implemented to reduce impacts; however, because monitoring TBM operations is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

3.6.6.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would consist of LRT and would not involve any additional ground-disturbance that could have a substantial adverse effect on paleontological resources. Therefore, no impacts would occur.

Construction Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option are located in area of high sensitivity for paleontological resources and loss of paleontological resources would occur during construction. Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in an impact to paleontological resources from excavation and soil disturbance where resources are likely to be present. Operation of the TBM and construction requiring excavation or other ground disturbance would result in direct impacts to paleontological resources. Implementation of MM GEO-1 through MM GEO-4 which require monitoring for resources and cataloging any finds as described in **Section 3.6.6.5.1** and identified in **Section 3.6.7** would reduce the potential impact on paleontological resources from some manual and mechanical construction activities. Together, these mitigation measures would reduce the potential impact from construction activities where monitoring is feasible.

Monitoring is feasible during excavation where the excavation site is reasonably accessible and visible, where soil spoils can be reasonably observed, and where construction methods do not completely destroy any potential specimen. Because of the nature of how the TBM operates, monitoring of tunnel boring is not feasible. Consequently, while any ground disturbance in previously undisturbed sediments could encounter resources, the primary construction impact would result from operation of the TBM to bore the underground section from South La Verne Avenue to Smithway Street. There is no known way to monitor or mitigate boring impacts on paleontological resources because the TBM grinds the material as it moves forward, making it impossible to preserve fossils or bones. Because tunnel boring would occur in sediments with a high sensitivity for paleontological resources, construction using TBM would result in significant direct impacts on paleontological resources.

As described above, ground disturbance associated with construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in significant impacts on paleontological resources. MM GEO-1 through MM GEO-4 as described in **Section 3.6.6.5.1** and identified in **Section 3.6.7** would be implemented to reduce impacts; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

3.6.6.5.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would consist of LRT and would not involve any additional ground-disturbance that could have a substantial adverse effect on paleontological resources. Therefore, no impacts would occur.

Construction Impacts

Base Alternative and Design Options

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located in an area of high sensitivity for paleontological resources and loss of paleontological resources would occur during construction.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option where resources are likely to be present would result in a direct impact to paleontological resources from soil disturbance including excavation, tunneling, and construction of underground stations. Additionally, the aerial features would be located in areas that have a high sensitivity for paleontological resources, including undisturbed sediments near the surface. Thus, there would be direct impacts to paleontological resources associated with installation of supports for the aerial station and aerial guideway. Implementation of MM GEO-1 through MM GEO-4 which require monitoring for resources and cataloging any finds as described in **Section 3.6.6.5.1** and identified in **Section 3.6.7** would reduce the potential impact on paleontological resources from some manual and mechanical construction activities.

Monitoring is feasible during excavation where the excavation site is reasonably accessible and visible, where soil spoils can be reasonably observed, and where construction methods do not completely destroy any potential specimen. Because of the nature of how the TBM operates, monitoring of tunnel boring is not feasible. Consequently, while any ground disturbance in previously undisturbed sediments could encounter resources, the primary construction impact would result from operation of the TBM to bore the underground section from South La Verne Avenue to Smithway Street.

Given the boring technologies employed in recent Metro projects, there is no known way to monitor or mitigate boring impacts on paleontological resources because the TBM grinds the material as it moves forward, making it impossible to preserve fossils or bones. There is no fossil record for the area in which the TBM would operate that would provide a basis for determining how many paleontological resources could be impacted or the magnitude of the impact. The conclusion that there would be a significant impact is based on the sediment type alone and evidence that this sediment type has a high sensitivity for paleontological resources. Thus, construction using TBM would result in significant direct impacts on paleontological resources.

As described above, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in significant impacts on paleontological resources. MM GEO-1 through MM GEO-4 as discussed in **Section 3.6.7** would be

implemented to reduce impacts; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

3.6.6.5.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are within sediments mapped as older alluvial fan deposits. However, operations would not involve additional ground disturbance that could result in direct or indirect destruction of paleontological resources. Therefore, no impacts would occur.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello site option, and the Montebello MSF At-Grade Option are within sediments mapped as older alluvial fan deposits which have a high potential for paleontological resources, including undisturbed sediments near the surface. Construction would have a significant impact on paleontological resources. Implementation of MM GEO-1 through MM GEO-4 which require monitoring for resources and cataloging any finds as described in **Section 3.6.6.5.1** and identified in **Section 3.6.7** would reduce the potential impact on paleontological resources from some manual and mechanical construction activities. Together, these mitigation measures would reduce the potential impact from construction activities at the MSF site options where monitoring of ground disturbance activities is feasible. Implementation of MM GEO-1 through MM GEO-4 as discussed in **Section 3.6.7** would reduce impacts to less than significant.

3.6.7 Project Measures and Mitigation Measures

3.6.7.1 Project Measures

Project measure are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option.

PM GEO-1: The Build Alternatives shall be designed and constructed per the 2018 Metro Rail Design Criteria (MRDC). The MRDC incorporates various design specifications from the Federal Highway Administration (FHWA), California Department of Transportation (Caltrans), the State of California, the County of Los Angeles, and other sources by reference. Key compliance sections of the MRDC relative to geology and soils are Section 5.3, Section 5.4, Section 5.6, and MRDC Section 5 Appendix, Metro Supplemental Seismic Design Criteria. Section 5.6 of the MRDC provides detailed requirements for planning and conducting a geotechnical investigation, geotechnical design methodologies, and reporting. In addition, Caltrans and the County of Los Angeles Building Code (based on the California Building Code [CBC]) have

independent design criteria for bridges and aerial structures (Caltrans) and building structures (County of Los Angeles) that are also required. In accordance with the MRDC, geotechnical report recommendations shall be incorporated into the project plans and specifications. These recommendations shall be a product of final design and shall address potential subsurface hazards. Without these report recommendations, the project plans and specifications shall not be approved and the Build Alternatives will not be allowed to advance into the final design stage or into construction.

3.6.7.2 Mitigation Measures

As identified in **Section 3.6.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on geology and soils under Impact GEO-1 (Exposure to Seismic Hazards), Impact GEO-2 (Soil Erosion), Impact GEO-3 (Soil Stability), and Impact GEO-4 (Expansive Soils). The Build Alternatives and Build Alternatives with design option(s) would have a significant impact on paleontological resources under Impact GEO-5 (Paleontological Resources). Mitigation measures to reduce the impacts are presented herein. MM-GEO-1 through MM GEO 4 apply to all Build Alternatives and Build Alternatives with the design option(s). However, impacts from boring cannot be mitigated. Therefore, impacts on paleontological resources would be significant and unavoidable.

Following the mitigation measures, **Table 3.6-1** identifies applicable measures and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM GEO-1: Metro shall retain a qualified paleontologist and a qualified paleontological monitor to carry out the following tasks: The qualified paleontologist shall supervise the qualified paleontological monitor to monitor excavation in areas identified as likely to contain paleontological resources. These areas are defined as all areas within the Older alluvium in the project site where planned excavation will exceed three feet below the surface or three feet into undisturbed sediments and all areas within the Younger alluvium in the project site where planned excavation will exceed 10 feet below the surface or 10 feet into undisturbed sediments. The qualified paleontologist shall retain the option to reduce monitoring if, in his or her professional opinion, sediments being monitored are previously disturbed. Monitoring may also be reduced if the potentially fossiliferous units are determined to have low potential to contain fossil resources.

MM GEO-2: Metro shall make sure that the qualified paleontologist and the qualified paleontological monitor are equipped to salvage fossils and samples of sediment as they are unearthed to avoid construction delays and empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Since Older alluvium yields small fossil specimens (microvertebrate fossils) likely to go unnoticed during typical large-scale paleontological monitoring, matrix samples shall be collected and processed to determine the potential for small fossils to be recovered prior to substantial excavations in those sediments. If this sampling indicates that these units do possess small fossils, a matrix sample of 6,000 pounds shall be collected at various locations, to be specified by the paleontologist, within the construction area. These matrix samples shall also be processed for small fossils.

MM GEO-3: The qualified paleontologist shall make certain that recovered specimens be prepared to a point of identification and permanent preservation, including washing of sediments to recover small invertebrate and vertebrate fossils.

MM GEO-4: Metro shall make certain that specimens shall be curated into a professional accredited museum repository with permanent retrievable storage. A report of findings, with an appended itemized inventory of specimens, shall be prepared. The report and inventory, when submitted to the professional accredited museum repository, shall signify completion of the program to mitigate impacts to paleontological resources

3.6.8 Significance After Mitigation

As identified in **Table 3.6-1**, **with implementation of mitigation measures MM GEO-1 through MM GEO-4 impacts on Paleontological Resources (Impact GEO-5) would be reduced; however impacts on paleontological resources would remain significant and unavoidable** for all Build Alternatives and the Build Alternatives with the design option(s) and the MSF site options.

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Table 3.6-1. Summary of Impact Determinations for Build Alternatives and MSF Options

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
GEO-1 Exposure to Seismic Hazards	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
GEO-2 Soil Erosion	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
GEO-3 Soil Stability	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
GEO-4 Expansive Soils	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
GEO-5 Paleonto-logical Resources	Applicable Mitigation	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1	MM GEO-1
		MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2	MM GEO-2
		MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3	MM GEO-3
		MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4	MM GEO-4
	Impacts After Mitigation	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU	SU

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated)
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.7 Greenhouse Gas Emissions

3.7.1 Introduction

This section discusses the Project setting in relation to greenhouse gas (GHG) emissions. It describes existing conditions, current regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options. Information in this section is based on the Eastside Transit Corridor Phase 2 Climate Change and Greenhouse Gases Impacts Report (Appendix H). The study area for climate change and greenhouse gas emissions is the GSA.

3.7.2 Regulatory Framework

3.7.2.1 Federal

A 2007 United States Supreme Court ruling (*Massachusetts et al. v. Environmental Protection Agency et al.* [U.S. Supreme Court No. 05–1120] found that GHGs are air pollutants under the Clean Air Act and can be regulated by the U.S. Environmental Protection Agency (USEPA). Following this decision, the USEPA published its endangerment finding in 2009 which found that six GHGs, taken in combination, endanger both the public health and welfare of current and future generations. The endangerment finding did not impose any requirements on industry or other entities, but it was a prerequisite for implementing GHG emissions standards for vehicles.

3.7.2.1.1 Greenhouse Gas and Fuel Efficiency Standards for Clean Vehicles

The USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) has finalized several joint rules to establish programs designed to reduce GHG emission and to improve fuel economy for cars and trucks.

Passenger Cars and Light-Duty Trucks

In April 2010, the USEPA and NHTSA finalized standards for new (model year 2012 through 2016) passenger cars, light-duty trucks, and medium-duty passenger vehicles and in August 2012, issued joint Final Rule for national program standards for future light-duty vehicles (model year 2017 through 2025). In August 2018, the USEPA and NHTSA proposed the "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks" (SAFE Vehicles Rules) to amend existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide (CO_2) emissions standards for light-duty vehicles and establish new standards covering model years 2021–2026. On April 30, 2020, the SAFE standards for model year 2021–2026 light-duty vehicles were made final.

The USEPA also proposed to withdraw the waiver previously provided to California under Section 209 of the Clean Air Art for the state's GHG and Zero Emission Vehicle (ZEV) programs by setting nationally applicable fuel economy standards that would preempt those State programs. On September 27, 2019, the USEPA and NHTSA published its Final Rule to revoke California's waiver and establish the federal preemption in the FR (84 FR 51310). California and a coalition of other states has sued both the USEPA and the NHTSA, challenging their decisions that would block states from setting

tougher automobile emissions standards. Litigation was held in abeyance pending review under Presidential Executive Order 13990, Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. In accordance with this order, on April 22, 2021, the NHTSA proposed to repeal the SAFE vehicle rule preemption on state fuel efficiency and GHG standards (86 FR 25980), and on August 10, 2021, new CAFE standards were proposed for 2024-2026 model year light-duty vehicles (86 FR 43726). On March 14, 2022, the USEPA issued a notice of decision rescinding the 2019 action withdrawing California's CAA waiver of preemption for GHG emission standards and ZEV, and on March 28, 2022, proposed an updated clean truck rule to reduce national air pollution from highway heavy-duty vehicles and engines, including ozone, particulate matter, and GHGs (87 FR 14332; 87 FR 17414).

Medium and Heavy-Duty Engines and Vehicles

In October 2010, the USEPA and NHTSA announced a program to reduce GHG emissions and to improve fuel efficiency for medium- and heavy-duty vehicles (model years 2014 through 2018). This program was adopted on August 9, 2011. In October 2016, phase 2 GHG and fuel efficiency standards for medium- and heavy-duty vehicles were adopted.

Fuel Efficiency Standards for Construction Equipment

The regulations, contained in 40 Code of Federal Regulations (CFR) Parts 1039, 1065, and 1068, set fuel efficiency standards for nonroad diesel engines that are used in construction equipment. In 2011, USEPA adopted a comprehensive national program to reduce emissions from nonroad diesel engines. Since 2015, all newly manufactured mobile nonroad diesel engines have been required to meet the strictest Tier 4 emission standards of this program. To meet these Tier 4 emission standards, engine manufacturers have produced new engines with advanced emission control technologies.

3.7.2.2 State

Multiple state laws, regulations, and programs within the state of California govern GHG emissions, primarily through regulating emission standards for vehicles.

3.7.2.2.1 California Advanced Clean Cars Program

California Assembly Bill (AB) 1493 required the California Air Resources Board (CARB) to develop and adopt GHG emission standards for automobiles. In 2012, CARB, in coordination with the USEPA and NHTSA, developed a set of regulations that are collectively known as the Advanced Clean Cars Program. The Low-Emission Vehicle III Regulation for GHG (LEV III GHG) builds upon AB 1493, which established GHG emission standards for 2009 through 2016 model year passenger vehicles, by requiring further reductions in passenger vehicle GHG emissions for 2017 and subsequent model years. The LEV III GHG regulation is projected to reduce GHG emissions by 40 percent in 2025 when compared to 2012 model year vehicles. The ZEV regulation also requires auto manufacturers to offer for sale specific numbers of full battery-electric, hydrogen fuel cell, and plug-in hybrid-electric vehicles. Approximately 8 percent of California new vehicle sales in 2025 are predicted to be ZEVs and plug-in hybrids (CARB 2019a).

3.7.2.2.2 California Advanced Clean Cars II Program

On September 16, 2020, CARB held the first public workshop to solicit input on the development of the Advanced Clean Cars II (ACC II) regulations. These regulations will seek to reduce criteria and GHG emissions from new light- and medium-duty vehicles beyond the 2025 model year and increase the number of zero emission vehicles (ZEV) for sale. The proposed Advanced Clean Cars II regulations establish the next set of LEV and ZEV requirements. The regulations are scheduled to go to the CARB Board in summer of 2022.

3.7.2.2.3 California Executive Order S-3-05, B-30-15, and B-55-18

California Executive Order S-3-05 (signed by Governor Schwarzenegger on June 1, 2005) and California Executive Order B-30-15 (signed by Governor Brown in 2015) established GHG emission reduction targets for California by four milestone timeframes (2010, 2020, 2030, and 2050.) The state has been successful in meeting the first two milestones (CARB 2018b, CARB 2021a).

California Executive Order B-55-18 (signed by Governor Brown. on September 10, 2018) established a directive for California to achieve carbon neutrality no later than 2045, and to achieve and maintain net negative emissions thereafter. The order directed CARB to work with relevant state and local agencies to develop a framework for implementation of the order and ensure that future Scoping Plans identify and recommend measure to achieve the State's carbon neutrality goal.

3.7.2.2.4 Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

California AB 32, the Global Warming Solutions Act of 2006, codifies the state's GHG emissions targets by requiring the state's global warming emissions to be reduced to 1990 levels by 2020 and directs CARB to enforce the statewide cap. In 2007, CARB recommended and adopted a 1990 GHG emissions level and 2020 emissions limit of 427 million metric tons (MMT) carbon dioxide equivalent (CO_2e) ($MMTCO_2e$); however, this limit has subsequently been updated to 431 $MMTCO_2e$ using the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report global warming potentials (GWPs) (CARB 2014a). The limit is a statewide limit and does not require individual sectors or facilities to reduce emissions equally. Key AB 32 milestones include developing a Scoping Plan indicating how emissions will be achieved from significant sources of GHGs via regulations, market mechanisms, and other actions and implementing a Cap-and-trade program with an emissions cap that declines over time (CARB 2014a). CARB has been proactive in its implementation of AB 32 and has met each of the milestones identified above that have already passed and is on track to meet the last milestone.

In 2016, California Senate Bill (SB) 32 the Global Warming Solutions Act of 2006: Emissions Limit, was passed as a follow up to AB 32. SB 32 requires the CARB to ensure the state's greenhouse gas (GHG) emissions are reduced to 40 percent below the 1990 levels by 2030. SB further requires CARB to expand on or develop new regulations that are technologically reasonable and cost-effective, while also considering the state's most disadvantaged communities.

3.7.2.2.5 Paris Climate Accord - U.S. Climate Alliance

The Paris Climate Accord, an agreement with 200 nations to reduce GHG emissions worldwide, included the United States as one of its founding nations. The United States announced its intention to withdraw from the accord in March 2017, and officially did so on November 4, 2020. Considering

the United States withdrawal, California, under former California Governor Jerry Brown, along with two other states, formed the U.S. Climate Alliance on June 1, 2017. This alliance is a coalition of states that will adhere to the tenets of the Paris Climate Agreement. The U.S. Climate Alliance has since grown to 25 states or United States territories. The United States officially rejoined the Paris Climate Accord on February 19, 2021.

Implementation of AB 32 requires GHG emission reduction to 1990 level by 2020, which is approximately 0.9 percent of 2005 level (CARB 2007, CARB 2018c). Therefore, implementation of AB 32 would ensure California meets the requirements outlined in the U.S. Climate Alliance.

3.7.2.2.6 Senate Bills

California SB 743, enacted in September 2013, stipulated a variety of GHG reduction strategies, including the encouragement of infill development and diversity of land uses and the development of multi-modal transportation networks, and initiated a change to the assessment of transportation-related impacts under CEQA from congestion-based to VMT-based.

SB 375 requires CARB to set regional targets for 2020 and 2035 to reduce GHG emissions from passenger vehicles. Regional targets were developed for each of the 18 metropolitan planning organizations (MPOs) in the state; the Southern California Association of Governments (SCAG) is the MPO that has jurisdiction over the GSA.

Each MPO is required to develop Sustainable Community Strategies (SCS) through integrated land use and transportation planning and to demonstrate an ability to attain the proposed reduction targets by 2020 and 2035. SCAG adopted the latest 2020 RTP/SCS for the six-county Southern California region (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) on September 3, 2020.

SB 49, approved on May 30, 2017, guides state environmental, public health, and worker safety agencies to take all actions within their authority to ensure standards in effect and being enforced as of January 2017 continue to remain in effect. This policy ensures that even if the federal government rolls back or weakens environmental standards, California will continue to make current federal clean air, clean water, climate, worker safety, and endangered species laws enforceable under state law (California Legislative Information Website 2017).

Signed into law in October 2015, SB 350 increases the State's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030. In addition, the State is required to double statewide energy efficiency savings in electricity and natural gas end uses by 2030.

3.7.2.2.7 California Executive Order S-01-07 and the Low Carbon Fuel Standard

California Executive Order S-01-07 establishes a statewide goal to reduce the carbon intensity of transportation fuels sold in California by at least ten percent by 2020 from 2005 levels. The Executive Order also mandated the creation of a low carbon fuel standard (LCFS) for transportation fuels. The LCFS requires that the lifecycle GHG emissions for the mix of fuels sold in California decline on average. In 2018, CARB amended the implementing LCFS regulations to require a 20 percent reduction in the carbon intensity of transportation fuels by 2030.

3.7.2.2.8 Innovative Clean Transit Regulation

CARB adopted the Innovative Clean Transit (ICT) Regulation in December 2018 which requires all public transit agencies to gradually transition to a 100 percent zero emission bus (ZEB) fleet. Beginning in 2029, 100 percent of new purchases by transit agencies are required to be ZEBs, with a goal of fully transitioning all fleets by 2040. The regulation applies to all transit agencies that own, operate, or lease buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds and includes standard, articulated, over-the-road, double-decker, and cutaway bus types. Full implementation of the regulation is expected to reduce GHG emissions by 19 million metric tons from 2020 to 2050 – the equivalent of taking 4 million cars off the road, and it will reduce harmful tailpipe emissions (nitrogen oxides and particulate matter) by about 7,000 tons and 40 tons, respectively, during that same 30-year period (CARB 2018d).

3.7.2.2.9 Potential Amendments to the Diesel Engine Off-Road Emission Standards

CARB is currently in the process of working on potential amendments to the off-road diesel engine standards, which is called the Tier 5 rulemaking. This rulemaking could reduce emissions of nitrogen oxides and particulate matter by up to 90 percent and 75 percent when compared to the current Tier 4 standards. Additionally, first-time CO2 emission standards for off-road engines could be proposed. These new Tier 5 emission standards would be expected to begin in 2028 (CARB 2021c).

3.7.2.3 Regional

GHG emissions are regionally overseen by SCAG and the South Coast Air Quality Management District (SCAQMD). In addition, Metro adopted a Green Construction Policy and published the Metro Climate Action and Adaptation Plan.

SCAG adopted the *Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020 RTP/SCS) for the six-county (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) Southern California region on September 3, 2020. The 2020 RTP/SCS includes various commitments to reduce emissions from transportation sources in compliance with SB 375, including close integration of land use and transportation planning. SCAQMD provides guidance to lead agencies on determining the significance of GHG emission under CEQA SCAQMD has yet to adopt a GHG significance threshold for transportation land use projects.

Metro's Green Construction Policy committed to using greener, less polluting construction equipment and vehicles on all Metro construction projects performed on Metro properties and rights-of-way than the statewide fleet average. This policy, revised in 2017, requires the use of renewable diesel fuel for projects where on-site bulk fuel storage is necessary. This measure would reduce GHG emissions and is a Metro policy that is required for the Project. The Metro Climate Action and Adaptation Plan, builds on Metro's existing commitments to environmental sustainability and stewardship and establishes a framework to reduce GHG emissions.

3.7.2.4 Local

Los Angeles County and the cities within the DSA have local regulations pertaining to GHG emissions. These regulations include the relevant general plan policies, ordinances, and municipal codes of Los Angeles County, and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier.

All the various general plan policies and municipal codes, including the Community Climate Action Plan (CCAP) of the Los Angeles County 2035 General Plan (soon to be replaced by the Los Angeles County Climate Action Plan [CAP]), the Pico Rivera General Plan (2014), the Santa Fe Spring's Re-Imagine Santa Fe Springs 2040 General Plan (2021), and the city of Whittier's *Envision Whittier General Plan* (2021) Resource Management Element identify initiatives and policies to reduce GHG emissions and encourage public transportation and transit, which would support GHG emission reductions.

3.7.3 Methodology

The analysis used protocols established by The Climate Registry (TCR), namely the *General Reporting Protocol* (TCR 2019) and the *Local Government Operations Protocol* (TCR 2010). Generally, GHG impact analyses follow the same quantification methodologies as air quality studies for criteria pollutants.

GHG emissions were calculated for direct and indirect sources of GHG, including engine exhaust and purchased electricity; detailed calculations are provided in Attachment A and Attachment B of Appendix H. Emissions were estimated for three GHG pollutants regulated under California and federal mandatory reporting requirements and voluntary reporting registries, such as TCR: CO_2, methane (CH_4), and nitrous oxide (N_2O). Although the Endangerment Finding also regulates three other GHG pollutants— hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) – these pollutants are not emitted as products of engine exhaust or purchased electricity and were not analyzed.[1]

Emissions were converted to CO_2e using the GWPs[2] in the IPCC's Fourth Assessment Report (AR4) and documented in the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* (USEPA 2021a). Although the IPCC has released the Fifth and Sixth Assessment Reports since the AR4 release in 2007, the international standard is to use the AR4 to maintain consistency with GHG emission inventories already compiled.

3.7.3.1 Construction Emissions

The analysis followed the SCAQMD's recommendation in the Interim CEQA GHG Significance Threshold document (2008) that construction emissions be amortized over 30 years (i.e., defined as life of a project) and added to the operational emissions.

Potential emissions of CO_2, CH_4, and N_2O from construction equipment (e.g., bulldozers, scrapers, graders, off-highway trucks) were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0, developed by the California Air Pollution Control Officers Association (CAPCOA) for land use projects. Emission factors from CARB's Emissions Model for Off-road Equipment (OFFROAD) and EMFAC version 2017[3] models are integrated into CalEEMod and are subsequently used to estimate emissions from construction equipment and construction-related on-road vehicle trips. All phases of construction, including street widening and construction of the

1 Although HFCs may be emitted from mobile sources from leaks in air conditioning systems (e.g., HFC-134a), methods for estimating these emissions are limited and are not included in this evaluation.
2 GWPs are defined by CARB as the radiative forcing impact (i.e., degree of warming to the atmosphere) of one mass-based unit of a given GHG relative to an equivalent unit of CO2. For example, one ton of CH_4 is equivalent to approximately 25 tons of CO2 in the atmosphere.
3 The Emission Factors (EMFAC) model is used to calculate emission rates from on-road motor vehicles in California. EMFAC2017 is the most recent version of the model approved by the USEPA for regulatory purposes.

guideway, stations, parking facilities, and an MSF site option, were included in the construction emissions calculations.

The Metro Green Construction Policy requires the use renewable diesel fuel if reasonably available in the vicinity of the Project. Emissions benefits associated with this measure were not included in the analysis due to uncertainty in the availability of renewable diesel fuel in the vicinity of the Project at the time of buildout. Actual construction GHG emissions would be lower than those estimated in this analysis due to the incorporation of renewable diesel fuel, therefore the analysis presented in this section is conservative.

3.7.3.2 Operational Emissions

Vehicle engine exhaust emissions were calculated to quantify the effects of Project-related reductions in highway traffic vehicle miles traveled (VMT) on regional GHG emissions. EMFAC2017[4] was used to develop an aggregated highway traffic emission factor for an average highway network speed of 35 miles per hour under the existing conditions and an average highway network speed of 30 miles per hour under future conditions.[5] These aggregated factors were multiplied by projected regional highway VMT to quantify regional highway traffic emissions. Increased transit rider trips to stations proposed under each alternative were included in the alternative's regional traffic analysis. Regional traffic data, including average network speeds, were obtained from the Project's traffic analysis for each alternative.

Although LRVs do not directly emit GHG, the GHG analysis quantified emissions resulting from the remote generation of electricity to run the LRVs and to power the facilities at the proposed stations. Emissions from power generation for the electricity needed to operate the LRVs were estimated from the route distance, headway between trains, and the average energy intensity for the train operation. The Federal Transit Administration (FTA)'s National Transit Database (NTD) (2019) was used to estimate the average energy intensity for Metro's LRT service. Chester and Horvath (2008) have published various fundamental environmental factors for rail. Electricity usage factors for San Francisco Municipal Railway (Muni) (San Francisco), Massachusetts Bay Transportation Authority (MBTA) Green Line (Boston), and Bay Area Rapid Transit (BART) (San Francisco) were used to estimate emissions from train control. CalEEMod default energy usage factors for surrogate land uses were used to estimate emissions at the LRT stations, an MSF site option, and parking facilities. CalEEMod surrogate land uses are identified by project element in Attachment B of Appendix H.

CalEEMod default CO_2, CH_4, and N_2O emission factors for the Southern California Edison (SCE) utility provider were used for Project electricity demand. The California Public Utilities Code establishes minimum Renewable Portfolio Standard (RPS) targets for electricity retail sellers. According to the 2019 Edison Electric Institute (EEI) ESG/Sustainability Report,[6] the renewable portfolio of SCE, including wind energy, geothermal energy, biomass energy, and solar power, was approximately 44 percent in 2019 (SCE 2019). The California RPS targets are 33 percent by 2020, 60 percent by 2030, and 100 percent by 2045. However, the California RPS excludes non-renewable nuclear power and hydropower which are considered zero-carbon (clean energy) sources. When including these additional energy sources, SCE's 2019 clean energy portfolio was approximately 52 percent of its total generation. Because the emission factors used in this analysis were from 2019, it was necessary to

4 While EMFAC2021 is the current version of the EMFAC model (released in April 2021), EMFAC2017 is the most recent version of the model approved by the USEPA.
5 Traffic modeling performed for the project indicated an aggregate vehicle speed for highway vehicles of 35 miles per hour under the existing conditions or 30 miles per hour under future conditions for all alternatives.
6 ESG refers to environmental, social, and governance factors.

reduce emissions by an amount equivalent to increasing the clean energy mix under future conditions. In SCE's 2020 Integrated Resource Plan, the preferred conforming portfolio indicated an 84 percent clean energy portfolio would be achieved by 2030 (SCE 2020). Therefore, the clean energy mix under future conditions was adjusted from 52 percent under existing conditions to 84 percent under future conditions. Even with this adjustment, the analysis would be conservative, as SCE will continue to integrate renewable resources between the portfolio target year of 2030 and the California 100 percent RPS deadline year of 2045.

3.7.4 Thresholds of Significance

3.7.4.1 South Coast Air Quality Management District Guidance

A tiered approach to evaluating the significance of GHG impacts was adopted by the SCAQMD Governing Board on December 5, 2008. The SCAQMD's *Interim GHG Significance Threshold Staff Proposal* (SCAQMD 2008) states that a project's GHG emissions analysis should include direct, indirect, and if possible, life-cycle emissions during construction and operation. The SCAQMD's recommendations regarding the quantification of emissions was followed for this Project; however, the SCAQMD interim thresholds are largely geared towards industrial, residential, and commercial projects, and do not specifically address transportation projects. Since a transportation-specific threshold of significance for GHG emissions has not been established by the SCAQMD, a quantitative threshold was not used to analyze the GHG emission impacts associated with the Project.

3.7.4.2 Amendments to the CEQA Guidelines

Amendments to the CEQA Guidelines adopted on March 18, 2010 and amended on December 28, 2018 recommend the following criteria for determining the significance of GHG emissions (14 California Code of Regulations [CCR] §15064.4):

- The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; or
- The extent to which the project complies with the regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR § 15183.5(b)). Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project. In determining the significance of impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is not cumulatively considerable.

The plans addressed in the final bullet can include RTPs, regional blueprint plans, and plans for the reduction of GHG emissions (14 CCR §15125).

In 2018, the amendments to the CEQA Guidelines (Section 15064.4), which became effective on December 28, 2018 (OPR 2019) clarified numerous points, including:

- Lead agencies must analyze the GHG emissions of proposed projects (14 CCR § 15064.4 (a)).
- The focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. (14 CCR § 15064.4 (b)).
- The impacts analysis of GHG emissions is global in nature and thus should be considered in a broader context. A project's incremental contribution may be cumulatively considerable even if it appears relatively small compared to statewide, national or global emissions. (14 CCR § 15064.4 (b)).
- Lead agencies should consider a timeframe for the analysis that is appropriate for the project. (14 CCR § 15064.4 (b)).
- A lead agency's analysis must reasonably reflect evolving scientific knowledge and state regulatory schemes. (14 CCR § 15064.4 (b)).
- Lead agencies may rely on plans prepared pursuant to section 15183.5 (Plans for the Reduction of GHGs) in evaluating a project's GHG emissions. (14 CCR § 15064.4 (b)(3)).
- In determining the significance of a project's impacts, the lead agency may consider a project's consistency with the State's long-term climate goals or strategies, provided that substantial evidence supports the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. (14 CCR § 15064.4 (b)(3)).
- The lead agency has discretion to select the model or methodology it considers most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change. (14 CCR § 15064.4 (c)).

These various points and guidelines for the evaluation of GHG emissions significance can be summarized as presented in Appendix G of the State CEQA Guidelines, in that an Alternative would have a significant impact related to GHG emissions if it would:

- Impact GHG-1: Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment
- Impact GHG-2: Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs

Typically, in a CEQA analysis, project-related impacts are compared to existing (without project) conditions. However, pursuant to CEQA Guidelines section 15125(a)(2), a lead agency has the discretion to exclusively use a future conditions baseline for the purposes of determination of

significance under CEQA in instances where showing an existing conditions analysis would be misleading or without informational value. Use of an existing conditions baseline would be misleading for the Project because it ignores the regional background growth in population, traffic, and transportation infrastructure that would occur between the existing conditions baseline year of 2019 and Project build-out (i.e., the 2019 existing conditions will be substantially altered by regional growth that will occur independent of the Project, which, in turn, would mask the impacts that are attributable to the Project and would not provide the reader with an accurate and meaningful delineation of Project-related impacts). Considering such growth is critical when determining future effects for transit projects designed to reduce traffic congestion and associated air quality impacts over time. Isolating the Project's impacts from ancillary changes in the environment would result in a misleading analysis.

Therefore, for the quantification of GHG emissions, Project emissions will be defined as the difference between a Build Alternative (2042) and the existing conditions in 2019 adjusted for regional growth (i.e., the projected future conditions baseline) that would occur by 2042. In this case, the projected future conditions baseline is 2042 without Project Conditions. The horizon year (2042) of the regional travel demand Corridor Based Model 2018 (CMB18), which incorporates Metro Measure M projects identified in the Measure M Expenditure Plan, roadway improvements, and other transit improvements anticipated to occur throughout the transit corridor, was selected as the Project design year. Use of this 2042 design year represents a characterization of the holistic, long-term benefits of the Project as transit-oriented development expands within the GSA and throughout the region. Additionally, although the Project is projected to open in 2035, emission factors for highway vehicles (the preeminent emission source affected by this Project) decrease as engine technology improves and vehicle manufacturers meet more stringent state and federal engine emission and efficiency standards. Since all alternatives would reduce VMT associated with highway traffic as compared to 2042 without Project Conditions, using 2042 highway traffic emission rates would result in fewer GHG reductions from this emission source as compared to reductions which might be achieved in 2035. Therefore, evaluation of Project impacts during the 2042 design year would conservatively evaluate the impacts of operations.

In 2018 and 2021, the OPR issued technical advisories for the streamlined review of transportation projects under CEQA (OPR 2018; OPR 2021). In these advisories, consistent with Section 15064.3 of the CEQA Guidelines, OPR presumes that certain types of transportation projects (including light rail projects) which would reduce VMT would also result in a less than significant impact on transportation and would align with SB 743 goals to reduce GHG emissions, increase multimodal transportation, and facilitate mixed used development. While OPR does recognize that reducing VMT would be essential to meeting state GHG reduction targets, it does not presume any conclusions relative to GHG emissions impacts specifically for VMT-reducing projects.

The CEQA Guidelines recommend that significance criteria established by the applicable air quality management district, air pollution control district, or lead agency be relied upon to make a determination of significance with respect to GHG impacts. No applicable quantitative threshold of significance has been established by SCAQMD, CARB, OPR, or Metro for the determination of project-level GHG emissions significance under CEQA. CARB and OPR, however, acknowledge that transforming public transit systems and reducing VMT are effective strategies for reducing GHG emissions on a regional scale. OPR recommends the streamlining of GHG emissions impacts analyses for transit and active transportation projects because these projects reduce GHG emissions, improve and increase multimodal transportation networks, and facilitate mixed use development, which are crucial land use planning initiatives for climate adaptation. Therefore, GHG emissions are quantified, and Impact GHG-1 is assessed qualitatively in the context of the predicted annual project-

level emission reductions and consistency with statutory goals and requirements of the applicable statewide, regional, or local plans.

Impact GHG-2 is assessed by evaluating the Project's consistency with the emission reduction strategies of the applicable statewide, regional, or local plans. If the Project would not conflict with or obstruct the strategies and implementation mechanisms of these plans, then the Project impacts would be less than significant

3.7.5 Existing Setting

3.7.5.1 Area of Potential Impact

The area of potential impact is defined as the South Coast Air Basin (SoCAB), which includes all of Orange County and the urban, non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Although the area of potential impact is extensive, the analysis will focus only on GHG emission sources that are impacted by the Project. Specifically, the analysis will analyze Project impacts within the four-county region to capture the changes in highway traffic-related VMT that could occur as a direct result of each Build Alternative as determined by the Project traffic analysis. The analysis covers emissions from Project-related construction sources (i.e., construction equipment, haul and delivery trucks, and construction worker vehicles) in the SoCAB, as well as operational emissions from the LRVs within the SoCAB and from the proposed MSF site options.

3.7.5.2 Description of Relevant Pollutants

GHGs include CO_2, CH_4, and N_2O, and fluorinated gases. Only emissions of CO_2, CH_4, and N_2O are substantially altered by implementation of the Project. A description of these affected GHGs and their primary sources is presented below.

- CO_2 enters the atmosphere through the burning of fossil fuels (i.e., oil, natural gas, and coal), solid waste, trees and wood products, respiration, and is the result of chemical reactions (e.g., the manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- CH_4 is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and the decay of organic waste in municipal solid waste landfills.
- N_2O is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

3.7.5.3 Existing Conditions

According to the IPCC, in 2010, worldwide man-made emissions of GHGs were approximately 49,000 $MMTCO_2e$ (IPCC 2007). Total U.S. GHG emissions in 2019 were 6558.3 $MMTCO_2e$, or about 13 percent of worldwide GHG emissions (USEPA 2021a). As mandated by the Global Warming Solutions Act of 2006 (AB 32), CARB has implemented a Scoping Plan to reduce state GHG emissions.

Accordingly, California's GHG emissions have steadily decreased, with emissions in 2019 decreasing by nearly 15 percent since peak levels in 2004 (CARB 2021a).

Transportation is responsible for 39.7 percent of the state's GHG emissions. Passenger vehicles and heavy-duty trucks represent approximately 36 percent of total emissions, with rail contributing less than one percent. Rail is therefore a key element in reducing the state's GHG emissions by providing an alternative to passenger vehicles.

Emissions of CO_2 and N_2O are largely byproducts of fossil fuel combustion. CH_4 results largely from off-gassing associated with agricultural practices and landfills. California GHG emissions in 2019 totaled approximately 418 $MMTCO_2e$ (CARB 2021a).

Climate change has the potential to affect the natural environment in California in a variety of ways, including but not limited to: rising sea levels along the California coastline, extreme heat conditions, increased frequency and severity of wildfires, reduced snow pack and streamflow in the Sierra Nevada mountains, changes in the growing season conditions that could affect agriculture, and changes in the distribution of plant and wildfire species due to climate-related effects. These changes in California's climate and ecosystems would occur over a period when California's population is projected to increase from 39.5 million in 2017 to 44 million by 2042 (SCDF 2020). As such, the number of people that could be affected by climate change, as well as the amount of anthropogenic GHG emissions expected under a No Project Alternative, is expected to increase.

3.7.5.3.1 Regional Highway Traffic Emissions

Existing year 2019 emissions from regional traffic[7] were estimated in the analysis for disclosure purposes; as discussed in **Section 3.7.3**, CEQA significance was determined by comparing future year 2042 Build Alternatives to 2042 without Project Conditions. Data on VMT in the region and emission factors from the EMFAC2017 model were used to estimate emissions of GHG. The emissions calculations were based on the total VMT in the region and the average speed on the highway network. **Table 3.7-1** summarizes the results of the GHG emissions from existing conditions. Detailed calculations are provided in Attachment B of Appendix H.

[7] As described in Section 3.14, Transportation and Traffic, the base year data in Metro's regional travel demand forecasting model (the Corridor Based Model 2018 [CBM18]) is from 2017 and represents the data that was most recently available when the model was created in 2018. This data has been used to represent 2019, the base year in this study.

Table 3.7-1. Existing and 2042 without Project Conditions Annual Regional Highway Traffic GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
2019 Existing Conditions VMT	n/a	n/a	n/a	151,291,998,000
2019 Emission Factor (grams per mile)	369	0.021	0.021	n/a
2019 Existing Conditions Emissions (metric tons per year)	55,766,998	3,122	3,219	n/a
2042 without Project Conditions VMT	n/a	n/a	n/a	185,726,628,000
2042 Emission Factor (grams per mile)	252	0.007	0.012	n/a
2042 without Project Conditions Emissions (metric tons per year)	46,845,556	1,387	2,178	n/a
GWP	1	25	298	n/a
2019 Existing Conditions CO_2e Emissions[2] (metric tons per year)	55,766,998	78,051	959,403	56,804,452
2042 without Project Conditions CO_2e Emissions (metric tons per year)	46,845,556	34,685	649,069	47,529,310

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential N/A = not applicable N2O = nitrous oxide VMT = vehicle miles traveled

3.7.5.3.2 Total Operational Emissions

Total operational emissions for the existing year 2019 conditions, summarized in **Table 3.7-2**, were estimated from regional highway traffic. Emissions from bus operations were not estimated because implementation of a Build Alternative would not include the addition of new bus services or removal of existing services and would include only minor adjustment of existing services to accommodate station access. Emissions from urban rail were not estimated because there are no expected urban rail operations under the existing conditions within the DSA. Emissions from construction-related activities were not quantified because there is no Project-related construction under the existing conditions.

Table 3.7-2. Existing and 2042 without Project Conditions Total Operational GHG Emissions

Source	Emissions (metric tons CO_2e per year)			
	CO_2	CH_4	N_2O	Total[1]
Existing Conditions Regional Traffic	55,766,998	78,051	959,403	56,804,452
Existing Conditions Total Emissions[2]	55,766,998	78,051	959,403	56,804,452
2042 without Project Conditions Regional Traffic	46,845,556	34,685	649,069	47,529,310
2042 without Project Conditions Total Emissions[2]	46,845,556	34,685	649,069	47,529,310

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane N_2O = nitrous oxide

3.7.6 Impact Evaluation

3.7.6.1 Impact GHG-1: Emission Generation

Impact GHG-1: Would a Build Alternative generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

3.7.6.1.1 Alternative 1 Washington

Operational Impacts

Operational emissions associated with Alternative 1 would include indirect emissions from electricity needed to operate the LRVs, new stations, parking facilities, MSF operations, which are essential in maintaining a reliable light rail system, and direct emissions from highway traffic after construction is completed and the Project is implemented. MSF operations are also discussed in **Section 3.7.6.1.4**.

Regional Highway Traffic Emissions

Direct operational GHG emissions from regional highway traffic were estimated following the methodology described in **Section 3.7.3**. The Project would provide an alternative to automobile transportation in the region; therefore, it was necessary to evaluate highway traffic to assess how the Project would increase or decrease operational emissions from highway vehicles. **Table 3.7-3** provides a summary of estimated direct GHG emissions under Alternative 1.

Table 3.7-3. Alternative 1 Annual Regional Highway Traffic GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
VMT	n/a	n/a	n/a	185,723,448,000
Emission Factor (grams per mile)	252	0.007	0.012	n/a
Emissions (metric tons per year)	46,844,754	1,387	2,178	n/a
GWP	1	25	298	n/a
CO_2e Emissions[2] (metric tons per year)	46,844,754	34,684	649,058	47,528,496

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential N/A = not applicable N_2O = nitrous oxide VMT = vehicle miles traveled

Light Rail, Station, Parking, and Maintenance and Storage Facility Operational Emissions

Indirect operational GHG emissions would occur from the generation of electricity used to operate the LRVs, the lighting, train control, and other functions of the LRV stations, lighting at parking facilities, and lighting and other equipment at the MSF. Emissions associated with electrical generation were estimated using baseline emission factors for the SCE utility provider. Emissions were also estimated assuming that the provider would achieve its preferred 84 percent clean energy portfolio by 2030. A small amount of direct operational GHG emissions would also occur from operation of the MSF and would include natural gas combustion for comfort heating and water use. Operational GHG emissions associated with vehicle trips for workers at the MSF and stations would be accounted for in the regional traffic emissions presented previously. **Table 3.7-4** and **Table 3.7-5** provide a summary of estimated indirect emissions associated with the LRV operation and station operation, respectively. **Table 3.7-6** provides a summary of estimated indirect emissions associated with parking facilities' operations. **Table 3.7-7** presents estimated indirect emissions associated with train control. **Table 3.7-8** and **Table 3.7-9** provide a summary of estimated direct and indirect GHG emissions associated with each of the MSF site options.

Table 3.7-4. Alternative 1 Annual LRV Operations GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
Electricity Used (kWh)	n/a	n/a	n/a	4,296,555
Emission Factor (pounds per kWh)	0.39	0.000033	0.000004	n/a
Emissions (metric tons per year)	762	0.064	0.008	n/a
GWP	1	25	298	n/a
CO_2e Emissions[2] (metric tons per year)	762	2	2	766
CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[3]	250	1	1	251

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-5. Alternative 1 Annual Station Operations GHG Emissions

Station	Annual Consumption (kWh per year)[1]	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[2]
Atlantic (relocated/reconfigured)	75,072	13	0.001	<0.001	n/a
Atlantic/Whittier	75,072	13	0.001	<0.001	n/a
Commerce/Citadel	75,072	13	0.001	<0.001	n/a
Greenwood	26,772	5	<0.001	<0.001	n/a
Rosemead	24,150	4	<0.001	<0.001	n/a
Norwalk	24,150	4	<0.001	<0.001	n/a
Lambert	24,150	4	<0.001	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[3] (metric tons per year)		58	<1	<1	58
Total CO_2e Emissions[3] (metric tons per year) (Adjusted for 84% clean energy)[4]		19	<1	<1	19

Notes:
1 Infrastructure energy consumption includes lighting, operation of elevators or escalators for elevated or sub-grade stations, and other station-related operational electrical demands.
2 Totals may vary due to rounding.
3 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-6. Alternative 1 Annual Parking Facility Operations GHG Emissions

Parking Facility	Annual Consumption (kWh per year)[1]	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[2]
Greenwood	51,800	9	0.001	<0.001	n/a
Rosemead	57,400	10	0.001	<0.001	n/a
Norwalk	54,600	10	0.001	<0.001	n/a
Lambert	91,000	16	0.001	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[3] (metric tons per year)		45	<1	<1	45
Total CO_2e Emissions[3] (metric tons per year) (Adjusted for 84% clean energy)[4]		15	<1	<1	15

Notes:
1 Infrastructure energy consumption includes lighting and other parking facility-related operational electrical demands.
2 Totals may vary due to rounding.
3 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-7. Alternative 1 Annual Train Control Operations GHG Emissions

Infrastructure	Annual Consumption (kWh per year)	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[1]
Train Control	446,500	79	0.007	0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)		79	<1	<1	80
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[3]		26	<1	<1	26

Source: Chester & Horvath, 2008.
Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-8. Alternative 1 Commerce MSF Site Option Operations GHG Emissions

Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total[3]
MSF Natural Gas[1]	8	<0.001	<0.001	n/a
MSF Electricity	134	0.011	0.001	n/a
MSF Water Usage	108	1.342	0.033	n/a
GWP	1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)	249	34	10	293
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[4]	159	34	10	203

Notes:
1 Operational emissions from the MSF include natural gas combustion for comfort heating and cooling.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 Totals may vary due to rounding.
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour MSF = maintenance and storage facility
N/A = not applicable N_2O = nitrous oxide

Table 3.7-9. Alternative 1 Montebello MSF Site Option Operations GHG Emissions

Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total[3]
MSF Natural Gas[1]	8	<0.001	<0.001	n/a
MSF Electricity	138	0.012	0.001	n/a
MSF Water Usage	108	1.342	0.033	n/a
GWP	1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)	253	34	10	297
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[4]	161	34	10	204

Notes:
1 Operational emissions from the MSF include natural gas combustion for comfort heating and landscaping.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 Totals may vary due to rounding.
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour MSF = maintenance and storage facility
N/A = not applicable N_2O = nitrous oxide

Total Operational Emissions

Total operational emissions from Alternative 1, including the LRVs, stations, parking facilities, train control, and the MSF site options, are summarized in **Table 3.7-10** and **Table 3.7-11**. This alternative would reduce highway traffic VMT and the associated GHG emissions as compared to 2042 without Project Conditions; however, the operation of the LRVs, stations, train control, parking facilities, and MSF would increase demand for electricity. Overall, a net decrease in regional operational GHG emissions would be expected as compared to 2042 without Project conditions. Implementation of Alternative 1 would reduce regional VMT by 3,180,000 miles annually. Overall, operation of Alternative 1 was estimated to reduce total GHG emissions by 300 metric tons CO_2e per year with the Commerce MSF site option, or 298 metric tons CO_2e per year with the Montebello MSF site option. Regional traffic emission estimates are based on VMT projections associated only with implementation of Alternative 1, and do not account for increased ridership (VMT reductions) from potential future transportation system improvements, such as those which may occur from improved bus, pedestrian, bike, and other First/Last Mile (FLM) enhancements or from increased mixed-use development in the DSA. Additionally, GHG estimates from electricity generation account for an 84 percent clean energy portfolio anticipated to be achieved by SCE, the local utility provider, by 2030. However, California SB 100 requires public utility providers to achieve 100 percent renewable energy by 2045. Thus, even with the 84 percent clean energy adjustment, the analysis would be conservative, as SCE will continue to integrate renewable electricity sources between the portfolio target year of 2030 and the California 100 percent RPS deadline year of 2045. By 2045, GHG emissions presented for the light rail operation, station operation, train control, and parking facilities project elements, which are associated with electrical generation, would be reduced to zero, and GHG emissions from MSF operations would also be reduced, resulting in additional annual GHG reductions starting in 2045.

As indicated previously, SCAQMD generally recommends that construction emissions be amortized over a period of 30 years. However, the project lifetime would be expected to be considerably longer than 30 years, and therefore the construction contribution to annual emissions would be lower than

presented in this analysis. When amortized over 30 years, construction emissions would contribute 288 metric tons CO_2e per year with the Commerce MSF site option or 297 metric tons CO_2e per year with the Montebello MSF site option, resulting in total annual emission reductions of 11.9 metric tons CO_2e per year for the Commerce MSF site option or 1.4 metric tons CO_2e per year for the Montebello MSF site option. California's RPS sets a target of 100 percent renewable grid power by 2045, three years after the Project horizon year. As discussed previously, as grid power becomes increasingly renewable, additional GHG benefits from operation would be expected.

In addition to emissions decreases on the project level, the Project is a component of the RTP and contributes to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of Alternative 1 would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Thus, operation of Alternative 1 would be consistent with the State's long-term climate strategies and the incremental contribution to climate change from Alternative 1 GHG emissions would be less than significant.

Table 3.7-10. Alternative 1 with Commerce MSF Site Option Total Operational GHG Emissions

Source	Emissions (metric tons CO_2e per year)[1,2]			
	CO_2	CH_4	N_2O	Total[3]
Regional Traffic	46,844,754	34,684	649,058	47,528,496
Light Rail Operation	250	1	1	251
Station Operation	19	<1	<1	19
Train Control	26	<1	<1	26
Parking Facilities	15	<1	<1	15
MSF Operation	159	34	10	203
Total Emissions[3]	46,845,223	34,719	649,069	47,529,010
Increment based on Existing Conditions (2019)[4,5]	(8,921,776)	(43,332)	(310,334)	(9,275,442)
Increment based on 2042 without Project Conditions[4,6]	(333)	34	(<1)	(300)

Notes:
1 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
2 Emissions associated with electrical consumption are adjusted for SCE's preferred clean energy portfolio anticipated to be met by 2030.
3 Totals may vary due to rounding.
4 Emission reductions (beneficial impacts) are shown in parentheses.
5 Increment calculated as the difference between the total emissions for the alternative and the total emissions for the Existing Conditions, presented in **Table 3.7-2**.
6 Increment calculated as the difference between the total emissions for the alternative and the total emissions for 2042 without Project Conditions, presented in Table 9-1 in Appendix H.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
MSF = maintenance and storage facility N_2O = nitrous oxide

Table 3.7-11. Alternative 1 with Montebello MSF Site Option Total Operational GHG Emissions

Source	Emissions (metric tons CO_2e per year)[1,2]			
	CO_2	CH_4	N_2O	Total[3]
Regional Traffic	46,844,754	34,684	649,058	47,528,496
Light Rail Operation	250	1	1	251
Station Operation	19	<1	<1	19
Train Control	26	<1	<1	26
Parking Facilities	15	<1	<1	15
MSF Operation	161	34	10	204
Total Emissions[3]	46,845,224	34,719	649,069	47,529,011
Increment based on Existing Conditions (2019)[4,5]	(8,921,774)	(43,332)	(310,334)	(9,275,441)
Increment based on 2042 without Project Conditions[4,6]	(332)	34	(<1)	(298)

Notes:
1 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
2 Emissions associated with electrical consumption are adjusted for SCE's preferred clean energy portfolio anticipated to be met by 2030.
3 Totals may vary due to rounding.
4 Emission reductions (beneficial impacts) are shown in parentheses.
5 Increment calculated as the difference between the total emissions for the alternative and the total emissions for the Existing Conditions, presented in **Table 3.7-2**.
6 Increment calculated as the difference between the total emissions for the alternative and the total emissions for 2042 without Project Conditions, presented in Table 9-1 in Appendix H.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
MSF = maintenance and storage facility N_2O = nitrous oxide

Design Options

Atlantic/Pomona Station Option

As described above, the operation of the base Alternative 1 would result in a decrease in GHG emissions at the project level. The Project would be consistent with state and regional climate strategies to increase mass transit, and would thus result in an incremental contribution to climate change that would be less than significant. While the Atlantic/Pomona Station option would slightly alter the configuration of Alternative 1, it would not be expected to increase or decrease ridership of the light rail system, nor would it be expected to appreciably increase or decrease VMT relative to the base Alternative 1. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in a meaningful difference in operational GHG emissions as compared to the base Alternative 1, nor would it alter the Project's contribution to the state and regional mass transit climate strategies. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Montebello At-Grade Option

As described above, the operation of the base Alternative 1 would result in a decrease in GHG emissions at the project level. The Project would be consistent with state and regional climate strategies to increase mass transit, and would thus result in an incremental contribution to climate change which would be less than significant. While the Montebello At-Grade option would slightly alter the configuration of Alternative 1, it would not be expected to increase or decrease ridership of the light rail system, nor would it be expected to appreciably increase or decrease VMT relative to the base Alternative 1. Therefore, implementation of Alternative 1 with the Montebello At-Grade Option would result in no meaningful difference in operational GHG emissions as compared to the base alternative, nor would it alter the Project's contribution to the state and regional mass transit climate strategies. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Construction Impacts

Construction GHG emission sources under Alternative 1 include exhaust from construction worker motor vehicles traveling to and from the project site, exhaust from delivery and hauling trucks traveling to and from the project site, and exhaust from heavy-duty construction equipment operating on-site. **Table 3.7-12** details the annual GHG emissions associated with construction of Alternative 1 and the MSF site options. Consistent with SCAQMD guidance, construction GHG emissions are amortized over the project lifetime, assumed to be 30 years, to be combined with annual operational emissions. When amortized over 30 years, construction emissions would contribute 288 metric tons CO_2e per year with the Commerce MSF site option or 297 metric tons CO_2e per year with the Montebello MSF site option. The incremental contribution to climate change from construction of Alternative 1, including amortized construction emissions, would be less than significant.

Table 3.7-12. Alternative 1 Annual Construction GHG Emissions

Project Element[1]	Emissions of CO_2e (metric tons per year)[2]					
	Year 1	Year 2	Year 3	Year 4	Year 5	Project
Guideway Construction[3,4]	570	1,067	660	1,222	172	3,690
Base Alternative Atlantic Station (Relocated/Reconfigured)	129	322	212	0	0	663
Design Option Atlantic/Pomona Station Option	129	322	212	0	0	663
Base Alternative Montebello Aerial	0	64	334	0	0	399
Design Option Montebello At-Grade	0	72	139	0	0	211
MSF Construction[5]	0	249	401	440	284	1,374
Commerce MSF Site Option	0	321	423	354	0	1,099
Montebello MSF Site Option	0	249	401	440	284	1,374
Station Construction	339	969	796	383	116	2,601
Parking Construction	0	0	0	48	39	86
Street Widening and TPSS	0	39	204	482	436	1,162
Maximum Total Emissions[3,4,5]	908	2,324	2,061	2,575	1,046	8,914
30-Year Amortized Emissions (Commerce MSF Site Option)						**288**
30-Year Amortized Emissions (Montebello MSF Site Option)						**297**

Note:
1 Emissions from hauling and vendor trips and construction worker commuting included in project element emission totals.
2 Construction of Alternative 1 would occur over 5 years. Emissions are calculated from calendar year 2022 emission factors. Emissions for project construction stated on or after January 1, 2022 would be less than or equal to the emissions presented.
3 Only the aerial alignment in Montebello (base alternative) or the at-grade alignment (Montebello At-Grade Option) would be constructed. Total emissions assume the base alternative construction as emissions would be higher.
4 Only the Atlantic station (relocated/reconfigured) (base alternative) or the Atlantic/Pomona station (design option) would be constructed. Because comparable excavation for the Atlantic/Pomona Station Option would already be required under the base alternative for the TBM receiving pit, there would not be a material difference in overall construction GHG emissions.
5 Only one MSF site option would be constructed. Total emissions assume the Montebello MSF site option construction as emissions would be higher.
Key:
CO_2e = carbon dioxide equivalent MSF = maintenance and storage facility N/A = not applicable
TPSS = transportation power substation

Design Options

Atlantic/Pomona Station Option

As presented in **Table 3.7-12**, GHG emissions associated with construction of the Atlantic/Pomona Station Option would be the same as those of the base Alternative 1 Atlantic Station (relocated/reconfigured). While the Atlantic/Pomona Station Option, the TBM receiving pit, and the alignment north of the proposed Atlantic/Whittier station would be located at a different position, the magnitude of excavation activity which would be required to implement the Atlantic/Pomona Station Option would be essentially the same as that required under the base Alternative 1 for the excavation of the TBM receiving pit and underground-to-at-grade transition of the alignment. Substantial additional construction is not anticipated for the Atlantic/Pomona Station Option and construction GHG

emissions would not materially differ from the base Alternative 1. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Montebello At-Grade Option

As presented in **Table 3.7-12**, GHG emissions associated with construction of the Montebello At-Grade Option would be less than those of the base alternative, and implementation of this design option would result in no meaningful change to the Project's incremental contribution to climate change. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

3.7.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operational emissions associated with the base Alternative 2 would include indirect emissions from electricity needed to operate the LRVs, new stations, and an MSF, as well as direct emissions from highway traffic after construction is completed and the Project is implemented.

Regional Highway Traffic Emissions

Direct operational GHG emissions from regional highway traffic were estimated following the methodology described in **Section 3.7.3**. The Project would provide an alternative to automobile transportation in the region; therefore, it was necessary to evaluate highway traffic to assess how the Project would increase or decrease operational emissions from highway vehicles. **Table 3.7-13** provides a summary of estimated direct GHG emissions under Alternative 2.

Table 3.7-13. Alternative 2 Annual Regional Highway Traffic GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
VMT	n/a	n/a	n/a	185,725,038,000
Emission Factor (grams per mile)	252	0.007	0.012	n/a
Emissions (metric tons per year)	46,845,155	1,387	2,178	n/a
GWP	1	25	298	n/a
CO_2e Emissions[2] (metric tons per year)	46,845,155	34,685	649,063	47,528,903

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential N/A = not applicable N_2O = nitrous oxide VMT = vehicle miles traveled

Light Rail, Station, Parking, and Maintenance and Storage Facility Operational Emissions

Indirect operational GHG emissions would occur from the generation of electricity used to operate the LRVs, the lighting, train control, and other functions of the LRV stations, and lighting and other equipment at the MSF. There would be no new project parking facilities under the base Alternative 2. Emissions associated with electrical generation were estimated using baseline emission factors for the SCE utility provider. Emissions were also estimated assuming that the provider would achieve its preferred 84 percent clean energy portfolio by 2030. A small amount of direct operational GHG emissions would also occur from operation of the MSF and would include natural gas combustion for comfort heating and water use. Operational GHG emissions associated with vehicle trips for workers at the MSF and stations would be accounted for in the regional traffic emissions presented previously. **Table 3.7-14** and **Table 3.7-15** provide a summary of estimated indirect emissions associated with the LRV operation and station operation, respectively. **Table 3.7-16** presents estimated indirect emissions associated with train control. **Table 3.7-17** provides a summary of estimated direct and indirect GHG emissions associated with the Commerce MSF site option.

Table 3.7-14. Alternative 2 Annual LRV Operations GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
Electricity Used (kWh)	n/a	n/a	n/a	1,130,672
Emission Factor (pounds per kWh)	0.39	0.000033	0.000004	n/a
Emissions (metric tons per year)	201	0.017	0.002	n/a
GWP	1	25	298	n/a
CO_2e Emissions[2] (metric tons per year)	201	<1	1	202
CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[3]	66	<1	<1	66

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-15. Alternative 2 Annual Station Operations GHG Emissions

Station	Annual Consumption (kWh per year)[1]	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[2]
Atlantic (relocated/reconfigured)	75,072	13	0.001	<0.001	n/a
Atlantic/Whittier	75,072	13	0.001	<0.001	n/a
Commerce/Citadel	75,072	13	0.001	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[3] (metric tons per year)		40	<1	<1	40
Total CO_2e Emissions[3] (metric tons per year) (Adjusted for 84% clean energy)[4]		13	<1	<1	13

Notes:
1 Infrastructure energy consumption includes lighting, operation of elevators or escalators for elevated or sub-grade stations, and other station-related operational electrical demands.
2 Totals may vary due to rounding.
3 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-16. Alternative 2 Annual Train Control Operations GHG Emissions

Infrastructure	Annual Consumption (kWh per year)	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[1]
Train Control	117,500	21	0.002	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)		21	<1	<1	21
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[3]		7	<1	<1	7

Source: Chester & Horvath, 2008.
Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-17. Alternative 2 Commerce MSF Site Option Operations GHG Emissions

Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total[3]
MSF Natural Gas[1]	8	<0.001	<0.001	n/a
MSF Electricity	134	0.011	0.001	n/a
MSF Water Usage	108	1.342	0.033	n/a
GWP	1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)	249	34	10	293
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[4]	159	34	10	203

Notes:
1 Operational emissions from the MSF include natural gas combustion for comfort heating and cooling.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 Totals may vary due to rounding.
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour MSF = maintenance and storage facility
N/A = not applicable N_2O = nitrous oxide

Total Operational Emissions

Total operational emissions from the base Alternative 2, including the LRVs, stations, train control, and the Commerce MSF site option, are summarized in **Table 3.7-18**. This alternative would reduce highway traffic VMT and the associated GHG emissions as compared to 2042 without Project Conditions; however, the operation of the LRVs, stations, train control, and MSF would increase demand for electricity. Overall, a net decrease in regional operational GHG emissions would be expected as compared to 2042 without Project Conditions. Implementation of Alternative 2 would reduce regional VMT by 1,590,000 miles annually. Overall, operation of the base Alternative 2 with the Commerce MSF site option was estimated to reduce total GHG emissions by 118 metric tons CO_2e per year. Regional traffic emission estimates are based on VMT projections associated only with implementation of the base Alternative 2, and do not account for increased ridership (VMT reductions) from potential future transportation system improvements, such as those which may occur from improved bus, pedestrian, bike, and other FLM enhancements or from increased mixed-use development in the DSA. Additionally, GHG estimates from electricity generation account for an 84 percent clean energy portfolio anticipated to be achieved by SCE, the local utility provider, by 2030. However, California SB 100 requires public utility providers to achieve 100 percent renewable energy by 2045. Thus, even with the 84 percent clean energy adjustment, the analysis would be conservative, as SCE will continue to integrate renewable electricity sources between the portfolio target year of 2030 and the California 100 percent RPS deadline year of 2045. By 2045, GHG emissions presented for the light rail operation, station operation, train control, and parking facilities project elements, which are associated with electrical generation, would be reduced to zero, and GHG emissions from MSF operations would also be reduced, resulting in additional annual GHG reductions starting in 2045.

As indicated previously, SCAQMD generally recommends that construction emissions be amortized over a period of 30 years. However, the project lifetime would be expected to be considerably longer than 30 years, and therefore the construction contribution to annual emissions would be lower than presented in this analysis. When amortized over 30 years, construction emissions would contribute

157 metric tons CO_2e per year, resulting in total annual emissions of 39 metric tons CO_2e per year. California's RPS sets a target of 100 percent renewable grid power by 2045, three years after the Project horizon year. As discussed previously, as grid power becomes increasingly renewable, additional GHG benefits from operation would be expected.

While annual emissions including amortized construction would increase on the project level, the Project is a component of the RTP and contributes to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of Alternative 2 would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Thus, operation of the base Alternative 2 would be consistent with the State's long-term climate strategies and the Project's incremental contribution to climate change would be less than significant.

Operation of Alternative 2 with the Atlantic/Pomona Station Option would result in no meaningful difference in operational GHG emissions as compared to the base Alternative 2, nor would it alter the Project's contribution to the state and regional mass transit climate strategies. Therefore, operation Alternative 2 with the Atlantic/Pomona Station Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Table 3.7-18. Alternative 2 with Commerce MSF Site Option Total Operational GHG Emissions

Source	Emissions (metric tons CO_2e per year)[1,2]			
	CO_2	CH_4	N_2O	Total[3]
Regional Traffic	46,845,155	34,685	649,063	47,528,903
Light Rail Operation	66	<1	<1	66
Station Operation	13	<1	<1	13
Train Control	7	<1	<1	7
MSF Operation	159	34	10	203
Total Emissions[3]	46,845,400	34,718	649,074	47,529,192
Increment based on Existing Conditions (2019)[4,5]	(8,921,598)	(43,332)	(310,329)	(9,275,260)
Increment based on 2042 without Project Conditions[4,6]	(156)	34	5	(118)

Notes:
1 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
2 Emissions associated with electrical consumption are adjusted for SCE's preferred clean energy portfolio anticipated to be met by 2030
3 Totals may vary due to rounding.
4 Emission reductions (beneficial impacts) are shown in parentheses.
5 Increment calculated as the difference between the total emissions for the alternative and the total emissions for the Existing Conditions, presented in **Table 3.7-2**.
6 Increment calculated as the difference between the total emissions for the alternative and the total emissions for the 2402 without Project Conditions, presented in Table 9-1 in Appendix H.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
MSF = maintenance and storage facility N_2O = nitrous oxide

Construction Impacts

Construction GHG emission sources under Alternative 2 include exhaust from construction worker motor vehicles traveling to and from the project site, exhaust from delivery and hauling trucks traveling to and from the project site, and exhaust from heavy-duty construction equipment operating on-site. **Table 3.7-19** details the annual GHG emissions associated with construction of Alternative 2 and the Commerce MSF site option. Consistent with SCAQMD guidance, construction GHG emissions are amortized over the project lifetime, assumed to be 30 years, to be combined with annual operational emissions. When amortized over 30 years, construction emissions would contribute 157 metric tons CO_2e per year. The Project's incremental contribution to climate change, including amortized construction emissions, would be less than significant.

Design Option

Atlantic/Pomona Station Option

As presented in **Table 3.7-19**, GHG emissions associated with construction of the Atlantic/Pomona Station Option would be the same as those of the base Alternative 2 Atlantic Station (relocated/reconfigured). While the Atlantic/Pomona Station Option, the TBM receiving pit, and the alignment north of the proposed Atlantic/Whittier station would be located at a different position along the alignment, the magnitude of excavation activity which would be required to implement the Atlantic/Pomona Station Option would be essentially the same as that required under the base Alternative 2 for the excavation of the TBM receiving pit and underground-to-at-grade transition of the alignment. Substantial additional construction is not anticipated under the Atlantic/Pomona Station Option and construction GHG emissions would not be expected to materially differ as compared to the base Alternative 2. Therefore, construction of Alternative 2 with the Atlantic/Pomona Station Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Table 3.7-19. Alternative 2 Annual Construction GHG Emissions

Project Element[1]	Emissions of CO_2e (metric tons per year)[2]					
	Year 1	Year 2	Year 3	Year 4	Year 5	Project
Guideway Construction[3]	570	1,002	31	0	0	1,602
Base Alternative Atlantic Station (Relocated/Reconfigured)	129	322	212	0	0	663
Design Option Atlantic/Pomona Station Option	129	322	212	0	0	663
MSF Construction	0	321	423	354	0	1,099
Station Construction	339	969	647	0	0	1,955
Street Widening and TPSS	0	39	0	0	0	39
Maximum Total Emissions[3]	908	2,331	1,102	354	0	4,696
30-Year Amortized Emissions						157

Note:
1 Emissions from hauling and vendor trips and construction worker commuting included in project element emission totals.
2 Construction of Alternative 2 would occur over 4 years. Emissions are calculated from calendar year 2022 emission factors. Emissions for project construction stated on or after January 1, 2022 would be less than or equal to the emissions presented.
3 Only the Atlantic (relocated/reconfigured) (base alternative) or the Atlantic/Pomona (design option) station would be constructed. Because comparable excavation for the Atlantic/Pomona Station Option would already be required under the base alternative for the TBM receiving pit, there would not be a material difference in overall construction GHG emissions.
Key:
CO_2e = carbon dioxide equivalent MSF = maintenance and storage facility N/A = not applicable
TPSS = transportation power substation

3.7.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operational emissions associated with the base Alternative 3 would include indirect emissions from electricity needed to operate the LRVs, new stations, an MSF site option, and parking facilities, as well as direct emissions from highway traffic after construction is completed and the Project is implemented.

Regional Highway Traffic Emissions

Direct operational GHG emissions from regional highway traffic were estimated following the methodology described in **Section 3.7.3**. The Project would provide an alternative to automobile transportation in the region; therefore, it was necessary to evaluate highway traffic to assess how the Project would increase or decrease operational emissions from highway vehicles. **Table 3.7-20** provides a summary of estimated direct GHG emissions under the base Alternative 3.

Table 3.7-20. Alternative 3 Annual Regional Highway Traffic GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
VMT	n/a	n/a	n/a	185,724,084,000
Emission Factor (grams per mile)	252	0.007	0.012	n/a
Emissions (metric tons per year)	46,844,914	1,387	2,178	n/a
GWP	1	25	298	n/a
CO_2e Emissions[2] (metric tons per year)	46,844,914	34,684	649,060	47,528,659

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential N/A = not applicable N_2O = nitrous oxide VMT = vehicle miles traveled

Light Rail, Station, Parking, and Maintenance and Storage Facility Operational Emissions

Indirect operational GHG emissions would occur from the generation of electricity used to operate the LRVs, the lighting, train control, and other functions of the LRV stations, lighting at parking facilities, and lighting and other equipment at the MSF. Emissions associated with electrical generation were estimated using baseline emission factors for the SCE utility provider. Emissions were also estimated assuming that the provider would achieve its preferred 84 percent clean energy portfolio by 2030. A small amount of direct operational GHG emissions would also occur from operation of the MSF and would include natural gas combustion for comfort heating and water use. Operational GHG emissions associated with vehicle trips for workers at the MSF and stations would be accounted for in the regional traffic emissions presented previously. **Table 3.7-21** and **Table 3.7-22** provide a summary of estimated indirect emissions associated with the LRV operation and station operation, respectively. **Table 3.7-23** provides a summary of estimated indirect emissions associated with parking facilities' operations. **Table 3.7-24** presents estimated indirect emissions associated with train control. **Table 3.7-25** and **Table 3.7-26** provide a summary of estimated direct and indirect GHG emissions associated with each of the MSF site options.

Table 3.7-21. Alternative 3 Annual LRV Operations GHG Emissions

Source	CO_2	CH_4	N_2O	Total[1]
Electricity Used (kWh)	n/a	n/a	n/a	2,035,210
Emission Factor (pounds per kWh)	0.39	0.000033	0.000004	n/a
Emissions (metric tons per year)	361	0.030	0.004	n/a
GWP	1	25	298	n/a
CO_2e Emissions[2] (metric tons per year)	361	1	1	363
CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[3]	118	<1	<1	119

Notes:
1 Totals may vary due to rounding.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-22. Alternative 3 Annual Station Operations GHG Emissions

Station	Annual Consumption (kWh per year)[1]	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[2]
Atlantic (relocated/reconfigured)	75,072	13	0.001	<0.001	n/a
Atlantic/Whittier	75,072	13	0.001	<0.001	n/a
Commerce/Citadel	75,072	13	0.001	<0.001	n/a
Greenwood	26,772	5	<0.001	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[3] (metric tons per year)		45	<1	<1	45
Total CO_2e Emissions[3] (metric tons per year) (Adjusted for 84% clean energy)[4]		15	<1	<1	15

Notes:
1 Infrastructure energy consumption includes lighting, operation of elevators or escalators for elevated or sub-grade stations, and other station-related operational electrical demands.
2 Totals may vary due to rounding.
3 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-23. Alternative 3 Annual Parking Facility Operations GHG Emissions

Parking Facility	Annual Consumption (kWh per year)[1]	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[2]
Greenwood Ave	51,800	9	0.001	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[3] (metric tons per year)		9	<1	<1	9
Total CO_2e Emissions[3] (metric tons per year) (Adjusted for 84% clean energy)[4]		3	<1	<1	3

Notes:
1 Infrastructure energy consumption includes lighting and other parking facility-related operational electrical demands.
2 Totals may vary due to rounding.
3 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-24. Alternative 3 Annual Train Control Operations GHG Emissions

Infrastructure	Annual Consumption (kWh per year)	Emissions (metric tons per year)			
		CO_2	CH_4	N_2O	Total[1]
Train Control	211,500	38	0.003	<0.001	n/a
GWP		1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)		38	<1	<1	38
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[3]		12	<1	<1	12

Source: Chester & Horvath, 2008.
Notes:
1 Totals may vary due to rounding.
2 CO2e emissions are weighted by the GWP for each non-CO2 pollutant (i.e., CO2e equals emissions of non-CO2 pollutant multiplied by its GWP).
3 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour N/A = not applicable N_2O = nitrous oxide

Table 3.7-25. Alternative 3 Commerce MSF Site Option Operations GHG Emissions

Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total[3]
MSF Natural Gas[1]	8	0.000	0.000	n/a
MSF Electricity	134	0.011	0.001	n/a
MSF Water Usage	108	1.342	0.033	n/a
GWP	1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)	249	34	10	293
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[4]	159	34	10	203

Notes:
1 Operational emissions from the MSF include natural gas combustion for comfort heating and cooling.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 Totals may vary due to rounding.
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour MSF = maintenance and storage facility
N/A = not applicable N_2O = nitrous oxide

Table 3.7-26. Alternative 3 Montebello MSF Site Option Operations GHG Emissions

Source	Emissions (metric tons per year)			
	CO_2	CH_4	N_2O	Total[3]
MSF Natural Gas[1]	8	0.000	0.000	n/a
MSF Electricity	138	0.012	0.001	n/a
MSF Water Usage	108	1.342	0.033	n/a
GWP	1	25	298	n/a
Total CO_2e Emissions[2] (metric tons per year)	253	34	10	297
Total CO_2e Emissions[2] (metric tons per year) (Adjusted for 84% clean energy)[4]	161	34	10	204

Notes:
1 Operational emissions from the MSF include natural gas combustion for comfort heating and landscaping.
2 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
3 Totals may vary due to rounding.
4 GHG emissions from electricity generation include 84 percent zero-carbon energy portfolio estimated to be achieved by 2030.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
GWP = Global Warming Potential kWh = kilowatt-hour MSF = maintenance and storage facility
N/A = not applicable N2O = nitrous oxide

Total Operational Emissions

Total operational emissions from the base Alternative 3, including the LRVs, stations, parking facilities, train control, and the MSF site options, are summarized in **Table 3.7-27** and **Table 3.7-28**. This alternative would reduce highway traffic VMT and the associated GHG emissions as compared to 2042 without Project Conditions; however, the operation of the LRVs, stations, train control, parking facilities, and MSF would increase demand for electricity. Overall, a net decrease in regional operational GHG emissions would be expected as compared to 2042 without Project Conditions. Implementation of Alternative 3 would reduce regional VMT by 2,544,000 miles annually. Overall, operation of the base Alternative 3 was estimated to reduce total GHG emissions by 299 metric tons CO_2e per year with the Commerce MSF site option, or 298 metric tons CO_2e per year with the Montebello MSF site option. Regional traffic emission estimates are based on VMT projections associated only with implementation of Alternative 3, and do not account for increased ridership (VMT reductions) from potential future transportation system improvements, such as those which may occur from improved bus, pedestrian, bike, and other FLM enhancements or from increased mixed-use development in the DSA. Additionally, GHG estimates from electricity generation account for an 84 percent clean energy portfolio anticipated to be achieved by SCE by 2030. However, California SB 100 requires public utility providers to achieve 100 percent renewable energy by 2045. Thus, even with the 84 percent clean energy adjustment, the analysis would be conservative, as SCE will continue to integrate renewable electricity sources between the portfolio target year of 2030 and the California 100 percent RPS deadline year of 2045. By 2045, GHG emissions presented for the light rail operation, station operation, train control, and parking facilities project elements, which are associated with electrical generation, would be reduced to zero, and GHG emissions from MSF operations would also be reduced, resulting in additional annual GHG reductions starting in 2045.

As indicated previously, SCAQMD generally recommends that construction emissions be amortized over a period of 30 years. However, the project lifetime would be expected to be considerably longer than 30 years, and therefore the construction contribution to annual emissions would be lower than presented in this analysis. When amortized over 30 years, construction emissions would contribute an additional 183 metric tons CO_2e per year with the Commerce MSF site option or 192 metric tons CO_2e per year with the Montebello MSF site option, resulting in total annual emission reductions of 116 metric tons CO_2e per year for the Commerce MSF site option or 106 metric tons CO_2e per year for the Montebello MSF site option. California's RPS sets a target of 100 percent renewable grid power by 2045, three years after the Project horizon year. As discussed previously, as grid power becomes increasingly renewable, additional GHG benefits from operation would be expected.

Table 3.7-27. Alternative 3 with Commerce MSF Site Option Total Operational GHG Emissions

Source	Emissions (metric tons CO_2e per year)[1,2]			
	CO_2	CH_4	N_2O	Total[3]
Regional Traffic	46,844,914	34,684	649,060	47,528,659
Light Rail Operation	118	<1	<1	119
Station Operation	15	<1	<1	15
Train Control	12	<1	<1	12
Parking Facilities	3	<1	<1	3
MSF Operation	159	34	10	203
Total Emissions[3]	46,845,222	34,718	649,070	47,529,011
Increment based on Existing Conditions (2019)[4,5]	(8,921,776)	(43,332)	(310,332)	(9,275,441)
Increment based on 2042 without Project Conditions[4,6]	(334)	33	1	(299)

Notes:
1 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
2 Emissions associated with electrical consumption are adjusted for SCE's preferred clean energy portfolio anticipated to be met by 2030.
3 Totals may vary due to rounding.
4 Emission reductions (beneficial impacts) are shown in parentheses.
5 Increment calculated as the difference between the total emissions for the alternative and the total emissions for the Existing Conditions, presented in **Table 3.7-2**.
6 Increment calculated as the difference between the total emissions for the alternative and the total emissions for 2042 without Project Conditions, presented in Table 9-1 in Appendix H.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
MSF = maintenance and storage facility N_2O = nitrous oxide

Table 3.7-28. Alternative 3 with Montebello MSF Site Option Total Operational GHG Emissions

Source	Emissions (metric tons CO_2e per year)[1,2]			
	CO_2	CH_4	N_2O	Total[3]
Regional Traffic	46,844,914	34,684	649,060	47,528,659
Light Rail Operation	118	<1	<1	119
Station Operation	15	<1	<1	15
Train Control	12	<1	<1	12
Parking Facilities	3	<1	<1	3
MSF Operation	161	34	10	204
Total Emissions[3]	46,845,223	34,718	649,070	47,529,012
Increment based on Existing Conditions (2019)[4,5]	(8,921,775)	(43,332)	(310,332)	(9,275,440)
Increment based on 2042 without Project Conditions [4,6]	(333)	33	1	(298)

Notes:
1 CO_2e emissions are weighted by the GWP for each non-CO_2 pollutant (i.e., CO_2e equals emissions of non-CO_2 pollutant multiplied by its GWP).
2 Emissions associated with electrical consumption are adjusted for SCE's preferred clean energy portfolio anticipated to be met by 2030.
3 Totals may vary due to rounding.
4 Emission reductions (beneficial impacts) are shown in parentheses.
5 Increment calculated as the difference between the total emissions for the alternative and the total emissions for the Existing Conditions, presented in **Table 3.7-2**.
6 Increment calculated as the difference between the total emissions for the alternative and the total emissions for 2042 without Project Conditions, presented in Table 9-1 in Appendix H.
Key:
CO_2 = carbon dioxide CO_2e = carbon dioxide equivalent CH_4 = methane
MSF = maintenance and storage facility N_2O = nitrous oxide

In addition to emissions decreases on the project level, the Project is a component of the RTP and contributes to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of Alternative 1 would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Thus, operation of the base Alternative 3 would be consistent with the State's long-term climate strategies and the incremental contribution to climate change from the base Alternative 3 would be less than significant.

Similar to the base Alternative 3, operation of Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in no meaningful difference in operational GHG emissions as compared to the base Alternative 3, nor would it alter the Project's contribution to the state and regional mass transit climate strategies. Therefore, operation Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Construction Impacts

Construction GHG emission sources under Alternative 3 include exhaust from construction worker motor vehicles traveling to and from the project site, exhaust from delivery and hauling trucks traveling to and from the project site, and exhaust from heavy-duty construction equipment operating on-site. **Table 3.7-29** details the annual GHG emissions associated with construction of Alternative 3 and the MSF site options. Consistent with SCAQMD guidance, construction GHG emissions are amortized over the project lifetime, assumed to be 30 years, to be combined with annual operational emissions. When amortized over 30 years, construction emissions would contribute an additional 183 metric tons CO_2e per year with the Commerce MSF site option or 192 metric tons CO_2e per year with the Montebello MSF site option. The Project's incremental contribution to climate change from construction of Alternative 3, including amortized construction emissions, would be less than significant.

Design Options

Atlantic/Pomona Station Option

As presented in **Table 3.7-29**, GHG emissions associated with construction of the Atlantic/Pomona Station Option would be the same as those of the base Alternative 3 Atlantic Station (relocated/reconfigured). While the Atlantic/Pomona Station Option, the TBM receiving pit, and the alignment north of the proposed Atlantic/Whittier station would be located at a different position along the alignment, the magnitude of excavation activity which would be required to implement the Atlantic/Pomona Station Option would be essentially the same as that required under the base Alternative 3 for the excavation of the TBM receiving pit and underground-to-at-grade transition of the alignment. Substantial additional construction is not anticipated under the Atlantic/Pomona Station Option and construction GHG emissions would not be expected to materially differ as compared to the base Alternative 3. Therefore, construction of Alternative 3 with the Atlantic/Pomona Station Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Montebello At-Grade Option

As presented in **Table 3.7-29**, GHG emissions associated with construction of Alternative 3 with the Montebello At-Grade Option would be less than those of the base Alternative 3, and implementation of this design option would result in no meaningful change to the Project's incremental contribution to climate change. Therefore, construction of Alternative 3 with the Montebello At-Grade Option would be consistent with state and regional climate strategies to increase mass transit and would thus result in an incremental contribution to climate change that would be less than significant.

Table 3.7-29. Alternative 3 Annual Construction GHG Emissions

Project Element[1]	Emissions of CO_2e (metric tons per year)[2]					
	Year 1	Year 2	Year 3	Year 4	Year 5	Project
Guideway Construction[3,4]	570	1,067	365	0	0	2,001
Base Alternative Atlantic (Relocated/Reconfigured)	129	322	212	0	0	663
Design Option Atlantic/Pomona Station Option	129	322	212	0	0	663
Base Alternative Montebello Aerial	0	64	334	0	0	399
Design Option Montebello At-Grade	0	72	139	0	0	211
MSF Construction[5]	0	249	401	440	284	1,374
Commerce MSF Site Option	0	321	423	354	0	1,099
Montebello MSF Site Option	0	249	401	440	284	1,374
Station Construction	339	969	796	75	0	2,178
Parking Construction	0	0	0	17	0	17
Street Widening and TPSS	0	39	142	0	0	182
Maximum Total Emissions[3,4,5]	908	2,324	1,704	532	284	5,752
30-Year Amortized Emissions (Commerce MSF Site Option)						**183**
30-Year Amortized Emissions (Montebello MSF Site Option)						**192**

Note:
1 Emissions from hauling and vendor trips and construction worker commuting included in project element emission totals.
2 Construction of Alternative 3 would occur over 5 years. Emissions are calculated from calendar year 2022 emission factors. Emissions for project construction stated on or after January 1, 2022 would be less than or equal to the emissions presented.
3 Only the aerial alignment in Montebello (base Alternative) or the at-grade alignment (Montebello At-Grade Option) would be constructed. Total emissions assume the base Alternative construction as emissions would be higher.
4 Only the Atlantic (relocated/reconfigured) (base alternative) or the Atlantic/Pomona (design option) station would be constructed. Because comparable excavation for the Atlantic/Pomona Station Option would already be required under the base alternative for the TBM receiving pit, there would not be a material difference in overall construction GHG emissions.
5 Only one MSF site option would be constructed. Total emissions assume the Montebello MSF site option construction as emissions would be higher.
Key:
CO_2e = carbon dioxide equivalent MSF = maintenance and storage facility N/A = not applicable
TPSS = transportation power substation

3.7.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

As detailed in **Section 3.7.6.1.1**, **Section 3.7.6.1.2**, and **Section 3.7.6.1.3**, the operation of the Project would contribute to the state and regional mass transit climate strategies and would result in a less than significant incremental contribution to climate change. An MSF is an essential element of maintaining a reliable light rail system and was included in the assessment of Project operations GHG emissions impacts.

Operation of the Commerce MSF site option would emit 203 metric tons CO_2e annually, representing approximately less than one percent of Project-related emissions under any Build Alternative. Operation of the Montebello MSF site option would emit 204 metric tons CO_2e annually, representing approximately less than one percent of Project-related emissions under Alternatives 1 and 3. While the Montebello MSF At-Grade Option would slightly alter the configuration of the Montebello MSF site option, it would not be expected to increase or decrease ridership of the light rail system, nor would it be expected to appreciably increase or decrease VMT relative to the Montebello MSF site option. Thus, implementation of the Montebello MSF At-Grade Option would result in no meaningful difference in operational GHG emissions as compared to the Montebello MSF site option, nor would it alter the Project's contribution to the state and regional mass transit climate strategies.

Therefore, operation of an MSF would contribute to the state and regional mass transit climate strategies and would result in a less than significant incremental contribution to climate change.

Construction Impacts

MSF Site Options and Design Option

As detailed in **Section 3.7.6.1.1**, **Section 3.7.6.1.2**, and **Section 3.7.6.1.3**, construction of the Project would contribute to the state and regional mass transit climate strategies and would result in a less than significant incremental contribution to climate change. An MSF is an essential element of maintaining a reliable light rail system and was included in the assessment of Project construction GHG emissions impacts.

Construction of the Commerce MSF site option would emit 1,099 metric tons CO_2e in total, or 37 metric tons CO_2e amortized over the Project lifetime. When added to Project operational emissions, construction emissions of the Commerce MSF site option represent less than one percent of Project-related GHG emissions under any Build Alternative. Operation of the Montebello MSF site option would emit 1,374 metric tons CO_2e in total, or 46 metric tons CO_2e amortized over the Project lifetime. When added to Project operational emissions, construction emissions of the Montebello MSF site option represent less than one percent of Project-related GHG emissions under Alternatives 1 and 3. GHG emissions associated with construction of the Montebello MSF At-Grade Option would be less than those of the base Montebello MSF site option, and implementation of this design option would result in no meaningful change to the Project's incremental contribution to climate change.

Therefore, construction of an MSF would contribute to the state and regional mass transit climate strategies and would result in a less than significant incremental contribution to climate change.

3.7.6.2 Impact GHG-2: Conflicts

Impact GHG-2: Would a Build Alternative conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

A universal GHG emission reduction focus of the 2017 Climate Change Scoping Plan Update, 2020 RTP/SCS, and Metro and City of Los Angeles Climate Action Plans is the reduction of GHG emissions associated with passenger vehicle VMT. In the 2017 Climate Change Scoping Plan Update, three key means of reducing these emissions are identified: increasing vehicle efficiency; reducing fuel carbon content; and reducing VMT. CARB has specifically identified VMT reduction as a key measure in

ensuring SB 375 targets are achieved acknowledging that State emission targets would be unachievable without stymieing statewide VMT growth.

3.7.6.2.1 Alternative 1 Washington

Construction and Operational Impacts

The implementation of Alternative 1 would support a larger regional effort to facilitate and enhance mass transit in the SoCAB. The Project is identified in the 2020 RTP/SCS as a major transit capital project and is included in the plan's regional growth and transportation projections.

At the project-level, the implementation of Alternative 1 would reduce regional VMT by 3,180,000 miles annually. Alternative 1 would be consistent with the 2020 RTP/SCS and other relevant GHG reduction plans in that it would support the VMT reduction strategies of those plans. Additionally, the Project, alongside other transit improvement projects planned to be implemented throughout the region, would facilitate broader adoption of mass transit and contribute to regional VMT reductions, and the associated GHG emission reductions, as projected in the 2020 RTP/SCS. Therefore, implementation of Alternative 1 would result in a less than significant impact with respect to GHG emission reduction plans.

Design Options

Atlantic/Pomona Station Option

As detailed previously, the Project would be consistent with the GHG reduction strategies of applicable plans, policies, and regulations by facilitating regional adoption of mass transit and reducing regional VMT. Implementation of Alternative 1 with the Atlantic/Pomona Station Option would result in no change to VMT reduction projections as compared to the base Alternative 1, nor would it alter the Project's consistency with the GHG reduction strategies of applicable plans, policies, and regulations. Therefore, implementation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact with respect to GHG emission reduction plans.

Montebello At-Grade Option

As detailed previously, the Project would be consistent with the GHG reduction strategies of applicable plans, policies, and regulations by facilitating regional adoption of mass transit and reducing regional VMT. Implementation of Alternative 1 with the Montebello At-Grade Option would result in no change to VMT reduction projections as compared to the base Alternative 1, nor would it alter the Project's consistency with the GHG reduction strategies of applicable plans, policies, and regulations. Therefore, implementation of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact with respect to GHG emission reduction plans.

3.7.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Construction and Operational Impacts

Base Alternative with Design Option

The implementation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would support a larger regional effort to facilitate and enhance mass transit in the SoCAB. The Project is identified in the 2020 RTP/SCS as a major transit capital project and is included in the plan's regional growth and transportation projections.

At the project-level, the implementation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would reduce regional VMT by 1,590,000 miles annually. The Project would be consistent with the 2020 RTP/SCS and other relevant GHG reduction plans in that it would support the VMT reduction strategies of those plans. Additionally, the Project, alongside other transit improvement projects planned to be implemented throughout the region, would facilitate broader adoption of mass transit and contribute to regional VMT reductions, and the associated GHG emission reductions, as projected in the 2020 RTP/SCS. Therefore, implementation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact with respect to GHG emission reduction plans.

3.7.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Construction and Operational Impacts

Base Alternative with Design Options

The implementation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would support a larger regional effort to facilitate and enhance mass transit in the SoCAB. The Project is identified in the 2020 RTP/SCS as a major transit capital project and is included in the plan's regional growth and transportation projections.

At the project-level, the implementation of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would reduce regional VMT by 2,544,000 miles annually. The Project would be consistent with the 2020 RTP/SCS and other relevant GHG reduction plans in that it would support the VMT reduction strategies of those plans. Additionally, the Project, alongside other transit improvement projects planned to be implemented throughout the region, would facilitate broader adoption of mass transit and contribute to regional VMT reductions, and the associated GHG emission reductions, as projected in the 2020 RTP/SCS. Therefore, implementation of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact with respect to GHG emission reduction plans.

3.7.6.2.4 Maintenance and Storage Facilities

Construction and Operational Impacts

MSF Site Options and Design Option

As stated in **Section 3.7.6.2.1**, **Section 3.7.6.2.2**, and **Section 3.7.6.2.3**, implementation of the Project would be consistent with the GHG emission reduction strategies of the 2020 RTP/SCS and other applicable plans, policies, and regulations. Further, the Commerce and Montebello MSF site options would be designed and constructed in compliance with Title 24 and CALGreen Building Code regulatory requirements for energy efficiency and sustainability.

The Commerce MSF site option would generate approximately 1,099 metric tons CO_2e during construction (37 metric tons per year when amortized over the project lifespan) and 203 metric tons CO_2e annually from operation. The Montebello MSF site option would generate approximately 1,374 metric tons CO_2e during construction (46 metric tons per year when amortized over the project lifespan) and 204 metric tons CO_2e annually from operation. However, an MSF is an essential element in supporting the reliable operation of an LRT system and would be necessary for the implementation and operation of the Project. Therefore, implementation of the Commerce MSF site option, Montebello MSF site option, or Montebello MSF At-Grade Option would result in a less than significant impact with respect to GHG emission reduction plans.

3.7.7 Project Measures and Mitigation Measures

As identified in **Section 3.7.6**, the Build Alternatives and Build Alternatives with the design option(s) and MSF site option would have less than significant impacts relative to greenhouse gases under Impact GHG-1 (Emission Generation) and Impact GHG-2 (Conflicts). No project measures or mitigation measures would be required for operation or construction. **Table 3.7-30 i**dentifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s). All impacts would be less than significant for all alternatives and design options.

3.7.8 Significance After Mitigation

As identified in **Table 3.7-30,** no mitigation is required for the Build Alternatives and Build Alternatives with the design option(s) and MSF site option. **The impacts are less than significant**.

Table 3.7-30. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
GHG-1 Emission Generation	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
GHG-2 Conflicts	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.

Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.8 Hazards and Hazardous Materials

3.8.1 Introduction

This section discusses the Project setting in relation to hazards and hazardous materials. It describes existing conditions, current applicable regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options.

The hazards and hazardous materials specialized study area, known as the resource study area (RSA), for each of the Build Alternatives is the area within a one-mile buffer of the LRT guideway and includes a half-mile buffer of the stations, TPSSs, and MSF site option footprints. The RSA for each of the Build Alternatives is described further in **Section 3.8.3**. Information in this section is based on the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report (Appendix I).

3.8.2 Regulatory Framework

3.8.2.1 Federal

Hazards and Hazardous Materials in the RSAs are protected by federal laws, including laws administered by the United States Environmental Protection Agency (USEPA), which is the lead federal agency responsible for enforcing federal regulations regarding hazardous materials. The primary legislation governing hazardous materials includes the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. § 6901 et seq.), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. §9601 et seq.), the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA) (15 U.S.C. §2601 et seq.).

The RCRA established an all-encompassing federal regulatory program for hazardous substances that is administered by USEPA. Under the RCRA, USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. The RCRA was amended by the Hazardous and Solid Waste Amendments of 1984, which specifically prohibits the use of certain techniques to dispose of various hazardous substances. In California, the USEPA has delegated much of the RCRA requirements to the California Department of Toxic Substances Control (DTSC).

CERCLA, also known as the "Superfund Act," provides a federal fund to identify, characterize, and remediate hazardous material sites. Through the Superfund Act, the USEPA was granted the authority to identify and obtain the cooperation of parties responsible for hazardous material incidents and conditions.

TSCA establishes the mechanisms by which USEPA tracks, screens, and tests industrial chemicals currently produced or imported into the United States that may pose an environmental or human health hazard. TSCA addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCBs), asbestos, radon, and lead-based paints (LBP).

Additionally, the United States Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration regulates oil pipeline design, construction, testing, operation, and maintenance. The Occupational Safety and Health Administration (OSHA) administers the Federal

Occupational Safety and Health Act which requires training handlers of hazardous materials, notifying employees who work in the vicinity of hazardous materials, acquiring material safety data sheets which describe the proper use of hazardous materials, and training employees to remediate any hazardous material accidental releases. OSHA regulates lead and asbestos as it relates to employee safety through a set of notification and corrective action requirements, warning signs and labels, controlled access, use of protective equipment, demolition/renovation procedures, housekeeping controls, training and certification, and in certain cases, air monitoring and medical surveillance to reduce potential exposure.

3.8.2.2 State

The DTSC is the state agency primarily responsible for the regulation of hazardous materials in California. DTSC is responsible for the management of hazardous substances and oversees the investigation and remediation of contaminated sites. The State Water Resources Control Board (SWRCB) is primarily responsible for the protection of groundwater and surface water resources from hazardous materials in California.

The California Hazardous Waste Control Act is implemented by DTSC in accordance with regulations contained in Title 26 of the CCR that describe requirements for the proper management of hazardous wastes. The Hazardous Materials Release Response Plans and Inventory Act (Section 25500 et seq. of the California Health and Safety Code), also known as the Business Plan Act, defines hazardous materials as raw or unused materials that are part of a process or manufacturing step.

The California Occupational Safety and Health Administration (Cal/OSHA) regulates worker safety similar to federal OSHA but also requires preparation of an Injury and Illness Prevention Program, an employee safety program of inspections, procedures to correct unsafe conditions, employee training, and occupational safety communication. In addition, Cal/OSHA regulations indirectly protect the general public by requiring construction managers to post warning signs, limit public access to construction areas, and obtain permits for work considered to present a significant risk of injury, such as excavations greater than five feet.

The California Highway Patrol (CHP), the California Department of Transportation (Caltrans), and DTSC have the responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies. Regulations governing hazardous materials transport are included in the California Vehicle Code (Title 13 of the California Code of Regulations, the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations.

The Hazardous Waste and Substances Sites (Cortese List) is a planning document used by the State of California, local agencies, and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency to develop, at least annually, an updated Cortese List. The DTSC and other state and local government agencies are required to contribute information for the list.

The La Follette Bill requires preparation of a Risk Management Plan (RMP) for commercial operations which use hazardous materials at defined thresholds. The RMP includes management, engineering, and safety studies, and plans for physical improvements to minimize accidental hazardous materials

releases. It is implemented via fire inspections, plan checking, Business Emergency Plan/Hazardous Materials Business Plan (HMBP) disclosure requirements and filing of the RMP.

Screening levels related to protection of human health in the case of routine, long term exposure by direct pathways commonly include USEPA Regional Screening Levels (RSLs) and DTSC Screening Levels (DTSC-SLs). RSLs and DTSC-SLs include inorganic constituent concentrations that are based on the protection of public health. The RSLs and DTSC-SLs are considered conservative. Under most circumstances, the presence of a chemical in site media at concentrations less than the corresponding RSL and DTSC-SL can be assumed not to pose a significant, long-term (chronic) threat to human health or the environment. Inorganic constituent concentrations may also be compared to local background levels.

Asbestos abatement efforts must be completed in compliance with 7 CCR Section 5208, 8 CCR Section 1529, and 8 CCR Sections 341.6 through 341.14. The regulations in 7 CCR Section 5208 implement worker exposure limits, require exposure monitoring, implement compliance programs, require employee protection and hazard communication, and require employee medical surveillance and reporting. Regulation of lead and lead-based paint is described in 29 CFR 1926.62 and 8 CCR Section 1532.1. These regulations cover the demolition, removal, cleanup, transportation, storage, and disposal of lead-containing material.

3.8.2.3 Regional

The Unified Program is the consolidation of six State environmental regulatory programs into one program under the authority of a CUPA. A CUPA is a local agency that has been certified by California EPA to implement these programs within the local agency's jurisdiction. This program was established under the amendments to the California Health and Safety Code made by Senate Bill 1082 in 1994.

The South Coast Air Quality Management District (SCAQMD) regulates asbestos through Rule 1403, Asbestos Emissions from Renovation/Demolition Activities. Rule 1403 regulates asbestos as a toxic material and controls the emissions of asbestos from demolition and renovation activities by specifying agency notifications, appropriate removal procedures and handling and cleanup procedures. SCAQMD also regulates Volatile Organic Compound (VOC) emissions from contaminated soil through Rule 1166, VOC Emissions from Decontamination of Soil.

The Project is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB), which is one of nine Regional Water Quality Control Boards that are responsible for regional water quality decisions and regulating surface and groundwaters, including setting standards, issuing waste discharge requirements, determining compliance with those requirements, and taking appropriate enforcement actions.

3.8.2.4 Local

Los Angeles County and the cities within the Build Alternative RSAs have local regulations pertaining to hazards and hazardous materials. The Los Angeles County Operational Area Emergency Response Plan establishes the coordinated emergency management system, which includes prevention, protection, response, recovery, and mitigation within incorporated and unincorporated areas of the county. Other local regulations and policies include general plan policies, ordinances, and municipal codes of Los Angeles County, and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. More information about these laws and policies is available in Appendix I.

The Los Angeles County Operational Area Emergency Response Plan applies to the cities within Los Angeles County and the unincorporated portions of Los Angeles County. The plan outlines procedures during emergencies, such as earthquakes, floods, fires, and other natural disasters; hazardous materials spills; transportation emergencies; civil disturbance; and terrorism. The plan also identifies the location of critical emergency response facilities, such as emergency dispatch and operations centers, government structures, and hospitals or other major medical facilities.

3.8.3 Methodology

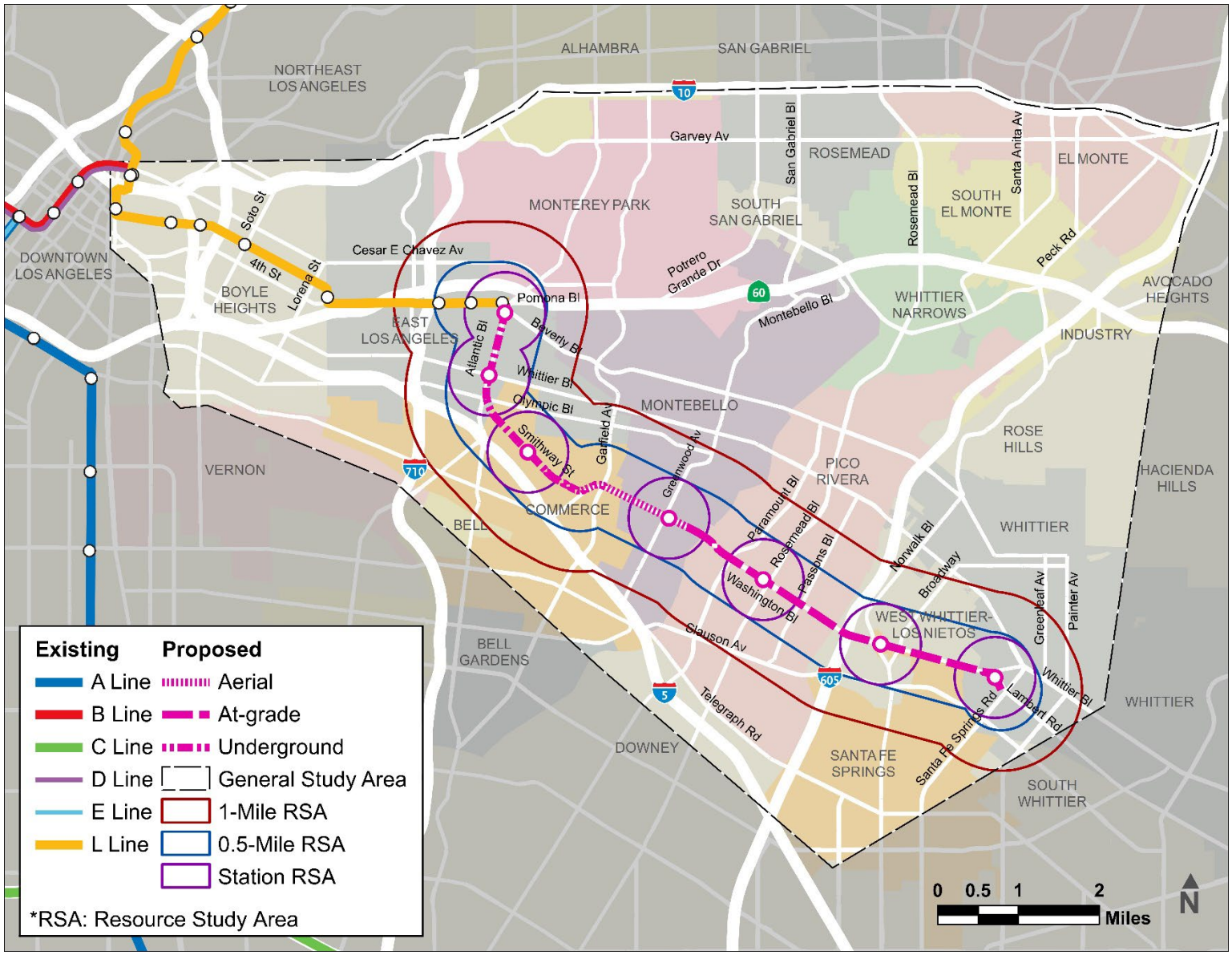
The methodology used to evaluate potential impacts on hazards and hazardous materials considers the range and nature of foreseeable hazardous materials transportation, use, storage, and disposal resulting from implementation of the Project and identifies the primary ways that these hazardous materials could expose individuals or the environment to health and safety risks.

The RSA study area for hazards and hazardous materials resources encompasses one-mile of the proposed alignment and design options, as well as the half-mile footprints of the stations and other facilities for each of the Build Alternatives (**Figure 3.8.1**). Haul routes were identified by reviewing designated truck routes in local plans within the RSA. Information related to known hazardous materials releases within the RSA was obtained from the *Draft Final Initial Site Assessment (ISA) Report* (Kleinfelder 2021).[1] Information gathered, and activities performed for the ISA are consistent with those required to address the Caltrans ISA Checklist for Hazardous Waste (Appendix DD, Hazardous Waste, Project Development Procedures Manual, July 1, 1999).

The ISA includes a review of standard historical sources including aerial photographs, topographic maps, and Sanborn Fire Insurance Maps to supplement regulatory agency database records. Visual surveys of the RSA were performed on April 8, 2019, May 8, 2019, and May 15, 2019, to assess and photograph present conditions in the DSA. A subsequent visual survey of the Montebello MSF site option was performed on February 20, 2021.

Publicly available databases maintained under Public Resources Code (PRC) Section 65962.5 (i.e., the Cortese List) were searched to determine whether any known hazardous materials are present in the DSA. The Hazardous Waste and Substances Site List (the EnviroStor database [DTSC 2021]) is maintained by DTSC as part of the requirements of PRC Section 65962.5. The SWRCB maintains the GeoTracker database, an information management system for tracking Leaking Underground Storage Tank (LUST) cleanup sites, permitted underground storage tanks (UST), Cleanup Program Sites, Military Cleanup sites, Land Disposal sites, Waste Discharge Requirement sites, and Oil and Gas Monitoring sites (SWRCB 2021).[2]

1 The ISA addresses hazardous materials associated with Alternative 1; however, Alternatives 2 and 3 are encompassed in Alternative 1. Therefore, information presented in the Draft Final ISA report for Alternative 1 is applicable to Alternatives 2 and 3 (see Section 2.0, "Proposed Project and Alternatives").
2 Cleanup Program Sites (CP), also known as Site Cleanups (SC), are formerly known as Spills, Leaks, Investigations, and Cleanups (SLIC) sites.



Source: Metro; CDM Smith/AECOM JV 2021.

Figure 3.8.1. Resource Study Area for Hazards and Hazardous Materials

In addition, a review of the USDOT National Pipeline Mapping System online database and the State of California Department of Conservation, California Geologic Energy Management Division (CalGEM) Well Finder online database was conducted during preparation of the ISA. The information obtained from these sources was reviewed and summarized to establish existing conditions and to evaluate the significance of potential environmental effects.

In determining the level of significance, this analysis assumes that development in the DSA would comply with relevant federal, State, regional, and local ordinances and regulations. Where a significant impact would be anticipated, proposed mitigation measures to address these potential effects were developed.

3.8.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to Hazards and Hazardous Materials if it would:

Impact HAZ-1: Create a significant hazard to the public or environment through the routine transport, storage, use, or disposal of hazardous materials.

Impact HAZ-2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact HAZ-3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Impact HAZ-4: Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, create a significant hazard to the public or the environment.

Impact HAZ-5: Create a safety hazard for people residing or working in the Project Area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, or a private airstrip.

Impact HAZ-6: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

Impact HAZ-7: Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

3.8.5 Existing Setting

The DSA is located in the Gateway Cities areas. The Project traverses the physiographic features known as the Montebello Plain, the Rio Hondo, and the San Gabriel River. Topography along the Project alignment consists of gentle slopes along the side of the San Gabriel Valley. A review of the United States Geological Survey (USGS) topographic maps of the Los Angeles, El Monte, South Gate, and Whittier Quadrangles indicate that elevation ranges from approximately 150 to 260 feet above mean sea level as shown in **Figure 3.8.2**. (See Appendix G for further discussion.)

3.8.5.1 Definition of Terms

For purposes of this section, the term "hazardous materials" refers to both hazardous substances and hazardous wastes. A "hazardous material" is defined by federal regulations as "a substance or material that ... is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> *Hazardous material means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.*

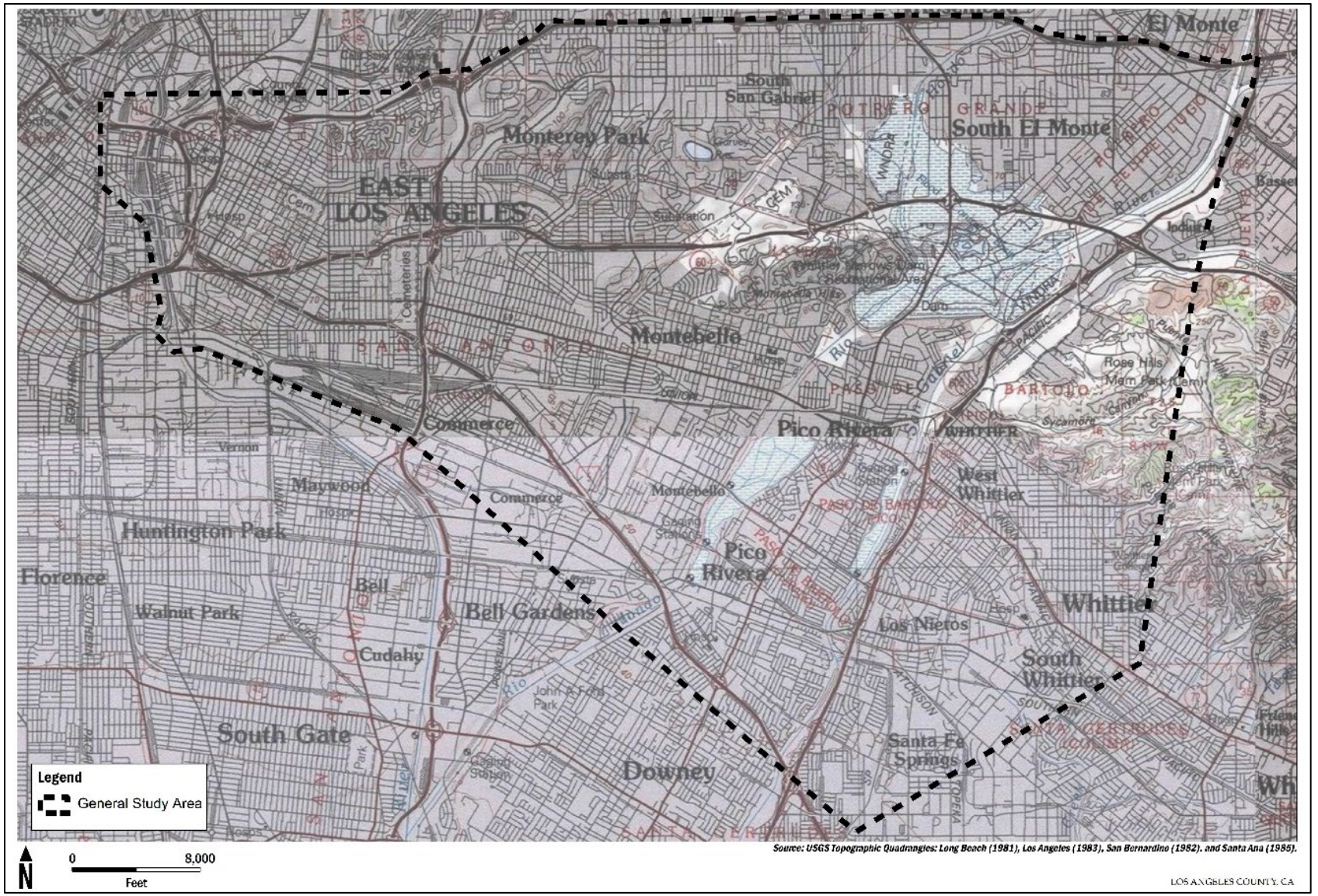
Hazardous wastes are defined in California Health and Safety Code Section 25141(b) as wastes that:

> *...because of their quantity, concentration, or physical, chemical, or infectious characteristics, [may either] cause, or significantly contribute to an increase in mortality or an increase in serious illness [, or] pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.*

3.8.5.2 Affected Properties with Documented Releases

The May 2021 Draft Final ISA identified 30 affected properties that have documented releases (Kleinfelder 2021) in the RSA. The list of affected properties was compiled using the March 2, 2020, Advanced Conceptual Engineering (ACE) Draft Final Right of Way Plans prepared for the Project.

Table 3.8-1 provides a summary of the identified affected properties including business addresses, assessor parcel numbers, Project construction purpose of each property, and proximity of the property to the Project alignment as well as a summary of the status of each property. The site numbers identified for each property in **Table 3.8-1** correspond with the numbers that appear on **Figure 3.8.3**. In addition to these affected properties with documented releases, 98 additional properties were identified that may have potential subsurface contamination from undocumented releases associated with current and/or historical uses of the properties (e.g., former railroad corridors, former gas stations, former dry cleaners, or former industrial properties). The location of these 98 additional properties is provided in Attachment A of Appendix I.



Source: Metro; CDM Smith/AECOM JV 2021.

Figure 3.8.2. U.S Geological Survey Topographic Map

Table 3.8-1. Affected Properties with Documented Releases

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
1	Mobil Gas Station 301/323 South Atlantic Boulevard	5248-004-040 5248-004-043	1/2/3	Construction staging (Atlantic station)	Closed LUST case. This property has been occupied by a gas service station since at least 1969. Mobil Oil was the subject of a closed LUST case for a release of gasoline that affected soil and groundwater; the case was closed by the RWQCB in 2015. Residual contamination may be present.	Southwest corner of Beverly Boulevard and Atlantic Boulevard
2	Shell Gas Station 300 South Atlantic Boulevard	6341-001-038	1/2/3	Optional construction staging (Atlantic station)	Closed LUST case (former Unocal). Unocal was the subject of a closed LUST case for a release of gasoline that affected soil; the case was closed by the RWQCB in 1998. Residual soil contamination may be present.	Southeast corner of Beverly Boulevard and Atlantic Boulevard
3	Shell Gas Station 318 South Atlantic Boulevard	6341-001-017	1/2/3	Optional construction staging (Atlantic station)	Closed LUST case (former Unocal). Unocal was the subject of a closed LUST case for a release with impacts to soil; the case was closed by the RWQCB in 1998. Residual contamination may be present.	Southeast corner of Beverly Boulevard and Atlantic Boulevard.
4	Discount Club; Brotman Boulevard Hand Car Wash 377 South Atlantic Boulevard	5248-008-046	1/2/3	Construction staging (Atlantic station)	Closed LUST case (former UZETA AMC). UZETA AMC was the subject of a closed LUST case for a release of aviation fuel to soil and groundwater; the case was closed by the county in 1993. Residual contamination may be present.	West side of Atlantic Boulevard between Via Corona Street and Repetto Street
5	76 Station 5200 Whittier Boulevard	6340-001-001	1/2/3	Construction staging (Atlantic/ Whittier station)	Closed LUST case (former ARCO). ARCO was the subject of two closed LUST cases associated with petroleum hydrocarbon contaminated soil and groundwater; the cases were closed by the RWQCB in 1996 and 2010. Remedial activities included soil excavation and soil vapor extraction (SVE). No groundwater remediation was performed/required. Groundwater was reported to be 127 to 130 feet bgs with a flow toward the southwest. Residual contamination may be present.	Southeast corner of Atlantic Boulevard and Whittier Boulevard

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
6	76 Station 5218 Whittier Boulevard	6340-001-002	1/2/3	Construction staging (Atlantic/ Whittier station)	Closed LUST case (see 5300 Whittier Boulevard). Potential for residual contamination to be present.	Southeast corner of Atlantic Boulevard and Whittier Boulevard
7	MGM Transformer Co. 5701 Smithway Street	6336-021-013	1/2/3	Construction easement	Closed DTSC evaluation site. Former transformer manufacturer and metals plating facility. VOC contamination (including chlorinated solvents) in soil from past activities; the case was closed by the DTSC in 2011. VOC and chlorinated solvent contamination may have contributed to groundwater contamination.	North of Smithway Street and The Citadel Outlet Center
8	Dreyer's Grand Ice Cream 5743 Smithway Street	6336-021-015	1/2/3	Construction easement	Closed LUST case. Dreyer's was the subject of a closed LUST case for a release of gasoline that affected soil; the case was closed by the RWQCB in 1996. Potential for residual contamination to be present.	North of Smithway Street and The Citadel Outlet Center
9	Cornerstone Apparel, Inc. 5801 Smithway Street	6336-024-016	1/2/3	Option construction staging (Commerce/ Citadel station)	Open Cleanup Program Site (CPS)-Spills, Leaks, Investigations, and Cleanups (SLIC) case. Pacific Tube Company is subject of an open CPS-SLIC case associated with VOC contamination in soil and groundwater from past activities, which may have migrated beneath the RSA (GeoTracker SLT34678676; Los Angeles RWQCB case number 19340719). The SLIC case was referred to the DTSC which has an open Voluntary Cleanup case associated with the property. The case remains open and active.	North of Smithway Street and The Citadel Outlet Center

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
10	Citadel Shopping Center 5600 Flotilla Street (also 5675 Telegraph Road and 5710 Smithway Street)	6336-019-031	1/2/3	Commerce/ Citadel station	Closed LUST case (Uniroyal Facility [5675 Telegraph Road]). Soil contamination (total petroleum hydrocarbons; TPH) and groundwater contamination (VOCs and metals) from former tire manufacturing activities (GeoTracker T0603702655, Los Angeles RWQCB case number I-00031). The property was redeveloped in 1990 for retail, office, and hotel use (Citadel). During construction, approximately 658 tons of petroleum hydrocarbon-impacted soil encountered during grading (up to 20 feet bgs) was disposed off-site. SVE was used to remediate remaining contaminated soil between 1989 and 1998. The Los Angeles County Fire Department and Los Angeles County Department of Public Works issued closure letters for non-UST related issues. Soil cleanup associated with USTs was overseen and deemed completed by the RWQCB as of December 18, 1996. VOC and metal contamination in groundwater was found to be the result of activities at an upgradient source (former Pacific Tube facility, discussed above). RWQCB indicated that no further action/remediation was required at the Citadel property. However, the RWQCB should be notified if additional soil/groundwater contamination is encountered during future activities on the property, and existing groundwater monitoring wells should remain to cooperate in ongoing groundwater investigations associated with off-site sources.	Southern Corner of Smithway Street and Hoefner Avenue

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
11	Zero Ten Corp. 2230-2250 Tubeway Avenue	6336-016-014	1/2/3	Below grade/tunnel	DTSC Evaluation case (JP Original Corp. Hsueh Trust). Referred to Los Angeles County in 2004 and listed as Los Angeles Co. Site Mitigation case, but no specific details (GeoTracker 19000024). Potential for contamination.	Southeast of Tubeway Avenue, approximately 250 feet south of Smithway Street
12	Samuel Son & Co. 6415 Corvette Street	6336-012-021	1/2/3	Commerce MSF	Open, inactive CPS-SLIC case (Advanced Process Supply Company). Advanced Process Supply Company is the subject of an open, inactive CPS-SLIC case for a release of acetone/toluene that affected soil; case is listed as open and inactive as of 2014 (GeoTracker SLT3401806, Los Angeles RWQCB case number 0340). Potential for contamination.	Eastern Corner of Saybrook Avenue and Corvette Boulevard
13	Unknown 6489 Corvette Street	6336-012-024	1/2/3	Commerce MSF	Closed LUST case (former Johnson Property). Former Johnson Property was subject of a closed LUST case for a release of "aviation" fuel that affected soil; the case was closed by the county in 1990. Potential for residual contamination.	Eastern Corner of Saybrook Avenue and Corvette Avenue
14	Allied Feather & Down 6905 West Acco Street	6336-002-033	1/3	Montebello MSF	Closed CPS-SLIC case. Release of VOCs; the case was closed in 2000. Coronet Carpets was listed as having had USTs, but detailed information was not provided. The facility status with the Los Angeles County is listed as removed. Potential for residual contamination.	Approximately 500 feet northeast of Washington Boulevard, just west of Vail Avenue

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
15	Gardner Trucking 2100 Yates Avenue (includes 8 Vail Avenue)	6336-002-018; 6336-002-019	1/3	Montebello MSF	Former Land Disposal Site (Vail Avenue Land Reclamation Project). The larger property was a land disposal site referred to as the "Vail Avenue Disposal Site" and "Vail Avenue Pit". The southern and northwestern portions were formerly used as a disposal sump for waste mud and water from Richfield Oil Company's well drilling operations (GeoTracker T110000004258, Los Angeles RWQCB case number: 60-052). The dumping operations were terminated and approximately 800,000 cubic yards of soil were removed. Dumping of furnace slag, refractory waste, concrete segments, mill scale, and sludge from room mills, and/or cooling tower sumps were approved to be disposed in the pit in 1958. Dumping of refuse began in 1962, and between 1968 and 1979, the City of Montebello used the site for dumping broken concrete, asphalt, and dirt. Filling of the pit continued until street level was reached. Concrete tilt-up structures were constructed on the property in the 1980s. Potential for encountering subsurface debris associated with past dumping activities.	Approximately 1,000 feet north-northeast of Washington Boulevard, east of Vail Avenue
16	Bella + Canvas 825 Vail Avenue	6336-002-020	1/3	Montebello MSF	Former Closed Landfill Disposal Site (Vail Avenue Land Reclamation Project associated with the main address of 2100 Yates Avenue). The eastern half of this facility is now 825 South Vail Avenue. Solid inert material (e.g., furnace slag, refractory waste, concrete segments, mill scale, and sludge from room mills, and/or cooling tower sumps, asphalt, dirt, and refuse) were disposed in a former pit until the pit was filled to street level beginning in 1985 until 1988 (GeoTracker T110000004258, Los Angeles RWQCB case number: 60-052). Potential exists for encountering subsurface debris associated with these past dumping/filling activities.	Approximately 1,000 feet north-northeast of Washington Boulevard, east of Vail Avenue

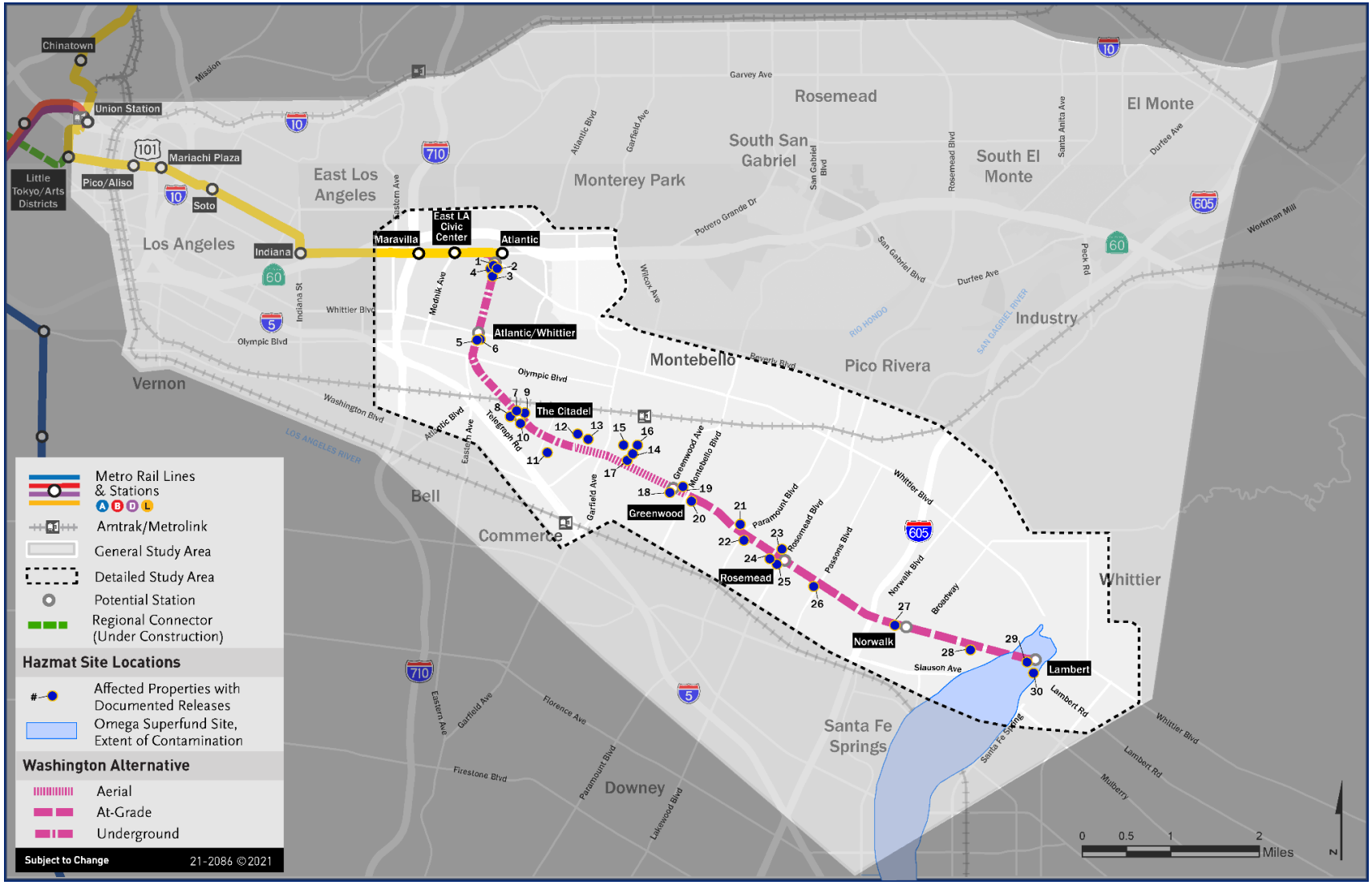
Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
17	Katzkin 6868 East Acco Street	6336-003-071; 6336-003-050	1/3	Montebello MSF	Closed LUST case (former John M. Fulmer Company). John M. Fulmer Company was subject of a closed LUST case for a release of gasoline that affected soil; the case was closed by the county in 1992 (GeoTracker T0603704232, Los Angeles RWQCB case number I-14947). Potential for residual soil contamination.	Approximately 250 northeast of Washington Boulevard, and 400 feet northwest of Vail Avenue
18	Jack in the Box 851, 869 Washington Boulevard	6352-007-059 6352-007-060	1/3	Optional construction staging (Greenwood station)	Open LUST case (former California Target #100 gas station). California Target #100 is the subject of an open LUST case for a release of gasoline to soil and groundwater; the case is listed as open as of 2006 (GeoTracker T0603705207, Los Angeles RWQCB case number R-13860). The site being considered for closure under the Low Threat Closure Policy (LTCP). Potential for soil and groundwater contamination.	South of Washington Boulevard, approximately 200 feet southwest of Montebello Boulevard
19	Westrux International; Michelin 812 Washington Boulevard	6352-027-011	1/3	Construction easement	Closed SLIC case (Westrux International Trucks). Westrux International Trucks was subject of a closed CPS-SLIC case for a release discovered during removal of a clarifier; the case was closed by RWQCB in 1998. Potential for residual contamination.	North of Washington Boulevard, approximately 200 feet northwest of Montebello Boulevard
20	Cruizers Express Car Wash 740 Washington Boulevard	6348-026-027	1/3	Construction easement	Closed LUST case (Custom Car Wash). Custom Car Wash was subject to a closed LUST case for a release of gasoline that affected soil; the case was closed by the RWQCB in 2015. Potential for residual contamination.	Northeast corner of Washington Boulevard and Montebello Boulevard

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
21	ARCO Gas Station 8351 Washington Boulevard	6369-006-032	1/3	Construction easement	Closed LUST case (ARCO #5224). ARCO was subject to a closed LUST case for a release of gasoline that affected soil and groundwater; the case was closed by RWQCB in 2010. Potential for residual contamination.	North corner of Washington Boulevard and Paramount Boulevard
22	Shell Gas Station 8400 Washington Boulevard	6369-006-032	1	Construction easement	Closed CPS-SLIC case (former Northrop Grumman Corp.). Northrop Grumman Corp. was subject of a closed CPS-SLIC case at this location based on the removal of a 500-gallon concrete-filled vault (referred to as a UST) that was discovered during the construction of the Acacia Car Wash at this location (associated with the Shell Gas Station). Groundwater was indicated to be approximately 30 to 40 feet bgs with a flow toward the south (away from the RSA). The case was closed by the RWQCB in 2007. Potential for residual contamination.	South corner of Washington Boulevard and Paramount Boulevard
23	Wienerschnitzel Restaurant 6749 Rosemead Boulevard	6370-027-013	1	Construction easement	Closed LUST case (former 76 Product Station #2594). The former gas station was subject to a closed LUST case for a release of "other solvent or non-petroleum hydrocarbon" that affected soil; the case was closed by the county in 1997. Potential for residual soil contamination.	Northwest corner of Washington Boulevard and Rosemead Boulevard
24	Chili's Grill and Bar 8890 Washington Boulevard	6369-006-045	1	Optional construction staging (Rosemead station)	Closed LUST case (former Ford Motor Company/Northrop Corporation). Ford Motor Company/Northrop Corporation was subject to a closed LUST case for a release that affected soil and groundwater; the case was closed by the RWQCB in 1997. Potential for residual contamination.	Southwest corner of Washington Boulevard and Rosemead Boulevard

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
25	Walgreens 8900 and 8930 Washington Boulevard	6369-006-048	1	Construction staging (Rosemead station)	Closed LUST case (former Ford Motor Company/Northrup Grumman Corp.) and closed DTSC Evaluation case (Northrup Grumman). Former Ford Motor Company (1956-1980) maintained at least 35 USTs, and generated various wastes (solvents, paint residues and heavy metals). Contaminated soil removed under DTSC oversight and case closure granted in 2011. Soil and groundwater samples were collected in April 1991 and results showed methylene chloride and acetone in soil, and VOCs and heavy metals in groundwater. Closed LUST cleanup cases for releases of oil, diesel, and gasoline that affected groundwater; the case closed by the RWQCB in 1997. Property redeveloped for commercial purposes. Potential for residual soil and groundwater contamination.	Southwest corner of Washington Boulevard and Rosemead Boulevard
26	Buffalo Spot 9332 Washington Boulevard	6381-006-024	1	Construction easement	Closed LUST case (former Mobil #18-FDR). Former gas service station (at least 1975 through 1989) was subject to a closed LUST case for a release of waste oil that affected soil; the case was closed by the RWQCB in 2004. Potential exists for residual contamination.	Southwest corner of Washington Boulevard and Passons Boulevard
27	76 Gas Station/Mini Mart 11025 Washington Boulevard	8176-016-029	1	Construction easement	Closed LUST case (Tosco - 76 Station #6907). Former gas service station was subject to a closed LUST case for a release of gasoline that affected groundwater; the case was closed by the RWQCB in 2019. Potential exists for residual petroleum hydrocarbon contamination.	Northwest corner of Washington Boulevard and Broadway
28	Waba Grill 11808 Washington Boulevard	8169-003-043	1	Construction easement	Closed LUST case (former Unocal #5091). Former gas service station was subject to a closed LUST case for a release of gasoline that affected groundwater; the case was closed by the RWQCB in 1998. Potential exists for residual contamination.	Southeast corner of Washington Boulevard and Sorensen Avenue

Site Number	Business Name and Address	Assessor Parcel Number	Alternative(s)	Construction Purpose	Parcel Status	Proximity to Alignment
29	Verizon; Flame Broiler; Starbucks; Jimmy Johns 12376 Washington Boulevard	8168-018-052	1	Construction staging (Lambert station)	Closed LUST case (former Chevron #9-7441). Former gas service station was subject to a closed LUST case for a release of gasoline that affected groundwater; the case was closed by the RWQCB in 1996. Potential exists for residual soil and groundwater contamination.	Southwest corner of Washington Boulevard and Lambert Road.
30	Unknow Occupant 12508 Lambert Road	8168-019-025	1	Construction staging (Lambert station)	Closed LUST case (American Medical Enterprises, Inc.). American Medical Enterprises was subject to a closed LUST case for a release of waste oil that affected groundwater; the case was closed by the RWQCB in 2016. Potential exists for residual soil and groundwater contamination.	West of Lambert Road, approximately 750 feet south of Washington Boulevard

Sources: Kleinfelder 2021; GeoTracker database; data compiled by AECOM 2021.



Source: AECOM/CDM Smith, 2021.

Figure 3.8.3. Affected Properties with Documented Releases

3.8.5.3 Omega Superfund Site

The eastern portion of the Project (from approximately Sorensen Avenue to Lambert Road/Santa Fe Springs Road) is situated within OU2 of the Omega Superfund Site (**Figure 3.8.3**). Omega Chemical Corporation (Omega) formerly operated a refrigerant and solvent recycling, reformulation and treatment facility in Whittier from 1976 to 1991. Former operations resulted in impacts to soil, gases found in the air space between soil particles (i.e., soil gas), and groundwater from VOCs, including tetrachloroethylene (PCE), trichloroethene (TCE), and Freon.

The plume of contaminated groundwater that comprises OU2 extends from the Omega property for approximately 4.5 miles in a south-southwesterly direction and beneath portions of the Project. The width of the contaminated groundwater plume varies from approximately 0.5 to one mile, and the area covered by the plume is approximately 3.3 square miles in size. In 2001, USEPA started investigations to define the extent of groundwater contamination at OU2 and installed 30 well clusters for monitoring groundwater contamination originating from the Omega property. In the vicinity of the alignment, two groundwater monitoring wells are south of Washington Boulevard near Rivera Road, one groundwater monitoring well is near Byron Road, and one groundwater monitoring well is north of the Washington Boulevard and Lambert Road intersection (USEPA 2011). Contaminated groundwater at OU2 has been measured at depths of approximately 40 to 100 feet below ground surface (bgs) and extends to depths of about 200 feet bgs in some areas.

As part of the OU2 remedial investigation, the USEPA conducted a baseline human health risk assessment for OU2 that identified the contaminants and exposure pathways (e.g., dermal exposure, ingestion) that required remedial action (USEPA, 2011). USEPA's human health risk assessment concluded that OU2 contaminated groundwater does not pose a current or immediate risk to human health but could pose a potential future risk through domestic use of contaminated groundwater without wellhead treatment. Furthermore, the USEPA performed a screening level risk assessment for soil gas vapor intrusion into indoor air, which found that the potential health risk for inhalation exposure to contaminants in soil gas that are present in indoor air as a result of vapor intrusion is low (USEPA 2011).[3]

3.8.5.4 Hazardous Materials from Roadway Corridors

Yellow-thermoplastic and yellow-painted traffic stripe and pavement marking that was applied to roadways before 1997 contained as much as 2.6 percent lead (Caltrans 2019). Lead is a highly toxic metal that was used until the late 1970s in a number of products, most notably paint. The use of lead as an additive to paint was discontinued in 1978 because human exposure to lead was determined by the USEPA and OSHA to be an adverse human health risk. Residue produced from the removal of this yellow-thermoplastic and yellow-painted traffic stripe and pavement marking contains heavy metals such as lead chromate in concentrations that exceed thresholds established by the California Health and Safety Code and Title 22 of the CCR Division 4.5 (Caltrans 2019).

3 The risk evaluation was based on conditions at the Whispering Fountains Apartments at 12251 Washington Boulevard, which are located in an area of OU2 where contaminant of concern (COC) concentrations in groundwater are relatively high and the depth to groundwater is relatively low. These conditions are believed to present the greatest potential within the OU2 area for the migration of volatile COCs from groundwater up through the overlying soil and into buildings. The estimate of risk was done by using soil gas data from this location to predict the levels of soil gas COCs that could be present in indoor air as a result of vapor intrusion. Cancer risks and non-cancer health hazards were estimated for an adult receptor. The estimated potential cancer risk for an adult was determined to range from 3x10-8 to 3x10-7. These risk levels are not considered to be significant by the USEPA (USEPA 2011).

Wood utility poles may be treated with preserving chemicals resulting in treated wood waste (TWW) if removal is necessary. TWW contains hazardous chemicals, such as arsenic, chromium, and copper, that are known to be toxic or carcinogenic and pose a risk to human health and the environment. Harmful exposure to these chemicals may result from dermal contact with TWW, or from inhalation or ingestion of TWW particulate (DTSC 2008). Aerially-deposited lead (ADL) can be present along major roadway corridors, such as Washington Boulevard and Atlantic Boulevard, from historical use of leaded gasoline (DTSC 2004). DTSC regulations specify the levels at which lead in soil is considered to be a risk. Soils with a total lead concentration of 80 mg/kg or less are usually considered acceptable for reuse without restriction for residential, or unrestricted, land use. Soils with a total lead concentration of 320 mg/kg or less are usually considered acceptable for use at commercial/industrial properties with prior written approval from DTSC, but land use restrictions are required to prevent unacceptable risk by limiting the use of the property (DTSC 2007). In areas where road construction would occur, Caltrans has found levels of lead that are higher than DTSC's specifications. The lead is found within 30 feet of the edge of the pavement and within the top 6 inches of the soil. In some cases, lead has been found as deep as 2 to 3 feet below the surface. Therefore, soils in major roadway corridors have the potential to be contaminated with ADL from car emissions that occurred prior to the elimination of lead in gasoline (DTSC 2016).

3.8.5.5 Hazardous Building Materials

Existing structures within the Commerce MSF site option and Montebello MSF site option may have been constructed when asbestos-containing materials (ACMs), PCB-containing materials, and LBP were used (Kleinfelder 2021). The existing structures at both MSF site options would be demolished to accommodate construction of the MSF.

Asbestos is designated as a hazardous substance when the fibers have potential to come in contact with air because the fibers are small enough to lodge in the lung tissue and cause health problems. The presence of ACMs in existing buildings as well as in natural gas and cementitious water pipelines poses an inhalation threat only if the ACMs are found to be in a friable state. If the ACMs are not friable, there is no inhalation hazard because asbestos fibers remain bound in the material matrix. Emissions of asbestos fiber to the ambient air, which can occur during activities such as renovation or demolition of structures made with ACMs (e.g., insulation), are regulated in accordance with Section 112 of the Federal Clean Air Act.

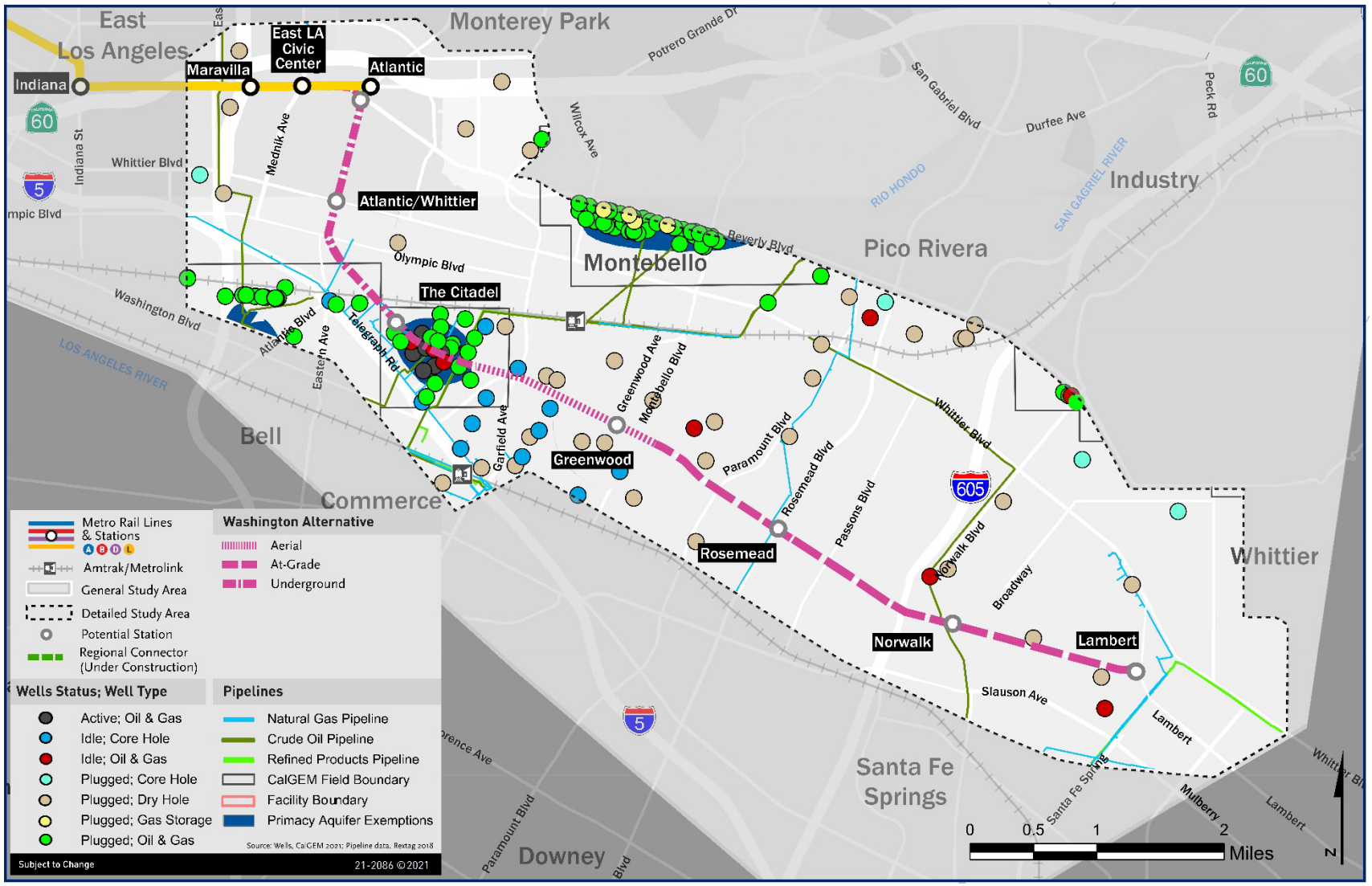
As discussed above, lead is a highly toxic metal that has been determined by USEPA and OSHA to be an adverse health risk, particularly to young children. Primary sources of lead exposure are deteriorating lead-based paint, including painted curbs, poles, protective bollards, and fire hydrants along the ROW and existing buildings within the Commerce MSF site option and Montebello MSF site option; lead-contaminated dust; and lead-contaminated soil. PCBs are considered hazardous materials because of their toxicity; they have been shown to cause cancer in animals, along with effects on the immune, reproductive, nervous, and endocrine systems, and studies have shown evidence of similar effects in humans (USEPA 2013).

3.8.5.6 Subsurface Gas Conditions and Oil and Gas Wells

Methane and hydrogen sulfide are considered hazardous because of their explosive properties. Also, hydrogen sulfide is highly toxic when inhaled, and can be smelled at lower, non-toxic, levels. These gases can seep into existing buildings and into open excavations, such as tunnels, from the surrounding soil and through open fractures or faults in deep bedrock. The Los Angeles County Public Works Department does not identify methane gas buffer zones within the Alternative 1 alignment (Los Angeles County 2022). The May 2021 Final Draft ISA Report did not identify subsurface methane or hydrogen sulfide gases. However, the May 2021 Final Draft ISA Report notes that methane, hydrogen sulfide, and other oil-filed related gases could be present in the vicinity of oil and gas wells.

In general, the DSA from approximately Union Pacific Avenue to Garfield Avenue passes through the Bandini Oil Field and Los Angeles East Oil Field. Oil or gas wells that are either idle, active, or abandoned/plugged located in the DSA are shown in **Figure 3.8.4** and in Figures 4A through 4C **i**n Attachment A of Appendix I. The May 2021 Final Draft ISA Report did not identify idle, active, or abandoned/plugged wells within the Alternative 1 alignment, station sites, or within the Commerce MSF site option. Active oil/gas wells, plugged dry oil/gas wells, and idle oil/gas wells are located in the vicinity of the alignment west of South Tubeway Avenue, and two plugged dry oil/gas wells are located under the Citadel Outlets parking lot southwest of Smithway Street. Additional plugged dry oil/gas wells and idle oil/gas wells are located south and west of the Commerce MSF site option boundaries.

The May 2021 Final Draft ISA Report identified plugged dry holes within the Montebello MSF site option (Attachment A of Appendix I, Figure 4B).



Source: Wells, CalGEM 2021, Pipeline data, Rextag 2018.

Figure 3.8.4. Oil and Gas Wells and Pipeline Locations

3.8.5.7 Petroleum and Natural Gas Pipelines

The following petroleum and natural gas pipelines were identified in close proximity to or passing through the DSA as shown in **Figure 3.8.4** and Attachment A of Appendix I (Figures 4A through 4C).

- Matrix Oil Corporation (Operator ID 39497) operates a crude oil pipeline (ID 4IN East Los Angeles Oil) as part of the 4" East Los Angeles – Oil Sales Line system. As of February 1, 2018, the pipeline was reported active and filled. The pipeline is depicted along Leo Avenue near its intersection with Triumph Street in the City of Commerce and continues southwesterly beyond I-5. An accidental release was reported (Report No. 20120207) from this pipeline due to corrosion in 2012 at the intersection of Leo Avenue and Triumph Street approximately 0.5 mile west of the Commerce MSF site option. The Alternative 1 alignment would intersect the oil pipeline where the pipeline crosses near the Smithway Street/Leo Avenue intersection. The alignment would be underground at this location.

- Crimson Pipeline L.P. (Operator ID 32103) operates a crude oil pipeline (ID 46) associated with its Northam System, and Montebello Terminal to Compton Junction Sub-System. As of August 10, 2017, the pipeline was indicated to be active and filled. The pipeline follows a northeast/southwest trending railroad corridor located between Tubeway Avenue and Saybrook Avenue and passes through the Alternative 1 alignment where the alignment intersects the railroad corridor south of South Tubeway Avenue. The alignment would be underground at this location.

- Chevron Pipeline Company (Operator ID 2731) operates a gasoline, diesel and/or jet fuel pipeline (ID CAL0319) as part of its "CUSA P/LS-Co. Calif. Products" System and "El Segundo-Montebello Product Pipeline" Subsystem. As of June 12, 2018, this pipeline was indicated to be active and filled. The pipeline follows a northeast-southwest trending railroad corridor located between Tubeway Avenue and Saybrook Avenue and passes through the Alternative 1 alignment where the alignment intersects the railroad corridor south of South Tubeway Avenue. The alignment would be underground at this location.

- Chevron Pipeline Company operates a natural gas pipeline (ID CAL0326) as part of its "CUSA Pipeline-So. Calif. Gas" System and "Los Angeles River JCT-Montebello Gas Pipeline" Subsystem. As of October 25, 2018, this pipeline was indicated to be active and filled. The pipeline follows a northeast-southwest trending railroad corridor located between Tubeway Avenue and Saybrook Avenue and passes through the Alternative 1 alignment where the alignment intersects the railroad corridor south of South Tubeway Avenue. The alignment would be underground at this location.

- Southern California Gas Company operates a natural gas transmission pipeline (ID 118), which crosses the Alternative 1 alignment at Rosemead Boulevard, then continues north within Washington Boulevard for approximately 0.7 mile, where it the turns and travels in a west/northwesterly direction within Coffman and Pico Road. The alignment would be at-grade at this location. As of March 14, 2018, this pipeline was indicated to be active and filled.

- Crimson Pipeline L.P. (Operator ID 32103) operates a crude oil pipeline (ID 1070) associated with its Montebello System and Subsystem. The pipeline crosses the Alternative 1 alignment at Norwalk Boulevard, then continues east within Washington Boulevard to Allport Avenue, where it turns in a southerly direction. The alignment would be at-grade at this location. As of August 10, 2017, the pipeline was indicated to be active, but unfilled.

- An empty liquid crude oil pipeline (ID 5222), operator not listed, associated with a Santa Fe Springs Crude System, M-2 Idle Santa Fe Springs STA-4 Subsystem, crosses the Alternative 1 alignment at Norwalk Boulevard. The alignment would be at-grade at this location. As of December 31, 2017, the pipeline was indicated to be permanently abandoned.

3.8.5.8 Agricultural Chemicals

Chemicals potentially used in agricultural activities could result in residual concentrations of persistent pesticides in the soil. Persistent pesticides leave residues that remain in the environment without breaking down, such as organochlorine pesticides (OCPs) (e.g., dichlorodiphenyl-trichloroethane [DDT], Toxaphene, and Dieldrin). Previous historical research revealed that the DSA was historically used for agricultural purposes generally between the 1920s and 1950s (Kleinfelder 2021). The DSA was redeveloped in the 1950s as residential, commercial, and industrial uses. However, residual pesticides and herbicides may be present in shallow soil along the Project alignment and on affected parcels. In addition, railroad tracks have been present in the DSA since the late 1920s between Atlantic Boulevard and Garfield Avenue in the City of Commerce which is an industrial area of the Alternative 1 alignment (Kleinfelder 2021). The potential exists for persistent pesticides to be present in shallow soil along railroad tracks, or in former railroad corridors.

3.8.5.9 Proximity to Schools

The following schools are located within one-quarter mile from the Alternative 1 alignment:

- George Washington Elementary School, 7804 S. Thornlake Avenue, Whittier
- Pioneer High School located at 10800 Benavon Street, Whittier
- Ada S. Nelson Elementary School, 8140 South Vicki Drive, Whittier
- Rivera Middle School located at 7200 Citronell Avenue, Pico Rivera
- El Rancho High School located at 6501 Passons Boulevard, Pico Rivera
- Greenwood Elementary School located at 900 South Greenwood Avenue, Montebello
- Calvary Chapel Christian Academy, 931 South Maple Avenue, Montebello

- KIPP Promesa Prep located at 5156 Whittier Boulevard, Los Angeles
- KIPP Raices Academy located at 668 South Atlantic Boulevard, East Los Angeles
- 4th Street Elementary located at 420 Amalia Avenue, Los Angeles
- Garfield High School located at 5101 East 6th Street, Los Angeles
- Monterey Senior High School, 466 South Fraser Street, Los Angeles
- St. Alphonsus School, 552 South Amalia Avenue, Los Angeles
- Griffith STEAM Magnet Middle School, 4765 East Fourth Street, Los Angeles
- Arts in Action Community Charter Elementary School, 5115 Via Corona Street, Los Angeles

3.8.5.10 Proximity to Airports

The nearest public airport or airstrip to the Build Alternatives is Whittier Air Strip, which at the nearest point is over four miles to the north.

3.8.5.11 Wildfire Hazards

The DSA is located in a Local Responsibility Area (as opposed to a State Responsibility Area (SRA)), and there are no fire hazard severity zones or wildland urban interfaces[4] as designated by the California Department of Forestry and Fire Protection(CAL FIRE 2015) (CAL FIRE 2021).[5] The nearest very high fire hazard severity zone approximately 1.5 miles to the east of the DSA within city of Whittier. The DSA is primarily located in a highly developed and urbanized area comprised of high-density residential, commercial, office, and industrial land uses. Limited portions of the DSA, which includes the Rio Hondo Spreading Grounds, are undeveloped and more susceptible to the ignition and spread of wildfire due and the presence of dry vegetation and shrubs (i.e. vegetative fuel). However, CAL FIRE does not categorize the Rio Hondo Spreading Grounds as an SRA, a very high fire hazard severity zone, and it is not delineated within a wildland urban interface.

3.8.5.12 Emergency Response

Metro is the primary source of mass transportation equipment used by the Los Angeles County Operation Area. Both busses and mass transit trains may be available for use in evacuations, transportation of equipment and supplies, transportation of emergency response workers, and establishment of temporary bus/train lines for the transportation of citizens to relief locations such as mass shelters (Los Angeles County 2012). I-605 freeway is identified as a primary disaster route and Washington Boulevard is identified as a secondary disaster route for the Los Angeles County Operational Area and both are designated as emergency evacuation routes for the cities within the

4 CAL FIRE defines the wildland urban interface as the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetation fuels.
5 California Public Resources Code (PRC) Sections 4125–4127 define a State Responsibility Area as lands in which the financial responsibility for preventing and suppressing wildland fire resides with the State of California. A Local Responsibility Area are areas under the jurisdiction of local entities (e.g., cities and counties).

DSA (i.e., cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier) (Los Angeles County 2012).[6]

3.8.6 Impact Evaluation

3.8.6.1 Impact HAZ-1: Transport, Storage, Use, or Disposal of Hazardous Materials

Impact HAZ-1: Would a Build Alternative create a significant hazard to the public or environment through the routine transport, storage, use, or disposal of hazardous materials?

3.8.6.1.1 Alternative 1 Washington

Operational Impacts

It is not anticipated that substantial quantities of hazardous materials would be routinely transported, used, stored, or disposed of during operation of Alternative 1. Operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous.[7] As set forth in PM HAZ-1 in **Section 3.8.7.1**, cleaning and maintenance products are required to be labeled with appropriate cautions and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. As discussed below, maintenance of LRT trains, vehicles, and equipment would occur at the Commerce MSF site option or Montebello MSF site option. Compliance with existing regulations would ensure proper transportation, use, and storage of hazardous materials, and operation of Alternative 1 would have a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As set forth in PM HAZ-1 in **Section 3.8.7.1**, cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Compliance with existing regulations would ensure proper transportation, use, and storage of hazardous materials, and operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact.

6 Disaster routes are freeway, highway, or arterial routes pre-identified for use during times of crisis. These routes are utilized to bring in emergency personnel, equipment, and supplies to impacted areas in order to save lives, protect property, and minimize impacts to the environment. An evacuation route is used to move the affected population out of an impacted area.
7 Acutely hazardous materials are defined as waste containing such dangerous chemicals that it could pose a threat to human health and the environment even when properly managed.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option, including operation of an at-grade Greenwood station and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides, as would an aerial station and alignment at this location. None of these substances would be acutely hazardous. As set forth in PM HAZ-1 in **Section 3.8.7.1**, cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Compliance with existing regulations would ensure proper transportation, use, and storage of hazardous materials, and operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

Construction Impacts

Construction of Alternative 1 would require use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction. There is low likelihood that substantial quantities of hazardous materials would be stored during construction. Moreover, these hazardous materials would not include acutely hazardous materials or substances listed in 40 CFR 355 *Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities*.

As described throughout **Section 3.8.2**, "Regulatory Framework," there is an established, comprehensive federal, state, regional, and local framework independent of the CEQA process that is intended to reduce the risks associated with the use, transport, and disposal of hazardous materials. Transportation of hazardous materials on area roadways is regulated by the CHP and Caltrans. The use and disposal of hazardous materials is heavily regulated at both the federal and state level; these regulations are promulgated and enforced by agencies such as USEPA, SWRCB, DTSC, Cal/OSHA, and the SCAQMD. Metro would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. In accordance with SWRCB regulations and set forth in PM HAZ-2 (**Section 3.8.7.1**), Metro would obtain and comply with a National Pollutant Discharge Elimination System (NPDES) permit, specifically the SWRCB Construction General Permit. As part of the Construction General Permit, the contractor would be required to prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) which would include best management practices (BMPs), including the following and/or similar measure to minimize the risk of accidental spills of hazardous materials during construction:

- Hazardous Spill Prevention. Vehicles and equipment would be maintained in proper working condition to minimize potential fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. Service/maintenance vehicles would carry materials to absorb leaks or spills. Servicing, refueling, and staging of construction equipment would take place only at designated areas where a spill would not flow to drainages. Equipment washing, if needed, would occur only in designated locations where water would not flow into drainage channels.

- Drainage BMPs to protect water quality, such as oil/water separators, catch basin inserts, storm drain inserts, media filtration, and catch basin screens, would be implemented. Spill cleanup materials (e.g., rags, absorbent materials, and secondary containment) would be kept at the work site when handling materials.

- Hazardous spills would be reported to the designated CUPA (i.e., Los Angeles County Fire Department Health Hazardous Materials Division or Santa Fe Springs Department of Fire-Rescue) and would be cleaned up immediately and contaminated soil would be properly disposed of at a licensed facility. A properly designed, centralized storage areas that would keep hazardous materials fully contained would be specified.

As discussed in Section 3.9.7.1 of Section 3.9, Hydrology and Water Quality, a qualified SWPPP Practitioner is responsible for implementing BMPs under the SWPPP and ensuring compliance with the permit. Site supervisors would conduct regular meetings to discuss pollution prevention as established in the SWPPP. The SWPPP would also specify a monitoring program to be implemented that includes both dry and wet weather inspections. City personnel from each applicable jurisdiction would also conduct regular inspections to ensure compliance with the SWPPP. By implementing the SWPPP and associated BMPs as required by the SWRCB Construction General Permit and set forth in PM HAZ-2, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs.

Transportation of hazardous materials, such as contaminated soils; hazardous building materials, including asbestos, lead, and PCBs; and other hazardous wastes (i.e., TWW, bridge demolition debris), would occur along designated truck routes within the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Consistent with local plans, truck routes that may be used for transporting and hauling hazardous materials include Atlantic Boulevard, Saybrook Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard, Slauson Avenue, and Whittier Boulevard. Specific routes would depend on a number of factors, including the construction contract limits, individual contractor's choices, and coordination with the city jurisdictions. Transportation of hazardous materials would comply with State regulations governing hazardous materials transport included in the California Vehicle Code (Title 13 of the California Code of Regulations), the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2.

The Los Angeles County Public Health Department manages enforcement and permitting for facilities that receive and dispose of solid waste, including hazardous waste. **Table 3.8-2** lists the largest active and regulatory permitted solid waste facilities that are serving Los Angeles County with the permitted capacity, anticipated closure date, and accepted hazardous waste. Contaminated soils and hazardous building materials and wastes would be disposed of in accordance with federal, state, and local requirements at the landfills listed in **Table 3.8-2**.

Table 3.8-2. Hazardous Waste Disposal Landfills

Landfill Site Name and Address	Max. Permit Capacity	Remaining Capacity	Remaining Capacity Date	Closure Date	Hazardous Waste Accepted
	Cubic Yards				
Antelope Valley Public, 1200 W. City Ranch Road, Palmdale	30,200,000	17,911,225	10/31/2017	4/1/2044	Contaminated soil, asbestos
Azusa Land Reclamation Co., 1211 West Gladstone Street, Azusa	58,900,00	9,900,000	4/7/2011	4/1/2030	Contaminated soil, asbestos
Clean Harbors Buttonwillow, 2500 West Lokern Road, Buttonwillow	13,250,000	NA	NA	1/1/2040	Acutely hazardous materials, contaminated soil, PCBs, asbestos, RCRA waste with heavy metals
Lancaster Landfill and Recycling Center, 600 East Avenue 'F' in Lancaster	27,700,000	14,514,648	8/25/2012	3/1/2044	Contaminated soil, asbestos

Source: CalRecycle 2022.
Note:
Acutely hazardous materials are defined as waste containing such dangerous chemicals that it could pose a threat to human health and the environment even when properly managed.
Key:
PCB = polychlorinated biphenyls RCRA = Resource Conservation and Recovery Act

Compliance with the regulations discussed above and set forth in PM HAZ-2, would ensure that all motor carrier transporters of hazardous materials have a Hazardous Materials Transportation license issued by the California Highway Patrol, requiring the transport of hazardous materials via routes with the least overall travel time, prohibiting the transportation of hazardous materials through residential neighborhoods, and requiring transporters to take immediate action to protect human health and the environment in the event of spill, release, or mishap.

Adherence to federal and state regulations reduces the risk of exposure to hazardous materials used during construction. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. With incorporation of existing regulations, construction of Alternative 1 would have a less than significant impact related to the creation of significant hazards to the public through routine transport, storage, use, and disposal of hazardous materials.

Design Options

Atlantic/Pomona Station Option

Under Alternative 1 with the Atlantic/Pomona Station, as required by law and set forth in PM HAZ-2 in **Section 3.8.7.1**, Metro would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be

managed through appropriate material handling and BMPs. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes would be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact related to the creation of significant hazards to the public through routine transport, storage, use, and disposal of hazardous materials.

Montebello At-Grade Option

Under Alternative 1 with the Montebello At-Grade Option, as required by law and set forth in PM HAZ-2 in **Section 3.8.7.1**, Metro would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes would be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact related to the creation of significant hazards to the public through routine transport, storage, use, and disposal of hazardous materials.

3.8.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

It is not anticipated that substantial quantities of hazardous materials would be routinely transported, used, stored, or disposed of during operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. Operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As set forth in PM HAZ-1 in **Section 3.8.7.1**, cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Maintenance of LRT trains, vehicles, and equipment would occur at the Commerce MSF site option or Montebello MSF site option. Compliance with existing regulations would ensure proper transportation, use, and storage of hazardous materials, and operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would require use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction. There is low likelihood that substantial quantities of hazardous materials would be

stored during construction. Moreover, these hazardous materials would not include acutely hazardous materials or substances listed in 40 CFR 355 *Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities*. As required by law and PM HAZ-2 (**Section 3.8.7.1**), Metro would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs.

Transportation of hazardous materials, such as contaminated soils; hazardous building materials, including asbestos, lead, and PCBs; and other hazardous wastes (i.e., TWW), would occur along designated truck routes within the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Cooperation with corridor cities would occur throughout the construction process. Restrictions on haul routes would be incorporated into construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impacts related to the creation of significant hazards to the public through routine transport, storage, use, and disposal of hazardous materials.

3.8.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

It is not anticipated that substantial quantities of hazardous materials would be routinely transported, used, stored, or disposed of during operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As set forth in PM HAZ-1 in **Section 3.8.7.1**, cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Maintenance of LRT trains, vehicles, and equipment would occur at the Commerce MSF site option or Montebello MSF site option. Compliance with existing regulations would ensure proper transportation, use, and storage of hazardous materials, and operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would require use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction. There is low likelihood that substantial

quantities of hazardous materials would be stored during construction. Moreover, these hazardous materials would not include acutely hazardous materials or substances listed in 40 CFR 355 *Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities*. As required by law and set forth in PM HAZ-2 (**Section 3.8.7.1**), Metro would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs.

Transportation of hazardous materials, such as contaminated soils; hazardous building materials, including asbestos, lead, and PCBs; and other hazardous wastes (i.e., TWW), would occur along designated truck routes within the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Cooperation with corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact related to the creation of significant hazards to the public through routine transport, storage, use, and disposal of hazardous materials.

3.8.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would involve maintenance of LRT trains, vehicles, and equipment and require the use of small amounts of hazardous substances such as oil, grease, solvents, paints, and pesticides. None of these substances would be acutely hazardous. The types and amounts of hazardous materials used at the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not pose any greater risk than the existing uses at other similar development elsewhere in the in the vicinity of the MSF site options. Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not require the use, handling, or storage of quantities of hazardous materials in excess of regulatory thresholds.[8] If the quantity of hazardous materials used, handled, or stored on-site would exceed the regulatory thresholds, there is an established comprehensive regulatory framework independent of the CEQA process that would be followed, including preparation and submittal of a HMBP, which is also as set forth in PM HAZ-3 in **Section 3.8.7.1**. Compliance with existing regulations, including those described in PM HAZ-1, would ensure proper transportation, use, and storage of hazardous materials, and operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would a have less than significant impact.

8 The thresholds are 55 gallons for a hazardous liquid; 500 pounds of a hazardous solid; 200 cubic feet for any compressed gas; or threshold planning quantities of an extremely hazardous substance, per Chapter 6.95 California Health and Safety Code.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would require use of typical construction equipment and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction. There is low likelihood that substantial quantities of hazardous materials would be stored during construction. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs as mandated by the SWRCB Construction General Permit and set forth in PM HAZ-2 (**Section 3.8.7.1**). Cooperation with corridor cities would occur throughout the construction process. Restrictions on haul routes would be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact related to the creation of significant hazards to the public through routine transport, storage, use, and disposal of hazardous materials.

3.8.6.2 Impact HAZ-2: Release of Hazardous Materials

Impact HAZ-2: Would a Build Alternative create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

3.8.6.2.1 Alternative 1 Washington

Operational Impacts

As discussed in Impact HAZ-1, operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. No activities are proposed that would result in the use or discharge of unregulated hazardous materials. As specified in PM HAZ-1 in **Section 3.8.7.1**, storage and disposal of hazardous materials and waste would be conducted in accordance with all federal and state regulatory requirements that are intended to prevent or manage hazards, and if a spill does occur, it would be remediated accordingly. Therefore, operation of Alternative 1 would have a less than significant impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As specified in PM HAZ-1 in **Section 3.8.7.1**, storage and disposal of hazardous materials and waste would be conducted in

accordance with all federal and state regulatory requirements that are intended to prevent or manage hazards, and if a spill does occur, it would be remediated accordingly. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides similar to an aerial station and guideway at this location. None of these substances would be acutely hazardous. As specified in PM HAZ-1 in **Section 3.8.7.1**, storage and disposal of hazardous materials and waste would be conducted in accordance with all federal and state regulatory requirements that are intended to prevent or manage hazards, and if a spill does occur, it would be remediated accordingly. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Construction Impacts

There are several ways in which construction activities required for Alternative 1 could result in the release of hazardous materials. Construction would require grading activities, which would potentially expose construction workers and the public to hazardous conditions through disturbance contaminated soils and/or groundwater. For the underground segment of the alignment, if tunneling advanced through contaminated soil or groundwater, the excavated soil/slurry mix could be considered hazardous, depending on the levels of contamination encountered. Parcels within one-quarter mile of the Alternative 1 alignment have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals (**Table 3.8-1**). In addition, other potentially affected parcels within one-quarter mile of the Alternative 1 alignment may have subsurface contamination from undocumented releases associated with current and/or historical uses of the property(ies) (e.g., railroad corridors, gas stations, dry cleaners, or industrial properties) (Attachment A of Appendix I, Figures 3A to 3H). Elevated concentrations of lead and chromium may be present in the striping paint used on the existing roadways. Demolition of the existing bridges over Rio Hondo and the San Gabriel River could generate debris contaminated with lead-based paint, ADL, and asbestos. Further, there is the potential during construction to encounter, dewater, and dispose of contaminated groundwater during ground disturbing activities, shallow excavation, tunnel boring or excavation for the underground guideway, and relocation of utilities. In addition, utility relocation could result in TWW that requires disposal. There are no methane gas buffer zones within the Alternative 1 alignment (Los Angeles County 2022).

As discussed in **Section 3.8.5.3**, the eastern portion of Alternative 1, from approximately Sorensen Avenue to Lambert Road/Santa Fe Springs Road, is within OU2 of the Omega Superfund Site (**Figure 3.8.3**). Contaminated groundwater is known to be present at depths of approximately 40 to 100 feet bgs and extends to approximately 200 feet bgs in some areas (USEPA 2011). Construction of the at-grade Lambert station and the at-grade alignment within OU2 would entail excavation of a maximum of 20 feet deep, which is approximately 20 feet higher than the highest depth of the known contaminated groundwater present. Therefore, the potential to encounter contaminated groundwater that results in human health and environmental hazards is low. As further discussed in **Section 3.8.5.3**,

additional screening level risk evaluations conducted by the USEPA and investigations conducted the RWQCB and DTSC concluded that exposure to soil gas posed a low health risk (USEPA 2011).

The May 2021 Draft Final ISA Report (Attachment A)identified the following environmental concerns applicable to Alternative 1:

- The Alternative 1 alignment from approximately Union Pacific Avenue to Garfield Avenue passes through the Bandini Oil Field and Los Angeles East Oil Field. Methane, hydrogen sulfide, and other oil-field-related gases may be present in the subsurface and may be encountered during ground-disturbing activities. Natural oil seeps in oil-bearing sediments may also be encountered.

- The underground alignment of Alternative 1 would transect the following active and filled pipelines in the vicinity of South Tubeway Avenue: the Matrix Oil Corporation crude oil pipeline; Crimson crude oil pipeline; Chevron Pipeline Company gasoline diesel and/or jet fuel pipeline; Chevron Pipeline Company natural gas pipeline. The at-grade portion of the Alternative 1 alignment would cross the active and filled Southern California Gas Company natural gas transmission pipeline at the intersection of Washington Boulevard and Rosemead Boulevard. Unmapped pipelines may also be present. These pipelines, and the potential for soil and groundwater contamination from undocumented releases, may be encountered during ground-disturbing activities.

- Elevated concentrations of lead (from use of leaded gasoline) and other metals are sometimes associated with older roadways. ADL may be present in shallow soil along these roadways, especially along Atlantic Boulevard and Washington Boulevard.

- The DSA was historically used for agricultural purposes generally between the 1920s and 1950s. Residual pesticides and herbicides may be present in shallow soil along the alignment and on affected parcels.

- Railroad tracks have been present in the DSA since the late 1920s in the industrial area between Atlantic Boulevard and Garfield Avenue in the city of Commerce. In addition, various railroad spurs branched onto private properties are associated with several of the industrial facilities in the DSA. Shallow soil along the railroad tracks or in former railroad corridors may be affected by petroleum hydrocarbons, metals, and pesticides.

During ground preparation and construction activities, construction workers and the public could come in contact with and be exposed to the documented or undocumented hazardous materials and conditions discussed above. As indicated, effects could include: potential exposure of construction workers and/or the public to chemical compounds in soils, soil gases, and groundwater; potential localized spread of contamination; potential exposure of workers, the public, and the environment to airborne chemical compounds migrating from the construction or demolition areas; and potential accidents during transportation of contaminated slurry or soils or groundwater.

Therefore, construction of Alternative 1 would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact.

Thus, MM HAZ-1 through MM HAZ-5, as discussed in **Section 3.8.7**, would be implemented. MM HAZ-1 requires a Phase II Environmental Site Investigation to be conducted before ground disturbing

activities occur to determine the potential presence of petroleum hydrocarbons, metals, and VOCs in soil and/or groundwater. MM HAZ-2 requires the preparation of a Soil and Groundwater Management Plan in consultation with LARWQCB that identifies and delineates contaminated areas; provides procedures for handling, excavating, and managing excavated soils and dewatering effluent and for notifying appropriate agencies; and provides requirements for site-specific health and safety plans. MM HAZ-3 requires contractors to inspect soil and groundwater for signs of contamination, and if contaminated soil or groundwater is found, stop work within and cordon of the area, notify and coordinate with appropriate agencies, and develop an investigation and site-specific management plan. MM HAZ-4 requires the contractor to prepare site-specific worker health and safety plans that identify human health risks from hazardous materials and appropriate protocols to ensure worker safety. MM HAZ-5 requires Metro to retain a Cal/OSHA certified contractor prior to demolition activities to determine the presence or absence of building materials or equipment that contains hazardous materials, and if such substances are found to be present, requires the contractor to prepare and submit a workplan to demonstrate how these hazardous materials would be properly removed and disposed of in accordance with federal and state law. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling and disposing of hazardous materials; thus, impacts would be reduced to less than significant.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would require grading activities, which would potentially expose construction workers and the public to hazardous conditions through disturbance contaminated soils and/or groundwater. Parcels within one-quarter mile of the Atlantic/Pomona Station Option have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals. In addition, other potentially affected parcels within one-quarter mile of the Atlantic/Pomona Station Option may have subsurface contamination from undocumented releases associated with historical use of the property (e.g., former gas stations, former dry cleaners) (Attachment A of Appendix I, Figures 3A to 3E). Exposure to documented or undocumented hazardous materials conditions could expose construction workers and the public to hazardous conditions, which would be a significant impact.

Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above during construction. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact. MM HAZ-1 through MM HAZ-5, as discussed above and in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials; thus, impacts would be reduced to less than significant.

Montebello At-Grade Option

As with the base Alternative 1, construction of Alternative 1 with the Montebello At-Grade Option would require grading activities, which would potentially expose construction workers and the public to hazardous conditions through disturbance contaminated soils and/or groundwater. Parcels within one-quarter mile of the Montebello At-Grade Option alignment have confirmed releases of hazardous

materials, including petroleum hydrocarbons, VOCs, and metals. In addition, other potentially affected parcels within one-quarter mile of the Montebello At-Grade Option may have subsurface contamination from undocumented releases associated with historical use of the property (e.g., former railroad corridors, former gas stations, former dry cleaners, or former industrial properties) (Attachment A of Appendix I, Figures 3A to 3E). Exposure to documented or undocumented hazardous materials conditions could expose construction workers and the public to hazardous conditions, which would be a significant impact.

Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above during construction. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact. MM HAZ-1 through MM HAZ-5, as discussed above and in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials; thus, impacts would be reduced to less than significant.

3.8.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

As discussed in Impact HAZ-1, operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. No activities are proposed that would result in the use or discharge of unregulated hazardous materials. Storage and disposal of hazardous materials and waste would be conducted in accordance with all federal and state regulatory requirements that are intended to prevent or manage hazards, and if a spill does occur, it would be remediated pursuant to existing regulatory requirements, including those summarized in PM HAZ-1 in **Section 3.8.7.1**. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Construction Impacts

Base Alternative and Design Option

As discussed in Impact HAZ-1, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would require grading activities, which would potentially expose construction workers and the public to hazardous conditions through disturbance contaminated soils and/or groundwater. For the underground segment of the alignment, if tunneling advanced through contaminated soil or groundwater, the excavated soil/slurry mix could be considered hazardous, depending on the levels of contamination encountered. Parcels have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals, within one-quarter mile of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. In addition, other potentially affected parcels within one-quarter mile of the base Alternative 2 or Alternative 2 with the

Atlantic/Pomona Station Option may have subsurface contamination from undocumented releases associated with current and/or historical use of the property(ies) (e.g., railroad corridors, gas stations, dry cleaners, or industrial properties) (Attachment A of Appendix I, Figures 3A to 3C). Elevated concentrations of lead and chromium may be present in the striping paint used on the existing roadways. There is the potential during construction to encounter, dewater, and dispose of contaminated groundwater during ground disturbing activities, shallow excavation, tunnel boring or excavation for the underground guideway, and relocation of utilities. Exposure to documented or undocumented hazardous materials conditions could expose construction workers and the public to hazardous conditions, which would be a significant impact.

The May 2021 Draft Final ISA Report (Attachment A of Appendix I) identified the following environmental concerns applicable to the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option:

- The Project alignment from approximately Union Pacific Avenue to the proposed Commerce/Citadel Station passes through the Bandini Oil Field and Los Angeles East Oil Field. Methane, hydrogen sulfide and other oil-field-related gases could be present in the subsurface and may be encountered during ground-disturbing activities. Natural oil seeps in oil-bearing sediments may also be encountered.

- ADL may be present in shallow soil along these roadways, especially along Atlantic Boulevard and Washington Boulevard.

- Residual pesticides and herbicides from historic agricultural use may be present in shallow soil along the alignment and on affected parcels.

- Shallow soil in the RSA along railroad tracks or spurs in former railroad corridors could be affected by petroleum hydrocarbons, metals, and pesticides.

During ground preparation and construction activities, construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. As indicated, effects could include: potential exposure of construction workers and/or the public to chemical compounds in soils, soil gases, and groundwater; potential localized spread of contamination; potential exposure of workers, the public, and the environment to airborne chemical compounds migrating from the construction or demolition areas; and potential accidents during transportation of contaminated slurry or soils or groundwater. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact.

MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials; thus, impacts would be reduced to less than significant.

3.8.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

As discussed in Impact HAZ-1, operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. No activities are proposed that would result in the use or discharge of unregulated hazardous materials. Storage and disposal of hazardous materials and waste would be conducted in accordance with all federal and state regulatory requirements that are intended to prevent or manage hazards, and if a spill does occur, it would be remediated accordingly. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would require grading activities, which would potentially expose construction workers and the public to hazardous conditions through disturbance contaminated soils and/or groundwater. For the underground segment of the alignment, if tunneling advanced through contaminated soil or groundwater, the excavated soil/slurry mix could be considered hazardous, depending on the levels of contamination encountered. Parcels within one-quarter mile of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option alignments have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals. In addition, other potentially affected parcels within one-quarter mile of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option alignment may have subsurface contamination from undocumented releases associated with current and/or historical use of the property(ies) (e.g., railroad corridors, gas stations, dry cleaners, or industrial properties) (Attachment A of Appendix I, Figures 3A to 3E). Elevated concentrations of lead and chromium may be present in the striping paint used on the existing roadways. There is the potential during construction to encounter, dewater, and dispose of contaminated groundwater during ground disturbing activities, shallow excavation, tunnel boring or excavation for the underground guideway, and relocation of utilities. In addition, utility relocation could result in TWW that requires disposal. Exposure to documented or undocumented hazardous materials conditions could expose construction workers and the public to hazardous conditions, which would be a significant impact.

The May 2021 Draft Final ISA Report (Attachment A of Appendix I) identified the following environmental concerns that would be applicable to base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option:

- The Project alignment from approximately Union Pacific Avenue to Garfield Avenue passes through the Bandini Oil Field and Los Angeles East Oil Field. Active The potential exists for methane, hydrogen sulfide, and other oil-field-related gases to be present in the subsurface, which may be encountered during ground-disturbing activities. In addition, the potential exists for natural oil seeps to be encountered in oil-bearing sediments.

- The underground alignment of Alternative 3 would transect the following active and filled pipelines in the vicinity of South Tubeway Avenue: the Matrix Oil Corporation crude oil pipeline; Crimson crude oil pipeline; Chevron Pipeline Company gasoline diesel and/or jet fuel pipeline; Chevron Pipeline Company natural gas pipeline. Additionally, unmapped pipelines may be present (e.g., pipelines associated with oil field related activities). These pipelines, and the potential for soil and groundwater contamination from undocumented releases, may be encountered during ground-disturbing activities.

- ADL may be present in shallow soil along these roadways, especially along Atlantic Boulevard and Washington Boulevard.

- Residual pesticides and herbicides from historic agricultural use may be present in shallow soil along the alignment and on affected parcels.

- Shallow soil along the railroad tracks or spurs in former railroad corridors in the RSA could be affected by petroleum hydrocarbons, metals, and pesticides.

During ground preparation and construction activities, construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. As indicated, effects could include: potential exposure of construction workers and/or the public to chemical compounds in soils, soil gases, and groundwater; potential localized spread of contamination; potential exposure of workers, the public, and the environment to airborne chemical compounds migrating from the construction or demolition areas; and potential accidents during transportation of contaminated slurry or soils or groundwater. Therefore, construction of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials; thus, impacts would be reduced to less than significant.

3.8.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

As discussed in HAZ-1, operation the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would involve maintenance of LRT trains, vehicles, and equipment and require the use of small amounts of hazardous substances such as oil, grease, solvents, paints, and pesticides. None of these substances would be acutely hazardous. The types and amounts of

hazardous materials used at the MSF site options would not pose any greater risk than the existing uses at other similar development elsewhere in the in the vicinity of the MSF site option. Operation of the MSF site options would not require the use, handling, or storage of quantities of hazardous materials in excess of regulatory thresholds. If the quantity of hazardous materials used, handled, or stored on-site would exceed the regulatory thresholds, an established comprehensive regulatory framework independent of the CEQA process that would be followed, including preparation and submittal of a HMBP, as further set forth in PM HAZ-3 (**Section 3.8.7.1**). Therefore, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello At-Grade Option would have a less than significant impact related to creating a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials.

Construction Impacts

Commerce MSF Site Option

Construction of the Commerce MSF site option would require site grading activities, which would potentially expose construction workers and the public to hazardous conditions from accidental release of contaminants from the soil and/or groundwater. Two of the parcels within the Commerce MSF site option have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals to soil and/or groundwater. These parcels are identified as Sites 12 and 13 on **Table 3.8-1** and on **Figure 3.8.3** and correspond to assessor's parcel number (APN) 6336-012-021 and APN 6336-012-024, respectively.

Site 13 (APN 6336-012-024) is a LUST Cleanup site associated with the release of aviation fuel that affected soil. Although the site is listed as "Case Closed" which indicates that a closure letter or other formal closure decision document has been issued for the site, there is the potential for residual soil contamination to remain that could include metals, petroleum hydrocarbons, and/or VOCs.

Site 12 (APN 6336-012-021) is an active Cleanup Program site. Specifically, the site is the subject of an open, inactive Spills, Leaks, Investigations, and Cleanups (SLIC) case for a release of acetone/toluene that affected soil. The case is listed as open but inactive since 2014. Therefore, there is the potential for residual VOC contamination in soil.

In addition, there are other potentially affected parcels located within the Commerce MSF site option and/or within one-quarter mile of site that may have subsurface contamination from undocumented releases associated with current and/or historical uses of the property(ies) (Attachment A of Appendix I, Figure 3D).

Furthermore, the May 2021 Final Draft ISA Report (Attachment A of Appendix I) identified the following environmental concerns applicable to the Commerce MSF site option:

- Plugged wells are located along the western boundary of the Commerce MSF site option (Attachment A of Appendix I, Figure 4B). Methane, hydrogen sulfide, and other oil-field-related gases may be present in the subsurface and may be encountered during ground-disturbing activities.

- Several pipelines are located west of the Commerce MSF site option (Attachment A of Appendix I, Figure 4B). There are no pipelines within the Commerce MSF site option and no releases have been reported for pipelines in the close vicinity of the Commerce MSF site option.

- Railroad tracks are located to the west and north of the Commerce MSF site option. Shallow soils may be affected along the railroad tracks or in former railroad corridors.

Construction of the Commerce MSF site option would require demolition of existing structures. Demolition of structures could potentially expose construction workers and the public to hazardous conditions through the disturbance or improper handling and/or disposal of hazardous building materials such as ACM, LBP, or PCBs. Both the federal OSHA and Cal/OSHA regulate worker exposure during construction activities that disturb LBP. Any ACMs, if present, would need appropriate abatement of identified asbestos prior to demolition pursuant to the SCAQMD Rule 1403 and set forth in PM HAZ-4 (**Section 3.8.7.1**). PCBs were commonly used in the small capacitor within fluorescent light ballasts. Ballasts manufactured through 1979 may contain PCBs. On-site fluorescent light features and electrical transformers that were manufactured prior to and throughout 1979, or reasonably suspected to have been manufactured before or throughout 1979, shall be assumed to contain PCBs. PCB-containing fluorescent light fixtures would be of concern if they are leaking as they may expose workers handling the fixtures to a variety of adverse health effects. As set forth in PM HAZ-4, identification and remediation of PCB-containing transformers would be the responsibility of the utility owner.

Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. Therefore, construction of the Commerce MSF site option would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials, and would minimize potential exposure to construction workers and the public to hazardous conditions through the disturbance or improper handling and/or disposal of hazardous building materials such as ACM, LBP, or PCBs during demolition activities; thus, impacts would be reduced to less than significant.

Montebello MSF Site Option and Design Option

Five of the parcels within the Montebello MSF site option and the Montebello MSF At-Grade Option have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals to soil and/or groundwater and are identified on lists of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (Cortese list). These parcels are identified as Site 15 (APNs 6336-002-018 and 6336-002-019), Site 16 (APN 6336-002-020), and Site 17 (APN 6336-003-071 and 6336-003-050) listed on **Table 3.8-1** and shown on **Figure 3.8.3**.

Two parcels that comprise Site 17 (APNs 6336-003-071 and 6336-003-050) are listed as Closed LUST Cleanup sites. The contamination was the result of a release of gasoline that affected soil. Although these sites are listed as "Case Closed," there is the potential for residual soil contamination that could include metals, petroleum hydrocarbons, and VOC contamination.

Three parcels that comprise Site 15 (APNs 6336-002-018 and 6336-002-019) and Site 16 (6336-002-020) are identified as a closed Land Disposal Site and listed as the Vail Avenue Land Reclamation Project for a non-municipal landfill. Site 15 is referred to as the "Vail Avenue Disposal Site" and "Vail Avenue Pit." The Richfield Oil Company used portions of the site as a disposal sump for waste mud and water and the City of Montebello used the site for dumping broken concrete, asphalt and dirt. The dumping operations were terminated, approximately 800,000 cubic yards of soil were removed, and the pit was filled. However, there is still the potential for encountering subsurface debris associated with past dumping activities. Site 16 is listed as the Vail Avenue Land Reclamation Project for a non-municipal landfill. Solid inert material (e.g., furnace slag, refractory waste, concrete segments, dirt, and refuse) were disposed in a former pit until the pit was filled to street level. Thus, subsurface debris associated with these past dumping/filling activities may be encountered during grading and excavation.

Other potentially affected parcels within the Montebello MSF site option or Montebello MSF At-Grade Option and within one-quarter mile of site may have subsurface contamination from undocumented releases associated with current and/or historical uses of the property(ies) (Attachment A of Appendix I, Figure 3E). The Final Draft ISA Report also identified plugged dry oil/gas wells within the Montebello MSF site option or Montebello MSF At-Grade Option (Attachment A of Appendix I, Figure 4B). These wells may require re-abandonment during construction.

Construction of the Montebello MSF site option or Montebello MSF At-Grade Option would require demolition of existing structures. Demolition of structures could potentially expose construction workers and the public to hazardous conditions through the disturbance or improper handling and/or disposal of hazardous building materials such as ACM, LBP, or PCBs. Both the federal OSHA and Cal/OSHA regulate worker exposure during construction activities that disturb LBP. Any ACMs, if present, would need appropriate abatement of identified asbestos prior to demolition pursuant to the SCAQMD Rule 1403 and PM HAZ-4 (**Section 3.8.7.1**). PCBs were commonly used in the small capacitor within fluorescent light ballasts. Ballasts manufactured through 1979 may contain PCBs. On-site fluorescent light features and electrical transformers that were manufactured prior to and throughout 1979, or reasonably suspected to have been manufactured before or throughout 1979, shall be assumed to contain PCBs. PCB-containing florescent light bulbs would be of concern if they are leaking as they may expose workers handling the fixtures to a variety of adverse health effects. As set forth in PM HAZ-4, identification and remediation of PCB-containing transformers would be the responsibility of the utility owner.

Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. Thus, construction of the Montebello MSF site option or the Montebello MSF At-Grade Option would potentially create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials, which would be a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials, and would minimize potential exposure to construction workers and the public to hazardous conditions through the disturbance or improper handling and/or disposal of hazardous building materials such as ACM, LBP, or PCBs during demolition activities; thus, impacts would be reduced to less than significant.

3.8.6.3 Impact HAZ-3: Hazardous Materials Within One-Quarter Mile of A School

Impact HAZ-3: Would a Build Alternative emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

3.8.6.3.1 Alternative 1 Washington

Operational Impacts

As identified in **Section 3.8.5.9**, 15 K-12 schools are located within one-quarter mile from Alternative 1. As discussed in Impact HAZ-1, operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As set forth in PM HAZ-1 (**Section 3.8.7.1**), cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Therefore, operation of Alternative 1 would have less than significant impacts associated with the transportation, use, storage, and handling of hazardous materials within one-quarter mile of an existing school.

Design Options

Atlantic/Pomona Station Option

The Arts in Action Community Charter Elementary School is located within one-quarter mile of the Atlantic/Pomona Station Option. As with operation of the base Alternative 1, operation of Alternative 1 with the Atlantic/Pomona Station Option would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. As set forth in PM HAZ-1 (**Section 3.8.7.1**), cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact associated with the transportation, use, storage, and handling of hazardous materials within one-quarter mile of an existing school.

Montebello At-Grade Option

Greenwood Elementary School (900 South Greenwood Avenue) is within one-quarter mile of the Montebello At-Grade Option. As discussed in Impact HAZ-1, the Montebello At-Grade Option would operate at-grade, as opposed to aerial, and would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As set forth in PM HAZ-1 (**Section 3.8.7.1**), cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in

accordance with label directions. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact associated with the transportation, use, storage, and handling of hazardous materials within one-quarter mile of an existing school.

Construction Impacts

Construction of Alternative 1 would involve handling of hazardous materials. Such activities, if not appropriately managed, could result in hazardous emissions that would potentially affect nearby schools. As identified in **Section 3.8.5.9**, 15 K-12 schools are located within one-quarter mile from the Alternative 1 alignment.

As discussed in Impact HAZ-1, construction of Alternative 1 would require use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction. Parcels proposed for construction staging and construction easements would occur on sites with known hazardous materials releases within one-quarter mile of Greenwood Elementary School (APNs 6352-007-059 and 6352-007-060 [Site 18]), KIPP Promesa Prep and KIPP Raices Academy (APN 6340-001-001 [Site 5] and APN 6340-001-002 [Site 6]), and 4th Street Elementary and Arts in Action Community Charter Elementary School (APNs 5248-004-040 and 5248-004-043 [Site 1], APN 6341-001-038 [Site 2], APN 6341-001-017 [Site 3], and APN 5248-008-046 [Site 4]) as shown in **Table 3.8-1**. These parcels are associated with closed LUST cases that resulted in contaminated soils and groundwater. These sites underlie paved parking lots that would be used as staging areas or construction easements during construction, and no ground-disturbing activities would occur that result in hazardous releases of contaminated soils or groundwater.

As also discussed in Impact HAZ-1, transportation of hazardous materials would comply with State regulations governing hazardous materials transport included in the California Vehicle Code (Title 13 of the California Code of Regulations), the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2.

By implementing the SWPPP and associated BMPs as mandated by the SWRCB Construction General Permit and set forth in HAZ-2 (**Section 3.8.7.1**), construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs. Adherence to federal and state regulations reduces the risk of exposure to hazardous materials used during construction. With compliance with existing regulations, construction of Alternative 1 would have less than significant impacts related to the transportation, use, storage, and handling of hazardous materials within one-quarter mile of an existing school.

Design Options

Atlantic/Pomona Station Option

The Arts in Action Community Charter Elementary School is within one-quarter mile of the Atlantic/Pomona Station Option. Construction of Alternative 1 with the Atlantic/Pomona Station Option, if not appropriately managed, could result in hazardous emissions that would potentially

affect nearby schools. By implementing the SWPPP and associated BMPs as mandated by the SWRCB Construction General Permit and as described in PM HAZ-2, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs. Adherence to federal and state regulations reduces the risk of exposure to hazardous materials used during construction. Each of these regulations is specifically designed to protect the public health through improved procedures for the handling of hazardous materials, better technology in the equipment used to transport these materials, and a more coordinated quicker response to emergencies. With incorporation of existing regulations, construction of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact related to the transportation, use, storage, and handling of hazardous materials within one-quarter mile of an existing school.

Montebello At-Grade Option

Greenwood Elementary School (900 South Greenwood Avenue) is within one-quarter mile of the Montebello At-Grade Option. As discussed in **Section 3.8.6.1**, construction of the Montebello At-Grade Option would use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction.

Parcels proposed for construction staging and construction easements would occur on sites with known hazardous materials releases within one-quarter mile of Greenwood Elementary School (APNs 6352-007-059 and 6352-007-060 [Site 18]) as shown in **Table 3.8-1**. These parcels are associated with closed LUST cases that resulted in contaminated soils and groundwater. These sites underlie paved parking lots that would be used as staging areas or construction easements during construction, and no ground-disturbing activities would occur that result in hazardous releases of contaminated soils or groundwater.

By implementing the SWPPP and associated BMPs as mandated by the SWRCB Construction General Permit and described in PM HAZ-2 (**Section 3.8.7.1**), construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs. Adherence to federal and state regulations reduces the risk of exposure to hazardous materials used during construction. With incorporation of existing regulations, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact related to the transportation, use, storage, and handling of hazardous materials within one-quarter mile of an existing school.

3.8.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The following six K-12 schools are located within one-quarter mile from the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option alignment:

- 4th Street Elementary located at 420 Amalia Avenue, Los Angeles
- Garfield High School located at 5101 East 6th Street, Los Angeles

- Monterey Senior High School, 466 South Fraser Street, Los Angeles
- St. Alphonsus School, 552 South Amalia Avenue, Los Angeles
- Griffith STEAM Magnet Middle School, 4765 East Fourth Street, Los Angeles
- Arts in Action Community Charter Elementary School, 5115 Via Corona Street, Los Angeles

As discussed in Impact HAZ-1, operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As described in PM HAZ-1 (**Section 3.8.7.1**), cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact associated with the transportation, use, storage, and handling hazardous materials within one-quarter mile of an existing school.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would involve handling of hazardous materials. Such activities, if not appropriately managed, could result in hazardous emissions that would potentially affect nearby schools. Parcels proposed for construction staging and construction easements would occur on sites with known hazardous materials releases within one-quarter mile of 4th Street Elementary School and Arts in Action Community Charter Elementary School (APNs 5248-004-040 and 5248-004-043 [Site 1], APN 6341-001-038 [Site 2], APN 6341-001-017 [Site 3], and APN 5248-008-046 [Site 4]) as shown in **Table 3.8-1**. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs as mandated by the SWRCB Construction General Permit and described in PM HAZ-2 (**Section 3.8.7.1**). In addition, transportation of hazardous materials would comply with State regulations governing hazardous materials transport included in the California Vehicle Code (Title 13 of the California Code of Regulations), the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact associated with the transportation, use, storage, and handling hazardous materials within one-quarter mile of an existing school.

3.8.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The following ten K-12 schools are located within one-quarter mile from the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option alignment:

- Greenwood Elementary School located at 900 South Greenwood Avenue, Montebello
- Calvary Chapel Christian Academy, 931 South Maple Avenue, Montebello
- KIPP Promesa Prep located at 5156 Whittier Boulevard, Los Angeles
- KIPP Raices Academy located at 668 South Atlantic Boulevard, East Los Angeles
- 4th Street Elementary located at 420 Amalia Avenue, Los Angeles
- Garfield High School located at 5101 East 6th Street, Los Angeles
- Monterey Senior High School, 466 South Fraser Street, Los Angeles
- St. Alphonsus School, 552 South Amalia Avenue, Los Angeles
- Griffith STEAM Magnet Middle School, 4765 East Fourth Street, Los Angeles
- Arts in Action Community Charter Elementary School, 5115 Via Corona Street, Los Angeles

As discussed in Impact HAZ-1, operation of new and relocated/reconfigured stations and LRT guideway would involve the use of small amounts of hazardous substances such as oil, grease, solvents, paints, common cleaning materials, and pesticides. None of these substances would be acutely hazardous. As described in PM HAZ-1 (**Section 3.8.7.1**), cleaning and maintenance products are required to be labeled with appropriate cautions and instructions for handling, storage and disposal, and do not represent a significant threat to human health and the environment. Staff would be required to use, store, and dispose of these materials properly in accordance with label directions. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts associated with the transportation, use, storage, and handling hazardous materials within one-quarter mile of an existing school.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would involve handling of hazardous materials. Such activities, if not appropriately managed, could result in hazardous emissions that would potentially affect nearby

schools. As discussed in Impact HAZ-1, construction would require use of typical construction equipment (e.g., gasoline- or diesel-powered machinery) and vehicles containing fuel, oil, and grease, as well as use and transport of these materials. Limited quantities of certain hazardous materials such as paints, solvents, and glues would be used during construction.

Parcels proposed for construction staging and construction easements would occur on sites with known hazardous materials releases within one-quarter mile of Greenwood Elementary School (APNs 6352-007-059 and 6352-007-060 [Site 18]), KIPP Promesa Prep and KIPP Raices Academy (APN 6340-001-001 [Site 5] and APN 6340-001-002 [Site 6]), and 4th Street Elementary and Arts in Action Community Charter Elementary School (APNs 5248-004-040 and 5248-004-043 [Site 1], APN 6341-001-038 [Site 2], APN 6341-001-017 [Site 3], and APN 5248-008-046 [Site 4]) as shown in **Table 3.8-1**. By implementing the SWPPP and associated BMPs, construction-related hazardous substances, such as oil and grease, would be managed through appropriate material handling and BMPs as mandated by the SWRCB Construction General Permit and described in PM HAZ-2 (**Section 3.8.7.1**). In addition, transportation of hazardous materials would comply with State regulations governing hazardous materials transport included in the California Vehicle Code (Title 13 of the California Code of Regulations), the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements as set forth in PM HAZ-2. With incorporation of existing regulations, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact associated with the transportation, use, storage, and handling hazardous materials within one-quarter mile of an existing school.

3.8.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not impact hazardous emissions within a quarter mile of a school because there are no K-12 schools located within one-quarter mile of the MSF site options.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not impact hazardous emissions within a quarter mile of a school because there are no K-12 schools located within one-quarter mile of the MSF site options.

3.8.6.4 Impact HAZ-4: Hazardous Materials Sites (Government Code Section 65962.5)

Impact HAZ-4: Would a Build Alternative be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, create a significant hazard to the public or the environment?

3.8.6.4.1 Alternative 1 Washington

Operational Impacts

The eastern portion of Alternative 1, from approximately Sorensen Avenue to Lambert Road/Santa Fe Springs Road, is situated within OU2 of the Omega Superfund Site, which is a Superfund Site and on the Cortese list (19280436). Any health risks to the public and/or the environment associated with release of hazardous materials would be mitigated during construction and would not occur after construction is complete. No ground-disturbing activities would occur during operation that could result in hazardous releases of contaminated soils from Cortese-listed hazardous materials sites thereby creating a significant hazard to the public or the environment. Therefore, operation of Alternative 1 would have no impact related to Cortese-listed hazardous materials sites.

Design Options

Atlantic/Pomona Station Option

No parcels proposed for the Atlantic/Pomona Station Option are located on hazardous materials sites included on the Cortese list. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in no impact related to Cortese-listed hazardous materials sites. However, the eastern portion of Alternative 1 is situated within OU2 of the Omega Superfund Site. Any health risks to the public and/or the environment associated with release of hazardous materials would be mitigated during construction and would not occur after construction is complete. No ground-disturbing activities would occur during operations that could result in hazardous releases of contaminated soils from Cortese-listed hazardous materials sites thereby creating a significant hazard to the public or the environment. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have no impact related to Cortese-listed hazardous materials sites.

Montebello At-Grade Option

Under Alternative 1 with the Montebello At-Grade Option, no parcels proposed for the at-grade guideway or Greenwood station are on hazardous materials sites included on the Cortese list. However, the eastern portion of Alternative 1 is situated within OU2 of the Omega Superfund Site. Any health risks to the public and/or the environment associated with release of hazardous materials would be mitigated during construction and would not occur after construction is complete. No ground-disturbing activities would occur during operations that could result in hazardous releases of contaminated soils from Cortese-listed hazardous materials sites thereby creating a significant hazard to the public or the environment. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have no impact related to Cortese-listed hazardous materials sites.

Construction Impacts

The former Omega site is a Superfund site and, therefore, is identified on the Cortese list (19280436). As discussed in **Section 3.8.6.2**, contaminated groundwater is known to be present at depths from approximately 40 to 100 feet bgs and extends to approximately 200 feet bgs in some areas. Construction of the Lambert station and the alignment would entail excavation to a maximum of 20 feet deep. Therefore, the potential to encounter contaminated groundwater that results in human health and environmental hazards is low. Additional screening level risk evaluations conducted by the USEPA and investigations conducted the RWQCB and DTSC concluded that exposure to soil gas from the Omega site posed a low health risk.

The Commerce/Citadel station site (APN 6336-019-031) identified as Site 10 on **Table 3.8-1** and on **Figure 3.8.3** would be located on hazardous materials site included on the Cortese list. The parcel is listed as a Closed LUST Cleanup site. The contamination was the result of tire manufacturing activities that affected soil and groundwater. Soil cleanup associated with USTs was overseen and deemed completed by the RWQCB as of December 18, 1996. The RWQCB indicated that no further action/remediation was required at the Citadel property. However, as set forth in PM HAZ-5 (**Section 3.8.7.1**), the RWQCB should be notified if additional soil/groundwater contamination is encountered during future activities on the property, and existing groundwater monitoring wells should remain to cooperate in ongoing groundwater investigations associated with off-site sources.

In addition, the following parcels proposed for possible construction staging and construction easements would occur on hazardous materials sites included on the Cortese list as identified on **Table 3.8-1** and shown on **Figure 3.8.3**:

- APNs 5248-004-040 and 5248-004-043 (Site 1)
- APN 5248-008-046 (Site 4)
- APN 6340-001-001 (Site 5)
- APN 6340-001-002 (Site 6)
- APN 6336-021-015 (Site 8)
- APN 6352-027-011 (Site 19)
- APN 6348-026-027 (Site 20)
- APN 6369-006-032 (Site 21)
- APN 6369-006-032 (Site 22)
- APN 6370-027-013 (Site 23)
- APN 6369-006-048 (Site 25)
- APN 6381-006-024 (Site 26)
- APN 8176-016-029 (Site 27)
- APN 8169-003-043 (Site 28)
- APN 8168-018-052 (Site 29)
- APN 8168-019-025 (Site 30)

The following parcels identified as optional construction staging would occur on hazardous materials sites included on the Cortese list. It is assumed that if an optional construction staging site is needed, it would be in place of the primary construction staging sites.

- APN 6341-001-038 (Site 2)
- APNs 6352-007-059 and 6352-007-060 (Site 18)
- APN 6341-001-017 (Site 3)
- APN 6369-006-045 (Site 24)

These sites underlie paved parking lots that would be used as staging areas during construction, and no ground-disturbing activities would occur that result in hazardous releases of contaminated soils or groundwater.

As discussed in **Section 3.8.6.2**, construction that disturbs existing soil or groundwater contamination from hazardous materials release sites or other sources, could pose a health risk to construction workers, the public, and/or the environment if not characterized, handled, and disposed of properly. Ground-disturbing activities occurring on sites included on a list of hazardous materials sites could potentially encounter soil or groundwater contamination and would be a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling and minimizing risk from hazardous materials; thus, impacts would be reduced to less than significant.

Design Options

Atlantic/Pomona Station Option

No parcels proposed for the Atlantic/Pomona Station Option are located on hazardous materials sites included on the Cortese list. Therefore, construction of the Atlantic/Pomona Station Option would result in no impact related to Cortese-listed hazardous materials sites. However, as discussed in **Section 3.8.6.2**, construction of other portions of Alternative 1 would result in significant impacts relative to hazardous material sites, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling and minimizing risk from hazardous materials; thus, impacts would be reduced to less than significant.

Montebello At-Grade Option

No parcels proposed for the at-grade guideway and Greenwood Station are located on hazardous materials sites included on the Cortese list. Therefore, construction of the Montebello At-Grade Option would result in no impact related to Cortese-listed hazardous materials sites. However, as discussed in **Section 3.8.6.2**, construction of other portions of Alternative 1 would result in significant impacts relative to hazardous material sites, construction of Alternative 1 with the Montebello At-Grade Option would result in a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling and minimizing risk from hazardous materials; thus, impacts would be reduced to less than significant.

3.8.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The hazardous site conditions for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option related to Government Code Section 65962.5 (Cortese list) are associated with contaminated soils. Any health risks to the public and/or the environment associated with release of hazardous materials would be mitigated during construction and not occur after construction is complete. No ground-disturbing activities would occur during operations that could result in hazardous releases of contaminated soils from Cortese-listed hazardous materials sites thereby creating a significant hazard to the public or the environment. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no impact related to Cortese-listed hazardous materials sites.

Construction Impacts

Base Alternative and Design Option

The Commerce/Citadel station site (APN 6336-019-031) identified as Site 10 on **Table 3.8-1** and on **Figure 3.8.3** would be located on hazardous materials site included on the Cortese list. The parcel is listed as a Closed LUST Cleanup site. The contamination was the result of tire manufacturing activities that affected soil and groundwater. Soil cleanup associated with USTs was overseen and deemed completed by the RWQCB as of December 18, 1996. The RWQCB indicated that no further action/remediation was required at the Citadel property. However, as set forth in PM HAZ-5 (**Section 3.8.7.1**), the RWQCB should be notified if additional soil/groundwater contamination is encountered during future activities on the property, and existing groundwater monitoring wells should remain to cooperate in ongoing groundwater investigations associated with off-site sources. No parcels proposed for the Atlantic/Pomona Station Option are located on hazardous materials sites included on the Cortese list.

The following parcels proposed for possible construction staging and construction easements are included on the Cortese list as identified on **Table 3.8-1** and shown on **Figure 3.8.3**:

- APNs 5248-004-040 and 5248-004-043 (Site 1)
- APN 5248-008-046 (Site 4)
- APN 6340-001-001 (Site 5)
- APN 6340-001-002 (Site 6)
- APN 6336-021-015 (Site 8)

The following parcels proposed for optional construction staging would occur on hazardous materials sites included on the Cortese list. It is assumed that if an optional construction staging site is needed it would be in place of the primary construction staging sites.

- APN 6341-001-038 (Site 2)
- APN 6341-001-017 (Site 3)

These parcels are associated with LUST cases that resulted in contaminated soils and/or groundwater and have been remediated and are classified as closed by the regulatory agency. These LUST sites underlie paved parking lots that would be used as staging areas during construction, and no ground-disturbing activities would occur that result in hazardous releases of contaminated soils.

As discussed in **Section 3.8.6.2**, construction that disturbs existing soil or groundwater contamination from hazardous materials release sites or other sources, could pose a health risk to construction workers, the public, and/or the environment if not characterized, handled, and disposed of properly. Ground-disturbing activities occurring on sites included on a list of hazardous materials sites could potentially encounter soil or groundwater contamination during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, which would be a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling and minimizing risk from hazardous materials; thus, impacts would be reduced to less than significant.

3.8.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The hazardous site conditions for the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option related to Government Code Section 65962.5, commonly known as the Cortese list, are associated with contaminated soils. Any health risks to the public and/or the environment associated with release of hazardous materials would be mitigated during construction and not occur after construction is complete. No ground-disturbing activities would occur during operations that could result in hazardous releases of contaminated soils from Cortese-listed hazardous materials sites thereby creating a significant hazard to the public or the environment. Therefore, operation of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in no impact related to Cortese-listed hazardous materials sites.

Construction Impacts

Base Alternative and Design Options

The Commerce/Citadel station site (APN 6336-019-031) identified as Site 10 on **Table 3.8-1** and on **Figure 3.8.3** would be located on hazardous materials site included on the Cortese list. The parcel is listed as a Closed LUST Cleanup site. The contamination was the result of tire manufacturing activities

that affected soil and groundwater. Soil cleanup was overseen and deemed completed by the RWQCB as of December 18, 1996. The RWQCB indicated that no further action/remediation was required at the Citadel property. However, as specified in PM HAZ-5 (**Section 3.8.7.1**), the RWQCB should be notified if additional soil/groundwater contamination is encountered during future activities on the property, and existing groundwater monitoring wells should remain to cooperate in ongoing groundwater investigations associated with off-site sources. The following parcels proposed for possible construction staging and construction easements are included on the Cortese list as identified on **Table 3.8-1** and shown on **Figure 3.8.3**:

- APNs 5248-004-040 and 5248-004-043 (Site 1)
- APN 5248-008-046 (Site 4)
- APN 6340-001-001 (Site 5)
- APN 6340-001-002 (Site 6)
- APN 6336-021-015 (Site 8)
- APN 6352-027-011 (Site 19)
- APN 6348-026-027 (Site 20)
- APN 6369-006-032 (Site 21)

The following parcels proposed for optional construction staging would occur on hazardous materials sites included on the Cortese list. It is assumed that if an optional construction staging site is needed it would be in place of the primary construction staging sites.

- APN 6341-001-038 (Site 2)
- APN 6341-001-017 (Site 3)
- APNs 6352-007-059 and 6352-007-060 (Site 18)

These parcels are associated with LUST cases that resulted in contaminated soils and/or groundwater and have been remediated and are classified as closed by the regulatory agency. These LUST sites underlie paved parking lots that would be used as staging areas during construction, and no ground-disturbing activities would occur that result in hazardous releases of contaminated soils.

As discussed in **Section 3.8.6.2**, construction that disturbs existing soil contamination from hazardous materials release sites or other sources, could pose a health risk to construction workers, the public, and/or the environment if not characterized, handled, and disposed of properly. Ground-disturbing activities occurring on sites included on a list of hazardous materials sites could potentially encounter soil or groundwater contamination during construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option and would be a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers have a clear understanding of hazardous materials that may occur in the

construction area as well as procedures and plans for safely handling and minimizing risk from hazardous materials; thus, impacts would be reduced to less than significant.

3.8.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The hazardous site conditions for the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option related to Government Code Section 65962.5 (Cortese list), are associated with contaminated soils. Any health risks to the public and/or the environment associated with release of hazardous materials would be mitigated during construction and would not occur after construction is complete. No ground-disturbing activities would occur during operation that could result in hazardous releases of contaminated soils from Cortese-listed hazardous materials sites thereby creating a significant hazard to the public or the environment. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have no impact related to Cortese-listed hazardous materials sites.

Construction Impacts

MSF Site Options and Design Option

Two of the parcels within the Commerce MSF site option have confirmed releases of hazardous materials, including petroleum hydrocarbons, VOCs, and metals to soil and/or groundwater as shown. on **Table 3.8-1** and on **Figure 3.8.3**. One parcel on the Commerce MSF site option identified as Site 13 on **Table 3.8-1** and on **Figure 3.8.3** (APN 6336-012-024) is located on a hazardous materials site included on the Cortese list as a Closed LUST Cleanup site. The second parcel on the Commerce MSF site option identified as Site 12 on **Table 3.8-1** and on **Figure 3.8.3** (APN 6336-012-021) is listed on the Cortese list as an active Cleanup Program site that is the subject of an open, inactive SLIC case for a release of acetone/toluene that affected soil. The case is listed as open but inactive since 2014. Therefore, there is the potential for residual VOC contamination in soil.

Two parcels on the Montebello MSF site option or Montebello MSF At-Grade Option identified as Site 17 on **Table 3.8-1** and on **Figure 3.8.3** (APNs 6336-003-071 and 6336-003-050) would be located on hazardous materials sites included on the Cortese list. The parcels are on the Cortese List as a Closed LUST Cleanup site. Three parcels on the Montebello MSF site option or Montebello MSF At-Grade Option listed as Site 15 (APNs 6336-002-018, 6336-002-019) and Site 16 (APN 6336-002-020) are identified on the Cortese list as a closed Land Disposal site and listed as the Vail Avenue Land Reclamation Project for a non-municipal landfill.

As discussed in **Section 3.8.6.2**, construction that disturbs existing soil contamination from hazardous materials release sites or other sources, could pose a health risk to construction workers, the public, and/or the environment if not characterized, handled, and disposed of properly. Ground-disturbing activities occurring on sites included on a list of hazardous materials sites could potentially encounter soil or groundwater contamination, and thus, construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would have a significant impact. MM HAZ-1 through MM HAZ-5, as summarized in **Section 3.8.6.2.1** and discussed in **Section 3.8.7**, would be implemented. Implementation of MM HAZ-1 through MM HAZ-5 would ensure that workers

have a clear understanding of hazardous materials that may occur in the construction area as well as procedures and plans for safely handling hazardous materials, and would minimize potential exposure to construction workers and the public to hazardous conditions through the disturbance or improper handling and/or disposal of hazardous building materials such as ACM, LBP, or PCBs during demolition activities; thus, impacts would be reduced to less than significant.

3.8.6.5 Impact HAZ-5: Airport Land Use Plans

Impact HAZ-5: Would a Build Alternative create a safety hazard for people residing or working in the Project Area for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, or a private airstrip?

3.8.6.5.1 Alternative 1 Washington

Operational and Construction Impacts

The Project is not within two miles of a public airport or public use airport, or a private airstrip and there are no applicable airport land use plans. The nearest public airport or airstrip is Whittier Air Strip, which is over four miles to the north. Therefore, operation and construction of Alternative 1 would have no impact with respect to safety hazards for people residing or working in the RSA.

Design Options

Atlantic/Pomona Station Option

The Project is not within two miles of a public airport or public use airport, or a private airstrip and there are no applicable airport land use plans. Therefore, operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would have no impact with respect to safety hazards for people residing or working in the RSA.

Montebello At-Grade Option

The Project is not within two miles of a public airport or public use airport, or a private airstrip and there are no applicable airport land use plans. Therefore, operation and construction of Alternative 1 with the Montebello At-Grade Option would have no impact with respect to safety hazards for people residing or working in the RSA.

3.8.6.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational and Construction Impacts

Base Alternative and Design Option

The Project is not within two miles of a public airport or public use airport, or a private airstrip and there are no applicable airport land use plans. Therefore, operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no impact with respect to safety hazards for people residing or working in the RSA.

3.8.6.5.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Options

The Project is not within two miles of a public airport or public use airport, or a private airstrip and there are no applicable airport land use plans. Therefore, operation and construction of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have no impact with respect to safety hazards for people residing or working in the RSA.

3.8.6.5.4 Maintenance and Storage Facilities

Operational and Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, and the Montebello MSF At-Grade Option are not within two miles of a public or public use airport, or a private airstrip and there are no applicable airport land use plans. Thus, operation and construction of any of the MSF site options would have no impact with respect to safety hazards for people residing or working in the RSA.

3.8.6.6 Impact HAZ-6: Emergency Response or Emergency Evacuation Plan

Impact HAZ-6: Would a Build Alternative impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

3.8.6.6.1 Alternative 1 Washington

Operational Impacts

Emergency vehicles traveling on streets that cross the tracks at the at-grade crossings could experience short delays at intersections if emergency vehicles arrive at a crossing at the same time as a passing train. Such delays would be brief due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings.

The Project would not impede with an adopted emergency response plan or emergency evacuation plan (Los Angeles County Department of Public Works, 2008a – 2008d). Washington Boulevard is identified by the County of Los Angeles as emergency and disaster route. Operations would not affect emergency evacuation plans and roadway conditions as the roadway width and configuration would be kept accessible to emergency vehicles and fire equipment. As standard practice, and as set forth in by PM HAZ-1 (**Section 3.8.7.1**), Metro would coordinate with fire and police protection officials when designing grade crossings to ensure that emergency access would be maintained under Alternative 1. In addition, all new LRT guideway, stations, and crossings would be designed in accordance with Metro Rail Design Criteria (MRDC), including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations. Further, compliance with applicable county and city design

criteria pertaining to emergency vehicle access, as well as the California Fire Code standards, would ensure that sufficient ingress and egress routes would be provided to new and relocated/reconfigured stations.

With implementation of the standard coordination and design practices identified above, operation of Alternative 1 would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant. See Impact TRA-4, Inadequate Emergency Access, of Section 3.14, Transportation and Traffic, and the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report (Appendix N) for a discussion of access to fire and police protection facilities in the vicinity of the RSA and potential increases in fire and police response times.

Design Options

Atlantic/Pomona Station Option

Operational impacts would be similar to those described under the base Alternative 1 because like the base Alternative 1 and the Atlantic station (relocated/reconfigured), the Atlantic/Pomona Station Option station and alignment would be underground. With implementation of standard coordination and design practices identified above and in PM HAZ-1 (**Section 3.8.7.1**), operation of Alternative 1 with the Atlantic/Pomona Station Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Montebello At-Grade Option

Operational impacts would be similar to those described under the base Alternative 1. Although, the Montebello At-Grade Option would include more at-grade crossings compared to the aerial guideway and station configuration, between Yates Avenue and the Greenwood station along Washington Boulevard. While short delays would occur at at-grade intersections if emergency vehicles arrive at a crossing at the same time as a passing train, such delays would be brief due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings. As standard practice, and as described in PM HAZ-1 (**Section 3.8.7.1**), Metro would coordinate with fire and police protection officials when designing grade crossings to ensure that emergency access would be maintained under Alternative 1 with the Montebello At-Grade Option. As set forth by PM HAZ-1, all new LRT guideway and crossings would be designed in accordance with MRDC, including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations. The Project would not impede with an adopted emergency response plan or emergency evacuation plan (Los Angeles County Department of Public Works, 2008a – 2008d). Washington Boulevard is identified by the County of Los Angeles as an emergency and disaster route. Operations would not affect emergency evacuation plans and roadway conditions as the roadway width and configuration would be kept accessible to emergency vehicles and fire equipment. With implementation of the standard coordination and design practices identified above, operation of Alternative 1 with the Montebello At-Grade Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Construction Impacts

Construction of Alternative 1 could result in temporary lane and/or road closures, increased truck traffic, and other roadway effects that could slow emergency vehicles or require detours, temporarily increasing response times and impeding existing services. Construction activities would shift along the corridor over the course of construction so that overall construction activities should be of relatively short duration within each segment. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions. Additional specialized construction activities may require full street closures and therefore the development of detour routes, such as decking activities at Atlantic Boulevard for underground construction and the demolition of the existing San Gabriel River and Rio Hondo Bridges on Washington Boulevard. Traffic control during construction would follow local jurisdiction guidelines. As set forth in PM HAZ-2 (**Section 3.8.7.1**), Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction including the development of detour routes to facilitate traffic movement (see MM TRA-1 in Section 3.14, Transportation and Traffic, and Appendix N for further discussion of traffic control plans). The nearest local first responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of Alternative 1 would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, construction of Alternative 1 with the Atlantic/Pomona Station Option could result in temporary lane and/or road closures, increased truck traffic, and other roadway effects that could slow emergency vehicles or require detours, temporarily increasing response times and impeding existing services. Traffic control during construction would follow local jurisdiction guidelines. As described in PM HAZ-2 (**Section 3.8.7.1**), Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Montebello At-Grade Option

As with the base Alternative 1, construction of Alternative 1 with the Montebello At-Grade Option could result in temporary lane and/or road closures, increased truck traffic, and other roadway effects that could slow emergency vehicles or require detours, temporarily increasing response times and impeding existing services. Traffic control during construction would follow local jurisdiction guidelines. As set forth in PM HAZ-2 (**Section 3.8.7.1**), Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of Alternative 1 with

the Montebello At-Grade Option would not impair implementation of or physically interfere any adopted emergency response or evacuation plans, and this impact would be less than significant.

3.8.6.6.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would operate primarily underground. As set forth in PM HAZ-1, all new LRT guideway, stations, and crossings would be designed in accordance with MRDC, including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations. As described in PM HAZ-1 (**Section 3.8.7.1**), compliance with applicable Los Angeles County and city requirements pertaining to emergency vehicle access as well as the California Building Code and California Fire Code standards ensure that sufficient ingress and egress routes are maintained and provided to the new stations and the Atlantic station (relocated/reconfigured). Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could result in temporary lane and/or road closures, increased truck traffic, and other roadway effects that could slow emergency vehicles or require detours, temporarily increasing response times and impeding existing services. Construction activities would shift along the corridor so that overall construction activities should be of relatively short duration within each segment. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions. Additional specialized construction activities may require full street closures and therefore the development of detour routes, such as decking activities at Atlantic Boulevard for underground construction. Traffic control during construction would follow local jurisdiction guidelines. As described in PM HAZ-2 (**Section 3.8.7.1**), Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction including the development of detour routes to facilitate traffic movement (see MM TRA-1). The nearest local first responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

3.8.6.6.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option alignment would be underground and aerial with no at-grade crossings. The Project would not impede with an adopted emergency response plan or emergency evacuation plan (Los Angeles County Department of Public Works, 2008a – 2008d). Washington Boulevard is identified by the County of Los Angeles as emergency and disaster route. Operations would not affect emergency evacuation plans and roadway conditions as the roadway width and configuration would be kept accessible to emergency vehicles and fire equipment. As set forth in PM HAZ-1, all new LRT guideway, stations, and crossings would be designed in accordance with MRDC, including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations. Compliance with applicable Los Angeles County and city requirements pertaining to emergency vehicle access as well as the California Building Code and California Fire Code standards would ensure that sufficient ingress and egress routes are maintained and provided to the new stations and the relocated/reconfigured Atlantic station.

Alternative 3 with the Montebello At-Grade Option would have four at-grade crossings at signalized intersections and one pedestrian only at-grade crossing at Greenwood station. Emergency vehicles traveling on streets that cross the tracks at the at-grade crossings would experience short delays at intersections if emergency vehicles arrive at a crossing at the same time as a passing train. However, such delays would be brief due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings would reduce any delays. As standard practice, and as set forth in PM HAZ-1 (**Section 3.8.7.1**), Metro would coordinate with fire and police protection officials when designing grade crossings to ensure that emergency access would be maintained under Alternative 3 with the Montebello At-Grade Option.

With implementation of the standard coordination and design practices identified above, operation of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow emergency vehicles, temporarily increasing response times and impeding existing services. Construction activities would shift along the corridor so that overall construction activities should be of relatively short duration within each segment. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions. Additional specialized construction activities may require full street closures and therefore the development of detour routes, such as decking activities at Atlantic Boulevard for underground construction. Traffic control during construction would follow local jurisdiction guidelines. As described in PM HAZ-4 (**Section 3.8.7.1**), Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and

approved in coordination with local fire and police departments prior to construction including the development of detour routes to facilitate traffic movement (see MM TRA-1). The nearest local first responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, construction of the base Alternative 3 or Alternative 3 the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

3.8.6.6.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option would include new or modified driveways and the closure of a portion of Corvette Street (between Saybrook Avenue and Davie Avenue). The Montebello MSF site option or the Montebello MSF At-Grade Option would include new or modified driveways and the potential closure of a portion of Acco Street (immediately west of Vail Avenue). As described in PM HAZ-3 (**Section 3.8.7.1**), compliance with applicable city of Montebello design criteria pertaining to emergency vehicle access as well as the California Fire Code standards would ensure that sufficient ingress and egress routes are provided to the MSF site options. Therefore, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option could result in temporary lane and/or road closures, increased truck traffic, and other roadway effects that could slow emergency vehicles or require detours, temporarily increasing response times and impeding existing services. Traffic control during construction would follow local jurisdiction guidelines. As set forth in PM HAZ-4 (**Section 3.8.7.1**), Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing (see MM TRA-1). Therefore, construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not impair implementation of or physically interfere with any adopted emergency response or evacuation plans, and this impact would be less than significant.

3.8.6.7 Impact HAZ-7: Wildland Hazards

Impact HAZ-4: Would a Build Alternative be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, and, as a result, create a significant hazard to the public or the environment?

3.8.6.7.1 Alternative 1 Washington

Operational and Construction Impacts

The Project is primarily in a highly developed urbanized area that is not susceptible to wildland fires. The nearest very high fire hazard severity zone approximately 1.5 miles to the east of the DSA within city of Whittier. Limited portions of the DSA, which includes the Rio Hondo Spreading Grounds, are undeveloped and more susceptible to the ignition and spread of wildfire due and the presence of vegetative fuel. However, CAL FIRE does not categorize the Rio Hondo Spreading Grounds as an SRA, a very high fire hazard severity zone, and is not delineated within a wildland urban interface (CAL FIRE 2015). Therefore, operation and construction of Alternative 1 would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, and no impact would occur.

Design Options

Atlantic/Pomona Station Option

Because the Project is in a highly urbanized area, operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, and no impact would occur.

Montebello At-Grade Option

Because the Project is in a highly urbanized area, operation and construction of Alternative 1 with the Montebello At-Grade Option would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, and no impact would occur.

3.8.6.7.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational and Construction Impacts

Base Alternative and Design Option

Alternative 2 is in a highly developed urbanized area that is not susceptible to wildland fires; therefore, operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, and no impact would occur.

3.8.6.7.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Options

Alternative 3 is in a highly developed urbanized area that is not susceptible to wildland fires; therefore, operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, and no impact would occur.

3.8.6.7.4 Maintenance and Storage Facilities

Operational and Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, and the Montebello MSF At-Grade Option are in a highly developed urbanized area that is not susceptible to wildland fires; therefore, operation and construction of any of the MSF site options would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires, and no impact would occur.

3.8.7 Project Measures and Mitigation Measures

3.8.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option.

PM HAZ-1: Operational (post Project) BMPs for the Build Alternatives shall include but not be limited to:

- Cleaning and maintenance products shall be required to be labeled with appropriate cautions and instructions for handling, storage and disposal. Staff shall be required to use, store, and dispose of these materials properly in accordance with label directions.
- Storage and disposal of hazardous materials and waste shall be conducted in accordance with all applicable federal and state regulatory requirements, such as the Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act, and if a spill does occur, it shall be remediated in accordance with all applicable federal and state regulatory requirements and in coordination with DTSC and/or LARWQCB.

- Metro shall coordinate with fire and police protection officials when designing grade crossings to ensure that emergency access would be maintained.
- All new LRT guideway, stations, and crossings shall be designed in accordance with Metro Rail Design Criteria (MRDC), including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations.
- Compliance with applicable Los Angeles County and city requirements pertaining to emergency vehicle access as well as the California Building Code and California Fire Code standards shall ensure that sufficient ingress and egress routes are maintained and provided to the new stations.

PM HAZ-2: Construction BMPs for the Build Alternatives shall include but not be limited to:

- Metro's contractor shall be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases in accordance with USEPA, SWRCB, DTSC, Cal/OSHA, and the SCAQMD.
- Development of a stormwater pollution prevent plan (SWPPP) in accordance with the State Water Resources Control Board Construction Clean Water Act Section 402 General Permit conditions, and subject to regular inspections by applicable jurisdiction(s) to ensure compliance. The SWPPP shall include specifications for the following but not limited to:
    - Maintain proper working conditions for vehicles and equipment to minimize potential fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials.
    - Conduct servicing, refueling, and staging of construction equipment only at designated areas where a spill would not flow to drainages. Conduct equipment washing, if needed, only in designated locations where water would not flow into drainage channels.
    - Implement drainage BMPs to protect water quality, such as oil/water separators, catch basin inserts, storm drain inserts, media filtration, and catch basin screens. Keep spill cleanup materials (e.g., rags, absorbent materials, and secondary containment) at the work site when handling materials.
    - Report hazardous spills to the designated CUPA (i.e., Los Angeles County Fire Department Health Hazardous Materials Division or Santa Fe Springs Department of Fire-Rescue) and implement clean up immediately and proper disposal of contaminated soil at a licensed facility.
    - Establish properly designed, centralized storage areas to keep hazardous materials fully contained.
    - Keep spill cleanup materials (e.g., rags, absorbent materials, and secondary containment) at the work site when handling materials.

- Implement monitoring program by the construction site supervisor that includes both dry and wet weather inspections.

- Transportation of hazardous materials shall comply with State regulations governing hazardous materials transporting included in the California Vehicle Code (Title 13 of the California Code of Regulations), the State Fire Marshal Regulations (Title 19 of the California Code of Regulations), and Title 22 of the California Code of Regulations. This includes:
  - Require all motor carrier transporters of hazardous materials to have a Hazardous Materials Transportation license issued by the California Highway Patrol.
  - Require the transport of hazardous materials via routes with the least overall travel time.
  - Prohibit the transportation of hazardous materials through residential neighborhoods.
  - Require transporters to take immediate action to protect human health and the environment in the event of spill, release, or mishap.
  - Incorporate restrictions on haul routes into the construction specifications according to local permitting requirements.
- Contaminated soils and hazardous building materials and wastes shall be disposed of in accordance with federal, state, and local requirements at landfills serving Los Angeles County.
- Traffic control during construction shall follow local jurisdiction guidelines. For specialized construction tasks, it may be necessary to work during nighttime hours to minimize traffic disruptions.
- Metro standard practices shall be followed that include scheduling of lane and/or road closures to minimize disruptions and preparation of a Traffic Management Plan (see MM TRA-1) that is approved in coordination with local fire and police departments prior to construction.

PM HAZ-3: Operational (post construction) BMPs for the MSF Site Options shall include but shall not be limited to:

- If the quantity of hazardous materials used, handled, or stored on-site would exceed the regulatory thresholds of 55 gallons for a hazardous liquid; 500 pounds of a hazardous solid; 200 cubic feet for any compressed gas; or threshold planning quantities of an extremely hazardous substance per Chapter 6.95 California Health and Safety Code, Metro shall prepare an HMBP in accordance with all related requirements of the California Health and Safety Code, chapter 6.95, Articles 1 and 2. The plan shall be reviewed and recertified every year and amended as required by the Health and Safety Code, Chapter 6.95, Articles 1 and 2.

- Compliance with applicable city of Commerce or city of Montebello design criteria (as applicable) pertaining to emergency vehicle access as well as the California Fire Code standards shall ensure that sufficient ingress and egress routes are provided to the MSF site options.

PM HAZ-4: Construction BMPs for the MSF Site Options shall include but shall not be limited to:

- Both the federal OSHA and Cal/OSHA regulate worker exposure during construction activities that disturb LBP. Any ACMs, if present, require appropriate abatement of identified asbestos prior to demolition pursuant to the SCAQMD Rule 1403.
- PCB-containing fluorescent light fixtures and electrical transformers that are not labeled "No PCBs", shall be assumed to contains PCBs, and shall be removed prior to demolition activities and be disposed of by a licensed and certified PCB removal contractor, in accordance with local, State, and federal regulations. The removal and disposal of the electrical transformers shall be the responsibility of the utility owner.
- Metro standard practices shall be followed that include scheduling of lane and/or road closures and detours to minimize disruptions and preparation of a Traffic Management Plan (see MM TRA-1) that is approved in coordination with local fire and police departments prior to construction.

PM HAZ-5: Construction BMPs for the Commerce/Citadel station site may include but not be limited to:

- Metro's contractor shall sample soil suspected of contamination (obvious signs of contamination includes indicators such as odors, stains, or other suspect materials) for the purpose of classifying material and determining disposal requirements. If excavated soil is suspected or known to be contaminated, Metro's contractor shall:
  - Segregate and stockpile the excavated material in a way that will facilitate measurement of the stockpile volume.
  - Spray the stockpile with water or an SCAQMD approved vapor suppressant and cover the stockpile with a heavy-duty plastic (i.e. Visqueen) to prevent soil volatilization in the atmosphere or exposure to nearby workers.
- Existing groundwater monitoring wells shall remain under ongoing groundwater investigations associated with off-site sources.

3.8.7.2 Mitigation Measures

As identified in **Section 3.8.6**, the Build Alternatives and Build Alternatives with the design option(s), and MSF site options would have significant impacts on hazards and hazardous materials under Impact HAZ-2 (Release of Hazardous Materials) and Impact HAZ-4 (Hazardous Materials Sites (Government Code Section 65962.5)). Mitigation measures to reduce the impacts are presented below. MM HAZ-1 through MM HAZ-4 apply to all Build Alternatives, the Build Alternatives with the

design option(s), and the MSF site options. MM HAZ-5 applies to both MSF site options. As identified in **Table 3.8-3**, implementation of MM HAZ-1 through MM HAZ-5 for Impact HAZ-2 (Release of Hazardous Materials) and Impact HAZ-4 (Hazardous Materials Sites (Government Code Section 65962.5) would reduce all impacts to less than significant for all Build Alternatives, the Build Alternatives with the design option(s), and the MSF site options.

MM HAZ-1: Phase II Environmental Site Investigation (ESI). Prior to the issuance of a grading permit and before any substantial ground disturbance occurs on or near the properties with documented releases, Metro shall hire a qualified environmental professional to conduct a Phase II Environmental Site Investigation to determine the potential presence of petroleum hydrocarbons, metals, and VOCs in soil and/or groundwater in accordance with the findings and recommendations of the Draft Final Initial Site Assessment Report prepared for Alternative 1 (Washington Alternative) (Kleinfelder 2021).

The Phase II ESI shall include sufficient soil and groundwater sampling and laboratory analysis to identify the types of chemicals and their respective concentrations. The Phase II Environmental Site Investigation shall compare soil and groundwater sampling results against applicable environmental screening levels developed by the Los Angeles RWQCB and/or DTSC. If the Phase II Environmental Site Investigation identifies contaminant concentrations above the screening levels, a site-specific soil and groundwater management plan shall be prepared and implemented as described in Mitigation Measure HAZ-2. Metro shall consult with the Los Angeles RWQCB, DTSC, and/or other appropriate regulatory agencies to ensure sufficient minimization of risk to human health and the environment is completed.

MM HAZ-2: Soil and Groundwater Management Plan. Prior to the issuance of a grading permit, a site-specific soil and groundwater management plan shall be prepared by Metro or Metro's contractor to address handling and disposal of contaminated soil and groundwater prior to demolition, excavation and construction activities. Metro shall consult with the Los Angeles RWQCB, DTSC, and/or other appropriate regulatory agencies to ensure sufficient minimization of risk to human health and the environment is completed. The soil and groundwater management plan shall specify all necessary procedures to ensure the safe handling and disposing of excavated soil, groundwater, and/or dewatering effluent in a manner that is protective of human health and in accordance with federal and state hazardous waste disposal laws, and with state and local stormwater and sanitary sewer requirements, At a minimum, shall include the following:

- Identification and delineation of contaminated areas and procedures for limiting access to such areas to properly trained personnel;
- Step-by-step procedures for handling, excavating, characterizing, and managing excavated soils and dewatering effluent, including procedures for containing, handling, and disposing of hazardous waste, procedures for containing, handling, and disposing of groundwater generated from construction dewatering, the method used to analyze excavated materials and groundwater for hazardous materials likely to be encountered at specific locations, appropriate treatment and/or disposal methods;

- Procedures for notification and reporting, including notifying and reporting to internal management and to local agencies;

- Minimum requirements for site-specific health and safety plans, to protect the general public and workers in the construction area. Prior to the issuance of grading permits, the Soil and Groundwater Management Plan and the results of environmental sampling shall be provided to contractors who shall be responsible for developing their own construction worker health and safety plans (HASPs) and training requirements, per MM HAZ-4.

- Metro's contractor shall sample groundwater suspected of contamination. If any groundwater is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact Metro and will immediately notify RWQCB. In coordination with the RWQCB, an investigation and remediation plan will be developed in order to protect public health and the environment. Any hazardous or toxic materials will be disposed according to local, state, and federal regulations.

MM HAZ-3 : Contractor Specifications. Metro shall include in its contractor specifications the following requirement relating to hazardous materials:

- During all ground-disturbing activities, the contractor(s) shall inspect the exposed soil and groundwater for obvious signs of contamination, such as odors, stains, or other suspect materials. Qualified personnel shall monitor for volatile organic compounds and other subsurface gases for concentrations exceeding EPA Regional Screening Levels and/or DTSC Screening Levels with a Photoionization Detector. Should signs of unanticipated contamination be encountered, work shall be suspended, and the Los Angeles County Department of Public Health shall be notified, and the area secured. An investigation shall be designed and performed to verify the presence and extent of contamination at the site, and a site-specific soil and groundwater management plan, as described under Mitigation Measure HAZ-2 above, shall be prepared and implemented.

MM HAZ-4: Worker Health and Safety Plan. The contractor shall prepare site-specific HASPs to protect the general public and workers in the construction area. The HASP shall be prepared in accordance with State and federal OSHA regulations. Copies of the HASP shall be made available to construction workers for review during their orientation and/or regular health and safety meetings. The HASP shall identify chemicals of concern, potential hazards, worker training requirements, personal protective equipment and devices, decontamination procedures, the need for personal or area monitoring, and emergency response procedures. The HASP shall be amended, as necessary, if new information becomes available that could affect implementation of the plan.

MM HAZ-5: Hazardous Building Survey and Abatement. Prior to demolition activities of any structures, Metro shall retain a Cal/OSHA certified contractor to determine the presence or absence of building materials or equipment that contains hazardous materials, including asbestos, lead-based paint, and PCB-containing equipment. If such substances are found to be present, the contractor shall prepare and submit a workplan to the relevant oversight agency to demonstrate how these hazardous materials would be properly removed and disposed of in accordance with federal and state law, including SCAQMD Rule 1403 (Asbestos Emissions from Renovation/Demolition Activities). Following completion of removal activities, Metro shall submit documentation to the relevant oversight agency verifying that all hazardous materials were properly removed and disposed.

3.8.8 Significance After Mitigation

As identified in **Table 3.8-3**, with implementation of mitigation measures MM HAZ-1 through MM HAZ-5, impacts related to the release of hazardous materials (Impact HAZ-1) and Hazardous Materials Sites Government Code Section 65962.5 (Impact HAZ-4), **all impacts would be reduced to less than significant** for all alternatives and design options, with the MSF site option(s).

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Table 3.8-3. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
HAZ-1 Transport, Storage, Use, or Disposal of Hazardous Materials	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HAZ-2 Release of Hazardous Materials	Applicable Mitigation	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HAZ-3 Hazardous Materials Within One-Quarter Mile of A School	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HAZ-4 Hazardous Materials Sites (Government Code Section 65962.5)	Applicable Mitigation	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5	MM HAZ-1 MM HAZ-2 MM HAZ-3 MM HAZ-4 MM HAZ-5
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HAZ-5 Airport Land Use Plans	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
HAZ-6 Emergency Response or Emergency Evacuation Plan	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HAZ-7 Wildland Hazards	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
4 See Section 3.9, Hydrology and Water Quality, and Appendix J, Hydrology and Water Quality Impacts Report.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable loo

3.9 Hydrology and Water Quality

3.9.1 Introduction

This section discusses the Project setting in relation to hydrology and water resources. It describes existing conditions, current applicable regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options. Information in this section is based on the Eastside Transit Corridor Phase 2 Hydrology and Water Quality Impacts Report (Appendix J).

3.9.2 Regulatory Framework

This section describes federal, state, regional, and local regulations and requirements related to potential water quality and supply, flooding, and hydrology impacts. Permits may be required during operation and construction of the Build Alternatives in order to comply with applicable regulations. Permits that may be required for operation and construction of the Build Alternatives are outlined in Section 3.0 of Appendix J.

3.9.2.1 Federal

3.9.2.1.1 Clean Water Act

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into waters of the United States (U.S.) and gives the United States Environmental Protection Agency (USEPA) the authority to implement pollution control programs. In most states, USEPA has delegated this authority to state agencies. In California, the State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCBs) implement these programs. The Project is within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB).

Section 301 of the CWA prohibits the discharge of any pollutant into waters of the U.S. without authorization under specific provisions of the CWA, including CWA Sections 402 and 404, which are discussed below.

Section 303(d) of the CWA requires states to develop a list of water quality-impaired segments of waterways. The 303(d) list includes water bodies that do not meet water quality standards for the specified beneficial uses of that waterway. The law requires that these jurisdictions establish priority rankings for water bodies on their 303(d) lists and implement a process, called Total Maximum Daily Loads (TMDLs), to meet water quality standards. The TMDL establishes the maximum allowable loadings of a pollutant that can be assimilated by a waterbody while still meeting applicable water quality standards. TMDLs are intended to address all significant stressors that cause or threaten to cause impairments to beneficial uses. States are required to include approved TMDLs and associated implementation measures in state water quality management plans. Within California, TMDL implementation is achieved through regional Basin Plans.

Section 401 of the CWA requires projects permitted under CWA Section 404 (described below) to obtain a Water Quality Certification. In California, the SWRCB and RWQCBs are responsible for reviewing proposed projects and issuing Water Quality Certifications. Construction of Alternative 1 in the Rio Hondo and San Gabriel River would require a permit under Section 404 and therefore, would also require a Water Quality Certification.

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) permit process, which provides a regulatory mechanism for the control of point source discharges—a municipal or industrial discharge at a specific location or pipe—to waters of the U.S. The NPDES program also regulates: 1) diffuse source discharges caused by general construction activities over 1 acre; and 2) stormwater discharges in municipal stormwater systems where runoff is carried through a constructed system to specific discharge locations. These permits are discussed in further detail in **Section 3.9.2.2.4** and **Section 3.9.2.3.1.**

Section 404 of the CWA requires a permit from the United States Army Corps of Engineers (USACE) for discharge of dredged or fill material into wetlands and waters of the U.S. (33 U.S. Code of Federal Regulations [CFR] 328.3(a)). Placement of bridge piers in the Rio Hondo or San Gabriel River would be considered discharge of fill into waters of the U.S. and would require a 404 permit. Specific permitting requirements would be determined once specific construction plans and phasing are determined.

3.9.2.1.2 Rivers and Harbors Appropriation Act of 1899

Under Section 14 of the Rivers and Harbors Act (RHA) of 1899, the USACE may grant permission for the temporary occupation or use of any seawall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States (33 United States Code [U.S.C.] Section 408). Alterations or modifications that require approval under 33 U.S.C. Section 408 include degradation, raising, realignment, and other alteration or modification of a flood protection system (USACE 2008). Alternative 1 would involve construction in federally authorized flood control areas (Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River Channel). Construction in these areas would require USACE to determine that the work would not be injurious to the public interest and would not impair the usefulness of the flood damage reduction project.

3.9.2.1.3 Executive Order 11988: Floodplain Management

Under Executive Order 11988, all federal agencies are directed to avoid to the extent possible long- and short-term adverse impacts associated with the occupancy and modification of floodplains. In addition, federal agencies should avoid direct or indirect support of floodplain development wherever there is a practicable alternative. Construction of the Build Alternatives has the potential to occur in Federal Emergency Management Agency (FEMA)-designated 100-year and 500-year floodplains (described in further detail in **Section 3.9.5.5**; also see **Figure 3.9.3**). The 100-year floodplain is defined as areas that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year and corresponds to flood zones A, AE, and AH on **Figure 3.9.3**. The 500-year floodplain is defined as areas that will be inundated by the flood event having a 0.2 percent chance of being equaled or exceeded in any given year and corresponds to flood zone X, shaded (500-year floodplain) on **Figure 3.9.3**.

FEMA provides floodplain information to allow local jurisdictions to regulate development in and around floodplains through Flood Insurance Studies and their associated Flood Insurance Rate Maps (FIRMs).

Section 3.9.5.5 provides specific information about the location of floodplains in the vicinity of the proposed alternative alignments, stations, parking facilities, and MSFs.

3.9.2.1.4 National Flood Insurance Program

In order to determine the necessity to comply with National Flood Insurance Program (NFIP) regulations, FEMA issues countrywide FIRMs delineating the limits of FEMA-defined flood zones throughout the county. The 100-year floodplain is defined as areas that will be inundated by the flood event having a 1 percent chance of being equaled or exceeded in any given year and corresponds to flood zones A, AE, and AH. The 500-year floodplain is defined as areas that will be inundated by the flood event having a 0.2 percent chance of being equaled or exceeded in any given year and corresponds to flood zone X, shaded (500-year floodplain) on **Figure 3.9.3**.

3.9.2.2 State

The SWRCB and the nine RWQCBs are responsible for the protection of water quality in California. The SWRCB establishes statewide policies and regulations mandated by federal and state water quality statutes and regulations. The RWQCBs are responsible for developing and implementing Water Quality Control Plans (Basin Plans), implementing the Porter-Cologne Water Quality Control Act, and issuing Water Quality Certifications pursuant to Section 401 of the CWA. Additionally, all projects resulting in waste discharges, whether to land or water, are subject to Section 13263 of the California Water Code. Dischargers are required to comply with Waste Discharge Requirements (WDRs) as developed by the RWQCB. WDRs for discharges to surface waters must meet requirements for related NPDES permits. These laws are further described below.

3.9.2.2.1 Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Act) established the principal California program for water quality control. The Act regulates discharges to surface and groundwater and directs the RWQCBs to develop regional Basin Plans that achieve the following: 1) designate beneficial uses for surface and ground waters; 2) set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's antidegradation policy; and 3) describe implementation programs to protect all waters in the region (LARWQCB 2014).

3.9.2.2.2 California Fish and Game Code Section 1602

Section 1602 of the California Fish and Game Code, administered by the California Department of Fish and Wildlife (CDFW), mandates that "it is unlawful for any person to substantively divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity." Streambed alteration must be permitted by CDFW through a Lake or Streambed Alteration Agreement.

3.9.2.2.3 State Antidegradation Policy

The state Antidegradation Policy was adopted by SWRCB to maintain high quality waters in California. The policy requires that any activity producing a waste or increased volume or concentration of waste that discharges into high quality waters will be required to meet WDRs to control the discharge and assure that degradation of the existing water quality will not occur (SWRCB 1968). Potentially applicable WDRs are described under **Section 3.9.2.3.2**.

3.9.2.2.4 National Pollutant Discharge Elimination System

In accordance with CWA Section 402(p), which regulates municipal and industrial stormwater discharges under the NPDES program, SWRCB adopted an Industrial General Permit and Construction General Permit. Metro would be responsible for compliance with both of these NPDES permits.

The CWA requires that stormwater associated with industrial activities that discharge either directly to surface waters or indirectly through municipal storm sewers must be regulated by an NPDES permit (Water Quality Order No. 2014-0057-DWQ as amended in 2015 and 2018) (SWRCB 2018). There are 11 categories of regulated industrial activities. The Project would be subject to Category 8, which includes transportation facilities that have "vehicle maintenance shops, equipment cleaning operations, or airport deicing operations." Operation of the MSF involving vehicle maintenance would be covered under this permit and would require Metro to submit a Notice of Intent (NOI) to the LARWQCB.

The SWRCB also administers the Construction General Permit, which is applicable to all stormwater discharges associated with construction activity (Order #2012-0006-DWQ). The main objectives of the Construction General Permit are erosion and sediment discharges from construction sites, preventing construction materials from contacting stormwater, preventing unauthorized discharges from construction sites, implementing sampling and analysis programs, and establishing maintenance commitments on post-construction pollution control measures. The Construction General Permit requirements apply to any construction project that results in the disturbance of 1 acre of land or greater or that is part of a larger common development plan. More information about application requirements, best management practices (BMPs), and monitoring requirements is provided in Appendix J.

3.9.2.2.5 Alquist-Priolo Earthquake Fault Zoning Act and Seismic Hazards Mapping Act of 1990

The 1972 Alquist-Priolo Earthquake Fault Zoning Act prohibits structures for human occupancy from being placed across the trace of an active fault (California Department of Conservation 2019). The state's Seismic Hazards Mapping Act (1990) requires the State Geologist to compile maps that identify and describe the seismic hazard zones in California. These policies are important in relation to water resources given the potential hazards of dam failure/inundation caused by strong earthquake ground shaking or a seiche event, and associated erosion or flooding.

3.9.2.2.6 Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), adopted in 2014, provides a framework for regulating groundwater in California. The intent of the law is to strengthen local groundwater management of basins most critical to the state's water needs. SGMA requires basins to be sustainably managed by local public agencies who become groundwater sustainability agencies. The primary purpose of the groundwater sustainability agencies is to develop and implement a Groundwater Sustainability Plan for basins designated as high and medium priority to achieve long-term groundwater sustainability. There are no relevant sustainable groundwater management plans for the groundwater basins underlying the DSAs, as discussed in **Section 3.9.5.3.1**.

3.9.2.3 Regional

3.9.2.3.1 NPDES Permits

LARWQCB is responsible for issuing the Los Angeles County Municipal Storm Water Permit (Order No. R4-2012-0175, NPDES No. CAS-004001, as amended by State Water Board Order WQ 2015-0075 and Los Angeles Water Board Order R4-2012-0175-A01, and as modified by LARWQCB). The existing permit covers the Los Angeles County Flood Control District (LACFCD), Los Angeles County, and 84 incorporated cities within the coastal watersheds of Los Angeles County, including the cities and unincorporated county in the DSAs (LARWQCB 2016). The permit covers the permittees for discharges of stormwater and urban runoff from municipal separate storm sewer systems (MS4s). This Order also serves as Waste Discharge Requirements.

The objectives of MS4 permits are to prohibit non-stormwater discharges through MS4s to the region's waterways, to reduce the discharge of pollutants in stormwater to the maximum extent practicable, and to implement other pollutant controls as necessary to achieve water quality standards (LARWQCB 2014). The current MS4 permit allows permittees to develop Watershed Management Programs (WMP) or Enhanced Watershed Management Programs (EWMP) to implement MS4 permit requirements, through BMPs, control measures, and customized strategies targeted at the watershed level. The current MS4 permit imposes basic programs, or minimum control measures, that mitigate stormwater quality issues. These programs and measures are discussed in more detail in Appendix J.

3.9.2.3.2 Waste Discharge Requirements

SWRCB's Waste Discharge Requirements for Specified Discharges to Groundwater in Santa Clara and Los Angeles River Basins (Order No. 93-010) "regulates all point source discharges of waste to land that do not require full containment or are not subject to the NPDES program" (SWRCB 2019). This WDR allows for the discharge of water resulting from construction dewatering and dust control application that may occur during construction. The WDR requires that wastewater be analyzed prior to being discharged in order to determine if it contains pollutants in excess of the applicable Basin Plan Water Quality Objectives. Additionally, any wastewater that might be encountered and subsequently discharged to groundwater will need to comply with applicable water quality standards. This WDR applies to the Build Alternatives during construction.

3.9.2.3.3 Basin Plan

The Basin Plan that applies to the DSAs is the *Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (*LA Basin Plan*) (LARWQCB 2014). The *LA Basin Plan* sets forth the regulatory water quality standards for surface waters and groundwater within the region. The water quality standards address the designated beneficial uses for each water body and the narrative and numeric water quality objectives to meet those designated beneficial uses. Where multiple designated beneficial uses exist, water quality standards are written to protect the most sensitive use. Also, the *LA Basin Plan* identifies implementation programs and actions to meet the water quality objectives and monitoring and assessment methods.

3.9.2.3.4 Total Maximum Daily Loads

In accordance with the federal CWA and the state Porter-Cologne Water Quality Control Act, TMDLs have been developed and incorporated into the *LA Basin Plan* for pollutants identified on the 303(d) list as causing contamination in the Los Angeles and San Gabriel River Watersheds. TMDLs are

discussed in **Section 3.9.2.1.1**. The Rio Hondo Watershed has established TMDLs for coliform bacteria, indicator bacteria, pH, trash, lead, copper, and zinc, and the San Gabriel River has established TMDLs for indicator bacteria, copper, lead, and trash (LARWQCB 2017).

3.9.2.3.5 Watershed Management and Enhanced Watershed Management Programs

According to the most current MS4 Order, the ultimate goal of the WMP and EWMP is to ensure that "discharges from the Los Angeles County MS4: (i) achieve applicable water quality-based effluent limitations that implement TMDLs, (ii) do not cause or contribute to exceedances of receiving water limitations, and (iii) for non-stormwater discharges from the MS4, are not sources of pollutants to receiving waters." The WMP allows permittees to develop and customize control measures to address water quality issues within their watershed management areas. Plans relevant to the DSAs include the Upper Los Angeles River Watershed's EWMP, approved in 2016, the Lower San Gabriel River WMP, approved in 2015 and modified in 2017, and the Los Angeles River Upper Reach 2 Coordinated Integrated Monitoring Program, approved in 2016 (LARWQCB 2019b).

3.9.2.4 Local

Los Angeles County and the cities within the DSAs have local regulations pertaining to the protection of water resources and low impact development (LID) standards, which promote the use of naturalistic, on-site BMPs to lessen the impacts of development on stormwater quality and quantity. These regulations include general plan policies, ordinances, and municipal codes of Los Angeles County, and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. Additionally, Los Angeles County prepared the 2014 *Low Impact Development Standards Manual* (LACDPW 2014) to provide guidance for the implementation of stormwater quality control measures in new development and redevelopment projects in unincorporated areas of the county.

Local regulations also seek to protect public safety from flood hazards. Alternative 1 crosses the Rio Hondo, the Rio Hondo Spreading Grounds, and the San Gabriel River, within the cities of Montebello and Pico Rivera, and Los Angeles County. Applicable floodplain regulations of these jurisdictions are described in more detail below.

Several sections of the Los Angeles County Code pertain to floodplain development, including the following:

- Title 11, Chapter 11.60, Floodways, Water Surface Elevations, and Areas of Special Flood Hazard: Defines the floodways and areas of special flood hazard in Los Angeles County that are subject to floodway development regulations defined in the code. The code adopts FEMA's special flood hazard areas shown in FEMA FIRMs covering Los Angeles County (Los Angeles County 2018).

- Title 26, Chapter 1, Section 110.1, Flood Hazard: Establishes construction standards for development and establishes that development must not increase flood hazards in adjacent areas by any of the following mechanisms: increasing flood water surface elevations, deflecting flows, or increasing erosion (Los Angeles County 2019b).

- Title 22, Chapter 22.118 Flood Control: Defines permit requirements for any work that would create flood hazards. Includes regulations prohibiting the obstruction of stream or river flow during work along natural waterways, including the Rio Hondo and San Gabriel River (Los Angeles County 2019a).

The city of Montebello's floodplain code (Title 15, Buildings and Construction, Chapter 15.40) governs flood damage prevention and floodplain management. This chapter provides regulations and construction standards for development in the floodplain and in special flood hazard areas within the city. Chapter 15.40 includes a provision that development in the regulatory floodway must not result in increased base flood elevations during base flood discharge (City of Montebello 1998).

The city of Pico Rivera's floodplain code (Title 15, Buildings and Construction, Chapter 15.50, Floodplain Management) describes floodplain management regulations and standards of construction for the protection of new construction from flooding hazards. This chapter includes a regulation that states that development in the regulatory floodway cannot increase base flood elevations by more than one foot during the base flood discharge (City of Pico Rivera 2016).

Metro has developed procedures and standards to protect water quality and conserve water. Metro has developed procedures dictating the use of potable water and conservation (Metro 2009). Applicable procedures relating to water use and conservation required by Metro include: Procedure 2.1 – Using Potable Water for Pressure Washing Activities and Procedure 2.2 – Using Potable Water for Construction. Metro Rail Design Criteria (MRDC), which are used in the design of Metro Rail Transit Projects and related work, can help provide protection for water resources and quality. For example, MRDC Section 3, Civil (Metro 2017), includes criteria for the design of transit system alignments, trackway subgrade, drainage, determination of rights-of-way, control of access, service roads, and relocation of any utilities; Section 8, Mechanical/Plumbing (Metro 2016a), describes criteria for the design of plumbing and drainage systems serving the Los Angeles area heavy and LRT system passenger stations and tunnels; and Section 11, Yards and Maintenance (Metro 2014), provides requirements for MSF design for shop, waste disposal, and other MSF facilities.

More information about local policies and ordinances is available in Appendix J.

3.9.3 Methodology

The water resources study area is the DSA for each of the Build Alternatives (i.e., DSAs). In order to determine potential impacts on water resources during operation and construction, existing data on surface and groundwater resources, drainage patterns, water quality, water supply, and flooding/inundation hazards are evaluated. Additionally, existing water quality conditions and identified beneficial uses in the watersheds associated with the DSAs are assessed.

For operations, the potential impacts associated with increases in polluted stormwater runoff, increases in impervious surfaces throughout the DSAs (resulting in decreased infiltration to groundwater), and surface water and groundwater contamination are analyzed in relation to applicable permits and regulations.

During construction, the potential impacts associated with stormwater runoff, construction in or near waters of the U.S. or waters of the state, floodplain impacts, and impacts on existing drainage infrastructure are evaluated. Additionally, each of the Build Alternatives is analyzed for potential

construction-related surface water sedimentation impacts generated by erosion and runoff from construction staging areas.

Additional issues evaluated include possible groundwater contamination resulting from construction of the Build Alternatives. Proposed construction components requiring permits are discussed in **Section 3.9.6**. The applicability and the ability to comply with each of these requirements was analyzed for each of the Build Alternatives.

In May 2016, field investigations were conducted to identify waters of the U.S. and waters of the state and determine the ordinary high-water mark (OHWM) of streams and rivers within or near the DSAs, as well as wetlands and state-regulated riparian areas. Current conditions were reviewed via aerial photography in spring 2021 and site visits were conducted in March and April 2021, to determine if site conditions have changed since the May 2016 field investigation. No changes in current conditions were identified that indicated any changes in the OHMW may have occurred.

3.9.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, an alternative would have a significant impact related to hydrology or water quality if it would:

Impact HWQ-1: Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.

Impact HWQ-2: Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

Impact HWQ-3: Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- **i) Result in a substantial erosion or siltation on- or off-site,**
- **ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site,**
- **iii) Exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, or**
- **iv) Impede or redirect flood flows.**

Impact HWQ-4: In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

Impact HWQ-5: Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.9.5 Existing Setting

3.9.5.1 Watershed Setting and Local Surface Water Bodies

The watersheds in the region experience extended periods of dry weather with an annual average rainfall of 15.7 inches (LARWQCB 2014). Rainfall amounts throughout the county vary substantially with the San Gabriel Mountains receiving an annual average of 34.2 inches and the coastal plain receiving 13.7 inches annually (LARWQCB 2014). The watersheds within the DSAs are discussed below. The watersheds are shown on **Figure 3.9.1** and described in **Section 3.9.5.1**. In relation to groundwater resources, the Central Subbasin of the Coastal Plain of Los Angeles underlies the DSAs as described in **Section 3.9.5.3**. More detailed information about these watersheds is provided in Appendix J.

3.9.5.1.1 Los Angeles River Watershed

The portion of the Alternatives 1 and 3 along Atlantic Boulevard, the entire Alternative 2, and both MSF options are located in the Los Angeles River Watershed. There are no surface waters associated with the Los Angeles River Watershed in the DSAs.

3.9.5.1.2 Rio Hondo Sub-Watershed

Alternative 1 from Greenwood Avenue to Rosemead Boulevard, and the portion of the Alternative 3 from Greenwood Avenue to its terminus at the Greenwood station, are located in the Rio Hondo Watershed (see **Figure 3.9.1**). The Rio Hondo is a sub-watershed of the Los Angeles River Watershed. It is also hydraulically connected to the San Gabriel River because, during major flood events, flows from the two rivers merge within the Whittier Narrows Reservoir to the north (upstream) of Alternative 1 (USACE 2011).

Although the Rio Hondo Watershed is largely developed, it is an important resource for groundwater recharge and the replenishment of potable groundwater supplies (GLAC 2014). Historically, the Rio Hondo formed the main bed of the San Gabriel River. Today, this area is highly engineered with channels that bring water from the San Gabriel River to the Rio Hondo to recharge of groundwater at the Rio Hondo Spreading Grounds (San Gabriel Valley Council of Governments 2004). The Rio Hondo Spreading Grounds are the largest and most effective spreading grounds in the county and are located along Alternative 1, as shown in **Figure 3.9.2** (San Gabriel Valley Council of Governments 2004). In the vicinity of Alternative 1, the Rio Hondo is channelized with a concrete bottom and side walls.

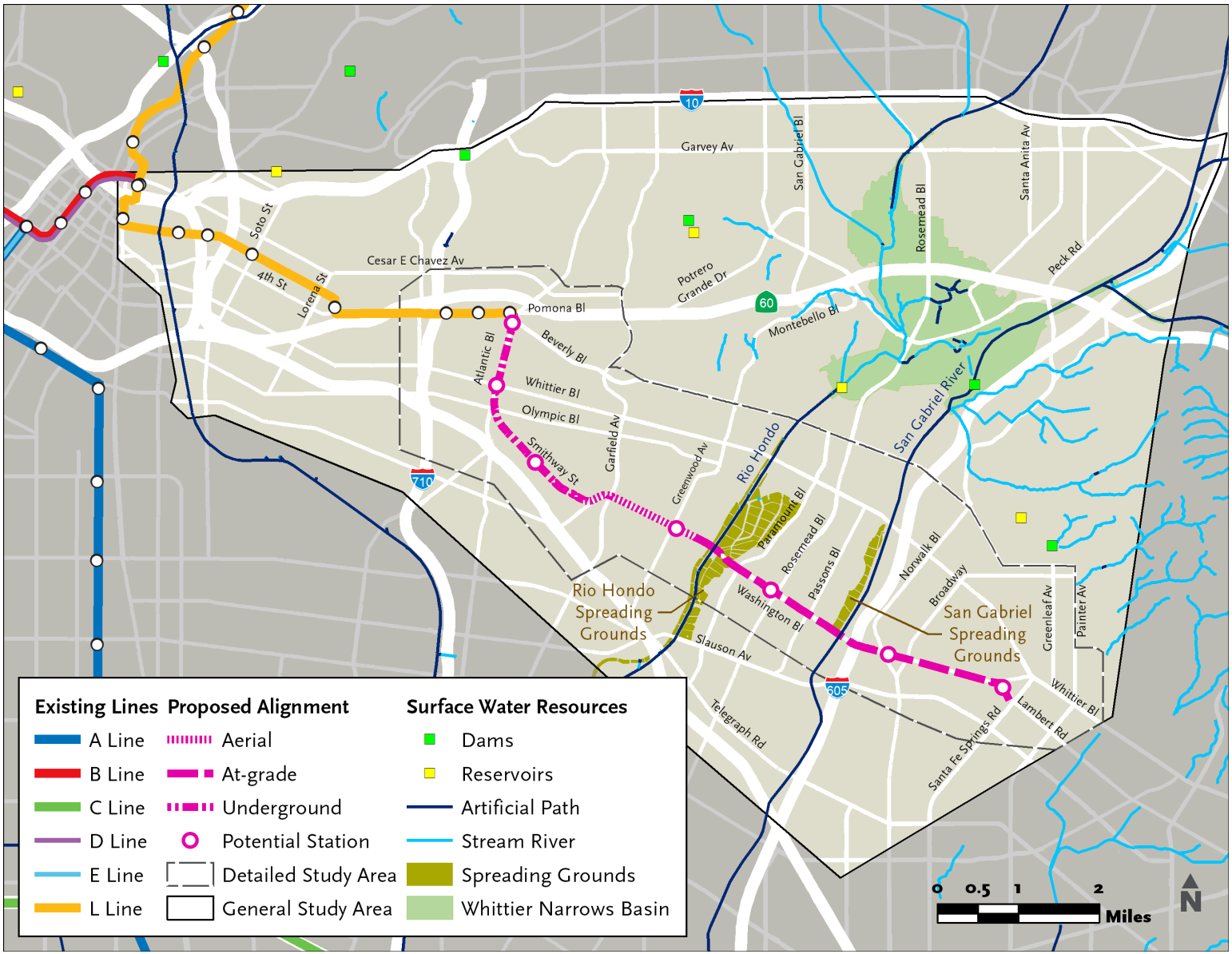
3.9.5.1.3 San Gabriel River Watershed

As illustrated in **Figure 3.9.1**, Alternative 1 lies within the San Gabriel Watershed from Rosemead Boulevard to its terminus at the Lambert station. The watershed is hydraulically connected to the Los Angeles River through the Whittier Narrows Reservoir during high flows from storm events.

Within the DSA of Alternative 1, the San Gabriel River flows in a soft-bottomed channel between raised levees. These conditions allow for infiltration of water to groundwater and are important when water is released from dams along the river during large storms (LACDPW 2006). LACDPW is responsible for operation and maintenance of the river and flood channel. The San Gabriel Spreading Grounds are located approximately 100 feet northeast (upstream) of Alternative 1; because the Spreading Grounds are upstream of the Project, they would not be impacted by operation or construction of the Project.

Source: USGS, 2019.

Figure 3.9.1. Alternative 1, Alternative 2, and Alternative 3 Watersheds



Source: USGS, 2019.

Figure 3.9.2. Surface Water Resources in the Alternative 1 Detailed Study Area

3.9.5.2 Water Quality

3.9.5.2.1 Surface Water

As identified above, the Rio Hondo and the San Gabriel River are the only surface water bodies that cross Alternative 1. No surface water bodies cross Alternatives 2 or 3. Beneficial uses designated in the *LA Basin Plan* and TMDLs for the river reaches that cross Alternative 1 are described below.

Rio Hondo Watershed – Rio Hondo

The *LA Basin Plan* lists the following potential and intermittent beneficial uses in the Rio Hondo Reach 2, Santa Ana Freeway to Whittier Narrows Dam, which crosses Alternative 1:

- **Municipal and Domestic Supply (MUN):** Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
- **Groundwater Recharge (GWR):** Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting of saltwater instruction into freshwater aquifers.
- **Warm Freshwater Habitat (WARM):** Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- **Wildlife Habitat (WILD):** Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
- **Water Contact Recreation (REC-1):** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible.

Table 3.9-1 summarizes the pollutants causing impairment in the Rio Hondo in Reach 2.

Table 3.9-1. 303(d) List of Pollutants Covered by TMDLs, Rio Hondo Reach 2

Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date USEPA Approved TMDL
Cyanide (Reach 2)	A[1]	01/01/2021	N/A
Coliform Bacteria	B[2]	N/A	03/23/2012

Source: LARWQCB, 2017.
Notes:
1 A – Pollutant requiring a TMDL.
2 B – Pollutant being addressed by USEPA approved TMDL.

San Gabriel River Watershed – San Gabriel River

The *LA Basin Plan* lists the following as existing beneficial uses for the San Gabriel River Reach 2, Firestone Boulevard to Whittier Narrows Dam, which crosses Alternative 1: WILD; Rare, Threatened, or Endangered Species; REC-1; and REC-2 (Non-contact Water Recreation) (LARWQCB 2014).

Additional potential and intermittent beneficial uses in the San Gabriel River Reach 2 include: MUN, GWR, WARM, Industrial Service Supply (for uses of water for industrial activities that do not depend primarily on water quality), and Industrial Process Supply (for uses of water for industrial activities that depend primarily on water quality).

Water quality in the San Gabriel River is impaired by pollutants transported in runoff from dense residential and commercial development in the middle watershed. Additionally, tertiary effluent from several sewage treatment plants enters Reach 2 (LARWQCB 2014). **Table 3.9-2** summarizes the TMDLs in Reach 2.

Table 3.9-2. List of Pollutants Covered by TMDLs, San Gabriel River Reach 2

Pollutant	TMDL Requirement Status	Expected TMDL Completion Date	Date USEPA Approved TMDL
Cyanide	A[1]	01/01/2021	N/A
Lead	B[2]	N/A	03/27/2007
Temperature	A[1]	01/01/2027	N/A

Source: LARWQCB, 2017
Notes:
1 A – Pollutant requiring a TMDL.
2 B – Pollutant being addressed by USEPA approved TMDL.

3.9.5.2.2 Groundwater

Due to the long history of commercial and industrial activity in the DSAs, groundwater contaminants in the Central Subbasin may include sulfate, total dissolved solids (TDS), iron, chloride, and other types of industrial wastes (City of Los Angeles Planning Department 1995). Groundwater monitoring wells are sampled by the LACDPW on an annual basis for major minerals, TDS, electrical conductivity, pH, phosphate, iron, manganese, fluoride, and boron (City of Los Angeles Planning Department 1995). In addition, the Water Replenishment District (WRD) of Southern California and the U.S. Geological Survey (USGS) conduct regional groundwater quality monitoring. Results of this monitoring for key water quality constituents in 2019-2020 is summarized in Table 6-3 in Appendix J. Section 3.8, Hazards and Hazardous Materials, and Appendix I describe specific local causes and sources of groundwater contamination and identify sites in the DSAs where groundwater contamination has been documented. As described in Section 3.8, groundwater contamination along Alternative 1 includes chlorinated solvents, hydrocarbons, gasoline and other fuels (diesel), landfill gases, oil, natural gas, and VOCs.

3.9.5.3 Groundwater Supplies and Recharge

Data from LACDPW on groundwater wells in the vicinity of the DSAs show lower groundwater tables (more than 50 feet below ground surface [bgs]) in the western and southern portions of the DSAs and higher (less than 50 feet bgs) groundwater tables near the spreading grounds (LACDPW 2019).

The Central Subbasin is used for potable water resources. A major factor in the production capacities of groundwater basins is the recharge of underground water resources, including infiltration that occurs at the spreading grounds such as the San Gabriel Spreading Grounds and Rio Hondo Spreading Grounds within the DSA of Alternative 1. Additionally, within the DSA of Alternative 1, the San Gabriel River has a soft bottom, providing infiltration capabilities. Rubber dams are installed on drop structures, allowing for percolation over a total of approximately 500 acres (LACDPW 2006). The

San Gabriel Spreading Grounds are upstream of Alternative 1 and would not be affected by operation or construction of the Project. Alternative 1 would cross approximately 0.35 miles of the Rio Hondo Spreading Grounds and would be at-grade through the spreading grounds with the exception of the bridge over the Rio Hondo channel. The Rio Hondo Spreading Grounds are comprised of 20 shallow basins below Whittier Narrows that replenish the Central Groundwater Basin. Percolation occurs over 430 acres with a storage capacity of 3,694 acre-feet of water. The Rio Hondo and San Gabriel Spreading Grounds are owned by the LACFCD and are operated by the LACDPW (LACDPW 2006).

3.9.5.3.1 Central Subbasin

The Central Subbasin is part of the Los Angeles Coastal Plain. Groundwater extends over much of the Coastal Plain and holds most of its groundwater. It directly underlies the DSAs and has a depth between 1,600 and 2,200 feet (MWD of Southern California 2007). No groundwater extraction is allowed from the subbasin unless water rights are obtained.

According to the state's SGMA Basin Prioritization Map (California DWR 2021), the Los Angeles Coastal Plain Central Subbasin is characterized as having very low priority. Because of its low priority rating, development of a groundwater sustainability plan for the basin underlying the DSAs is not required under the SGMA.

3.9.5.4 Drainage

The DSAs are urbanized and largely covered with impervious surfaces, such as areas of asphalt, concrete, buildings, and other land uses which concentrate storm runoff. Areas of pervious surfaces include the Rio Hondo Spreading Grounds and San Gabriel River and to a minimal extent, landscaped medians and setbacks, parks, and residential yards. There is extensive engineered stormwater drainage infrastructure within the DSAs, and stormwater and other surface water runoff in this area is primarily conveyed to municipal storm drains. Stormwater flows through constructed drainages and into the Rio Hondo and San Gabriel River and is ultimately conveyed to the Pacific Ocean. Jurisdiction over the drainages, tributaries, and rivers in the DSAs is shared between local jurisdictions, LACDPW, and USACE.

3.9.5.5 Flooding and Inundation

Unincorporated Los Angeles and the cities in the DSAs are located in a relatively flat alluvial plain, about 30 miles wide, lying on uplift terraces surrounded by mountain ranges. FEMA has prepared flood maps identifying areas in Los Angeles County and surrounding cities that would be subject to flooding during 100-year and 500-year storm events. The following sections describe the floodplains in the vicinity of the Build Alternatives and MSF site options. FIRM panels that were referred to in order to determine the potential flood hazards are: 06037C1645F, 06037C1810F, 06037C1830F, and 06037C1835F.

3.9.5.5.1 Flood Zones

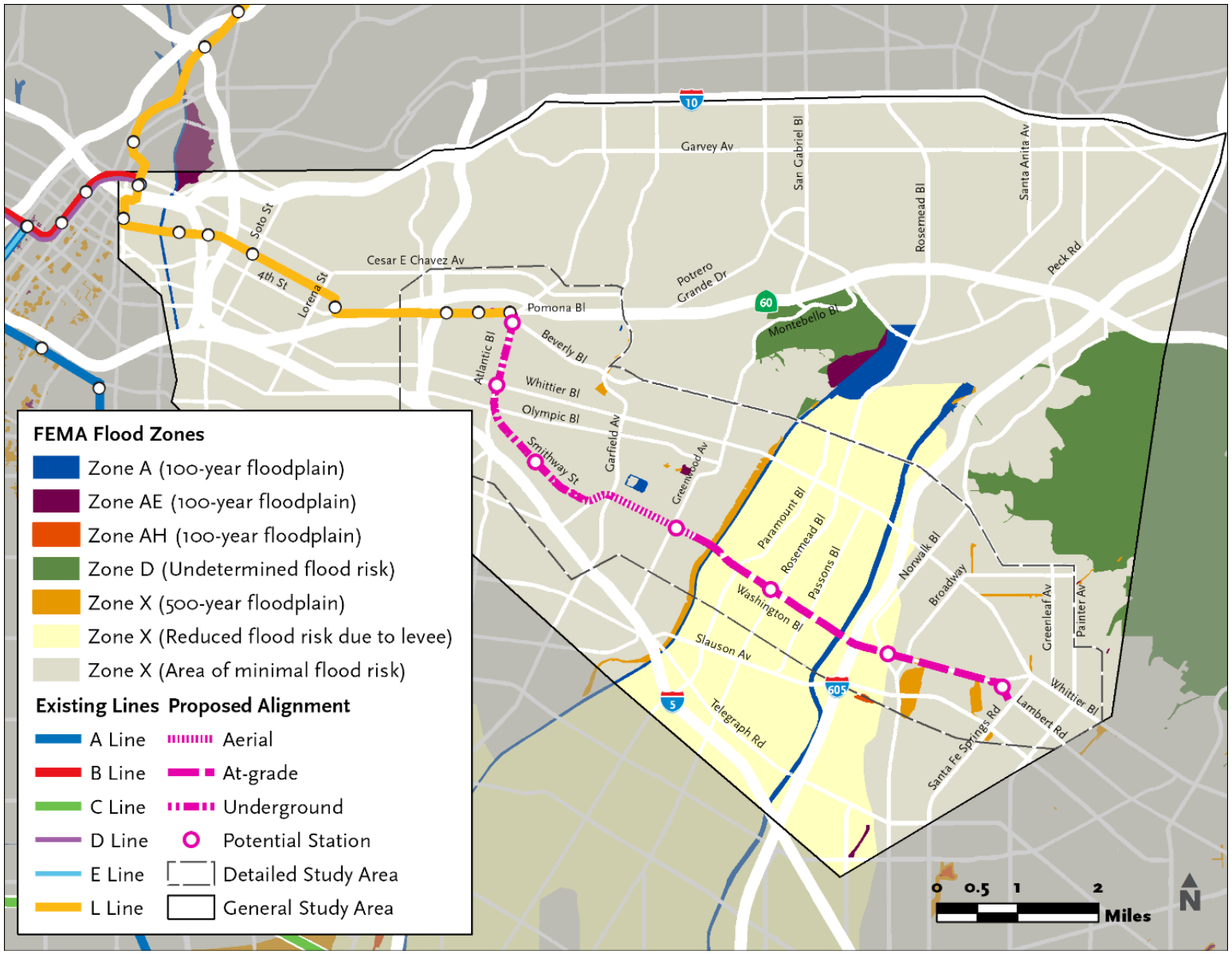
The majority of the DSAs are outside of the 100-year and 500-year flood zones as defined by FEMA (100-year and 500-year storms are defined as having a 1 percent and 0.2 percent chance, respectively, of occurring in any given year). The majority of the areas where the Build Alternatives are located in flood zone X, defined as areas of minimal flood risk. Alternative 1 crosses areas designated as the 500-year floodplain at the Rio Hondo Spreading Grounds and Zone A (100-year floodplain) at the Rio Hondo and San Gabriel River. The Montebello MSF site option is also within Zone A based on its historic use as a rock quarry that collected stormwater. However, because the Montebello MSF site option is now developed, it does not contain any of the natural functions and values of a floodplain. The Commerce MSF site option is outside of the 100-year and 500-year flood zones.

3.9.5.5.2 Inundation Zones

Inundation is defined as flooding related to earthquake-induced failure of up-gradient dams, flood control facilities, or other water retaining structures. Multiple flood control structures intersect Alternative 1 including the channels of the Rio Hondo and San Gabriel River. The Whittier Narrows Dam is located approximately 4 miles north of the Project, outside of the DSAs but within the GSA. Flooding or failure of these facilities could potentially cause inundation in the vicinity of the Build Alternatives. This section describes potential flood inundation hazards.

The Build Alternatives are not located near the ocean or large water bodies susceptible to seiches. Therefore, the Build Alternatives are not located within areas potentially impacted by seiches or tsunamis.

Along Alternative 1, the inundation area below the Whittier Narrows Dam spans from the Rio Hondo to approximately the Norwalk station, as shown on **Figure 3.9.3** as Zone X shaded. The city of Santa Fe Spring's *Re-Imagine Santa Fe Springs 2040 General Plan* discusses inundation hazards from the Whittier Narrows Dam. The general plan states that inundation from dam failure would impact the city and would mostly affect the commercial, industrial, and residential areas west of Norwalk Boulevard (City of Santa Fe Springs 2022). Similarly, the city of Whittier's *Envision Whittier General Plan* shows that the inundation area below Whittier Narrows Dam includes a small northwest portion of the city (City of Whittier 2021). The northwest portion of the city also includes a small area of inundation from the Hoover Reservoir (City of Whittier 2021). USACE is actively managing the dam and addressing safety concerns under the seepage/stability correction program (USACE 2021).



Source: FEMA, 2021.

Figure 3.9.3. FEMA Flood Zones in the Alternative 1 Detailed Study Area

3.9.5.6 Municipal Water Supply

Within Los Angeles County, water supply is comprised of a complex system made up of state agencies and local water districts operating aqueducts, reservoirs, and groundwater basins. Approximately 33 percent of the water in the county comes from local supply sources, while the remaining supply is imported from outside of the county.

Local water supply sources include surface water from mountain runoff, groundwater, and recycled water. Imported sources of water supply include the Colorado River, the Bay-Delta in Northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. Overall, the water supply in the DSAs comes from a mixture of local supplies of groundwater and surface water, as well as imported supplies from larger regional water supply agencies. Additional information on water supply is provided in Section 3.16, Utilities and Service Systems.

The LACDPW maintains a database of groundwater supply wells that identify groundwater wells near the Rio Hondo and San Gabriel River (LACDPW 2019). Additionally, there are 10 municipal water wells located within approximately 0.5 miles of the proposed underground guideway portion of the Build Alternatives and the aerial portion of Alternatives 1 and 3. There is one municipal well located approximately 0.5 miles from the at-grade portion of Alternative 1. Most of these wells are located approximately 1,800 feet or more away from the Build Alternatives.

3.9.6 Impact Evaluation

3.9.6.1 Impact HWQ-1: Water Quality

Impact HWQ-1: Would a Build Alternative violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

3.9.6.1.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would not generate pollutants covered by TMDLs in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (i.e., cyanide and coliform bacteria in the Rio Hondo Reach 2 and cyanide, lead, and temperature in San Gabriel River Reach 2, as discussed in **Section 3.9.5.2.1**). Although lead has historically been generated by transportation operations from fuels and brake pad and tire wear, LRT operations would not generate lead as the system would use electricity to operate and would not have tires.

The Project could result in potential direct impacts on surface water quality, primarily the Rio Hondo and San Gabriel River, by increasing stormwater runoff and producing contaminants typically associated with transit, such as oil and grease, that could be carried by the stormwater runoff into surface waters. However, operations would be subject to the LARWQCB MS4 NPDES permit (Order No. R4-2012-0175 and NPDES No. CAS004001) and its associated BMPs for activities such as roadway paving or repair operation and public agency facilities and activities. In compliance with the SWRCB's General Construction Permit (Order #2009-0009-DWQ), and as set forth in PM HWQ-1 in **Section 3.9.7.1**, post-Project BMPs would be installed to minimize stormwater pollution. With implementation

of post-construction BMPs, operation of Alternative 1 would not result in substantial degradation of surface water quality from runoff and impacts would be less than significant.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials involved in operation of Alternative 1 including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Project would comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and storage and handling of hazardous materials. Thus, operation of Alternative 1 would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality from use of hazardous materials; impacts would be less than significant.

Indirect water quality impacts could occur from operation of Alternative 1 over time. Operation of the trains could produce pollutants, such as heavy metals and petroleum hydrocarbons, that enter the soil and then become entrained in surface water over time via erosion and stormwater runoff. If such pollutants were released onto the ground during operation, they could impact surface water resources in the DSA, primarily the Rio Hondo and San Gabriel River. However, as described above, post-construction runoff and pollution control measures would be implemented, as required by NPDES permits. This would minimize stormwater pollution and thereby ensure that no violation of water quality standards or waste discharge requirements or other degradation of water quality would occur. Thus, operation of Alternative 1 would have less than significant indirect impacts on surface water quality.

There is a potential for stormwater containing pollutants from the Project (e.g., oil and grease) to percolate into groundwater basins underlying the DSA. However, implementation of post-construction BMPs as required by the NPDES permits and set forth in PM HWQ-1, would minimize stormwater and non-stormwater runoff from the DSA during operation of Alternative 1. Treatment of stormwater runoff using infiltration BMPs would reduce the risk that polluted water would percolate into groundwater basins underlying the DSA. Additionally, with the exception of the spreading grounds, the DSA is primarily covered with impervious surface, which prevents surface water from percolating to groundwater. Therefore, operation of Alternative 1 would not violate water quality standards or waste discharge requirements or otherwise substantially degrade groundwater quality; impacts would be less than significant.

Based on the information above, operation of Alternative 1 would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 1 would have less than significant impacts on surface water and groundwater quality.

It should also be noted that, as identified in the Section 3.14, Transportation and Traffic, and Appendix N, Alternative 1 would result in reduced vehicle miles traveled (VMT) compared to the No Project Alternative. An overall reduction in VMT in the DSA could decrease the pollutants associated with transportation operations compared to the No Project Alternative (Fang and Volker 2017). Common transportation-related pollutants include fuel, oil, and grease from vehicle leaks or improperly discarded used oil, particulates and heavy metals generated from vehicle exhaust fumes, tire and asphalt wear deposits, and dirt and solids carried by vehicles from other sites (Nixon and Saphores 2007; Trumbull and Bae 2000). The reduction in VMT would result in a corresponding beneficial effect on surface water quality in the DSA compared to the No Project Alternative.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect water quality differently than the base Alternative 1. As with the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option has the potential to degrade surface water quality by increasing stormwater runoff, producing contaminates (e.g., oil and grease) that could be carried by that stormwater runoff into surface waters, and accidentally releasing hazardous materials. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not generate pollutants covered by TMDLs in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (as discussed in **Section 3.9.5.2.1**). The Project would comply with post-construction BMPs as required by the NPDES permits and set forth in PM HWQ-1 (**Section 3.9.7.1**). Furthermore, the Project would comply with hazardous materials laws and regulations, as described in Section 3.8, Hazards and Hazardous Materials, and Appendix I. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not generate runoff, stormwater pollution, or require the use of hazardous materials such that surface water quality would be substantially degraded.

There is a potential for stormwater containing pollutants from the Project to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by NPDES permits would minimize stormwater and non-stormwater runoff from the DSA during operation, percolation of polluted water to the groundwater basin underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of Alternative 1 with the Atlantic/Pomona Station Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts on surface water and groundwater quality.

Montebello At-Grade Option

Alternative 1 with the with the Montebello At-Grade Option would not affect water quality differently than the base Alternative 1. Operation of Alternative 1 with the Montebello At-Grade Option would not generate pollutants covered by TMDLs in the portions of the Rio Hondo and San Gabriel River within the DSA of Alternative 1 (as discussed in **Section 3.9.5.2.1**).

As with the base Alternative 1, Alternative 1 with the Montebello At-Grade Option has the potential to degrade surface water quality by increasing stormwater runoff, producing contaminates (e.g., oil and grease) that could be carried by that stormwater runoff into surface waters, and accidentally releasing hazardous materials. The Project would comply with post-construction BMPs as required by the NPDES permits and set forth in PM HWQ-1 (**Section 3.9.7.1**). Furthermore, the Project would comply with hazardous materials laws and regulations described in Section 3.8, Hazards and Hazardous Materials, and Appendix I. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not generate runoff, stormwater pollution, or require the use of hazardous materials such that surface water quality would be substantially degraded.

There is a potential for stormwater containing pollutants from the Project to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by NPDES

permits would minimize stormwater and non-stormwater runoff from the DSA during operation, percolation of polluted water to groundwater basins underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of Alternative 1 with the Montebello At-Grade Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. Thus, operation of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts on surface water and groundwater quality.

Construction Impacts

Water quality impacts could potentially result from construction of Alternative 1. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Ground disturbing activities associated with construction could result in a temporary increase in suspended solids running off construction sites. In a storm event, construction site runoff could result in sheet erosion of exposed soil. If not adequately controlled, contaminated water runoff from these areas would have the potential to degrade surface water quality in surface water bodies in the DSA of Alternative 1, primarily the Rio Hondo and San Gabriel River.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit (see details of SWPPP requirements in **Section 3.9.7.1**). Implementation of the SWPPP would ensure that the applicable provisions of Sections 301 and 402 of the CWA and Chapter 6, Article 4.4, Storm Water and Urban Runoff Pollution Control from the Los Angeles County Municipal Code, would be met and pollutant discharges would be properly controlled. Implementation of Construction Stormwater Management Controls in the SWPPP would function to minimize the contact of construction materials, equipment, and maintenance supplies (e.g., fuels, lubricants, solvents) with stormwater. BMPs designed to reduce erosion of exposed soil may include, but are not limited to, soil stabilization controls, water for dust control, perimeter silt fences, placement of straw wattles, and sediment basins. If ground disturbing activities must take place during the rainy season when there is greater potential for erosion to occur, the selected BMPs would focus on erosion control and keeping soil and sediment in place. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities. As part of this, an erosion and sediment control plan would be established prior to the initiation of construction activities. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

Construction of Alternative 1 would involve construction across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The existing bridges would be demolished and replaced with new bridges that carry both the LRT facility and the roadway. Replacement of bridges would require construction activities such as installing the foundation and pouring the concrete for the superstructure, as detailed in Appendix P. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. The Rio Hondo bridge would include one column in the Rio Hondo and one column in the spreading grounds. For San Gabriel River bridge, a total of four bridge piers within the San Gabriel River would be replaced.

Construction activities associated with replacing bridge piers have the potential to impact water quality from ground disturbance, which could cause erosion and sedimentation into water bodies and generate turbidity if work occurs in water. Furthermore, potential fuel leaks from construction equipment could contaminate nearby water bodies. The contractor would be required to implement construction BMPs, such as properly maintaining equipment and vehicles and refueling equipment and vehicles away from surface waters. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1, which requires water present in the work area to be isolated such that construction does not occur in water as discussed in **Section 3.9.7**, would reduce this impact to less than significant.

During construction, there is the potential for Alternative 1 to encounter, dewater, and dispose of groundwater during ground disturbing activities, tunnel boring or excavation for the underground guideway, relocation of utilities, and ground improvements used to address liquefaction along the eastern portion of the alignment (as described in Section 3.6, Geology, Seismicity, Soils, and Paleontological Resources, and Appendix G). If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, discussed in **Section 3.9.7**, requires the preparation of a Soil and Groundwater Management Plan in consultation with LARWQCB. The plan would identify and delineate contaminated areas; provide procedures for handling, excavating, and managing excavated soils and dewatering effluent and for notifying appropriate agencies; and provide requirements for site-specific health and safety plans. Thus, implementation of MM HAZ-2 would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

As discussed in **Section 3.9.5.2.2**, known and/or suspected groundwater contamination exists in the vicinity of the DSA. While construction of Alternative 1 would not occur directly within any of the known contaminated sites identified in the area, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks, including pollutants covered by TMDLs (i.e., lead and cyanide) in the Rio Hondo and San Gabriel River (**Section 3.9.5.2.1**). Thus, construction of Alternative 1 may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. MM HAZ-3 is discussed in **Section 3.9.7** and requires contractors to inspect groundwater for signs of contamination, and if contaminated groundwater is found, stop work in the vicinity of area, cordon off the area, notify and coordinate with appropriate agencies, and develop an investigation and site-specific groundwater management plan to ensure contaminants are not spread. Thus, implementation of MM HAZ-3 would reduce this potential impact from construction of Alternative 1 to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

If groundwater is encountered during excavation for replacement bridge piers, the walls of the excavation would be supported with the use of drilling muds, or the "wet method of construction." This method would not require dewatering and is explained in detail in Appendix J.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect water quality differently from the base Alternative 1. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Thus, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit to reduce any potential impacts related to stormwater runoff from construction sites. Implementation of the SWPPP would ensure that the applicable requirements would be met and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities, including an erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect construction at the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River differently than the base Alternative 1. Bridge work would be the same and would have the potential to impact water quality. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1, which requires water present in the work area to be isolated such that construction does not occur in water, as discussed in **Section 3.9.7**, would reduce this impact to less than significant.

As with the base Alternative 1, there is the potential for Alternative 1 with the Atlantic/Pomona Station Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, summarized above and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 with the Atlantic/Pomona Station Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of Alternative 1 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized above and discussed in **Section 3.9.7**, would reduce this potential impact from construction of Alternative 1 with the Atlantic/Pomona Station Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Montebello At-Grade Option

Similar to the base Alternative 1, water quality impacts could potentially result from construction of Alternative 1 with the Montebello At-Grade Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around

proposed construction and staging areas. The At-Grade Option would potentially have more ground disturbance than Alternative 1 as it would include a longer at-grade and shorter aerial alignment.

As with the Base Alternative 1, a SWPPP would be prepared to comply with the Construction General Permit to reduce any potential impacts related to stormwater runoff from construction sites. Implementation of the SWPPP would ensure that the applicable requirements would be met and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities, including an erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

Construction of Alternative 1 with the Montebello At-Grade Option would not affect construction across the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River differently than under the base Alternative 1. Bridge work would be the same and would have the potential to impact water quality. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1, which requires water present in the work area to be isolated such that construction does not occur in water as discussed in **Section 3.9.7**, would reduce this impact to less than significant.

As with the base Alternative 1, there is the potential for Alternative 1 with the Montebello At-Grade Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, summarized above and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 with the Montebello At-Grade Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of Alternative 1 with the Montebello At-Grade Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized above and discussed in **Section 3.9.7**, would reduce this potential impact from construction of Alternative 1 with the Montebello At-Grade Option to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Potential direct impacts on surface water quality from the Project could include increased stormwater runoff from surface facilities that could contaminate local surface water resources. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are not near the Rio Hondo

Reach 2 or San Gabriel River Reach 2. Further, operational activities would not generate pollutants covered by TMDLs in the Rio Hondo or San Gabriel River. The operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option has the potential to increase the concentration and accumulation of pollutants typically associated with transit projects. In compliance with the Construction General Permit and MS4 NPDES permit, and set forth in PM HWQ-1 in **Section 3.9.7.1**, post-Project BMPs would be installed to minimize stormwater pollution.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials, including fuels (for maintenance vehicles), paints, lubricating fluids, and solvents used for maintenance. As described in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Project would comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and storage of hazardous materials.

Operational activities could release pollutants such as heavy metals and petroleum hydrocarbons over time. If such pollutants were released onto the ground during operation, they could reach surface water resources in the DSA of Alternative 2 and result in adverse impacts on surface water quality. Post-construction runoff and pollution control measures would be implemented, as required by NPDES permits and set forth in PM HWQ-1. This would minimize stormwater pollution and thereby ensure that no violation of water quality standards or waste discharge requirements or other degradation of water quality would occur.

There is a potential for stormwater containing pollutants from operation of the Project (e.g., oil and grease) to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by the NPDES permits and set forth in PM HWQ-1 would minimize stormwater and non-stormwater runoff from the DSA during operations, percolation of polluted water to groundwater basins underlying the DSA would be unlikely. Additionally, because the DSA is primarily covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; thus, impacts would be less than significant.

It should also be noted that, as with Alternative 1, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA compared to the No Project Alternative could decrease the primary pollutants associated with transportation operations (Fang and Volker 2017) such as fuels, oil, and grease; particulates and heavy metals; and dirt (Nixon and Saphores 2007; Trumbull and Bae 2000). This would be a beneficial effect on surface water quality in the DSA compared to the No Project Alternative.

Construction Impacts

Base Alternative and Design Option

Water quality impacts could potentially result from construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around construction and staging areas. Ground disturbing activities associated with construction could potentially result in a temporary increase in suspended solids running off construction sites. In a storm event, construction site runoff could result in sheet erosion of exposed soil. If not adequately controlled, contaminated water runoff from these areas would have the potential to degrade surface water quality.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the SWRCB's NPDES Construction General Permit (see details of SWPPP requirements in PM HWQ-2 in **Section 3.9.7.1**). Implementation of the SWPPP would ensure that the applicable provisions of the CWA and Los Angeles County Municipal Code, would be met and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities. As part of this, an erosion and sediment control plan would be established prior to the initiation of construction activities. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

No construction would occur in or near the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. Thus, construction would not cause turbidity in water.

There is the potential for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Potential direct impacts on surface water quality could include increased stormwater runoff from surface facilities that could contaminate local surface water resources. Operational activities would not generate pollutants covered by TMDLs in the portions of the Rio Hondo near the DSA of Alternative 3 and would not affect the San Gabriel River. The operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option has the potential to increase the concentration and accumulation of pollutants typically associated with transit projects (e.g., oil and grease). In compliance with the Construction General Permit and MS4 NPDES permit, and as set forth in PM HWQ-1 in **Section 3.9.7.1**, post-Project BMPs would be installed to minimize stormwater pollution.

Potential direct impacts on water quality could also result from the accidental release of hazardous materials, including fuels, paints, lubricating fluids, and solvents used for maintenance. As described in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Project would comply with hazardous materials laws and regulations, including hazardous materials inventory and emergency response planning, risk planning and accident prevention, employee hazard communication, public notification of potential exposure to specific chemicals, and storage and handling of hazardous materials.

Operational activities could release pollutants such as heavy metals and petroleum hydrocarbons over time. If such pollutants were released onto the ground during operation, they could reach surface water resources in the DSA and result in adverse impacts on surface water quality. However, as described above, post-construction runoff and pollution control measures would be implemented, as required by NPDES permits and set forth in PM HWQ-1. This would minimize stormwater pollution and thereby ensure that no violation of water quality standards or waste discharge requirements or other degradation of water quality would occur.

There is a potential for stormwater containing pollutants from operation of the Project (e.g., oil and grease) to percolate into groundwater basins underlying the DSA. Because the implementation of BMPs required by NPDES permits and set forth in PM HWQ-1 would minimize stormwater and non-stormwater runoff from the DSA during operation, percolation of polluted water to the groundwater basin underlying the DSA would be unlikely. Additionally, because the DSA is covered with impervious surface, potential impacts on groundwater quality from percolation of contaminated surface water would be limited.

Based on the information above, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality; thus, impacts would be less than significant.

It should also be noted that, as with Alternative 1, and as identified in Section 3.14, Transportation and Traffic, and Appendix N, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in reduced VMT compared to the No Project Alternative. An overall reduction in VMT in the DSA compared to the No Project Alternative

could decrease the primary pollutants associated with all types of transportation operations (Fang and Volker 2017) such as fuels, oil, and grease; particulates and heavy metals; and dirt (Nixon and Saphores 2007; Trumbull and Bae 2000). This would be a beneficial effect on surface water quality in the DSA compared to the No Project Alternative.

Construction Impacts

Base Alternative and Design Options

Water quality impacts could potentially result from construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Ground disturbing activities associated with construction could potentially result in a temporary increase in suspended solids running off construction sites. In a storm event, construction site runoff could result in sheet erosion of exposed soil. If not adequately controlled, contaminated water runoff from these areas would have the potential to degrade surface water quality in surface water bodies near the alignment, primarily the Rio Hondo.

To reduce any potential impacts related to stormwater runoff, a SWPPP would be prepared to comply with the Construction General Permit (see details of SWPPP requirements in PM HWQ-2 in **Section 3.9.7.1**). Implementation of the SWPPP would ensure that the applicable provisions of the CWA and Urban Runoff Pollution Control from the Los Angeles County Municipal Code would be met, and pollutant discharges would be properly controlled. LARWQCB's MS4 permit also specifies that permittees must implement a program to control runoff from construction activities. As part of this, an erosion and sediment control plan would be established prior to the initiation of construction activities. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

No construction would occur in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. Thus, construction would not cause turbidity in water.

There is the potential for the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to encounter, dewater, and dispose of groundwater during construction. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and

contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the proposed Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option could have adverse effects on surface water and groundwater resources and water quality. Vehicle maintenance, including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication, has the potential to generate pollutants, such as dirt, oil, and fuel that may runoff into nearby surface waters (Trumbull and Bae 2000). However, operation of maintenance facilities, including cleaning of vehicles and other activities, would conform with MRDC 11.5 as described in **Section 3.9.2.4**. Additionally, operations would comply with applicable permits, such as SWRCB's Industrial General Permit and the MS4 permit and BMPs required by these permits and set forth in PM HWQ-1 (discussed in **Section 3.9.7.1**) would be implemented. Operations would not generate pollutants covered by TMDLs in the Rio Hondo and would not affect the San Gabriel River. The MSF site options are in developed, impervious areas with an established stormwater and drainage system. No change in impervious surface area would occur and thus, no change in the amount of runoff from precipitation would occur. Based on the information above, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant.

Construction Impacts

MSF Site Options and Design Option

Water quality impacts could potentially result from construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction areas. Construction of the MSF site options would comply with applicable construction permits, such as the SWRCB Construction General Permit and SWPPP, to avoid erosion that could impact water quality if soils were released to surface waters. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

There is the potential to encounter, dewater, and dispose of groundwater during construction of the MSF site options. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

There is the potential during construction to encounter shallow groundwater from demolition and grading activities, shallow excavation, and relocation of utilities. This groundwater could be

contaminated with hazardous materials from sources such as underground storage tanks. Contaminated groundwater may contain pollutants covered by a TMDL (i.e., cyanide) and a potentially significant impact would occur. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.2 Impact HWQ-2: Groundwater Supplies and Recharge

Impact HWQ-2: Would a Build Alternative substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

3.9.6.2.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 may result in a slight increase in impervious surfaces associated with the potentially larger piers within the Rio Hondo Spreading Grounds and the earthen bottom of the San Gabriel River. During project operations, this potential increase in impervious surface area within the riverbed and spreading grounds would not substantially impact groundwater supplies or interfere with groundwater recharge. The underground alignment would not affect groundwater movement or infiltration as the groundwater table would likely be lower than the underground alignment, as discussed in **Section 3.9.5.3**. Operation of Alternative 1 would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. The impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would affect groundwater supplies and recharge similar to the base Alternative 1. The open station and underground alignment would be above the groundwater table and would not affect groundwater movement or infiltration. Under Alternative 1 with the Atlantic/Pomona Station Option, there may still be a minor change in the amount of impervious surfaces associated with the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River. However, this would not substantially affect groundwater supplies or recharge capacity. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin; the impact would be less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would affect groundwater supplies and recharge similar to the base Alternative 1. This design option would include a longer at-grade segment in the city of Montebello and a shorter aerial segment, which would reduce the amount of new imperious

surface that would be constructed as compared to an aerial alignment at this location and no significant impacts on groundwater recharge would occur.

Under Alternative 1 with the Montebello At-Grade Option, there may still be a minor change in the amount of impervious surfaces associated with the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River. However, this would not substantially affect groundwater supplies or recharge capacity. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin. The impact would be less than significant.

Construction Impacts

Construction of Alternative 1 could impact groundwater supplies and recharge because dewatering activities have the potential to lower the groundwater table. Groundwater dewatering would take place during construction, particularly during the construction of the underground guideway and station construction. However, the closest groundwater well is approximately 1,800 feet away from the underground guideway, and thus dewatering would not be expected to affect groundwater wells. Additionally, groundwater well depths are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. The tunnel would only be up to 60 feet deep, and the water table would likely be below or at the lower level of construction activities. Thus, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Groundwater recharge in the DSA of Alternative 1 takes place primarily in the spreading grounds associated with the Rio Hondo and through the earthen bottom of the San Gabriel River. Construction of the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River might slightly increase the amount of impervious surface if the piers are larger in area than the existing bridge piers. The size of the bridge piers would not be determined until final design. Thus, while the change is expected to be small, construction of Alternative 1 in the Rio Hondo Spreading Grounds and San Gabriel River would have potentially significant impacts on groundwater supplies and recharge. Implementation of MM HWQ-2, which requires the construction of compensatory mitigation to compensate for potential loss of flood storage and infiltration potential due to placement of the bridge piers based on the volume of the flood storage loss and a hydraulic analysis, as discussed in **Section 3.9.7**, would reduce impacts to less than significant.

Construction in the Rio Hondo Spreading Grounds and the San Gabriel River has the potential to disturb and compact soils that could affect groundwater recharge and cause erosion. As the spreading grounds are owned and operated by LACDPW, a construction permit from the LACDPW would be required, which would stipulate approaches for minimizing construction-related impacts on the spreading basins, such as soil compaction and erosion. BMPs required by this permit are also set forth in PM HWQ-2, as discussed in **Section 3.9.7.1**. Given compliance with the permit, construction of Alternative 1 would have less than significant impacts on groundwater supplies and recharge from ground disturbance and soil compaction.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect groundwater recharge or supplies any differently than the base Alternative 1. Under Alternative 1 with the Atlantic/Pomona Station Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a negligible increase in impervious surface area compared to the existing condition.

The Atlantic/Pomona Station Option would shift the underground guideway slightly east of Atlantic Boulevard between Beverly Boulevard and 4th Street. However, there are no groundwater wells near the Option location, so groundwater wells would not be impacted. As explained under Alternative 1, the groundwater table would be much lower than the underground alignment. Since the water table would likely be located below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Construction of Alternative 1 with the Atlantic/Pomona Station Option would still require replacement bridge piers in the Rio Hondo Spreading Grounds and the San Gabriel River. As described for the base Alternative 1, if the bridge piers are larger in area, there would potentially be significant impacts on groundwater supplies and recharge. Implementation of MM HWQ-2, as summarized above and discussed in **Section 3.9.7**, would compensate for potential loss of flood storage and infiltration potential due to placement of the bridge piers, which would reduce impacts to less than significant.

As with the base Alternative 1, construction in the Rio Hondo Spreading Grounds and San Gabriel River also has the potential to disturb and compact soils that could affect groundwater recharge and cause erosion. A construction permit from LACDPW would dictate approaches for minimizing construction-related impacts on the spreading basins. BMPs required by this permit are also set forth in PM HWQ-2, as discussed in **Section 3.9.7.1**. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts on groundwater supplies and recharge from ground disturbance and soil compaction.

Montebello At-Grade Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would affect groundwater recharge similar to the base Alternative 1. Under Alternative 1 with the Montebello At-Grade Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a negligible increase in impervious surface area compared to the existing condition. This design option would include a longer at-grade segment in the city of Montebello and a shorter aerial segment, which would reduce the amount of new imperious surface that would be constructed as compared to an aerial alignment at this location. Groundwater dewatering would take place during construction, particularly during the construction of the underground guideway and station construction. However, the groundwater table would be much lower than the underground alignment, as explained under Alternative 1. Since the water table would likely be located below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Construction of Alternative 1 with the Montebello At-Grade Option would still require replacement bridge piers in the Rio Hondo Spreading Grounds and the San Gabriel River. As described for the base Alternative 1, if the bridge piers are larger in area, there would potentially be significant impacts on

groundwater supplies and recharge. Implementation of MM HWQ-2, as summarized above and discussed in **Section 3.9.7**, would compensate for potential loss of flood storage and infiltration potential due to placement of the bridge piers, which would reduce impacts to less than significant.

Construction in the Rio Hondo Spreading Grounds and San Gabriel River also has the potential to disturb and compact soils that could affect groundwater recharge and cause erosion. A construction permit from LACDPW would dictate approaches for minimizing construction-related impacts on the spreading basins. BMPs required by this permit are also set forth in PM HWQ-2, as discussed in **Section 3.9.7.1**. Given compliance with permit requirements, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts on groundwater supplies and recharge from ground disturbance and soil compaction.

3.9.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. The underground alignment would not affect groundwater movement or infiltration as it would likely be above the groundwater table. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impact groundwater supplies or recharge.

Construction Impacts

Base Alternative and Design Option

Under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a negligible increase in impervious surface area compared to the existing condition. Furthermore, no construction would occur in the Rio Hondo Spreading Grounds or the San Gabriel River where most of the groundwater replenishment occurs.

Dewatering activities have the potential to lower the groundwater table and contaminate groundwater resources. However, the closest groundwater well is approximately 1,800 feet away from the base Alternative 2 underground guideway and the Atlantic/Pomona Station Option, which shifts the guideway slightly to the east of Atlantic Boulevard between Beverly Boulevard and 4th Street. Thus, dewatering would not be expected to affect groundwater wells. Additionally, groundwater depths are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. Since the water table would likely be below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have less than significant impacts on groundwater recharge and groundwater supplies.

3.9.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River. The underground alignment would not affect groundwater movement or infiltration as it would likely be above the groundwater table. Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impact groundwater supplies or recharge.

Construction Impacts

Base Alternative and Design Options

Under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, construction activities would be temporary and would not significantly impact the recharge capabilities of the watershed as there would be a minimal increase in impervious surface area as compared to the existing condition. Furthermore, no construction would occur in the Rio Hondo Spreading Grounds or San Gabriel River where most of the groundwater recharge occurs.

Dewatering activities have the potential to lower the groundwater table and contaminate groundwater resources. However, the closest groundwater well is approximately 1,800 feet away from the base Alternative 3 underground guideway and the Atlantic/Pomona Station Option, which shifts the guideway slightly to the east of Atlantic Boulevard. Thus, dewatering would not be expected to affect groundwater wells. Additionally, groundwater depths are relatively deep near the underground alignment, which would reduce the likelihood that groundwater would be encountered during construction of the tunnel. Since the water table would likely be below or at the lower level of construction activities, the amount of water that would need to be extracted, cleaned, and disposed of during construction would be minimal.

Thus, construction of Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have less than significant impacts on groundwater recharge and groundwater supplies.

3.9.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The proposed Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would be located in impervious areas. Operational activities would not change the amount of impervious surface and would not affect the Rio Hondo Spreading Grounds or San Gabriel River where most of the groundwater recharge occurs. Thus, operations would have no impacts on groundwater supplies or recharge capacity.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, and the Montebello MSF At-Grade Option would not require deep excavation or work within Rio Hondo Spreading Grounds where the majority of groundwater recharge occurs. Furthermore, there would be no change in impervious surface area from construction. Thus, construction would have no impact on groundwater recharge or supplies.

3.9.6.3 Impact HWQ-3: Drainage Patterns

Impact HWQ-3: Would a Build Alternative substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in a substantial erosion or siltation on- or off-site?

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

iii) Exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

iv) Impede or redirect flood flows?

3.9.6.3.1 Alternative 1 Washington

Operational Impacts

Operations would not result in substantial erosion or siltation or substantially alter the course of any streams or rivers. The replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River would result in a minimal increase in impervious surface but this would not substantially alter existing drainage patterns of either the site or area and would not alter the course of a stream or river, as discussed below.

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 1 would not result in ground disturbance or a change in the amount of exposed soil as compared to existing conditions and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The potential slight increase in the size of the bridge piers would not result in substantial erosion or siltation during operation of Alternative 1 as the increase in impervious surface from the bridge piers would be minimal. Therefore, operation of Alternative 1 would not result in erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of Alternative 1, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 1. Operation of Alternative 1 would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Under operation of Alternative 1, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSA by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby water bodies via stormwater runoff. Operation of Alternative 1 would comply with post-construction and erosion control measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The Project would require additional permanent stormwater infrastructure, which would comply with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). The potential slight increase in the size of the bridge piers would not affect stormwater drainage as the increase in impervious surface from the bridge piers would be minimal. Therefore, operation of Alternative 1 would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

Small portions of Alternative 1, including the areas where the alignment crosses the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River, would be operated in or near 100-year and 500-year floodplain areas. Operation of LRT, specifically the placement of bridge piers within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River, could impede or redirect flood flows in these areas. The potential slight increase in the size of the bridge piers would not impede or redirect flood flows because compensatory mitigation during construction (MM HWQ-2) would allow flood waters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. Therefore, operation of Alternative 1 would not impede or redirect flood flows and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect drainage patterns differently than the base Alternative 1.

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**).

Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Under operation of Alternative 1 with the Atlantic/Pomona Station Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 1. Operations would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Small portions of Alternative 1 with the Atlantic/Pomona Station Option would be operated in or near 100-year and 500-year floodplain areas. Operation of LRT, specifically the placement of bridge piers within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River, could impede or redirect flood flows in these areas. The potential slight increase in the size of the bridge piers would not affect flood flows because compensatory mitigation implemented during construction (MM HWQ-2) would allow flood waters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and impacts would be less than significant.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not affect drainage patterns differently than the base Alternative 1.

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of Alternative 1 with the Montebello At-Grade Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Under operation of Alternative 1 with the Montebello At-Grade Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 1. Operations would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not exceed the capacity of

existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Small portions of Alternative 1 with the Montebello At-Grade Option would be operated in or near 100-year and 500-year floodplain areas. Operation of LRT, specifically the placement of bridge piers within the Rio Hondo Spreading Grounds, Rio Hondo, and San Gabriel River, could impede or redirect flood flows in these areas. The potential slight increase in the size of the bridge piers would not affect flood flows because compensatory mitigation implemented during construction (MM HWQ-2) would allow flood waters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not impede or redirect flood flows and impacts would be less than significant.

Construction Impacts

Construction of Alternative 1 would not substantially alter the course of any streams or rivers. However, replacement of bridge piers in the Rio Hondo, Rio Hondo Spreading Grounds, and the San Gabriel River would require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Erosion and Siltation

Construction of Alternative 1 could increase erosion and sedimentation around proposed construction and staging areas, particularly during ground disturbing activities such as excavation and grading. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit and an erosion and sediment control plan would be prepared in compliance with LARWQCB's MS4 permit. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Additionally, the topography of the DSA of Alternative 1 is relatively flat, which would minimize the risk of erosion and siltation impacts along Alternative 1. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition.

The risk of increased erosion and sedimentation is of particular concern at the Rio Hondo Spreading Grounds and San Gabriel River, which have soft, dirt bottoms with more potential for erosion and sedimentation. Construction occurring near the rivers would likely include activities such as excavation of abutments and foundation installation, as detailed in Appendix P. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, significant erosion and siltation impacts could occur. Implementation of MM HWQ-1, which requires construction work to be isolated if water is present as discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water, and would thus reduce impacts to less than significant.

Surface Runoff

Under construction of Alternative 1, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA. Some small areas of pervious surface, such as landscaped medians along the alignment, may be replaced by impervious surface; however, this would not result in a notable change in surface runoff as these areas would be minimal and the majority of the DSA is currently developed with urban land uses.

Additionally, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas if the piers have a larger area than the existing piers. This would be determined during the final design of the bridge. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. This potential increase in impervious surface from wider bridges would only affect infiltration of rainwater that falls directly on the bridges because the amount of pervious surface below would not change and would still allow for infiltration of runoff. A construction permit from the county would be necessary. Compliance with permit requirements would minimize construction impacts related to surface runoff. Therefore, construction of Alternative 1 would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

As described in **Section 3.9.5.4**, there is extensive engineered stormwater drainage infrastructure in the DSA. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River and ultimately to the Pacific Ocean. Construction activities could affect drainage infrastructure. However, construction would be temporary and would avoid these drainage structures along most of the alignment, so substantial alterations to existing drainages would not occur. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5.

Prior to issuance of any grading or building permits, the Los Angeles County Building and Safety Division and other applicable local jurisdictions must determine whether plans comply with applicable codes, such as LID requirements. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

Where the alignment switches to at-grade at Montebello Boulevard, the LRT would be constructed in the middle of the existing street; therefore, the street would need to be widened and stormwater infrastructure would be relocated. Road widening may occur at other locations along Alternative 1, such as the intersection at the San Gabriel River crossing and the intersection with Pioneer Boulevard. Relocation of drainage infrastructure would occur in compliance with MRDC 3.3.2 and 3.8 and LACDPW requirements and would not impact the direction, flow, or capacity of the stormwater drainage system. Thus, construction of Alternative 1 would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The majority of Alternative 1 would be constructed outside of the floodplain in a FEMA-defined flood zone X (area of minimal flood risk) or flood zone X shaded (area of reduced flood risk due to a levee). Thus, construction in these areas would not impede or redirect flood flows and no impact would occur.

Alternative 1 passes over the Rio Hondo (within a 500-year flood zone X [shaded] in the spreading grounds and 100-year flood zone A in the river) and the San Gabriel River (within flood zone A).

Construction would result in tracks running on existing roadways that traverse the flood zone areas. Executive Order 11988 would apply to the Project because federal permits, including the CWA Section 404 and RHA Section 408 permits, would be required for work within flood control areas, as discussed below. Compliance with MM HWQ-2, which requires compensatory mitigation as detailed below, would ensure compliance with Executive Order 11988. Further, construction activities would not expose people or structures to a significant risk of loss, injury, or death involving flooding because construction would be temporary and the contractor would establish evacuation routes and protocols in the case of a flood.

Construction of Alternative 1 would involve construction across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The bridges would be demolished and replaced with new wider bridges that carry both the LRT facility and the roadway. The Rio Hondo replacement bridge would include one column in the Rio Hondo and one column in the spreading grounds. The new San Gabriel River bridge would have a substructure on deep foundations and piers located within the stream banks. A total of four bridge piers within the San Gabriel River would be replaced. Wider bridge supports or bridge piers with a different shape or configuration from the existing condition may alter flood flows or reduce the flood protection capacity of the rivers and the spreading grounds.

The replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge piers would require CWA Section 404 and RHA Section 408 Permits from USACE, thereby ensuring that the discharge of dredged and fill materials into the rivers would be regulated and that construction would not be injurious to the public interest and would not impair the usefulness of the flood control area. Additionally, construction would comply with local floodplain ordinances of Los Angeles County and the cities of Montebello and Pico Rivera that seek to regulate construction and development activities that may increase flood hazards and damage from flooding, as discussed in Appendix J. However, construction of Alternative 1, without compensatory mitigation, would still have a potentially significant impact on flood flows because the loss of flood storage could cause flood heights or flooded areas to increase because there would be less area for the floodwaters within the flood control area. Implementation of MM HWQ-2, which would require compensatory flood storage to be provided as discussed in **Section 3.9.7**, would reduce impacts on flood flows to less than significant.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect drainage patterns differently from the base Alternative 1.

Erosion and Siltation

Construction of Alternative 1 with the Atlantic/Pomona Station Option could increase erosion and sedimentation around proposed construction and staging areas particularly during ground disturbing activities such as excavation and grading. Construction would comply with applicable NPDES permits and a SWPPP would be prepared. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Additionally, the topography of the DSA of Alternative 1 is relatively flat, which would minimize the risk

of erosion and siltation impacts from construction. Exposed soils would be restored to a paved or vegetated state at the close of construction.

The risk of increased erosion and sedimentation is of particular concern at the Rio Hondo Spreading Grounds and San Gabriel River. Construction occurring near the rivers would likely include activities such as excavation of abutments and foundation installation, as detailed in Appendix P. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, significant erosion and siltation impacts could occur. Implementation of MM HWQ-1, as summarized above and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

Surface Runoff

Under construction of Alternative 1 with the Atlantic/Pomona Station Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA. Additionally, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas if the piers have a larger area than the existing piers. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. This potential increase in impervious surface from wider bridges would only affect infiltration of rainwater that falls directly on the bridges because the amount of pervious surface below would not change and would still allow for infiltration of runoff. A construction permit from the county would be necessary and would include approaches for minimizing construction-related impacts. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Construction of Alternative 1 with the Atlantic/Pomona Station Option could affect drainage infrastructure; however, construction would be temporary and would avoid drainage structures along most of the alignment, so substantial alterations to existing drainages would not occur. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The majority of Alternative 1, including the Atlantic/Pomona Station Option, would be constructed outside of the floodplain in a FEMA-defined flood zone X (area of minimal flood risk) or flood zone X shaded (area of reduced flood risk due to a levee). Thus, construction in these areas would not impede or redirect flood flows and no impact would occur.

Alternative 1 passes over the Rio Hondo (within a 500-year flood zone X shaded in the spreading grounds and 100-year flood zone A in the river) and the San Gabriel River (flood zone A). Executive Order 11988 applies to development in base flood areas, which are defined as those areas which are within the 100-year floodplain. Compliance with MM HWQ-2, which requires compensatory mitigation as detailed below, would ensure compliance with Executive Order 11988. Further, construction activities would not expose people or structures to a significant risk of loss, injury, or death involving flooding because construction would be temporary and the contractor would establish evacuation routes and protocols in the case of a flood.

The replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge supports would require CWA Section 404 and RHA 408 Permits from USACE, thereby ensuring that the discharge of dredged and fill materials into the rivers would be regulated and that construction would not be injurious to the public interest and would not impair the usefulness of the flood control area. Additionally, construction would comply with local floodplain ordinances of Los Angeles County and the cities of Montebello and Pico Rivera that seek to regulate construction and development activities that may increase flood hazards and damage from flooding, as discussed in Appendix J. However, construction of Alternative 1 with the Atlantic/Pomona Station Option without compensatory mitigation would have a potentially significant impact on flood flows because the loss of flood storage could cause flood heights or flooded areas to increase because there would be less area for the floodwaters within the flood control area. Implementation of MM HWQ-2, which would require compensatory flood storage to be provided as discussed in **Section 3.9.7**, would reduce impacts to less than significant.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not affect drainage patterns differently from the base Alternative 1.

Erosion and Siltation

Construction of Alternative 1 with the Montebello At-Grade Option could increase erosion and sedimentation around construction and staging areas particularly during ground disturbing activities such as excavation and grading. Construction would comply with applicable NPDES permits and a SWPPP would be prepared. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Additionally, the topography of the DSA of Alternative 1 is relatively flat, which would minimize the risk of erosion and siltation impacts from construction. At the close of construction, exposed soils would be restored to a paved or vegetated state.

The risk of increased erosion and sedimentation is of particular concern at the Rio Hondo Spreading Grounds and San Gabriel River. Construction occurring near the rivers would likely include activities such as excavation of abutments and foundation installation, as detailed in Appendix P. As set forth in PM HWQ-3, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River would be scheduled to occur in the dry season when there is no water, to the extent feasible. However, if construction occurs when water is present, significant erosion and siltation impacts could occur. Implementation of MM HWQ-1, as summarized above and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

Surface Runoff

Under construction of Alternative 1 with the Montebello At-Grade Option, there would be a minimal amount of impervious surface, which could increase the rate or amount of stormwater runoff within the DSA. Additionally, the replacement of bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River may add a minimal amount of impervious surface to these areas if the piers have a larger area than the existing piers. The replacement bridges would be wider than the existing bridges to accommodate the light rail guideway. This potential increase in impervious surface from wider bridges would only affect infiltration of rainwater that falls directly on the bridges because the amount of pervious surface below would not change and would still allow for infiltration of runoff. A construction permit from the county would be necessary and would include approaches for minimizing construction-related impacts. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite and impacts would be less than significant.

Stormwater Drainage

If the Montebello At-Grade Option is selected, the roadway within this option location would be widened and drainages may be affected. Relocation of drainage infrastructure would occur in compliance with MRDC 3.3.2 and 3.8 and LACDPW requirements and would not impact the direction, flow, or capacity of the stormwater drainage system. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Thus, construction of Alternative 1 with the Montebello At-Grade Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The majority of Alternative 1, including the Montebello At-Grade Option, would be constructed outside of the floodplain in a FEMA-defined flood zone X (area of minimal flood risk) or flood zone X shaded (area of reduced flood risk due to a levee). Thus, construction in these areas would not impede or redirect flood flows and no impact would occur.

Alternative 1 passes over the Rio Hondo (within a 500-year flood zone X shaded in the spreading grounds and 100-year flood zone A in the river) and the San Gabriel River (flood zone A). Executive Order 11988 applies to development in base flood areas, which are defined as those areas which are within the 100-year floodplain. Compliance with MM HWQ-2, which requires compensatory mitigation as detailed below, would ensure compliance with Executive Order 11988. Further, construction activities would not expose people or structures to a significant risk of loss, injury, or death involving flooding because construction would be temporary and the contractor would establish evacuation routes and protocols in the case of a flood.

The replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge supports would require CWA Section 404 and RHA 408 Permits from USACE, thereby ensuring that the discharge of dredged and fill materials into the rivers would be regulated and that construction would not be injurious to the public interest and would not

impair the usefulness of the flood control area. Additionally, construction would comply with local floodplain ordinances of Los Angeles County and the cities of Montebello and Pico Rivera that seek to regulate construction and development activities that may increase flood hazards and damage from flooding, as discussed in Appendix J. However, construction of Alternative 1 with the Montebello At-Grade Option without compensatory mitigation would have a potentially significant impact on flood flows because the loss of flood storage could cause flood heights or flooded areas to increase because there would be less area for the floodwaters within the flood control area. Implementation of MM HWQ-2, which would require compensatory flood storage to be provided as discussed in **Section 3.9.7**, would reduce impacts to less than significant.

3.9.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, and would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Operational Impacts

Base Alternative and Design Option

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the Project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, there would be no increase in impervious surface area as the majority of the alignment would be underground. Thus, impacts related to an increase in impervious surface area, including an increase in the rate or amount of stormwater runoff, would be avoided. Further, the operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Under operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, there would be no increase in impervious surface area as the majority of the alignment would be underground. Thus, impacts related to an increase in impervious surface area, including a reduction in

infiltration and concentration of pollutants on impervious surfaces, would be avoided. Further, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would comply with post-construction and erosion control measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

Erosion and Siltation

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could increase erosion and sedimentation around proposed construction and staging areas, particularly during ground disturbing activities, such as excavation and grading. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit and a sediment and erosion control plan would be prepared in compliance with LARWQCB's MS4 permit. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1.** Further, the topography of the DSA of Alternative 2 is relatively flat, which would minimize the risk of erosion and siltation impacts along Alternative 2. At the close of construction, areas of exposed soil that were previously paved would be restored to a paved condition. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, there would not be an increase in impervious surfaces as the majority of the DSA is currently developed and the alignment would be underground. Since the Project takes place on and under primarily impervious land, it would not substantially change the volume or peaks of runoff entering the storm drain system. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

There is extensive engineered stormwater drainage infrastructure in the DSA. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River and

ultimately to the Pacific Ocean. Construction activities could affect this infrastructure. However, construction would be temporary and would avoid these drainage structures along most of the alignment, so substantial alterations to existing drainages would not occur. Additionally, no work would occur within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction.

Prior to issuance of any grading or building permits, the Los Angeles County Building and Safety Division must determine whether plans are in compliance with applicable codes, such as LID requirements. Additionally, permits from other relevant agencies would need to be obtained. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impede or redirect flood flows and no impacts would occur.

3.9.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not cross the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River and would not alter the course of any streams or river or require a Section 1602 Lake and Streambed Alteration Agreement with CDFW.

Base Alternative and Design Options

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in ground disturbance and there would be no change in erosion or siltation. Additionally, the project would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSA of Alternative 3. Operations would comply with post-construction measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not substantially change the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Under operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSA by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby waterbodies via stormwater runoff. Operations would comply with post-construction and erosion control measures in applicable NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). The Project would require additional permanent stormwater infrastructure, which would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impede or redirect flood flows and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

Erosion and Siltation

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could increase erosion and sedimentation around construction and staging areas, particularly during ground disturbing activities, such as excavation and grading. To reduce potential impacts related to erosion and siltation, a SWPPP would be prepared in compliance with SWRCB's Construction General Permit and an erosion and sediment control plan would be prepared in compliance with LARWQCB's MS4 permit. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1.** Further, the topography of the DSA is relatively flat, which would minimize the risk of erosion and siltation impacts along Alternative 3. At the close of construction, areas of exposed soil

that were previously paved would be restored to a paved condition. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial erosion on- or off-site and impacts would be less than significant.

Surface Runoff

Under construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, there would be a minimal increase in the amount of impervious surface from the conversion of pervious surface, such as landscaped medians along the alignment, to impervious surface. The increase would be minimal because the majority of the DSA is currently developed, and the majority of the alignment would be underground. Since the Project takes place on and under primarily impervious land, it would not substantially increase the volume or peaks of runoff entering the storm drain system. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

There is extensive engineered stormwater drainage infrastructure in the DSA. Surface runoff in the watershed is carried through municipal infrastructure to the Rio Hondo and San Gabriel River and ultimately to the Pacific Ocean. Construction activities could affect drainage infrastructure. However, construction activities would be temporary and would avoid these drainage structures along most of the alignment; therefore, substantial alterations to existing drainages would not occur. Additionally, no work would occur within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction.

Prior to issuance of any grading or building permits, the Los Angeles County Building and Safety Division must determine whether plans are in compliance with applicable codes, such as LID requirements. Additionally, permits from other relevant agencies would need to be obtained. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**.

Thus, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; impacts would be less than significant.

Flood Flows

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impede or redirect flood flows and no impacts would occur.

3.9.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Erosion and Siltation

Ground-disturbing activities have the potential to generate erosion and siltation. Operation of the Commerce MSF site option, Montebello MSF site option, or Montebello MSF At-Grade Option would not result in ground disturbance, so there would be no change in erosion or siltation. Operation of the MSF site options would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Thus, operation of the MSF site options would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option, there would be a minimal increase in impervious surface, which could increase the rate or amount of stormwater runoff within the DSAs. Operation of MSF site options would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Thus, operation of the MSF site options would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite and impacts would be less than significant.

Stormwater Drainage

Under operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option, there would be a minimal increase in impervious surface. This could affect stormwater drainage within the DSAs by reducing the area that allows for infiltration and concentrating pollutants, which can be transferred into nearby waterbodies via stormwater runoff. Operation of the MSF site options would comply with the SWRCB Construction General Permit post-construction measures, the Industrial General Permit, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Operation of maintenance facilities, including cleaning of vehicles and other activities that have the potential to affect water quality, would conform with MRDC 11.5. Any permanent additions of stormwater infrastructure would be operated in compliance with LACDPW and Metro drainage standards (MRDC 3.3.2 and 3.8). Thus, operation of the MSF site options would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

The Commerce MSF site option is not located in FEMA-defined 100- or 500-year flood zones; thus, operation of the Commerce MSF site option would not impede or redirect flood flows and no impacts would occur.

The proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone. This location was historically a rock quarry that collected stormwater and flooded. However, the area has since been developed and no longer floods as stormwater is directed in the municipal stormwater management system. Furthermore, the proposed MSF site option does not contain any natural functions or values of a floodplain. Thus, operation of the Montebello MSF site option or the Montebello MSF At-Grade Option would not impede or redirect flood flows and no impacts would occur.

Construction Impacts

MSF Site Options and Design Option

Erosion and Siltation

Construction of the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option could increase erosion and sedimentation around construction areas, particularly during ground disturbing activities, such as excavation and grading. The MSF site options are already covered with impervious surfaces and are characterized by flat topography. Construction would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in **Section 3.9.7.1.** Thus, construction of the MSF site options would not result in substantial increases in erosion or siltation and impacts would be less than significant.

Surface Runoff

Under construction of the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option, there would be a minimal increase in the amount of impervious surface. Although the MSF site options are already covered with impervious surfaces and are characterized by flat topography, a minimal amount of pervious surface, such as small, landscaped pockets within the MSF site options, would be converted to impervious surface. Construction would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus, construction of the MSF site options would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site and impacts would be less than significant.

Stormwater Drainage

Construction activities could affect drainage infrastructure. However, construction activities would be temporary and would avoid these drainage structures. Storm drains affected by the Project would be connected to municipal systems per MRDC 3.3.2 and 3.8. Drainage systems for the Project, including storm drains, would be constructed per MRDC Section 8.2.5. The contractor would be responsible for preparing the drainage and grading plans and obtaining approval of the plans prior to the start of construction. Implementation of the drainage and grading plans and associated BMPs is also set forth in PM HWQ-2, discussed in **Section 3.9.7.1**. Additionally, construction would comply with the SWRCB Construction General Permit, LID standards, and local policies protecting water quality. Thus, construction of the MSF site options would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff and impacts would be less than significant.

Flood Flows

The Commerce MSF site option is entirely within an area of minimal flood risk (FEMA-defined flood zone X). Thus, construction of the Commerce MSF site option would not impede or redirect flood flows and no impacts would occur.

The proposed Montebello MSF site option and the Montebello MSF At-Grade Option are located in a FEMA-defined 100-year flood zone. However, the area is developed and no longer floods as stormwater is directed in the municipal stormwater management system. Furthermore, the proposed MSF site option does not contain any natural functions or values of a floodplain as it is developed. Thus, construction of the Montebello MSF site option or the Montebello MSF At-Grade Option would not impede or redirect flood flows and no impacts would occur.

3.9.6.4 Impact HWQ-4: Inundation

Impact HWQ-4: Would a Build Alternative in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

3.9.6.4.1 Alternative 1 Washington

Operational Impacts

The DSA of Alternative 1 is not located in tsunami or seiche zones. A portion of the tracks (approximately 2.8 miles) are located in the 100-year and 500-year flood zones, including the inundation area below the Whittier Narrows Dam, as shown on **Figure 3.9.3**. The tracks would be at-grade within this area, with the exception of the bridges over the Rio Hondo and San Gabriel River. Operation of the train system would not occur if tracks were inundated by flood waters, as set forth in PM HWQ-4, discussed in **Section 3.9.7.1**. Small amounts of pollutants associated with operation of trains (e.g., oil and grease) may be present on the tracks and these pollutants could become entrained in flood waters if the tracks are inundated. These materials are not acutely hazardous; however, entrainment of pollutants associated with the Project in flood waters would not pose a substantial risk to the public or environment. Further, NPDES permits would require post-construction BMPs, such as the implementation of infiltration BMPs (e.g., vegetated filter strips), to be installed to minimize stormwater pollution; these BMPs would also serve to minimize the risk of pollutant release during flood events. These BMPs are also set forth in PM HWQ-1. Thus, there would be a low potential for the operation of Alternative 1 to release pollutants during inundation and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have similar impacts as the operation of the base Alternative 1. As discussed above, the alignment would be located outside of the limits of tsunami or seiche zones. The location of the Atlantic/Pomona Station Option is not within a designated flood zone and thus this portion of the alignment is not expected to be subject to inundation. Thus, there would be a low potential for the operation of Alternative 1 with the Atlantic/Pomona Station Option to release pollutants during inundation and impacts would be less than significant.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would have similar impacts as the operation of the base Alternative 1. As discussed above, the alignment would be located outside of the limits of tsunami or seiche zones. The location of the Montebello At-Grade Option is not within a designated flood zone and thus this portion of the alignment is not expected to be subject to inundation. Thus, there would be a low potential for the operation of Alternative 1 with the Montebello At-Grade Option to release pollutants during inundation and impacts would be less than significant.

Construction Impacts

The DSA of Alternative 1 is not within tsunami or seiche zones. Some construction would occur in the 100-year and 500-year flood zones, including the inundation area below the Whittier Narrows Dam, as shown on **Figure 3.9.3**. Construction in flood zones could involve the use of materials such as vehicle fuels (both gasoline and diesel), oils, solvents, and transmission fluids. The types and amounts of hazardous materials would vary according to the nature of the activity but would be used in quantities that are typical of the construction industry. These types of materials are not acutely hazardous, and the construction contract documents would require these materials be stored, handled, and disposed of in accordance with state and local regulations and manufacturers' instructions. Further, construction activities would comply with SWRCB's Construction General Permit and LARWQCB's MS4 Permit conditions, such as safe storage of fluids, that would protect against the release of pollutants. Construction materials would be stored at staging areas and would not be used within the rivers or spreading grounds in substantial quantities. If a flood event occurs in the DSA, construction activities would cease, and equipment and materials would be moved to a safe location outside of the floodwaters, as set forth in PM HWQ-4 discussed in **Section 3.9.7.1**. Therefore, construction of Alternative 1 would not occur within areas of inundation and impacts would be less than significant.

Design Options

Atlantic/Pomona Station Option

If the Atlantic/Pomona Station Option is selected for Alternative 1, the DSA of Alternative 1 would not change and would still be located outside of the limits of a tsunami or seiche zone. While the Atlantic/Pomona Station Option would be constructed outside of flood zones, some construction for Alternative 1 would occur in the 100-year and 500-year flood zones associated with the Rio Hondo and its spreading grounds, the San Gabriel River, and the inundation area below the Whittier Narrows Dam (as shown on **Figure 3.9.3**). Construction activities would comply with SWRCB's Construction General Permit and LARWQCB's MS4 Permit, including conditions, such as safe storage of fluids, that would protect against release of pollutants. Additionally, construction materials would be stored at staging areas, would be handled and disposed of in accordance with state and local regulations and manufacturers' instructions, and would not be used within the rivers or spreading grounds in substantial quantities. If a flood event occurs in the DSA, construction activities would cease and equipment and materials would be moved to a safe location outside of the floodwaters, as set forth in PM HWQ-4 discussed in **Section 3.9.7.1**; thus, construction would not occur within areas of inundation. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would not occur within areas of inundation and impacts would be less than significant.

Montebello At-Grade Option

If the Montebello At-Grade Option is selected for Alternative 1, the DSA of Alternative 1 would not change and would still be located outside of the limits of a tsunami or seiche zone. While the Montebello At-Grade Option would be constructed outside of flood zones, some construction for Alternative 1 would occur in the 100-year and 500-year flood zones associated with the Rio Hondo and its spreading grounds, the San Gabriel River, and the inundation area below the Whittier Narrows Dam (as shown on **Figure 3.9.3**). Construction activities would comply with SWRCB's Construction General Permit and LARWQCB's MS4 Permit, including conditions, such as safe storage of fluids, that would protect against release of pollutants. Additionally, construction materials would be stored at staging areas, would be handled and disposed of in accordance with state and local regulations and manufacturers' instructions, and would not be used within the rivers or spreading grounds in substantial quantities. If a flood event occurs in the DSA, construction activities would cease, and equipment and materials would be moved to a safe location outside of the floodwaters, as set forth in PM HWQ-4 discussed in **Section 3.9.7.1**. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would not occur within areas of inundation and impacts would be less than significant.

3.9.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option and associated facilities (e.g., TPSS, and parking facilities) are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

Construction Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option and associated facilities (e.g., TPSS, and parking facilities), are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the construction of Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to release pollutants during inundation and no impacts would occur.

3.9.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option alignment and associated facilities (e.g., TPSS and parking facilities) are not within the limits of flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the

operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to release pollutants during inundation and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option and associated facilities (e.g., TPSS and parking facilities) are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the construction of Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to release pollutants during inundation and no impacts would occur.

3.9.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are not within the limits of flood hazard, tsunami, or seiche zones. Thus, there would be no potential for operation of the MSF site options to release pollutants during inundation and no impacts would occur.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option are not within flood hazard, tsunami, or seiche zones. Thus, there would be no potential for the construction of the MSF site options to release pollutants during inundation and no impacts would occur.

3.9.6.5 Impact HWQ-5: Water Management

Impact HWQ-5: Would a Build Alternative conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

3.9.6.5.1 Alternative 1 Washington

Operational Impacts

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of Alternative 1 would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers.

The DSA of Alternative 1 includes the Rio Hondo Reach 2 and San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff would be minimized, would not contribute to degradation of water quality within the basin, and would meet the TMDL requirements. Therefore, operation of Alternative 1 would not contribute to degradation of beneficial uses or exceed TMDL requirements in the Rio Hondo or San Gabriel River. Operation of Alternative 1 would not conflict with or obstruct implementation of the *LA Basin Plan* and the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, the groundwater basin underlying Alternative 1 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. If the Atlantic/Pomona Station Option is selected under Alternative 1, the DSA of Alternative 1 would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff would be minimized, would not contribute to degradation of water quality within the Basin, and would meet the TMDL requirements. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the *LA Basin Plan* and the impact would be less than significant.

Montebello At-Grade Option

As with the base Alternative 1, the groundwater basin underlying Alternative 1 with the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. If the Montebello At-Grade Option is selected under Alternative 1, the DSA of Alternative 1 would not change and would still include the Rio Hondo Reach 2 and San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff would be minimized, would not contribute to degradation of water quality within the Basin, and would meet the TMDL requirements. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not conflict with or obstruct implementation of the *LA Basin Plan* and the impact would be less than significant.

Construction Impacts

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Construction would comply with the SWRCB's NPDES Construction General Permit, a SWPPP, and erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, only a minimal increase in impervious surface would occur during construction.

Construction activities associated with replacing bridge piers have the potential to cause erosion and generate turbidity if work occurs in water. As set forth by PM HWQ-3, construction work would occur in the dry season to the extent feasible. However, if work occurs when water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, activities may generate turbidity and release contaminants in the water and significant water quality impacts could occur. Implementation of MM HWQ-1, as summarized in **Section 3.9.6.3.1** and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

As discussed in **Section 3.9.6.1.1**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.1**, construction of Alternative 1 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3 would ensure that construction of Alternative 1 would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Design Options

Atlantic/Pomona Station Option

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same effects as the construction of the base Alternative 1. Construction would comply with the SWRCB's NPDES Construction General Permit, a SWPPP, and erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, only a minimal increase in impervious surface would occur during construction.

Construction activities associated with replacing bridge piers have the potential to cause erosion and generate turbidity if work occurs in water. As set forth by PM HWQ-3, construction work would occur in the dry season to the extent feasible. However, if construction occurs when water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, activities may generate turbidity and release contaminants in water and significant water quality impacts could occur. Implementation of MM HWQ-1, as summarized in **Section 3.9.6.3.1** and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

As with the base Alternative 1, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2, discussed in **Section 3.9.7**, requires the preparation of a Soil and Groundwater Management Plan in consultation with LARWQCB. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.1**, construction of Alternative 1 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3 would ensure that construction of Alternative 1 would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

Montebello At-Grade Option

As described in **Section 3.9.5.3.1**, the groundwater basin underlying Alternative 1 with the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of Alternative 1 with the Montebello At-Grade Option would have the same effects as the construction of the base Alternative 1. Construction would comply with the SWRCB's NPDES Construction General Permit, a SWPPP, and erosion and sediment control plan. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, only a minimal increase in impervious surface would occur during construction.

Construction activities associated with replacing bridge piers have the potential to cause erosion and generate turbidity if work occurs in water. As set forth in PM HWQ-3, construction work would occur in the dry season to the extent feasible. However, if construction occurs when water is present in the Rio

Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, activities may generate turbidity and release contaminants in water and significant water quality impacts could occur. Implementation of MM HWQ-1, as summarized in **Section 3.9.6.3.1** and discussed in **Section 3.9.7**, would reduce the potential for construction to cause erosion and siltation in water and would thus reduce impacts to less than significant.

As with the base Alternative 1, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.1**, construction of Alternative 1 with the Montebello At-Grade Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HWQ-1, MM HAZ-2, and MM HAZ-3 would ensure that construction of Alternative 1 would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The groundwater basin underlying the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are not near the Rio Hondo Reach 2 or San Gabriel River Reach 2. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff and wastewater from the project site would not contribute to degradation of water quality within the Basin and would meet the LARWQCB TMDL requirements.

Based on the above, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Construction Impacts

Base Alternative and Design Option

The groundwater basin underlying the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are not near the Rio Hondo Reach 2 or San Gabriel River Reach 2. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Construction would comply with the SWRCB Construction General Permit and SWPPP, the MS4 permit, waste discharge requirements, LID standards, and local policies protecting water quality. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, construction would not add impervious surface to the DSA of Alternative 2, as the alignment would be underground and the majority of the DSA is already highly developed.

As discussed in **Section 3.9.6.1.2**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.2**, construction of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HAZ-2 and MM HAZ-3 would ensure that construction of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.5.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The groundwater basin underlying the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Operation of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would terminate near the Rio Hondo and would not be near the San Gabriel River. Operation of the Project would comply with post-construction measures in NPDES permits, LID standards, and local policies protecting water quality. These post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Compliance with these permits, plans, and policies would ensure that runoff and wastewater from the Project would not contribute to degradation of water quality within the Basin and would meet the LARWQCB TMDL requirements.

Based on the above, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Construction Impacts

Base Alternative and Design Options

The groundwater basin underlying the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option is not subject to a sustainable groundwater management plan and, thus, no conflict with a sustainable groundwater management plan would occur.

Construction of the Project would conflict with the *LA Basin Plan* if it were to degrade beneficial uses of the Rio Hondo or San Gabriel River or result in an exceedance of a TMDL established for those rivers. The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would terminate near the Rio Hondo and would not be near the San Gabriel River. Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction and staging areas. Construction would comply with the SWRCB Construction General Permit and SWPPP, the MS4 permit, waste discharge requirements, LID standards, and local policies protecting water quality. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**). Further, construction would not add a substantial amount of impervious surface to the DSA of Alternative 3 as the majority of the alignment would be underground and the majority of the DSA is already highly developed.

As discussed in **Section 3.9.6.1.3**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.3**, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with the Atlantic/Pomona Station Option could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HAZ-2 and MM HAZ-3 would ensure that construction of the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.6.5.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The groundwater basin underlying the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option is not subject to a sustainable groundwater management plan; thus, no conflict with a sustainable groundwater management plan would occur.

Operation of maintenance facilities, including cleaning of vehicles and other activities that have the potential to affect water quality, would conform with MRDC 11.5. Operation of the MSF would comply with applicable permits, such as SWRCB's Industrial General Permit and post-construction measures in NPDES permits. Implementation of post-construction BMPs are also set forth in PM HWQ-1 (**Section 3.9.7.1**). Thus, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not substantially degrade surface or groundwater quality and would therefore not conflict with or obstruct implementation of the *LA Basin Plan*. The impact would be less than significant.

Construction Impacts

MSF Site Options and Design Option

The groundwater basin underlying the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option is not subject to a sustainable groundwater management plan; thus, no conflict with a sustainable groundwater management plan would occur.

Construction activities that disturb the ground, such as excavation and grading, have the potential to increase erosion and sedimentation around proposed construction areas. Construction would comply with applicable construction permits, such as the SWRCB Construction General Permit and SWPPP. The implementation of the SWPPP, erosion and sediment control plan, and BMPs to control erosion are also set forth in PM HWQ-2, discussed in (**Section 3.9.7.1**).

As discussed in **Section 3.9.6.1.4**, if groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. Implementation of MM HAZ-2, summarized in **Section 3.9.6.1.1** and discussed in **Section 3.9.7**, would help minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

As discussed in **Section 3.9.6.1.3**, construction of the MSF site options could encounter groundwater contaminated with hazardous materials from sources such as underground storage tanks. Thus, construction may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3, as summarized in

Section 3.9.6.1.1 and discussed in **Section 3.9.7**, would minimize the spread of contaminated groundwater and would reduce this potential impact to less than significant.

Thus, the implementation of MM HAZ-2 and MM HAZ-3 would ensure that construction of the MSF site options would not conflict with the *LA Basin Plan*. This mitigation, as well as information about hazardous and contaminated materials, is discussed in detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I.

3.9.7 Project Measures and Mitigation Measures

3.9.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option, unless otherwise noted.

PM HWQ-1: Operational (post-Project) BMPs for the Build Alternatives (may include but shall not be limited to):

- Design efforts to reduce impervious surfaces.
- Treatment of stormwater runoff using infiltration BMPs such as detention basins or tanks, infiltration basins, bioretention facilities media filters, porous pavement, or vegetated filter strips to remove particulate pollutants.

PM HWQ-2: Construction BMPs for the Build Alternatives (may include but shall not be limited to):

- Establishment of an erosion and sediment control plan prior to the initiation of construction activities that includes BMPs such as:
  - Use of natural drainage, detention ponds, sediment ponds, or infiltration pits to allow runoff to collect and to reduce or prevent erosion.
  - Use of barriers to direct and slow the rate of runoff and to filter out large-sized sediments.
  - Use of downdrains or chutes to carry runoff from the top of a slope to the bottom.
  - Control of the use of water for irrigation so as to avoid off-site runoff.
- Development of a SWPPP subject to regular inspections by applicable jurisdictions to ensure compliance. The SWPPP shall include specifications for the following, but shall not be limited to:
  - Properly designed, centralized storage areas to keep hazardous materials fully contained.
  - Keeping spill cleanup materials (e.g., rags, absorbent materials, and secondary containment) at the work site when handling materials.
  - Monitoring program to be implemented by the construction site supervisor that includes both dry and wet weather inspections.

- Implementation of BMPs designed to reduce erosion of exposed soil including, but not limited to, soil stabilization controls, water for dust control, perimeter silt fences, placement of straw wattles, and sediment basins.
    - If ground disturbing activities must take place during the rainy season when the potential for erosion is greater, the BMPs selected shall focus on erosion control and keeping soil and sediment in place.
    - End-of-pipe soil/sediment control measures (e.g., basins and traps) shall be used as secondary measures.
    - Ingress and egress from construction sites shall be carefully controlled to minimize off-site tracking of soil.
- Locating staging areas outside of the spreading grounds and Los Angeles County Department of Public Works (LACDPW) right-of-way (ROW) areas where possible.
- Implementation of drainage and grading plans and BMPs designed to protect water quality such as oil/water separators, catch basin inserts, storm drain inserts, media filtration, and catch basin screens.

PM HWQ-3: Avoidance of In-Water Work (Applies to Alternative 1 only)

- To the extent feasible, construction work within the Rio Hondo, Rio Hondo Spreading Grounds, and San Gabriel River shall be scheduled to occur in the dry season when there is no water.

PM HWQ-4: Flood Events (Applies to Alternative 1 Only)

- If a flood event inundates LRT tracks within the DSA of Alternative 1 during operation of the Project, operation of the train system shall not occur.
- If a flood event occurs in the DSA of Alternative 1 during construction of the Project, construction activities shall cease, and equipment and materials shall be moved to a safe location outside of the floodwaters.

3.9.7.2 Mitigation Measures

As identified in **Section 3.9.6**, the Build Alternatives and Build Alternatives with the design option(s) would have potentially significant impacts on hydrology and water quality resources under Impact HWQ-1 (Water Quality), Impact HWQ-2 (Groundwater Supplies and Recharge), Impact HWQ-3(i) (Erosion and Siltation), Impact HWQ-3(iv) (Flood Flows), and Impact HWQ-5 (Water Management). Mitigation measures to reduce the impacts are presented herein. MM HWQ-1 and MM HWQ-2 would apply only to Alternative 1 and Alternative 1 with the design options. MM HAZ-2 and MM HAZ-3 would apply to all Build Alternatives and Build Alternatives with the design option(s). With implementation of mitigation for Impact HWQ-1 (Water Quality), Impact HWQ-2 (Groundwater Supplies and Recharge), Impact HWQ-3(i) (Erosion and Siltation), Impact HWQ-3(iv) (Flood Flows), and Impact HWQ-5 (Water Management), all impacts would be reduced to less than significant for all alternatives and design options.

Following the mitigation measures, **Table 3.9-3** identifies applicable measures and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM HWQ-1: If water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, the work area shall be isolated so that construction does not occur in water. The work area isolation method shall be determined through an agreement between Metro and LACFCD and shall involve use of a coffer dam, a by-pass channel, management of the water in the system by LACFCD, or other means.

MM HWQ-2: To compensate for potential loss of flood storage due to placement of LRT bridge piers or enhanced bridge supports in LACDPW flood control facilities, Metro shall construct compensatory mitigation within the impacted flood control facility based on the volume of the flood storage loss and hydraulic analysis. Exact compensatory mitigation requirements shall be determined based on the volume of the loss of flood storage and a hydraulic analysis of the impacts on flood storage and flood flows. The compensatory storage must allow floodwaters to flow freely into and out of the storage area in a similar manner as pre-Project conditions. In general, the compensatory mitigation shall occur at or below the elevation of the impact and the hydraulics of the mitigation design must function to prevent any change in flood elevations upstream of the DSA of Alternative 1. The area chosen for compensatory mitigation must be free draining (e.g., pooled water must be able to flow out of the storage area as floodwaters recede) and shall comply with drainage requirements of LACDPW.

MM HAZ-2: Soil and Groundwater Management Plan. Prior to the issuance of a grading permit, a site-specific soil and groundwater management plan shall be prepared by Metro or Metro's contractor to address handling and disposal of contaminated soil and groundwater prior to demolition, excavation and construction activities. Metro shall consult with the Los Angeles RWQCB, DTSC, and/or other appropriate regulatory agencies to ensure sufficient minimization of risk to human health and the environment is completed. The soil and groundwater management plan shall specify all necessary procedures to ensure the safe handling and disposing of excavated soil, groundwater, and/or dewatering effluent in a manner that is protective of human health and in accordance with federal and state hazardous waste disposal laws, and with state and local stormwater and sanitary sewer requirements. At a minimum, shall include the following:

- Identification and delineation of contaminated areas and procedures for limiting access to such areas to properly trained personnel;
- Step-by-step procedures for handling, excavating, characterizing, and managing excavated soils and dewatering effluent, including procedures for containing, handling, and disposing of hazardous waste, procedures for containing, handling, and disposing of groundwater generated from construction dewatering, the method used to analyze excavated materials and groundwater for hazardous materials likely to be encountered at specific locations, appropriate treatment and/or disposal methods;
- Procedures for notification and reporting, including notifying and reporting to internal management and to local agencies;

- Minimum requirements for site-specific health and safety plans, to protect the general public and workers in the construction area. Prior to the issuance of grading permits, the Soil and Groundwater Management Plan and the results of environmental sampling shall be provided to contractors who shall be responsible for developing their own construction worker health and safety plans (HASPs) and training requirements, per MM HAZ-4 described in the Eastside Transit Corridor Phase 2 Hazards and Hazardous Resources Impacts Report.

- Metro's contractor shall sample groundwater suspected of contamination. If any groundwater is encountered during construction, the contractor will stop work in the vicinity, cordon off the area, and contact Metro and will immediately notify RWQCB. In coordination with the RWQCB, an investigation and remediation plan will be developed in order to protect public health and the environment. Any hazardous or toxic materials will be disposed according to local, state, and federal regulations.

MM HAZ-3 : Contractor Specifications. Metro shall include in its contractor specifications the following requirement relating to hazardous materials:

- During all ground-disturbing activities, the contractor(s) shall inspect the exposed soil and groundwater for obvious signs of contamination, such as odors, stains, or other suspect materials. Qualified personnel shall monitor for volatile organic compounds and other subsurface gases for concentrations exceeding EPA Regional Screening Levels and/or DTSC Screening Levels with a Photoionization Detector. Should signs of unanticipated contamination be encountered, work shall be suspended, and the Los Angeles County Department of Public Health shall be notified, and the area secured. An investigation shall be designed and performed to verify the presence and extent of contamination at the site, and a site-specific soil and groundwater management plan, as described under Mitigation Measure HAZ-2 above, shall be prepared and implemented.

3.9.8 Significance After Mitigation

As identified in **Table 3.9-3,** with implementation of mitigation measures MM HWQ-1, MM HWQ-2, MM HAZ-2, and MM HAZ-3, impacts related to water quality (Impact HWQ-1), groundwater supplies and recharge (Impact HWQ-2), erosion and siltation (Impact HWQ-3[i]), flood flows (Impact HWQ-3[iv]), and water management (Impact HWQ-5) would be reduced to less than significant for all alternatives and design options.

Table 3.9-3. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
HWQ-1 Water Quality	Applicable Mitigation	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-2 Groundwater Supplies and Recharge	Applicable Mitigation	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(i) Erosion and Siltation	Applicable Mitigation	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	MM HWQ-1	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(ii) Surface Runoff	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(iii) Stormwater Drainage	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
HWQ-3(iv) Flood Flows	Applicable Mitigation	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	MM HWQ-2	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
HWQ-4 Inundation	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
HWQ-5 Water Management	Applicable Mitigation	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HWQ-1 MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3	MM HAZ-2 MM HAZ-3
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.

Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

3.10 Land Use and Planning

3.10.1 Introduction

This section discusses the Project setting in relation to land use and planning. It describes existing conditions, the current regulatory setting, and potential impacts from operation and construction of the Build Alternatives including design options and MSF site options.

The land use study area encompasses the Detailed Study Area (DSA), an approximately two-mile area from the project alignment in eastern Los Angeles County. Information in this section is based on the *Eastside Transit Corridor Phase 2 Land use and Planning Impacts Report* (Appendix K).

3.10.2 Regulatory Framework

3.10.2.1 State

California Government Code Section "Authority for and Scope of General Plans" [§§ 65300 - 65303.4] requires that each city adopt a General Plan with eight mandatory elements to guide the city's long-term growth. Mandatory elements dictated in Section 65302 and required for each city's general plan are land use, circulation, housing, conservation, open space, noise, safety, and environmental justice.

3.10.2.2 Local

Regional agencies, Los Angeles County, and the cities within the DSA have local regulations and policies pertaining to land use and planning as summarized below. More information on guiding principles and specific policies relevant to the Project is available in Appendix K.

The *2020 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS), adopted by the Southern California Association of Governments (SCAG), includes goals and guiding policies focused on coordinating land use and transportation decisions and promoting sustainable growth. This long-range visioning plan aims to greatly expand the urban rail network and make transit operations more efficient, effective and accessible while increasing ridership.

Metro's *2020 Long Range Transportation Plan* (LRTP) aims to address population growth, changing mobility needs and preferences, technological advances, equitable access to opportunity, and adaptation to a changing environment. The LRTP details construction of an additional 100 miles of fixed-guideway transit to reduce congestion. Metro's other planning documents include the *Metro Active Transportation Strategic Plan*, *Countywide Sustainability Planning Policy and Implementation Plan, Complete Streets Policy*, *Transit Oriented Communities (TOC) Policy*, and *First/Last Mile Guidelines*. An overarching goal of these plans is to develop and maintain a multi-modal transportation network that is safe and accessible for all users and stimulates economic development, reduces trip lengths, and supports opportunities for transit-oriented development.

The *Los Angeles County 2035 General Plan* guides the long-range growth and development of the County, including unincorporated areas, such as East Los Angeles. The *East Los Angeles Community*

Plan aims to improve local transit and circulation, increasing economic growth, and job creation with priority to jobs accessible by public transportation.

The general plan policies of the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier provide the overall context for land use planning decisions and to guide the long-range growth and community development within their respective jurisdictions. They support mobility options to disadvantaged communities, the expansion of housing around transit stations, and the reduction of vehicle trips to help achieve air quality goals. The cities of Commerce, Pico Rivera, and Whittier also have specific plans that govern land use planning in the DSA that contain detailed development standards, focusing on well-connected quality development and community-serving uses that encourage walking, bicycling and transit use.

Table 3.10-1 summarizes relevant goals and policies from each land use planning document.

Table 3.10-1. Relevant Land Use Plans and Policies

Planning Jurisdiction	Adopted Plans	Relevant Goals and Policies
Los Angeles County	East Los Angeles Community Plan	• Increase economic growth and job creation with priority to jobs accessible by public transportation • Provide for new development which is compatible with and compliments existing uses • Develop and maintain a complete pedestrian network linking to transit • Support projects that increase pedestrian connectivity and safety
Commerce	Commerce 2020 General Plan	• Promote site plans for new development located in the vicinity of Washington Boulevard that promotes primary access to businesses • Promote improvements of existing commercial areas • Promote the development of the Citadel and neighboring areas
Montebello	Montebello General Plan	• Facilitate traffic movement • Provide ample commercial facilities to meet the needs of residents • Provide opportunities for a variety of living needs
Pico Rivera	Pico Rivera General Plan	• Encourage and support accessible, safe, and efficient public transit opportunities as a viable alternative to automobiles • Support the use of alternative transportation through the development of facilities that support and accommodate these services • Integrate alternative transportation into new developments to reduce the need for parking
Pico Rivera	Rancho de Bartolo Specific Plan Amendment	• Promote new development that will benefit the city • Reduce adverse environmental effects associated with future development

Planning Jurisdiction	Adopted Plans	Relevant Goals and Policies
Santa Fe Springs	Santa Fe Springs 2040 General Plan	• Provide convenient multi-modal access to schools, parks, religious institutions, retail and commercial services, and community facilities • Promote development of high-density residential uses, mixed use, and commercial services within walking distance of commuter rail transit stations • Improve community health by ensuring equal access within disadvantaged communities and reducing pollution burdens • Encourage first/last mile infrastructure improvements, mobility services, transit facilities and amenities, and signage/wayfinding solutions to transit stations
Los Angeles County	Los Angeles County General Plan	• Increase economic growth and job creation with priority to jobs accessible by public transportation • Provide for new development which is compatible with and compliments existing uses
Los Angeles County	Step by Step Los Angeles County: Pedestrian Plans for Unincorporated Communities	• Increase economic growth and job creation with priority to jobs accessible by public transportation • Provide for new development which is compatible with and compliments existing uses
Whittier	2021-2040 Envision Whittier General Plan	• Promote transit-supportive development at Lambert Road • Provide opportunities for clustering compatibles uses • Establish a transportation network that ensure transit users can easily and safely reach their destination • Establish a transit hub at the future Lambert station by connecting local transit circulator services • Enhance first-last mile by improving access, local shuttle service, new transit-supportive infrastructure, and subsidizing fares
Whittier	Whittier Boulevard Specific Plan	• Attract new types of office land uses • Establish the area as an appealing location for workplace uses • Encourage the development of housing within and adjacent to the district • Promote connections to the district from within the city and throughout the county by increasing transit service
Whittier	Lincoln Specific Plan	• Provide access to the site • Enhance commercial opportunities in the DSA • Create connectivity between land uses • Redevelop blighted areas • Reduce vehicle miles traveled

3.10.3 Methodology

The impacts analysis is based on land use activities and the location in which these activities occur. Operation-related land use impacts include direct land acquisition, permanent right of way (ROW) encroachments, and permanent access disruptions within or to adjacent existing land uses. Construction-related land use impacts include construction staging, temporary ROW encroachments, property acquisitions for construction activities, temporary construction easements, and temporary access disruptions within or to adjacent existing land uses. Significant land use impacts are determined based on the significance thresholds identified in **Section 3.10.4**.

The impacts analysis considers existing land uses within 0.5 miles from the Project and whether the Build Alternatives would be compatible with existing land uses. The identification of land uses (i.e., type, density, and character) relies on aerial photographs, maps of general plan land use designations, and observations made during site visits. The impacts analysis also evaluates if an alternative would physically divide an established community. A physical division would occur if the Project results in the creation of physical barrier within an established community or neighborhood or the disruption of access to community assets.

Additionally, an evaluation is made of the Project's consistency with goals and objectives presented in applicable land use plans, policies, and regulations (e.g., general plans, specific plans, zoning codes) adopted by the regional and local jurisdictions. As construction impacts are typically short-term and localized and do not affect the long-term planning aspects, the consistency evaluation is focused on operational impacts of the Project and any permanent property acquisitions for construction activities. The Project need not be in perfect conformity with each and every policy, nor does state law require precise conformity of a project with every policy or land use designation for a site. Further, conflicts with land use policies are not by themselves a significant environmental impact; the conflict would have to relate to an environmental issue and result in significant adverse effects on the physical environment to be considered significant.

3.10.4 Thresholds of Significance

In accordance with Appendix G of the CEQA Guidelines, an alternative would have a significant impact related to Land Use and Planning if it would:

Impact LUP-1: Physically divide an established community.

Impact LUP- 2: 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.

3.10.5 Existing Setting

The DSA consists of portions of five cities (Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier) and portions of unincorporated Los Angeles County (East Los Angeles and West Whittier-Los Nietos) that include East Los Angeles and West Whittier-Los Nietos. The majority of multi-family residential land uses within the DSA are located in East Los Angeles. Business and industrial parks are concentrated in the city of Commerce. Several commercial uses range from neighborhood/main street retail to large regional malls and shopping centers. The cities of Commerce, Pico Rivera, and Whittier

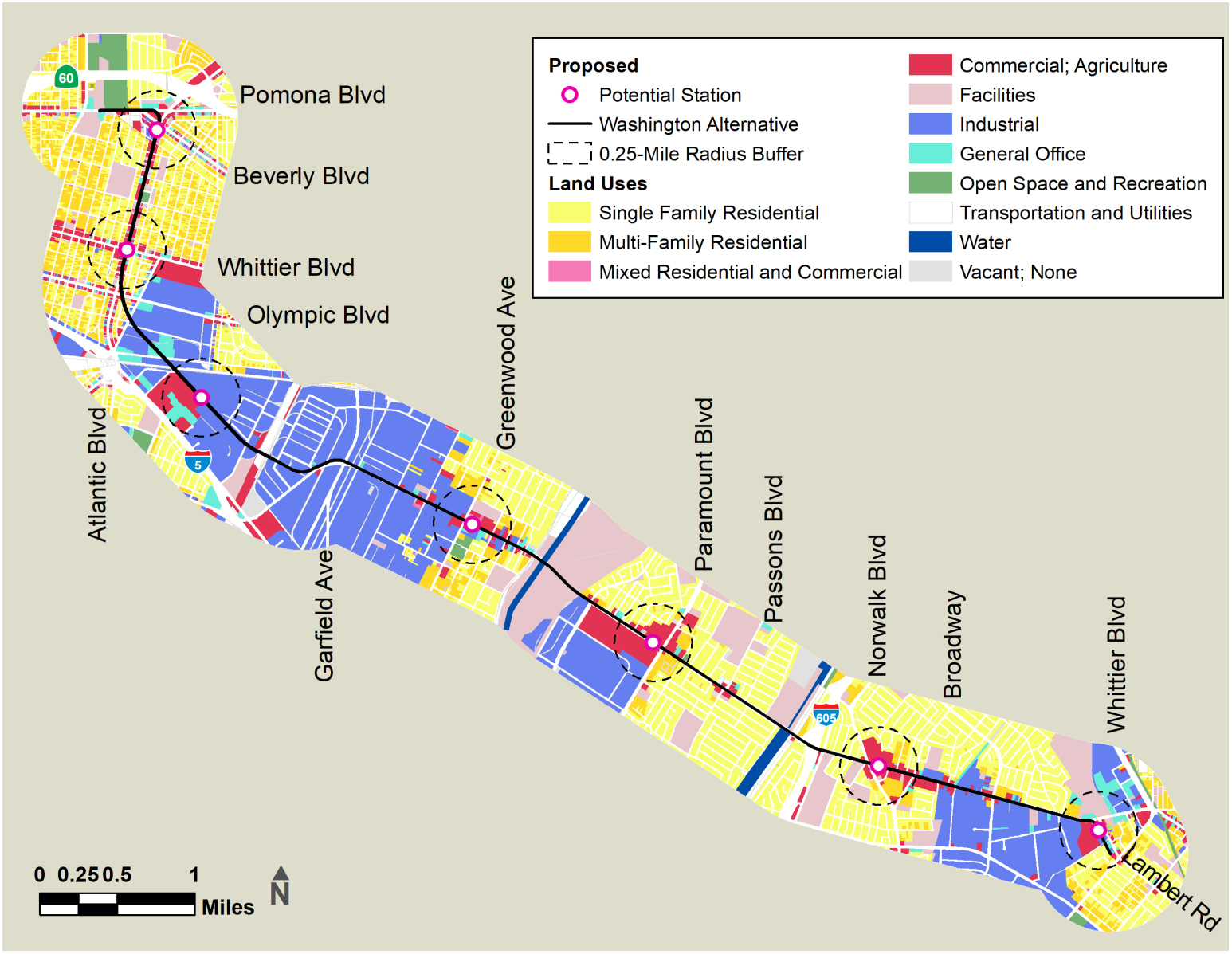
each have activity centers located near or adjacent to the Project, such as the Citadel Outlets, Pico Rivera Towne Center, and the Presbyterian Intercommunity Hospital (PIH) campus, respectively.

Land uses abutting the proposed Build Alternatives encompass a range of land use types typically found in mature urban and suburban communities. **Figure 3.10.1** illustrates the existing land uses and Table 3.10-2 identifies the distribution of land use types within 0.5 miles of Alternative 1, including the guideway alignment, stations, and MSF site options. A buffer distance of 0.5 miles provides a high level understanding of the surrounding area that would have the greatest potential for land use affects. As identified in the table, the greatest percentages of land uses are single family residential (29 percent) and industrial (28 percent), with multi-family residential and facilities and education being the next most prevalent land uses (both 13 percent). Land use characteristics within 0.25 miles of each of the proposed station locations are shown on **Figure 3.10.2**. A buffer distance of 0.25 miles provides a detailed understanding of the walkable and bikeable neighborhood area of the stations. As shown on the figure, the percentage of residential uses within 0.25 miles of the stations varies from approximately 25 percent to 65 percent, with the exception of the Commerce/Citadel station that is primarily near commercial and industrial uses.

Table 3.10-2. Land Use Distribution within 0.5 Miles of Alternative 1 Washington

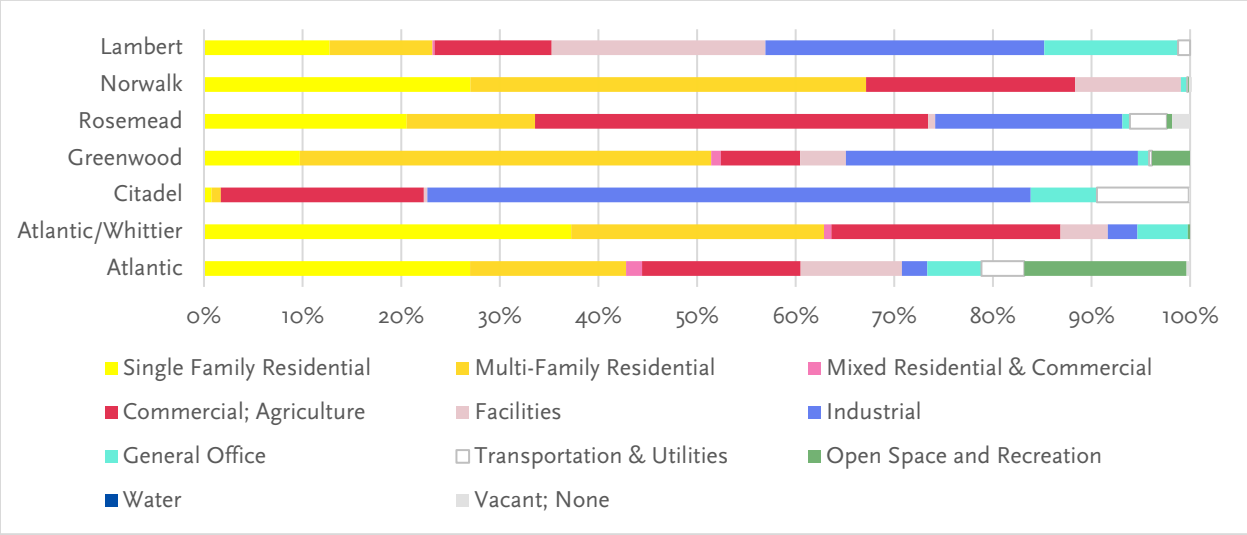
Land Use Type	Alternative 1 Washington	
	Acreage	Percentage of Total Area
Single Family Residential	1,527	29%
Multi-Family Residential	680	13%
Mixed Residential & Commercial	12	0%
Commercial; Agriculture	380	7%
Facilities and Education	676	13%
Industrial	1460	28%
General Office	183	3%
Transportation & Utilities	177	3%
Open Space and Recreation	82	2%
Water	31	1%
Vacant; None	90	2%
Total	5,298	100%

Source: SCAG, 2020.



Source: SCAG, 2020.

Figure 3.10.1. Existing Land Uses within 0.5 Miles of Alternative 1 Washington



Source: SCAG, 2020.

Figure 3.10.2. Land Use Distribution within 0.25 Miles of Alternative 1 Washington Stations

3.10.6 Impact Evaluation

3.10.6.1 Impact LUP-1: Established Community

Impact LUP-1: Would a Build Alternative physically divide an established community?

3.10.6.1.1 Alternative 1 Washington

Operational Impacts

The underground segment of Alternative 1 would operate under the ROW of Atlantic Boulevard and Smithway Street and under existing residential and industrial land uses as it curves south to align under Smithway Street. The station portals for the underground stations would be designed to integrate with the existing character of the surrounding land uses. Since the underground segment is below grade, it would not physically disrupt any existing land uses and would not physically divide an established community.

The aerial segment of Alternative 1 would be operate above the ROW of Washington Boulevard in Montebello. The retaining wall to support the daylighting to an aerial alignment and the transition between the aerial and at-grade segments, would not interfere with existing surrounding land uses or pedestrian or vehicle crossings. Surrounding land uses, immediately adjacent to the aerial segment of Alternative 1, would continue to have access to the surrounding roadway, bicycle, and sidewalk network, and would continue to be accessible to users; therefore, this would not represent a division to an existing established community.

The at-grade segment of Alternative 1, would operate within the median of Washington Boulevard. Pedestrians and motor vehicles would be protected from the guideway by a barrier for pedestrian and vehicular safety. As set forth in PM TRA-1 in Section 3.14, Transportation and Traffic, at unsignalized crossings, left turns and pedestrian crossings shall be controlled using best practice safety measures

(e.g., curbs and fencing to prevent uncontrolled left-turns, high visibility curbs between roadway and guideway, mid-block crosswalks, signal-protected pedestrian movements, channelization, barriers to protect and route pedestrians, Americans with Disabilities Act [ADA]-compliant curb ramps, and warning signs). Although the at-grade segment of the guideway would limit vehicle and pedestrian crossings except at controlled intersections, such limitations would not represent a division to an existing established community. Washington Boulevard is an existing developed area and roadway infrastructure is already a dominant feature of the landscape. The addition of permanent infrastructure associated with an at-grade light rail guideway on an existing roadway facility would not physically divide existing neighborhoods, communities, or land uses to the extent to which they would be disrupted or isolated. New limitations for crossings would primarily limit pedestrian crossings outside of controlled intersections (jaywalking). Under existing conditions, vehicle left turns are primarily only available at signalized intersections due to street configurations and barriers such as curbs and medians. At signalized intersections, left-turning traffic would be maintained, and pedestrian access would be maintained via crosswalks. Surrounding land uses would continue to be accessible from both sides of the at-grade guideway to vehicle and non-vehicle users via surrounding roadway, bicycle, and sidewalk network via crossings at signalized intersections.

Operation of Alternative 1 would require property acquisition for some operational systems and facilities, including TPSS along the guideway and parking facilities at several of the stations. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The new uses would be consistent with existing commercial and industrial uses and the land use characteristics of the transportation corridor. The property acquisition and change in uses under Alternative 1 would not affect vehicular, bicycle, or pedestrian access, and would not physically divide an established community.

Therefore, operation of Alternative 1 would not physically divide an established community and would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Operation of the Atlantic/Pomona Station Option would have similar impacts as operation of a fully underground station on Atlantic Boulevard that would be implemented under the base Alternative 1. The Atlantic/Pomona Station Option would require commercial and industrial property acquisition for some operational systems and facilities, which would include permanent acquisition of properties to accommodate the open air Atlantic/Pomona Station Option. The property acquisition and change to transportation uses under Alternative 1 with the Atlantic/Pomona Station Option would not affect vehicular, bicycle, or pedestrian access, and would not physically disrupt any existing land uses. As identified in PM TRA-1, pedestrians would be protected from the open air station with a barrier for safety. The open air Atlantic/Pomona Station Option would be designed to integrate with the existing character of the surrounding land uses. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not physically divide an established community and would result in a less than significant impact.

Montebello At-Grade Option

Operation of the Montebello At-Grade Option would have similar impacts as operation of an aerial alignment at this location. As with the at-grade segment under the base Alternative 1, the at-grade segment of the Montebello At-Grade Option would operate within the median of Washington Boulevard. Pedestrians and motor vehicles would be protected from the guideway with a barrier for pedestrian and vehicular safety. As set forth in PM TRA-1, at unsignalized crossings, left turns and pedestrian crossings would be controlled using best practice safety measures as identified for the base alternative. New limitations for crossings would limit vehicle and pedestrian crossings outside of controlled intersections. At signalized intersections, left-turning traffic would be maintained, and pedestrian access would be maintained via crosswalks. Surrounding land uses would continue to have access to the surrounding roadway, bicycle, and sidewalk network, and would continue to be accessible to users. The property acquisition and change to transportation uses under Alternative 1 with the Montebello At-Grade Option would not affect vehicular, bicycle, or pedestrian access, and would not physically disrupt any existing land uses. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not physically divide an established community and would result in a less than significant impact.

Construction Impacts

Construction activities for Alternative 1 would not create any permanent physical divisions within the surrounding community; however, temporary street closures during the construction period would be required and would potentially temporarily physically divide established communities. Street and sidewalk closures during construction would result in temporary limitation on movement for pedestrians, cyclists, and vehicles within and between local communities. However, closures would be temporary, periodic, and would not restrict access to or from any established communities. Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared to reduce the disruption caused by construction work zones. Metro would notify and work with surrounding communities of the construction schedule in advance and would use wayfinding signage to inform the public of reroutes due to closed pedestrian areas and roadways. Section 3.14, Transportation and Traffic, and Appendix N further analyze the potential effect on circulation and pedestrian access to adjoining or nearby properties.

Construction of Alternative 1 would require property acquisition and construction easements for some construction activities, including construction staging, installation of systems and facilities, street widening and reconstruction, demolition, and utility relocation and installation work. The temporary construction easements (i.e., the areas needed temporarily during construction in addition to the actual project footprint) would vary along Alternative 1, depending on the type of construction and adjacent land use. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would likely return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The property acquisition for construction under Alternative 1 would not affect vehicular, bicycle, or pedestrian access, and would not physically divide an established community. Therefore, construction of Alternative 1 would not physically divide an established community and would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Construction of the Atlantic/Pomona Station Option would have similar impacts as construction of a fully underground station on Atlantic Boulevard that would be implemented under the base Alternative 1. Construction activities for the Atlantic/Pomona Station Option would not create any permanent physical divisions within the surrounding community. Street and sidewalk closures during construction would result in temporary limitations on movement for pedestrians, cyclists, and vehicles within and between local communities. However, closures would be temporary and intermittent. Further, Metro would notify and work with surrounding communities of the construction schedule in advance and would use wayfinding signage to inform the public of reroutes due to closed pedestrian areas and roadways. Similar to the base Alternative 1, property acquisition would be generally limited to properties currently zoned for commercial or industrial uses. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. Therefore, construction of the Atlantic/Pomona Station Option would not physically divide an established community and would result in a less than significant impact.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would have similar impacts as construction of an aerial alignment at this location, including temporary street and sidewalk closures that would result in temporary limitations on movement for pedestrians, cyclists, and vehicles within and between local communities. However, closures would be temporary and intermittent. Metro would notify and work with surrounding communities of the construction schedule in advance and would use wayfinding signage to inform the public of reroutes due to closed pedestrian areas and roadways. Similar to the base Alternative 1, property acquisition would be generally limited to properties currently zoned for commercial or industrial uses. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would not physically divide an established community and would result in a less than significant impact.

3.10.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would primarily operate below the transportation ROW and acquired commercial and industrial property. The station portals for the underground stations or open air underground station associated with the Atlantic/Pomona Station Option would be designed to integrate with the existing character of the surrounding land uses. Since the underground segment is below grade, it would not physically disrupt any existing land uses and would not physically divide an established community. The retaining wall to support the daylighting to an aerial alignment for the lead tracks to the Commerce MSF site option would not interfere with existing surrounding land uses or pedestrian and vehicle crossings.

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would require property acquisition for some operational systems and facilities, including TPSS along the guideway, parking facilities at several of the stations, and for the open air station under the Atlantic/Pomona Station Option. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The new uses would be materially consistent with existing commercial and industrial uses and the land use characteristics of the transportation corridor. The property acquisition and change in uses under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not affect vehicular, bicycle, or pedestrian access, and would not physically divide an established community. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not create any permanent physical divisions within the surrounding community; however temporary street closures during the construction period would be required for construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option and would potentially temporarily physically divide established communities. Street and sidewalk closures during construction would result in temporary limitations on movement for pedestrians, cyclists, and vehicles within and between local communities. However, closures would be temporary, periodic, and would not restrict access to or from any established communities. A Traffic Management Plan would be prepared to reduce the disruption caused by construction work zones. Metro would work with surrounding communities to establish a construction schedule that notifies the public of construction in advance and to develop wayfinding signage (e.g., closed pedestrian areas, rerouting directions, etc.). Section 3.14, Transportation and Traffic, and Appendix N further analyze the potential effect on circulation and pedestrian access to adjoining or nearby properties.

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would require property acquisition and construction easements for some construction activities as discussed under Alternative 1. The temporary construction easements would vary along the alignment, depending on the type of construction and adjacent land use. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The property acquisition for construction under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not affect vehicular, bicycle, or pedestrian access, and would not physically divide an established community. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not physically divide an established community and would result in a less than significant impact.

3.10.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option design options would operate within or below the transportation ROW and acquired commercial and industrial property. The station portals for the underground stations, the aerial station associated with the base Alternative 3, open air underground station associated with the Atlantic/Pomona Station Option, or at-grade station associated with the Montebello At-Grade Option would be designed to integrate with the existing character of the surrounding land uses.

The aerial segment of the base Alternative 3 would be grade-separated and would operate above the ROW of Washington Boulevard in Montebello. The retaining wall to support the daylighting to an aerial alignment and, for the Montebello At-Grade Alignment, the transition between aerial and at-grade segment would not interfere with existing surrounding land uses or pedestrian and vehicle crossings. As set forth in PM TRA-1 in Section 3.14, Transportation and Traffic, pedestrians and motor vehicles would be protected from the guideway with a barrier for pedestrian and vehicular safety. Surrounding land uses would continue to have access to the surrounding roadway, bicycle, and sidewalk network, and would continue to be accessible to users.

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would require property acquisition for some operational systems and facilities, including TPSS along the guideway, the aerial or at-grade Greenwood and open station under Atlantic/Pomona Station Option, and parking facilities at several of the stations. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The new uses would be materially consistent with existing commercial and industrial uses and the land use characteristics of the transportation corridor. The property acquisition and change in uses under the base Alternative 3 or Alternative 3 with design options would not affect vehicular, bicycle, or pedestrian access, and would not physically divide an established community. Washington Boulevard is an existing developed area and roadway infrastructure is already a dominant feature of the landscape. The addition of permanent infrastructure associated with an at-grade light rail guideway on an existing roadway facility would not physically divide existing neighborhoods, communities, or land uses to the extent to which they would be disrupted or isolated. Therefore, operation of the Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not physically divide an established community and would result in a less than significant impact.

Construction Impacts

Base Alternative and Design Option

Temporary street closures during the construction period would be required for construction of the base Alternative 3 or Alternative with the design options and would potentially temporarily physically divide established communities. Street and sidewalk closures during construction would result in temporary limitations on movement for pedestrians, cyclists, and vehicles within and between local communities. However, closures would be temporary, periodic, and would not restrict access to or

from any established communities. A Traffic Management Plan would be prepared to reduce the disruption caused by construction work zones. Metro would notify and work with surrounding communities of the construction schedule in advance and would use wayfinding signage to inform the public of reroutes due to closed pedestrian areas and roadways. Section 3.14, Transportation and Traffic, and Appendix N further analyze the potential effect on circulation and pedestrian access to adjoining or nearby properties.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would require property acquisition and construction easements for some construction activities. The temporary construction easements would vary along the alignment, depending on the type of construction and adjacent land use. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The property acquisition for construction under the base Alternative 3 or Alternative 3 with design options would not affect vehicular, bicycle, or pedestrian access, and would not physically divide an established community. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not physically divide an established community and would result in a less than significant impact.

3.10.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option would vacate Corvette Street and require acquiring properties adjacent to Corvette Street. The Montebello MSF site option or the Montebello MSF At-Grade Option would require acquiring properties west of Vail Avenue. However, the Commerce MSF site option and Montebello MSF site option would not require the closure of any primary vehicle routes critical to circulation within a community or between communities. Under the Montebello MSF At-Grade Option, through access on Acco Street would be eliminated to provide for the lead tracks into the MSF. Cul-de-sacs would be located on each side of the lead tracks to provide access to the adjacent properties. The MSF site options and design option would be located primarily on existing parcels designated for industrial uses. Surrounding land uses at the MSF site options and design option would continue to have access to the surrounding roadway, bicycle, and sidewalk network, and would continue to be accessible to users. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not physically divide an established community and would result in a less than significant impact.

Construction Impacts

MSF Site Options and Design Option

Construction activities for the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF site option with the Montebello MSF At-Grade Option would temporarily physically divide established communities as a result of temporary closures during the construction period. Street and sidewalk closures during construction would result in temporary limitations on movement for pedestrians, cyclists, and vehicles within and between local communities. However, closures would be temporary, periodic, and would not restrict access to or from any established communities. A Traffic Management Plan would be prepared to reduce the disruption caused by construction work zones. Metro would notify and work with surrounding communities of the construction schedule in advance and would use wayfinding signage to inform the public of reroutes due to closed pedestrian areas and roadways. Section 3.14, Transportation and Traffic, and Appendix N further analyze the potential effect on circulation and pedestrian access to adjoining or nearby properties. Therefore, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF site option with the Montebello MSF At-Grade Option would not physically divide an established community and would result in a less than significant impact.

3.10.6.2 Impact LUP-2: Plan, Policy, or Regulation Conflicts

Impact LUP-2: Would a Build Alternative 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?

3.10.6.2.1 Alternative 1 Washington

Operational Impacts

Alternative 1 would traverse portions of unincorporated Los Angeles County (East Los Angeles and West Whittier-Los Nietos), and the cities of Montebello, Commerce, Pico Rivera, Santa Fe Springs, and Whittier. Consistency with relevant land use plans and community/specific plans associated with these jurisdictions that were summarized in **Section 3.10.2.2** are discussed in greater detail in Appendix K.

Southern California Association of Governments

The policies and goals of the 2020 RTP/SCS focus on the need to coordinate land use and transportation decisions to manage travel demand. Alternative 1 would not conflict with the 2020 RTP/SCS goals of sustaining mobility, fostering economic development, enhancing the environment, reducing energy consumption, promoting transportation-friendly development patterns, and encouraging fair and equitable access to all people in the region. The purpose of the Project is to provide a transit connection to the existing Metro L (Gold) Line, linking communities east of Los Angeles to the regional transit network and improving mobility within the DSA by enhancing transit options, and planning for projected growth in a sustainable manner. Additionally, the Project was included in the SCAG 2020 RTP/SCS, in the list of selected transit capital projects. Therefore, this alternative would not conflict with SCAG's 2020 RTP/SCS.

Metro

Alternative 1 would be consistent with the Metro plans and policies, including the 2020 LRTP, Countywide Sustainability Planning Policy, Active Transportation Strategic Plan, and Complete Streets Policy, that encourage sustainable design of public facilities, expansion of existing transportation options, and increased rail service. Alternative 1 would improve rail service and would provide interconnectivity to the existing and planned LRT system. Mobility would be improved with alternatives to automobile travel and the congested roadway network. In addition to the investment in improved public transit systems associated with Alternative 1, the TOCs (which could occur indirectly as a result of the alternative) would encourage sustainable neighborhood development principles and other initiatives that would advance more efficient land use patterns. In addition, Alternative 1 is specifically identified in Metro's 2020 LRTP as future transit improvement project for the region. Therefore, this alternative would not conflict with Metro's plans and policies.

Los Angeles County

Objectives of the *Los Angeles County 2035 General Plan* include coordinating land use with existing and proposed transportation networks and developing a transportation system that is responsive to economic, environmental, and transportation needs at a local and regional level. The county-wide land use element focuses on pedestrian-friendly and community-serving uses that encourage walking, bicycling, and transit use. Alternative 1 would provide residents, businesses, and transit dependent populations with a transportation option connecting them to the rest of Los Angeles County via the Metro transit system. Implementation of Alternative 1 would also increase transit ridership, generating environmental benefits through reduced vehicle trips, less roadway congestion, reduction of emissions for several air pollutants, and offset of GHG emissions.

The *Los Angeles County 2035 General Plan* also promotes transit oriented development (TOD). Land Use Policy 4.3 encourages TOD in urban and suburban areas with the appropriate residential density along transit corridors and within station areas. Transit oriented opportunities along the alignment would be expected to result from Alternative 1. Therefore, this alternative would not conflict with the *Los Angeles County 2035 General Plan*. Refer to Section 3.2, Air Quality, and Section 3.7, Greenhouse Gas Emissions, for more information regarding vehicle trip and GHG emission reductions associated with this alternative.

Los Angeles County, East Los Angeles

Applicable goals and policies of the *East Los Angeles Community Plan* include improving local transit and circulation, economic growth, and job creation prioritizing jobs accessible by public transportation. Alternative 1 would include two stations in East Los Angeles, the relocated/ reconfigured Atlantic Boulevard station and Atlantic/Whittier station. Land Use Goal 2.0 promotes the rehabilitation of commercial uses along Atlantic Boulevard where transportation can support these uses. Improved accessibility and mobility to Atlantic Boulevard via Alternative 1 could lead to increased employment opportunities for the regional population and support this land use goal. Therefore, this alternative would not conflict with the *East Los Angeles Community Plan.*

Los Angeles County, West Whittier-Los Nietos

Applicable goals and policies of the *Step by Step Los Angeles County: Pedestrian Plans for Unincorporated Communities* include developing/maintaining the linkage between the pedestrian network and transit and supporting projects the increase pedestrian connectivity and safety. As set forth in PM TRA-1 in

Section 3.14, Transportation and Traffic, Alternative 1 would include crosswalks, lighting, and other safety streetscape elements at station areas to ensure more comfortable and convenient place to walk to/from. Facilitating connections to the pedestrian network adjacent to proposed stations would make walking safer as well. Therefore, this alternative would not conflict with the *Step by Step Los Angeles County: Pedestrian Plans for Unincorporated Communities*.

City of Commerce

Alternative 1 includes one station, the Commerce/Citadel station, in the city of Commerce. The *Commerce 2020 General Plan* policies address land use in the Community Development element and promotes the development of commercial corridors near Alternative 1, specifically within the vicinity of Washington Boulevard and the Citadel. Overall, the *Commerce 2020 General Plan* promotes the goal of furthering the enhancement of a safe and efficient regional and inter-city transit system. Transportation Policy 3.10 specifically directs the city of Commerce to continue to cooperate with regional transportation agencies to establish routes, stops, and stations in Commerce to expand the regional transit system. The implementation of Alternative 1 would further these goals by providing a new regional transit opportunity.

The *Commerce 2020 General Plan* Community Development Policy 7.2 identifies that the city will oppose a concentration of public facilities that benefit the region at-large but adversely impact the local community, unless the region shares the advantages and disadvantages of the uses and facilities. The alignment and the stations located throughout the DSA and the advantages (i.e., increased access to transit, reduction in vehicle miles traveled [VMT]) and disadvantages (i.e., temporary disruption during construction, noise generation, property acquisition) would be shared regionally along the alignment. Thus, opposition to the Project relative to Policy 7.2 is not anticipated; however, it would be the city's policy decision to support or oppose the Project relative to Policy 7.2. Similarly, Transportation Policy 6.2 identifies that the city of Commerce will oppose improvements that do not first consider the potential impacts of such facilities on the local community in which the facility will be located. As identified throughout the CEQA evaluation for the Project, impacts on the local communities including Commerce and the region as a whole are identified, evaluated, and significant environmental impacts are reduced through mitigation where applicable/feasible. It would be the city's policy decision to support or oppose the Project relative to Policy 6.2.

The *Commerce 2020 General Plan* promotes the operation and enhancement of regional and inter-city transit systems and the reduction of VMT to reduce congestion and pollution. Alternative 1 would improve transit connectivity, increase transit ridership and provide an alternative to automobile travel. Increased transit ridership would also generate environmental benefits through reduced vehicle trips, less roadway congestion, reduction of emissions for several air pollutants, and offset of GHG emissions associated with automobile travel.

Overall, Alternative 1 would not conflict with the *Commerce 2020 General Plan*. Section 3.2, Air Quality and Section 3.7, Greenhouse Gas Emissions, provide more information regarding vehicle trip and GHG emission reductions associated with this alternative.

City of Montebello

Although Montebello has been built beyond the life of the *Montebello 1973 General Plan*, goals still relevant today include facilitating traffic movement and alleviating congestion. Alternative 1 includes one station located in the city of Montebello, the Greenwood station. Circulation Goal 3.0 promotes the development of a circulation system that provides for continuous movement to and from adjacent

communities. Alternative 1 would not only provide a means of continuous travel but also provide alternative travel options in the DSA, alleviating congestion on the highway and roadway network and facilitating traffic movement and thereby furthering general plan goal for improved circulation. Further, a general plan update that is currently underway is expected to plan for transit and a multi-modal transportation network, which would be supported by Alternative 1.

City of Pico Rivera

Alternative 1 includes one station in the city of Pico Rivera, the Rosemead station. Alternative 1, including the Rosemead station, would improve transit connectivity and increase transit ridership. This is supportive of Circulation Policy 5.1-5, which directs the city to strive to provide multi-modal transportation throughout the city, especially to key locations such as employment centers, schools, parks, medical facilities, libraries and grocery stores.

The applicable goals and policies outlined in the *Pico Rivera 2014 General Plan* would be met by Alternative 1. These policies direct the city of Pico Rivera to coordinate with Metro and Montebello transit agencies to encourage the maintenance and expansion of transit routes and facilities within the city; reduce air quality emissions; and provide a diverse and efficient transportation system that minimizes emissions for several air pollutants. Healthy Community Goal 10.2-3 specifically directs the city to continue to work with Metro to locate the "station for the Gold Line" light rail extension within Pico Rivera and encourage transit ridership. Additionally, Environmental Resource Policy 8.3-1 promotes the implementation of energy conserving land use practices including higher density and mixed-use development in proximity to transit along within infill development and expansion of transit routes, facilities and services. The general plan also supports the use of alternative transportation through the development of facilities that support and accommodate these services and integrate alternative transportation into new developments to reduce the need for parking. Implementation of an LRT system would make it easier for new developments to integrate alternative transportation into their project design.

Overall, Alternative 1 would not conflict with the *Pico Rivera 2014 General Plan*. Section 3.2, Air Quality, and Section 3.7, Greenhouse Gas Emissions, provide more information regarding the reduction of vehicle trips and the offset of GHG emissions.

Rancho de Bartolo

The *Rancho de Bartolo Specific Plan Amendment* area is bounded by Washington Boulevard to the north, Paramount Boulevard to the west, the BNSF railroad to the south, and Rosemead Boulevard to the east. The Rosemead station would be located just north of the specific plan area and would have station facilities and a parking facility within the specific plan boundary. Objectives of the specific plan include promoting new development that will benefit the city and reduce adverse environmental effects associated with future development within the planning area. Alternative 1 would be supportive of these objectives through increasing transit ridership within the surrounding area and Pico Rivera overall. This would support new development and generate environmental benefits through reduced vehicle trips, less roadway congestion, reduction of emissions for several air pollutants, and offset of GHG emissions associated with automobile travel.

City of Santa Fe Springs

Alternative 1 includes one station in the city of Santa Fe Springs, the Norwalk station. The *Santa Fe Springs 2040 General Plan* prioritizes infrastructure improvements that enhance access and connectivity to the established street and transportation system, especially within disadvantaged communities. Land Use Policy 1.4 directs the city to promote the development of transit oriented districts around rail stations to create vibrant new neighborhoods. The Norwalk station would support mobility related policies by providing convenient and reliable transit access to residential neighborhoods and activity destinations. Alternative 1 would provide residents, businesses, and transit dependent populations with a transit option, connecting Santa Fe Springs to the regional transit network. Through improved accessibility and mobility for communities, and connection to major centers, Alternative 1 would create opportunities for economic development, increasing employment opportunities in the DSA. Conservation and Open Space Policy 9.1 allows urban infill and transit oriented communities within walking stance of transit stops and stations to reduce vehicle trips and trip lengths. Alternative 1 would make it easier for new major developments to accommodate transit service into their project design. In addition, Alternative 1 would help to improve connectivity to major commercial areas and reduce VMT. Therefore, Alternative 1 would not cause a significant environmental impact due to a conflict with the goals and policies of the *Santa Fe Springs 2040 General Plan*.

City of Whittier

Alternative 1 includes one station in the city of Whittier, the Lambert station, which serves as the terminus of the alternative. This station would be located directly opposite the PIH campus and would provide walking access to the commercial corridor along Washington Boulevard. Also, Lambert Road provides a connection to the Fred C. Nelles Youth Correctional Facility, a redevelopment area approximately 0.5 miles to the north. This station is also within walking distance of residential areas in Santa Fe Springs to the southeast and central Whittier to the northeast and northwest.

The *Envision Whittier General Plan* contains multiple goals and policies that encourage the expansion of transit in the city to connect community members to jobs and services, reduce congestion and GHG emissions, and support TOD projects. Land Use and Community Character, Policy 2.3 encourages the development of pedestrian-friendly mixed-use projects along Lambert Road. The placement of the Lambert station would be consistent with this policy by promoting opportunities for transit oriented development in the area. In addition, the alternative would be consistent with the Mobility and Infrastructure Policy 2.3, which promotes the use of transit as a means of reducing local traffic congestion, achieving GHG reduction targets, and connecting the City "physically and socially." Overall, Alternative 1 would not conflict with the *Envision Whittier General Plan*.

Whittier Boulevard Specific Plan

A portion of the Alternative 1 guideway would be located adjacent to the *Whittier Boulevard Specific Plan* area. Principles identified in the plan to guide development in this area include attracting new types of office land uses, establishing the area as an appealing location for workplace uses, encouraging the development of housing within and adjacent to the district, and promoting connections to the district from within the city and throughout the county by increasing transit service. Alternative 1 would support these principals by linking communities farther east of Los Angeles, including Whittier, to the regional transit network and improving mobility within the DSA by enhancing transit options. Implementation of Alternative 1 would increase transit oriented opportunities in the

area and increase access to nearby commercial, residential, and potential redevelopment areas. Therefore, Alternative 1 would not conflict with the *Whittier Boulevard Specific Plan*.

Whittier Commercial Corridor

Alternative 1 would travel in the center of Washington Boulevard to the Lambert station. This station would be located in the vicinity of the redevelopment site of the former Fred C. Nelles Youth Correctional Facility, as proposed by the *Lincoln Specific Plan*. As a result, implementation of Alternative 1 would increase access to the planned commercial and residential uses in this redevelopment area. The alternate form of transportation associated with Alterative 1 complements the commercial services and residences in this area, enhances transit-oriented opportunities, and helps to reduce VMT. Therefore, Alternative 1 would not conflict with the *Lincoln Specific Plan*.

Relevant Land Use Plans and Policies Summary

Alternative 1 would be supportive of goals and policies identified in land use plans of the jurisdictions located along the alignment that prioritize circulation improvements and transit connections, encourage economic development and improved access along major roadway corridors, and reductions of vehicle trips, air pollutant emissions, and GHG emissions.

Operation of Alternative 1 would require property acquisition for some operational systems and facilities, including TPSS along the guideway and parking facilities at several of the stations. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The new uses would be materially consistent with existing commercial and industrial uses and the land use characteristics of the transportation corridor. The property acquisition and change in uses under Alternative 1 would not introduce new uses that are incompatible with the surrounding uses and would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect.

Alternative 1 would not conflict with the goals and policies of the applicable jurisdictions along the corridor; therefore, operation of Alternative 1 would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Operation of the Atlantic/Pomona Station Option would have similar impacts as operation of a fully underground station on Atlantic Boulevard that would be implemented under the base Alternative 1. Similar to the underground station on Atlantic Boulevard, the Atlantic/Pomona Station Option would promote the rehabilitation of commercial uses along Atlantic Boulevard where transportation can support these uses, consistent with the East Los Angeles Community Plan. Improved accessibility and mobility to Atlantic Boulevard could lead to increased employment opportunities for the regional population and support the East Los Angeles Community Plan's land use goals. The Atlantic/Pomona Station Option would not create any new land uses that could generate conflicts with land uses adjacent to the at-grade option, or conflict with local land use plans, policies, or regulations. Alternative 1 with the Atlantic/Pomona Station Option would be supportive of regional and local goals and policies supporting improved mobility and transit access as identified for the base Alternative 1. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Montebello At-Grade Option

Operation of the Montebello At-Grade Option would have similar impacts as operation of an aerial alignment at this location. The Montebello At-Grade Option would not create any new land uses that could generate conflicts with land uses adjacent to the at-grade option, or conflict with local land use plans, policies, or regulations. The Circulation Goal 3.0 in the Montebello 1973 General Plan promotes the development of a circulation system that provides for continuous movement to and from adjacent communities. Alternative 1 with the Montebello At-Grade Option would provide a means of continuous travel and provide alternative travel options in the DSA, alleviating congestion on the highway and roadway network and facilitating traffic movement and thereby furthering the general plan goal for improved circulation. Vehicles would still be able to cross the existing signal-controlled intersection of Washington Boulevard and Greenwood Avenue. Thus, Alternative 1 with the Montebello At-Grade Option would be supportive of regional and local goals and policies supporting improved mobility and transit access as identified for the base Alternative 1. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact.

Construction Impacts

Construction of Alternative 1 would require property acquisition and construction easements for some construction activities, including construction staging, installation of systems and facilities, street widening and reconstruction, demolition, and utility relocation and installation work. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses, and no residential uses, churches, schools, parks, or other sensitive land uses would be permanently acquired. The property acquisition for construction under Alternative 1 would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Construction of Alternative 1 would be conducted in compliance with local land use plans and codes, including the provision of noise control measures in order to avoid conflict with the goals of local noise ordinances. Therefore, the construction of Alternative 1 would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Construction of the Atlantic/Pomona Station Option would have similar impacts as construction of a fully underground station on Atlantic Boulevard that would be implemented under the base Alternative 1. As with the base Alternative 1, construction of Alternative 1 with the Atlantic/Pomona Station Option would require property acquisition and construction easements for some construction activities. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. The property acquisition for construction under Alternative 1 with the Atlantic/Pomona Station Option would not conflict with

applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Construction of the Atlantic/Pomona Station Option would be conducted in compliance with local land use plans and codes. Construction of Alternative 1 with the Atlantic/Pomona Station Option would not conflict with local land use plans, policies, or regulations; it would result in a less than significant impact.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would have similar impacts as construction of an aerial alignment at this location. As with the base Alternative 1, construction of Alternative 1 with the Montebello At-Grade Option would require property acquisition and construction easements for some construction activities. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes separate from this environmental review process. The property acquisition for construction under Alternative 1 with the Montebello At-Grade Option would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Construction of the Montebello At-Grade Option would be conducted in compliance with local land use plans and codes. Construction of Alternative 1 with the Montebello At-Grade Option would not conflict with local land use plans, policies, or regulations and would therefore result in a less than significant impact.

3.10.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The operation of Alternative 1 would not conflict with local land use plans, policies, or regulations and would help achieve regional and local goals to improve transit and mobility in East Los Angeles and the city of Commerce as discussed in **Section 3.10.6.2.1**. While it would not directly support the goals of the plans located further east, Alternative 2 would provide more convenient access to transit for those communities and would not prevent a future rail extension to serve those areas. Similarly, the operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would be supportive of plans, policies, and regulations encouraging circulation improvements, community access and development, and air pollutant emissions and GHG reductions in East Los Angeles and the city of Commerce. Operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would not conflict with local land use plans, policies, or regulations and would therefore result in a less than significant impact.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would require property acquisition and construction easements for some construction activities, although to a lesser degree than Alternative 1 or Alternative 3.

The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes from this environmental review process. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses. The property acquisition for construction under the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Construction of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would be conducted in compliance with local land use plans and codes. Construction of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would not conflict with local land use plans, policies, or regulations and would therefore result in a less than significant impact.

3.10.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Option

The operation of Alternative 1 would not conflict with local land use plans, policies, or regulations and would help achieve regional and local goals to improve transit and mobility in East Los Angeles and the cities of Commerce and Montebello discussed in **Section 3.10.6.2.1**. While it would not directly support the goals of the plans located further east, Alternative 3 would provide more convenient access to transit for those communities and would not prevent a future rail extension to serve those areas. Similarly, the operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would be supportive of plans, policies, and regulations encouraging circulation improvements, community access and development, and air pollutant emissions and GHG reductions in East Los Angeles and the cities of Commerce and Montebello. Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not conflict with local land use plans, policies, or regulations and would therefore result in a less than significant impact.

Construction Impacts

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would require property acquisition and construction easements for some construction activities, though to a lesser degree than Alternative 1. The properties under construction easements would retain their original land use designation and zoning classifications, and upon termination of the construction easement, would return to their original use. Properties acquired for construction activities would, upon completion of the construction activities, be available for joint development or parking facilities subject to standard planning and permitting review processes from this environmental review process. Property acquisition would be generally limited to properties currently zoned for commercial or industrial uses. The property acquisition for construction under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Construction would also be conducted in compliance with local land use plans and codes. Construction of the base Alternative 3 or

Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not conflict with local land use plans and would therefore result in a less than significant impact.

3.10.6.2.4 Maintenance and Storage Facilities

Operational Impacts

Commerce MSF

The Commerce MSF site option would require acquisition of several properties with low-rise commercial and industrial buildings serving light industrial, wholesale, warehousing, distribution, and commercial supply businesses and require the permanent closure of portions of Corvette Street between Saybrook and Davie Avenues. The parcels in the vicinity of the Commerce MSF site option are classified as Public Facility, Heavy Industrial, and Unlimited Commercial in the city of Commerce zoning code. Given the existing industrial and commercial uses of the parcels to be acquired and of the parcels in the surrounding area, operation of this MSF site option would not be considered a change in land use type and would not conflict with adjacent land uses. The *Commerce 2020 General Plan* Community Development Policy 7.2 identifies that the city of Commerce will oppose a concentration of public facilities that benefit the region at-large but adversely impact the local community, unless the region shares the advantages and disadvantages of the uses and facilities. The Commerce MSF site option is located in Commerce and would serve the entire alignment, thereby benefiting the region at large while also having some effects only on the local area, such as property acquisition, street closures, and removal of potentially historic buildings. The Commerce MSF site option would also bring the city new job and economic growth opportunities. It would be the city's policy decision to support or oppose the Project relative to Community Development Policy 7.2 and no conflict with this policy would occur. Similarly, Transportation Policy 6.2 identifies that the city of Commerce will oppose improvements that do not first consider the potential impacts of such facilities on the local community in which the facility will be located. As identified throughout the CEQA evaluation for the Project, impacts on the local communities including Commerce and the region as whole are identified, evaluated, and significant environmental impacts are reduced through mitigation where applicable/feasible. It would be the city's policy decision to support or oppose the Project relative to Policy 6.2 and no conflict with this policy would occur. Operation of the Commerce MSF site option would not create any new land uses that could generate conflicts with land uses adjacent to the alignment, or conflict with local land use plans, policies, or regulations; thus, no impact would occur.

Montebello MSF and Montebello MSF At-Grade Option

The Montebello MSF site option or the Montebello MSF At-Grade Option would require acquisition of several properties with commercial and industrial uses. The parcels within the Montebello MSF site option and in the vicinity are designated as Heavy Manufacturing under the city of Montebello zoning code. A significant portion of the Montebello MSF site option is occupied by an industrial/commercial paving business. Given the existing industrial and commercial uses of the parcels to be acquired and of the parcels in the surrounding area, operation of this MSF option would not be considered a change in land use type and would not conflict with adjacent land uses. West of the intersection of Gayhart Street and Washington Boulevard, the guideway alignment with the Montebello MSF site option and Montebello MSF At-Grade Option would be located with the median of Washington Boulevard to avoid permanent acquisition of a historical resource as discussed further in Section 3.4, Cultural Resources. Operation of the Montebello MSF site option or the Montebello MSF site option with the

Montebello MSF At-Grade Option would not create any new land uses that could generate conflicts with land uses adjacent to the alignment, or conflict with local land use plans, policies, or regulations; no impact would occur.

Construction Impacts

Commerce MSF

The Commerce MSF site option would be located in a highly industrial and commercial environment. Given the existing industrial and commercial uses in the area, construction of this MSF would not be considered a change in land use type and would not conflict with adjacent land uses. As described for operations, The *Commerce 2020 General Plan* Community Development Policy 7.2 identifies that the city of Commerce will oppose a concentration of public facilities that benefit the region at-large but adversely impact the local community, unless the region shares the advantages and disadvantages of the uses and facilities. It would be the city's policy decision to support or oppose the Project relative to Community Development Policy 7.2 and no conflict with this policy would occur. Similarly, Transportation Policy 6.2 identifies that the city of Commerce will oppose improvements that do not first consider the potential impacts of such facilities on the local community in which the facility will be located. As identified throughout the CEQA evaluation for the Project, impacts on the local communities including Commerce, and the region as whole are identified, evaluated, and significant environmental impacts are reduced through mitigation where applicable/feasible. It would be the city's policy decision to support or oppose the Project relative to Policy 6.2 and no conflict with this policy would occur. Construction of the Commerce MSF site option would not create any new land uses that could generate conflicts with land uses adjacent to the alignment, or conflict with local land use plans, policies, or regulations; no impact would occur.

Montebello MSF and Montebello MSF At-Grade Option

The Montebello MSF site option or the Montebello MSF At-Grade Option would be located in the city of Montebello. The parcels within the Montebello MSF site option and in the surrounding vicinity are designated as Light Manufacturing, Heavy Manufacturing, and Community Commercial in the zoning code. A significant portion of the proposed Montebello site is occupied by an industrial/commercial paving business.

The Montebello MSF site option or the Montebello MSF site option with the Montebello MSF At-Grade Option would be located in a highly industrial and commercial area. Given the existing industrial and commercial uses in the area, operation of this MSF would not be considered a change in land use type and would not conflict with adjacent land uses. Construction of the Montebello MSF site option or the Montebello MSF At-Grade Option would not create any new land uses that could generate conflicts with land uses adjacent to the alignment, or conflict with local land use plans, policies, or regulations; no impact would occur.

3.10.7 Project Measures and Mitigation Measures

3.10.7.1 Project Measures

The project measures are design features, best management practices, or other measures required by law and/or permit approvals that avoid or reduce potential impacts. These measures are requirements of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option.

PM TRA-1 would be implemented for the construction of the Build Alternatives. For more details on this measure, see Section 3.14.7.1 in Section 3.14, Transportation and Traffic.

3.10.7.2 Mitigation Measures

As identified in **Section 3.10.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on land use and planning under Impact LUP-1 (Established Community) and Impact LUP-2 (Plan, Policy, or Regulation Conflicts). The MSF site options would have less than significant impacts under Impact LUP-1 and no impact under Impact LUP-2. No mitigation measures would be required for operation or construction. **Table 3.10-3 i**dentifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s). A**ll impacts would be less than significant for all alternatives and design options.**

3.10.8 Significance After Mitigation

As identified in **Table 3.10-3, no mitigations are required for** the Build Alternatives and Build Alternatives with the design option(s). Less than significant impacts would remain.

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Table 3.10-3. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact LUP-1: Established Community	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact LUP-2: Plan, Policy, Or Regulation	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.11 Noise and Vibration

3.11.1 Introduction

This section discusses the Project setting in relation to noise and vibration. It describes existing conditions, current regulatory setting, and potential impacts from operation and construction of the Build Alternatives and the No Project Alternative. Information in this section is based on the Eastside Transit Corridor Phase 2 Noise and Vibration Impacts Report (Appendix L).

3.11.2 Regulatory Framework

3.11.2.1 Definitions

3.11.2.1.1 Noise

Noise is defined as unwanted sound. Several factors affect the actual level and quality of sound (or noise) as perceived by the human ear: loudness, pitch (or frequency), and time variation. The loudness, or magnitude, of noise determines its intensity and is measured in decibels (dB) that can range from below 40 dB (the rustling of leaves) to over 100 dB (a rock concert). Pitch describes the character and frequency content of noise, such as the very low "rumbling" noise of stereo subwoofers or the very high-pitched noise of a piercing whistle. Finally, the time variation of noise sources can be characterized as continuous, such as a building ventilation fan; intermittent, such as the passing of trains; or impulsive, such as pile-driving activities during construction. From this point forward in the document, the word "noise" means "sound."

Various sound levels are used to quantify noise from transit sources, including a sound's loudness and tonal character. For example, the A-weighted decibel (dBA) is commonly used to describe the overall noise level because it more closely matches the human ear's response to audible frequencies. See **Table 3.11-1**.

Table 3.11-1. A-Weighted Noise Descriptors

Noise Metric	Description
Lmax	Represents the maximum noise level that occurs during an event such as a bus or train passing by.
Leq(h)	Represents a level of constant noise with the same acoustical energy as the fluctuating noise levels observed during a given interval, such as one hour.
Ldn	The 24-hour day-night noise level that includes a 10-dBA penalty for all nighttime activity between 10 pm and 7 am. The 10-dBA penalty is an adjustment factor added to all nighttime noise events to reflect the heightened sensitivity of residents who are sleeping.

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration (FTA), Washington DC, Sept 2018.
Key:
Lmax = maximum noise level Leq(h) = average hourly equivalent noise level Ldn = average day-night noise level

Since human hearing is less responsive to low frequency noise, the tonal character of A-weighted noise levels reflects mid- to high-frequency sounds, which are more audible to most listeners. Since the A-weighted decibel scale is logarithmic, a 10 dBA increase in a noise level is generally perceived as a doubling of loudness, while a 3 dBA increase in a noise level is just barely perceptible to the human ear.

3.11.2.1.2 Vibration

Ground-borne vibration (GBV) associated with vehicle movements is usually the result of uneven interactions between wheels and the road or rail surfaces. Examples of such interactions (and subsequent vibrations) include train wheels over a jointed rail, an untrue rail car wheel with "flats," and a motor vehicle wheel hitting a pothole, a manhole cover, or any other uneven surface. The typical background levels refer to ambient ground vibrations not related to any specific transportation source (e.g., naturally occurring ground vibration). This level is assumed to be fairly constant from site to site, except in the vicinity of active fault lines.

Transit vibration typically travels along the surface of the ground. Depending on the geological properties of the surrounding terrain and the type of building structure exposed to transit vibration, vibration propagation (i.e., the method by which vibration waves travels through a medium, such as the ground or building structures) can be more or less efficient. Buildings with a solid foundation set in bedrock are "coupled" more efficiently to the surrounding ground and experience relatively higher vibration levels than buildings located in sandier soil. On the other hand, heavier buildings (such as masonry structures) are less susceptible to GBV than wood-frame buildings because they absorb more of the vibration.

Vibration induced by passing vehicles can generally be discussed in terms of displacement, velocity, or acceleration. However, human responses and responses by monitoring instruments and other objects are most accurately described with velocity. Therefore, the vibration velocity level is used to assess vibration impacts from transit projects.

To describe the human response to vibration, the average vibration amplitude (called the root mean squared [RMS] amplitude) is used to assess impacts. The RMS velocity level is expressed in inches per second (ips) or VdB. All VdB vibration levels are referenced to 1 micro-inch per second (µips). Similar to noise dB, vibration dBs are dimensionless because they are referenced to (i.e., divided by) a standard level (such as $1x10^{-6}$ ips in the U.S.). This convention allows compression of the scale over which vibration occurs, such as 40-100 VdB rather than 0.0001 ips to 0.1 ips.

The FTA has established noise and vibration assessment methodologies and criteria for transit projects. These are applied here. For future construction, Metro would make every effort to be consistent with local noise ordinances based on Metro baseline specifications Section 015619, Construction Noise and Vibration Control, although as a state-chartered transportation agency it is not required to do so.

3.11.2.2 Federal

3.11.2.2.1 Noise

Operational Noise

The FTA's guidance manual, the *Transit Noise and Vibration Impact Assessment Manual*, September 2018, presents the basic concepts, methods, and procedures for evaluating the extent and severity of noise impacts from transit projects and is used in this analysis. Federal guidance from FTA is relevant to this CEQA assessment as the State of California does not provide a specific assessment methodology; therefore, the FTA guidance is applied to assess noise and vibration. Transit noise impacts are assessed based on land use categories and sensitivity to noise from transit sources under the FTA guidelines. As summarized in **Figure 3.11.1**, the FTA noise impact criteria are defined by two curves that allow project noise levels to increase as existing noise increases up to a point, beyond which an impact is determined to occur based on project noise alone. The FTA land use categories and applicable noise metrics are described in **Table 3.11-2**.

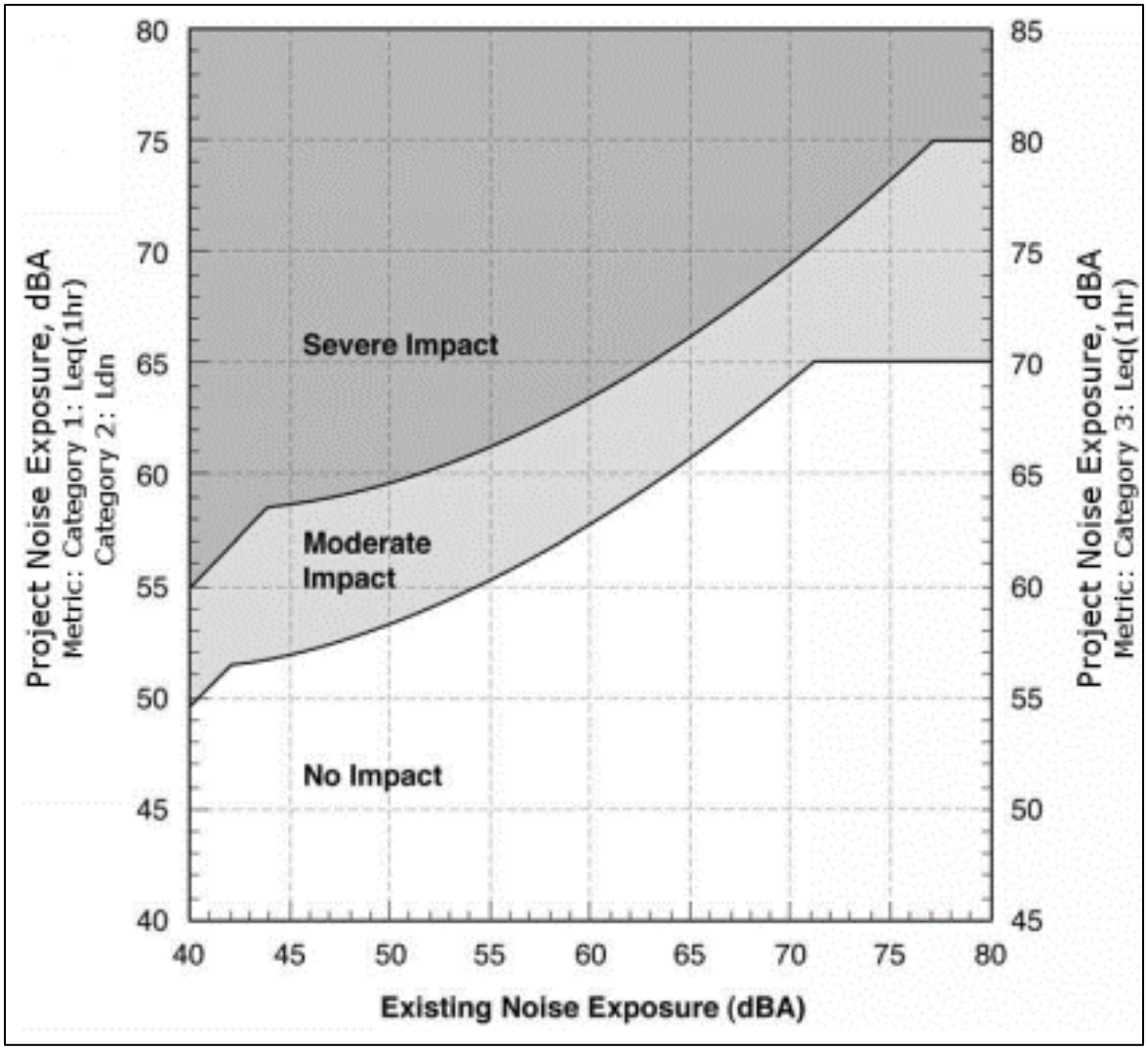
Table 3.11-2. FTA Land Use Categories and Noise Metrics

Land Use Category	Noise Metric	Description
1	Leq(h)	Tracts of land set aside for serenity and quiet, such as outdoor amphitheaters, concert pavilions, and historic landmarks.
2	Ldn	Buildings used for sleeping, such as residences, hospitals, hotels, and other areas where nighttime sensitivity to noise is of utmost importance.
3	Leq(h)	Institutional land uses with primarily daytime and evening uses, including schools, libraries, churches, museums, cemeteries, historic sites, parks, and certain recreational facilities used for study or meditation.

Source: Transit Noise and Vibration Impact Assessment Manual, FTA, Washington DC, Sept 2018.

The FTA noise criteria create two categories of impact: moderate and severe impact. The moderate impact threshold defines areas where the change in noise is noticeable, but may not be sufficient to cause a strong, adverse community reaction. The severe impact threshold defines the noise limits above which a significant percentage of the population would be highly annoyed by new noise. The level of impact at any specific site can be established by comparing the predicted future project noise level at the site to the existing noise level there. For example, for residences and other FTA Category 2 land uses with an existing noise level of 65 dBA, a moderate impact would occur with a future project noise level in the range from 61 to 66 dBA, while a severe impact would occur with a future project noise level greater than 66 dBA.

The FTA noise impact criteria for all three land use categories are summarized in **Figure 3.11.1.**



Source: Transit Noise and Vibration Impact Assessment Manual, FTA, Washington DC, Sept 2018.

Figure 3.11.1. Noise Impact Criteria for Transit Projects

The average day-night noise level (Ldn) over a 24-hour period is used to characterize noise exposure for residential areas (FTA Category 2). The Ldn descriptor describes a receptor's cumulative noise exposure from all events over a full 24 hours, with events between 10 pm and 7 am increased by 10 dB to account for greater nighttime sensitivity to noise. Similarly, the average hourly equivalent noise level (Leq(h)) during the facility's peak operating period is used to characterize noise exposure at all other noise-sensitive land uses, such as schools and libraries (FTA Category 3) or outdoor amphitheaters (FTA Category 1).

Construction Noise

The FTA guidelines suggest evaluating prototypical construction scenarios against local ordinances or the FTA one-hour Leq thresholds summarized in **Table 3.11-3** if no other applicable criteria are available. The FTA design guidelines, for example, are evaluated against noise levels from the two loudest pieces of equipment that, under worst-case conditions, are assumed to operate continuously for one hour during both the daytime (7 am to 10 pm) and nighttime (10 pm to 7 am) periods.

Table 3.11-3. FTA Recommended Construction Noise Limits (dBA)

Land Use Category	Construction Period	
	Daytime (7 am – 10 pm)	Nighttime (10 pm – 7 am)
Residential	90	80
Commercial (non-residential)	100	100
Industrial	100	100

Source: Transit Noise and Vibration Impact Assessment Manual, FTA, Washington DC, Sept 2018.
Note:
The recommended construction evaluation criteria are evaluated against the one-hour equivalent noise level from the two loudest pieces of equipment.

3.11.2.2.2 Vibration

Operational and Construction Vibration

The FTA vibration criteria for evaluating GBV impacts from transit operations (such as train passbys) and construction at nearby sensitive receptors are summarized in **Table 3.11-4**. These vibration criteria are related to RMS GBV levels that are expected to result in human annoyance. The FTA's criteria to distinguish projects with a frequent event category is defined as more than 70 events per day. The FTA frequent criteria were used to assess operational GBV impacts along the Build Alternatives. The FTA infrequent criteria were used to assess construction GBV along the Build Alternatives.

The vibration criteria levels summarized in **Table 3.11-4** are defined in terms of human annoyance for land use categories such as high sensitivity (Category 1), residential (Category 2), and institutional (Category 3). In general, the vibration threshold of human perceptibility is approximately 65 VdB.

For above-grade (i.e., at-grade or elevated) sections of transit systems, LRT operations are typically not a significant source of vibration-induced ground-borne noise (GBN), except for buildings that have sensitive interior spaces and that are well insulated from exterior noise. Airborne noise often masks GBN for above ground transit system sections.

GBN from underground sections of transit systems may be audible and the FTA's guidance manual, the *Transit Noise and Vibration Impact Assessment Manual*, September 2018, provides procedures for evaluating the extent and severity of noise impacts from below grade transit alignments. The FTA vibration criteria for evaluating GBN impacts from transit operations (such as train passbys) and construction at nearby sensitive receptors are summarized in **Table 3.11-4**. The frequent event category is applied for train passbys.

Table 3.11-4. Ground-Borne RMS Vibration Impact Criteria for Annoyance During Transit Operations and Construction (VdB)

Receptor Land Use		GBV Impact Levels RMS Vibration Levels (VdB)[1]			GBN Impact Levels dB re 20 micro Pascals		
Category	Description	Frequent Events[2]	Occasional Events[2]	Infrequent Events[2]	Frequent Events[2]	Occasional Events[2]	Infrequent Events[2]
1	Buildings where low vibration is essential for interior operations	65	65	65	N/A	N/A	N/A
2	Residences and buildings where people normally sleep	72	75	80	35 dBA	38 dBA	43 dBA
3	Daytime institutional and office use	75	78	83	40 dBA	43 dBA	48 dBA
Specific Buildings	TV/Recording Studios/Concert Halls	65	65	65	25 dBA	25 dBA	25 dBA
	Auditoriums	72	80	80	30 dBA	38 dBA	38 dBA
	Theaters	72	80	80	35 dBA	43 dBA	43 dBA

Source: Transit Noise and Vibration Impact Assessment Manual, FTA, Washington DC, Sept 2018.
Notes:
1 Ground-borne vibration levels are referenced to 1x10-6 inches per second (VdB re 1 micro-inch/sec).
2 The frequent event category is defined as more than 70 events per day, the occasional event category as 30 to 70 events per day, and the infrequent category as fewer than 30 events per day.
Key:
RMS = Root mean square N/A = not applicable dBA = A-weighted decibels vdB = vibration decibels

3.11.2.3 State

The state of California does not have applicable limits for operational or construction noise, or for operational or construction vibration.

3.11.2.4 Local

Local ordinances regarding noise and vibration are typically "qualitative" in that they refer to noise "annoyance" from public disturbances. However, several local jurisdictions do limit the period of construction activities to the daytime period when ambient noise levels are typically higher, and most people are not sleeping. During construction, Metro's contractor would conduct activities to be consistent with local noise ordinances whenever feasible and reasonable, although as a state-chartered transportation agency, Metro is not required to do so.

3.11.3 Methodology

3.11.3.1 Screening Assessment

A screening assessment using screen distances identified in Table 4-1 and Table 4-2 in Appendix L was conducted to identify the location and land use category of noise- and vibration-sensitive receptors along the Build Alternatives. These include residential areas and buildings such as hospitals, schools, churches, parks, and noise-sensitive historic resources. The list of noise-sensitive community facilities and historic resources was obtained through analysis from the Eastside Transit Corridor Phase 2 Cultural Resources Impacts Report (Appendix E) and the Community and Neighborhoods Impacts Report (Appendix M).

3.11.3.2 Noise Modeling Methodology

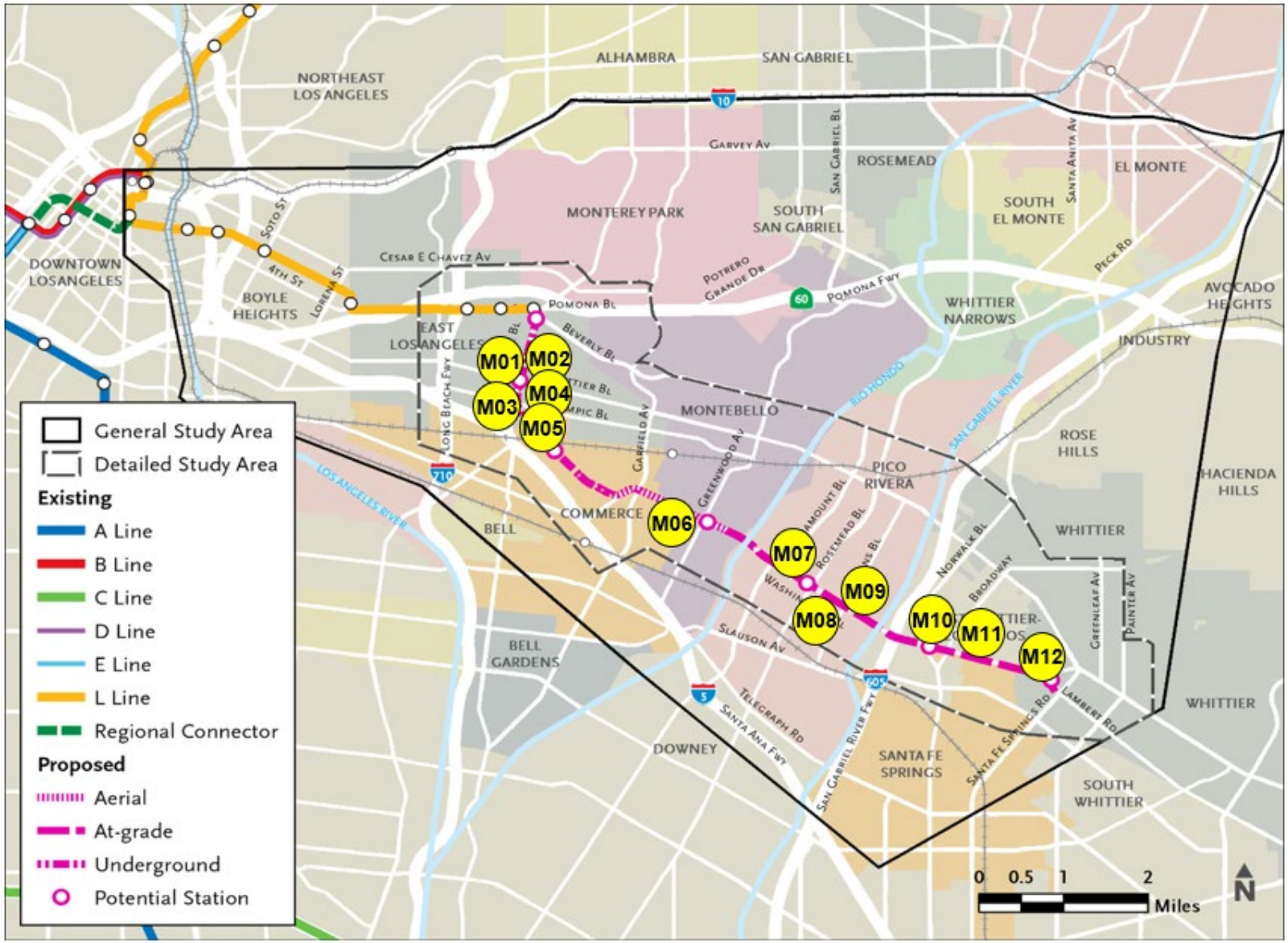
To determine the existing background noise levels at sensitive receptors in the vicinity of the proposed transit rail corridor alignment, a noise monitoring program was conducted at 12 representative locations selected based on the FTA guidelines (shown in **Figure 3.11.2**). An average hourly equivalent noise level (or Leq(h) in dBA) was measured during the peak hour at non-residential or institutional sites (such as schools and parks) and continuously over a 24-hour period at residential sites to determine the average ambient conditions during a typical weekday. The noise measurements document existing noise sources along the DSA, such as existing aircraft traffic overhead and background traffic. At residences and other FTA Category 2 land uses (described in **Table 3.11-2**), 24-hour Ldn were reported in accordance with the FTA guidelines. Similarly, peak-hour equivalent noise levels were measured at non-residential or institutional receptors such as schools and parks.

Sites were strategically selected to document existing noise exposure at different residential clusters along the proposed alignment. The noise levels from these existing sources were adjusted to reflect distance propagation to other nearby clusters of residences and other noise-sensitive uses where appropriate. The measured noise levels were applied to these other noise-sensitive receptor sites based on their similarities to nearby roadways and intersections, land use densities, and geographical distance from the monitoring sites.

The sound-level meters that were used to measure current noise conditions meet American National Standards Institute (ANSI) standards for Type I meters. The sound-level meters were calibrated before and after each measurement. All measurements were conducted according to ANSI Standard S1.13-2005, Measurement of Sound Pressure Levels in Air. All noise levels are reported in dBA, which approximate the sensitivity of human hearing.

3.11.3.3 Noise Evaluation

Noise impacts were evaluated using the FTA's "Detailed Assessment" guidelines to reflect the type of input data available more accurately. However, noise impacts from the stationary sources (such as the MSF site options) were evaluated using the FTA's "General Assessment" guidelines to reflect a single large stationary source (FTA 2018). Similarly, although baseline vibration measurements were not conducted, vibration impacts were evaluated using the FTA's "General Assessment" guidelines to reflect average or typical ground conditions.



Source: CDM Smith/AECOM JV, 2022.

Figure 3.11.2. Representative Noise Monitoring Locations

3.11.3.4 Construction Noise Assumptions

Construction noise differs from transit noise in two ways.

- Construction noise lasts for the duration of the construction contract, and it is usually limited to daylight hours when most human activity occurs. Construction activities are generally of a short duration and, depending on the nature of construction operations, could last from seconds (such as for a truck passing by) to months (such as when constructing a bridge at an overpass). Transit noise occurs during all periods of the day and night and is a permanent part of the acoustical environment.

- Construction noise is also intermittent and depends on the type of operation, location, and function of the equipment, as well as equipment use. Transit noise, on the other hand, is more continually present after construction activities are completed.

Details of the proposed construction activities are normally developed in the later project stages after a transit agency retains the services of the construction contractor for the Project. Therefore, short-term construction impacts from the Project were evaluated based on prototypical construction tasks and equipment summarized in the Eastside Transit Corridor Phase 2 Construction Impacts Report (Appendix P).

Based on the FTA guidelines, the two loudest pieces of equipment (such as jack hammers and dump trucks) were selected to operate at full power over a period of one hour. The cumulative noise level at the closest noise-sensitive receptor was used to estimate the level of impact. The resultant noise level was compared with the FTA recommended construction noise limits from **Table 3.11-3** to determine the onset of impact. Conservative assumptions (such as no shielding effects from existing structures or temporary noise barriers) were used to estimate the potential for impact.

The following construction scenarios were selected to be representative of the types of activities expected during Project construction: track-laying (at-grade), track-laying (aerial), excavation and boring, station construction, bridge construction, parking facility construction, and MSF site option construction. The equipment types and the maximum FTA reference noise levels are summarized in **Table 3.11-5** for the selected prototypical construction scenarios using the two loudest pieces of equipment.

Table 3.11-5. Construction Scenario Equipment Noise Reference Lmax Levels[1] for the Two Loudest Pieces of Equipment for Each Scenario (dBA)

Equipment Type	Construction Scenario		Stations	Bridges	Parking	MSF
	At-grade	Aerial				
Crane, Derrick	--	88	--	--	88	--
Grader	85	--	85	85	85	--
Jack Hammer	--	--	--	88	--	--
Loader	--	--	--	--	--	85
Tie Inserter	85	--	--	--	--	--
Truck	--	88	88	--	--	88

Source: Morgner, 2019 and 2021.
Notes:
1 Default FTA noise levels reported at a reference distance of 50 feet.
Key:
"--" = Equipment type not included in the selected construction scenario.

3.11.3.5 Operational Noise Assumptions

The reference noise levels for each of the proposed noise sources (such as train passbys and wheel squeal) and other operating characteristics (such as average dwell times and source heights), are summarized in **Table 3.11-6**. These data are based on default FTA data, as well as information included in other recent Metro studies, such as the *Crenshaw/LAX Transit Corridor Final Environmental Impact Statement (EIS)/EIR* (2011). Operations data is summarized in **Table 3.11-7** for various peak and off-peak periods of the day. The assumptions used in this evaluation are listed after the tables.

Table 3.11-6. Summary of Noise Source Reference Data

Noise Source			Duration (sec)	Height(ft)	Noise Level (dBA)[1]	
Category	Name	Description			Lmax	SEL
LRT	Passbys	Passby operations	--[2]	2	78[3]	80
	Warning device	Onboard bell	5	10	76[3]	79[3]
	Switches/ crossovers	Special trackwork	--	0	86[3]	88
	Wheel squeal	Curves <65 feet	4	0	100	136
	Auxiliary equipment	Stations only	30[4]	10	70	106
Crossing bell	Grade crossing bell	Grade crossing	15[3]	10	72[5]	108
Parking	Park and ride	Parking facility	--	10	56	92
Yard	Maintenance yard	Yard	--	2	82	118

Source: Morgner, 2019/2020.
Notes:
1 All noise levels are reported in A-weighted decibels at a reference distance of 50 feet and a reference speed of 50 mph for passbys only. Lmax represents the maximum noise level during an event and the sound exposure level (SEL) converts the cumulative noise energy of an event to one second. Default FTA reference levels are reported except where noted.
2 "--" means not applicable. Duration time is not used to compute passby and facility noise levels.
3 Noise levels and duration times are based on the *Metro Gold Line Phase II – Pasadena to Montclair Draft EIS/EIR Study* (April 2004).
4 The default dwell time is 30 seconds at all proposed stations.
5 The Lmax level for the crossing bell reflects a 5-dBA penalty to account for the intrusive character of the noise source.

Table 3.11-7. Build Alternatives Operating Characteristics

Time Period	Hours	Frequency of Service[1]	Consist Size[2]
Early morning	4:00 am to 6:30 am	15	3
AM peak	6:30 am to 8:30 am	5	3
Midday	8:30 am to 4:00 pm	10	3
PM peak	4:00 pm to 7:00 pm	5	3
Early evening	7:00 pm to 8:00 pm	10	3
Late evening	8:00 pm to 1:30 am	15	3

Source: Metro, 2010/2020.
Notes:
1 The frequency of service (or headway time) is reported in minutes.
2 Consist size is the number of LRT vehicles coupled together into one train.

- Total daily operations were determined based on 5-minute headways during peak periods of the day, 10-minute headways during off-peak periods, and 15-minute headways during the late night and early morning periods.
- Operations data is summarized in **Table 3.11-7** for various peak and off-peak periods of the day. This service frequency is representative of a typical weekday, which includes an operating period between 4:00 am and 1:30 am.
- A three-vehicle train was assumed for all periods of the day and night.
- At stations, an average idling time of 30 seconds was used at each of the designated station stops to compute the noise contribution from stationary or auxiliary vehicle noise (such as rooftop mechanical equipment).
- Proposed train operating speeds were taken from speed profiles included in the track alignment designs, based on vehicle performance characteristics and system speed limits for the Project corridor, with a minimum speed of 20 mph and a maximum of 55 mph.
- Following Metro operating practices, train operators sound the 75 dBA warning device (i.e., the "quacker") prior to all gate-protected crossings, starting approximately 300 feet prior to the crossing. At speeds greater than 35 mph, noise from the quacker adds less than 1 dB to the noise exposure caused by light-rail train operations. Because train speeds greater than 35 mph were assumed for all gate-protected crossings where the quacker would be sounded, the quacker was not included as a separate source in the noise analysis. It is assumed that emergency train horns would rarely be used and were not included in this analysis.
- The Project would operate on a concrete-embedded continuous welded rail (CWR) track at-grade.
- Wheel impacts at special trackwork are based on a Lmax of 86 dBA at 50 feet.
- Since all the curves along revenue-service track are expected to be longer than 65 feet (the distance associated with the onset of wheel squeal), no wheel squeal is predicted anywhere along the Build Alternatives. Although there is a possibility of wheel squeal at the MSF due to the shorter-radius curves, these events are expected to occur infrequently.

- The vibration impacts from LRT vehicle operations were predicted using the default FTA ground surface vibration curves summarized in Appendix L. These curves were adjusted to reflect local conditions such as changes in train speed, special trackwork such as switches, and coupling to building foundations for residential wood-frame houses.

- In lieu of a solid transit barrier or parapet, open railings with no acoustical properties were used as part of the noise modeling analysis for all elevated or aerial sections of the Build Alternatives. However, the edge of the aerial structure (which is a solid footing for the railing and has an approximate height of six inches) was included in the noise modeling analysis to provide some acoustical benefits.

- Vehicular noise from the activities at proposed parking facilities was also included in the modeling analysis using the FTA "General Assessment" guidelines.

3.11.3.6 Vibration Monitoring Methodology

Since the Project is proposed along an alignment without an existing rail corridor, no existing vibration measurements were conducted. In general, rubber-tired vehicles with a soft suspension system do not contribute to vibration impacts; therefore, since there are only rubber-tired vehicles in the area, no existing vibration measurements were conducted. Unlike noise, where the Project criteria are based on existing conditions, the vibration criteria are based on future service frequency alone.

The default FTA ground-surface vibration curves were used to predict future vibration levels from Metro LRT vehicles along the proposed Build Alternatives. The FTA "General Assessment" guidelines were used to determine future impacts from vibration under the proposed Build Alternatives.

3.11.3.7 Construction Vibration Assumptions

A qualitative analysis was prepared to estimate the potential for vibration impacts during temporary construction activities. Based on the FTA guidelines, the equipment with the highest reference level (such as pile drivers) was selected. The maximum vibration level at the closest vibration-sensitive receptor was used to estimate the level of impact. The resultant vibration levels were compared with the FTA ground-borne RMS vibration impact criteria for annoyance from **Table 3.11-4** to determine the onset of impact. Conservative assumptions were used to estimate the potential for impact.

3.11.3.8 Operational Vibration Assumptions

Future GBV levels from LRT passbys were predicted using the default FTA ground surface vibration curves summarized **Figure 3.11.1**. These curves were adjusted per the FTA methodology to reflect local conditions such as changes in train speed, special trackwork such as switches, aerial track structures, ground type and different building construction types (e.g., masonry versus timber).

3.11.3.9 Ground-Borne Noise

GBN can occur when a vibration source such as a train passby causes floors and walls to vibrate in nearby buildings, resulting in a low frequency rumble sound within the building. GBN is determined by applying adjustment factors to the predicted train vibration level that reflect the surrounding ground.

FTA has developed impact criteria to assess the potential for GBN due to transit project construction and operations (U.S. Department of Transportation 2006). Impacts of GBN typically occur from underground transit construction and operations. Where vibration impacts are predicted mitigation measures would be provided.

3.11.3.10 Roadway Traffic Noise Assumptions

Regarding traffic noise, there is a reduction in VMT between the No Project Alternative and Build Alternatives. As discussed in Section 3.14, Transportation and Traffic, and the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report (Appendix N), VMT decreases for all Build Alternatives as compared to the No Project. Since noise is logarithmic, it takes a halving of the traffic volumes (or a 50 percent decrease), or a doubling of the traffic volumes (or a 100 percent increase) for the noise levels to change by 3 dBA (FTA 2018). The decrease in VMT would not result in a halving of traffic volumes, and, thus, the decrease in VMT would not be acoustically perceptible. Therefore, the Build Alternatives would result in an insignificant change in traffic noise from the No Project Alternative. As a result, no further traffic noise analysis was conducted.

3.11.3.11 Area of Potential Impact

In accordance with the *FTA Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), a screening assessment was conducted to determine the location and number of noise- and vibration-sensitive receptors along the Project corridor. The FTA screening distances of 350 feet (unobstructed noise screening distance) and 150 feet (unobstructed vibration screening distance) were used to develop the population of receptors included in the noise and vibration modeling analyses. The screening distances were applied from the centerline of the proposed transit corridors to determine the area of potential impact (API).

The API for construction activities varies, depending on factors such as types and numbers of construction equipment operating in an area at the same time and the specific location and distance between the construction activity and the sensitive receptor. The specific types and locations of equipment in any one location are difficult to predict at this stage of project development. Therefore, the API that is used to assess operational impacts is also used to assess the potential for construction impacts.

3.11.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a project would have a significant impact related to noise if it would result in:

Impact NOI-1: Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

Impact NOI-2: Generation of excessive ground-borne vibration or ground-borne noise levels.

Appendix G of the State CEQA Guidelines also includes a significance criterion for impacts relating to a project located within the vicinity of private airport airstrip or an airport land use plan, or that is located within two miles of public airport that does not have an adopted airport land use plan. The

nearest public airport or airstrip to the Build Alternatives is Whittier Air Strip, which at the nearest point is over four miles to the north; therefore, this criterion is not applicable and was not evaluated.

CEQA does not provide quantitative thresholds for a substantial operational noise impact or a significant adverse vibration impact. The thresholds for determining the significance of operational impacts for this analysis are based on the *FTA Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), also referred to as the FTA Guidance Manual, and are detailed below:

- Operational Noise: As discussed in **Section 3.11.2.2**, the FTA Guidance Manual presents both moderate and severe noise impact thresholds. The severe noise impact criteria are used as the operational noise significance threshold for the Project.

- Construction Noise: FTA suggests there may be adverse community reaction to daytime construction noise when levels exceed 80 dBA at residences for work at night, 90 dBA at residences for work during the day, and 100 dBA at commercial uses for work at night or during the day. Therefore, a significance threshold of 80 dBA and 90 dBA at residences during the night and day respectively and 100 dBA at commercial uses is used as the construction noise significance threshold for the Project.

- Operational Vibration: The FTA has established specific operational vibration criteria for transit projects in the FTA Guidance Manual. For frequent annoyance from operational vibration (i.e., more than 70 events per day), the FTA considers an exceedance of 72 VdB at residential or other Category 2 land uses as an impact. Therefore, a significance threshold of 72 VdB at residential or other Category 2 land use is considered as the operational vibration significance threshold for the Project.

- Construction Vibration: The FTA has established specific construction vibration criteria for transit projects in the FTA Guidance Manual.

    - For infrequent annoyance from construction vibration (i.e., less than 30 events per day), the FTA considers an exceedance of 80 VdB at residential or other Category 2 land uses as an impact. Therefore, a significance threshold of 80 VdB at residential or other Category 2 land use is considered as the construction vibration significance threshold for the Project.

    - For structural damage from construction vibration, the FTA considers an exceedance of ppv 0.2 ips for typical timber and masonry residences as an impact. An exceedance of ppv 0.2 ips for typical timber and masonry residences is Therefore, a significance threshold of ppv 0.2 ips for structural damage is considered as the construction vibration significance threshold for the Project.

3.11.5 Existing Setting

The locations at which existing background noise levels were measured are shown in **Figure 3.11.2** and identified in **Table 3.11-8**. **Table 3.11-8** also shows the measured day-night noise levels along the Project corridor Build Alternatives with noise levels ranging from 57 dBA to 71 dBA. Measured peak-hour noise levels along the Project corridor Build Alternatives range from 57 dBA to 73 dBA. These levels are representative of active urban land uses. Based on the monitoring results, the high ambient noise

conditions identified in **Table 3.11-8** reflect the proximity of residences to heavily used transportation corridors.

The DSA for all Build Alternatives is dominated by busy auto-oriented corridors, including city streets and congested highways. Therefore, although no vibration measurements were conducted, current ambient vibration levels are dominated by vehicular traffic, particularly heavy trucks at locations adjacent to active roadways such as Atlantic Boulevard.

Table 3.11-8. Baseline Noise Levels Measured along the Project Corridor (in dBA)

Receptor		Alternative	Land Use		24-Hr Ldn	Pk-Hr Leq
ID No.[1]	Description		Type	FTA[2]		
M01	376 S Woods Avenue	1,2,3	SFR	2	62	63
M02	5224 ½ Via Corona Street	1,2,3	SFR	2	66	65
M03	743 Amalia Avenue	1,2,3	SFR	2	58	59
M04	740 ½ Woods Avenue	1,2,3	SFR	2	57	57
M05	668 S Atlantic Boulevard	1,2,3	School	3	--	63
M06	860 Washington Boulevard	1,2	SFR	2	71	68
M07	6735 Keltonview Drive	1	SFR	2	67	64
M08	9122 Washington Boulevard	1	Museum	3	--	73
M09	6768 Washington Boulevard	1	SFR	2	70	67
M10	7857 Milna Avenue	1	SFR	2	71	67
M11	7904 Broadway Avenue	1	SFR	2	66	63
M12	7972 Calobar Avenue	1	SFR	2	69	67

Source: AECOM, November 2010; Morgner, December 2019 and July 2021.
Notes:
1 Refer to **Figure 3.11.2** and Attachment A of Appendix L of the Draft EIR for locations of representative noise measurements.
2 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
Key:
SFR = Single-Family Residence "--" = The day-night noise level is not applicable to institutional land uses

3.11.6 Impact Evaluation

3.11.6.1 Impact NOI-1: Ambient Noise

Impact NOI-1: Would a Build Alternative result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

3.11.6.1.1 Alternative 1 Washington

Operational Impacts

At residences and other FTA Category 2 land uses sensitive to nighttime activity, such as hospitals, the Ldn descriptor was used to reflect the particularly heightened sensitivity to nighttime noise. To evaluate the change in noise levels from the existing condition, the predicted future noise levels from operation of Alternative 1 are summarized in **Table 3.11-9** for the same representative receptor

locations used to monitor current noise levels (see **Figure 3.11.2**) based on FTA criteria. The criteria are based on land use category, existing noise levels, and projected Project noise levels.

The Ldn day-night noise levels at residences along the proposed alignment are predicted to range from 55 dBA at representative Receptor M11 (single-family residences along Broadway Avenue) to 66 dBA at representative Receptor M06 (single-family residence at 860 Washington Boulevard). At the selected representative receptors, only the noise levels at representative Receptors M06 and M07 are predicted to equal or barely exceed the FTA moderate impact criteria.

Corridor-wide Project noise levels along Alternative 1 are predicted to exceed the FTA moderate impact criteria at 28 residences and at one FTA Category 3 receptor (a contractor's license school along Washington Boulevard opposite Crossway Drive). These moderate impacts are discussed below. No noise level exceedances are predicted above the FTA severe impact criteria at sensitive receptors and thus, no significant noise impacts would occur. The predicted corridor-wide noise impacts are summarized in **Table 3.11-10** and shown in Attachment A of Appendix L. Note that the receptors identified in the table are representative receptors which are intended to characterize noise levels for given residential areas and do not each represent an individual property.

Table 3.11-9. Summary of Project Noise Levels at Representative Receptors from Alternative 1 Washington (in dBA)

Receptor		Land Use		Existing Noise	Build Noise[4]	FTA Criteria[2]		Significant Impact? (Build noise greater than FTA "Severe" Criteria)
ID No.[1]	Noise Measurement Location	Type	FTA[3]			"Moderate"	"Severe"	
M01	376 S Woods Avenue	SFR	2	62	N/A	59	65	No
M02	5224 ½ Via Corona Street	SFR	2	66	N/A	62	68	No
M03	743 Amalia Avenue	SFR	2	58	N/A	57	63	No
M04	740 ½ Woods Avenue	SFR	2	57	N/A	57	63	No
M05	668 S Atlantic Boulevard	School	3	63	N/A	65	71	No
M06	860 Washington Boulevard	SFR	2	71	**66**	66	71	No
M07	6735 Keltonview Drive	SFR	2	67	**64**	63	68	No
M08	9122 Washington Boulevard	Museum	3	73	61	71	77	No
M09	6768 Washington Boulevard	SFR	2	70	61	64	70	No
M10	7857 Milna Avenue	SFR	2	71	63	65	70	No
M11	7904 Broadway Avenue	SFR	2	66	55	62	68	No
M12	7972 Calobar Avenue	SFR	2	69	61	64	70	No

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** or Attachment A of Appendix L of the Draft EIR for receptor locations.
2 FTA moderate impacts are bold and underlined.
3 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
4 The "Build Noise" levels represent the future Project noise only. The cumulative future ambient noise with the Project would be equal to the "Existing Noise" logarithmically added to the "Build Noise."
Key:
SFR = Single-Family Residence MFR = Multi-Family Residence N/A = not applicable (no airborne noise along tunnel sections)

Table 3.11-10. Corridor-Wide Project Noise Impacts Along Alternative 1 Washington

Nearest ID No.	Location	Land Use Type	Impact (Moderate or Severe)	No. Residences Affected	Major Source(s) Contributing to Impact
M06	Kelly House, Washington Boulevard	SFR	Moderate	1	LRT passbys
M07	Washington Boulevard at Paramount Boulevard	MFR	Moderate	10	LRT Bells and LRT passbys
M09	Washington Boulevard at Bonnie Vale Place Washington Boulevard at Lemoran Avenue Pico Vista Road	SFR SFR SFR	Moderate Moderate Moderate	2 1 0	Switches and LRT passbys
M10	Washington Boulevard at Pioneer Boulevard	SFR	Moderate	3	LRT Bells and LRT passbys
M11	Washington Boulevard at Ridgeview Lane	SFR	Moderate	1	LRT passbys
M12	Sorensen Avenue	SFR	Moderate	8	LRT Bells and LRT passbys
	Crowndale Avenue	SFR MFR	Moderate Moderate	1 1	Switches and LRT passbys
Total FTA Category 2			Severe Moderate Total	0 28 28	

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Note:
See **Figure 3.11.2** and Attachment A of Appendix L of the Draft EIR for receptor locations.
Key:
SFR = Single-Family Residence MFR = Multi-Family Residence

Passby Impacts from LRT Vehicles

Noise along the Alternative 1 would be primarily due to passbys from LRT vehicles. Lmax's along the Alternative 1 from LRT train passbys are predicted to range from 67 dBA at Receptor M11 to 81 dBA at representative Receptor M06 (both single-family residences). The dominant noise sources from LRT passbys along the proposed transit corridor would be wheel-rail and aerodynamic noise. Noise generated by passby LRT vehicles would not exceed the FTA moderate noise impact criteria at any sensitive receptors along Alternative 1. The impact would be less than significant.

Impacts from At-Grade Crossings

There are 10 at-grade crossings along Alternative 1, all east of South Greenwood Avenue in Montebello. However, the closest noise-sensitive receptors at most grade crossings are shielded by commercial buildings. At Pioneer Boulevard, for example, Lmax noise levels from grade crossings at the closest residence where impacts are predicted are 76 dBA for LRT vehicle warning bells. FTA moderate noise impacts are predicted at 15 residences in the vicinity of at-grade crossings along Alternative 1. At Sorensen Avenue, Paramount Boulevard, and Pioneer Boulevard, these impacts would be partially due to LRT passbys and warning bells. The impact would be less than significant.

Impacts from Special Trackwork

Special trackwork (such as turnouts and crossovers) is proposed at several locations along Alternative 1 to provide operational flexibility. Turnouts or switches allow trains to move from one track to another, while crossovers allow trains to move between parallel tracks. Noise from switches or crossovers comes from a small gap in the central part of the switch known as a frog. When the steel LRT wheel hits this gap, train noise levels could increase up to 8 dBA in the vicinity of the switch. As shown in **Table 3.11-10**, switches are primary sources contributing to moderate noise impacts at representative Receptors M09 and M12. Noise generated by special trackwork would not exceed the FTA moderate noise impact criteria at any sensitive receptors along Alternative 1. The impact would be less than significant.

Impacts from Traction Power Substations

The traction power substations (TPSS) are transformers that "step-up" the voltage necessary to operate the trains. TPSS noise is a continuous hum caused by the constant expansion and contraction of the magnetically charged metal plates inside the casing. However, the absolute level of the TPSS is regulated by Metro's own specifications, thereby minimizing the potential for noise impact in the community.

TPSS would be installed at several locations along the proposed rail corridor to provide adequate electrical power for LRT service. As set forth in PM NOI-1 (described in **Section 3.11.7**), each TPSS would be designed in accordance with the Metro Rail Design Criteria (MRDC) of 45 dBA at 50 feet or at the setback line of the nearest building or occupied area, whichever is closer (Metro 2018). This operating noise level for the TPSS would be significantly lower than existing ambient noise levels (which range from 66 dBA Ldn to 73 dBA Leq) and LRT passby noise levels of 78 dBA at 50 feet. Therefore, noise generated by the TPSS would not exceed the FTA moderate noise impact criteria at any sensitive receptors along Alternative 1. The impact would be less than significant.

Operational Noise Impacts at Historic Properties

As summarized in **Table 3.11-11**, several historic properties were identified along Alternative 1. At historic residences, the Ldn descriptor was used to reflect the particularly heightened sensitivity to nighttime noise. At institutional (FTA Category 3) receptors (former Atchison, Topeka and Santa Fe Railway [AT&SF] Depot/Museum of Pico Rivera), the peak-hour Leq descriptor was used to reflect the sensitivity to daytime noise. Since the FTA does not consider commercial properties (historic or not) such as restaurants and stores to be sensitive to transit noise, the peak-hour Leq noise levels are reported at these sites (Steak Corral Restaurant) for informational purposes only and the impact was not assessed. Noise impacts would not exceed the FTA moderate noise impact criteria at any historic properties along Alternative 1. The impact would be less than significant.

Table 3.11-11. Summary of Project Noise Levels at Historic Properties Along the Alternative 1 Washington (in dBA)[1]

Receptor		Land Use		Existing Noise	Build Noise[4]	FTA Criteria	
ID No.[2]	Description	Type	FTA[3]			Moderate	Severe
HP2	Kelly House	Historic	2	71	65	65	70
HP3	Former AT&SF Depot[5]	Historic	3	73	61	70	77
HP4	Cliff May-designed Ranch House	Historic	2	70	62	64	70
HP5	Steak Corral Restaurant	Historic	--	63	63	--	--

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 Peak-hour Leq noise levels are reported for all institutional receptor Sites No. 106 and 108, while the 24-hour Ldn noise level is reported for Sites No. 104 and 107.
2 See **Figure 3.11.2** and Attachment A of Appendix L of the Draft EIR for receptor locations.
3 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
4 FTA moderate impacts are bold and underlined.
5 Current site of the Museum of Pico Rivera.

Operational Noise Impacts at Parks, Schools, and Other Institutional Receptors

As summarized in **Table 3.11-12**, several parks, schools, hospitals, and other non-residential receptors were identified along Alternative 1. At these non-residential sites, the peak-hour Leq descriptor was used to reflect the sensitivity to daytime noise. At the Presbyterian Intercommunity Hospital (PIH) in Whittier, which as shown in **Table 3.11-12** is predicted to be 46 dBA, the Ldn descriptor was used to reflect the particularly heightened sensitivity to nighttime noise. Project Leq noise levels at parks along Alternative 1 are predicted to range from 38 dBA at the Whittier Greenway to 56 dBA at the San Gabriel Coastal Basin Spreading Grounds.

Similarly, peak-hour Leq noise levels at institutional receptors are predicted to range from 40 dBA at the Tri-Cities Regional Occupational Program (ROP) in Whittier to 56 dBA at the San Gabriel Coastal Spreading Grounds and Greenwood Elementary School. However, none of the Project noise levels at the parks, schools, libraries, hospitals, or churches are predicted to exceed the FTA moderate or severe impact criteria along Alternative 1. The impact would be less than significant.

Table 3.11-12. Summary of Project Noise Levels at Parks, Schools, and Other Institutional Receptors Along Alternative 1 Washington (in dBA)[1]

Receptor		Land Use		Existing Noise	Build Noise[3]	FTA Criteria	
ID No.[2]	Description	Type	FTA[3]			Moderate	Severe
201	San Gabriel Coastal Basin Spreading Grounds	Park	3	67	56	67	73
202	Whittier Greenway	Park	3	67	38	67	73
206	Chet Holifield Park	Park	3	68	45	68	73
301	Chet Holifield Library	Library	3	68	48	68	73
304	Tri-Cities ROP	School	3	67	40	67	73
305	Washington Elementary School	School	3	63	51	65	70
306	Pioneer High School	School	3	67	51	67	73
308	Greenwood Elementary School	School	3	68	56	68	73
309	Brethren Christian School	School	3	67	54	67	73
313	Presbyterian Intercommunity Hospital	Hospital	2	67	46	67	73

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 Peak-hour Leq noise levels are reported for all institutional receptors Site No. 103, 201-312, while the 24-hour Ldn noise level is reported for Site No. 313 (Presbyterian Intercommunity Hospital).
2 See **Figure 3.11.2** and Attachment A of Appendix L of the Draft EIR for receptor locations.
3 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
4 FTA moderate impacts are bold and underlined.

Design Options

Atlantic/Pomona Station Option

The operational impacts for Alternative 1 with the Atlantic/Pomona Station Option would be the same as the base Alternative 1 because there is no difference in the number of sensitive receptors that would experience noise impacts exceeding the FTA severe impact criteria. The Atlantic/Pomona Station Option would be in a below grade cut and screened from the residences to the east. The Atlantic/Pomona Station Option would not change grade crossings, special trackwork, or TPSS locations compared to the base Alternative 1. There is one school, the Arts in Action Community Charter Elementary School, located approximately 200 feet from the Atlantic/Pomona Station Option site; however, the school is screened by existing structures and the trackwork at the Atlantic/Pomona Station Option site would be below grade and the predicted noise levels at the school would not exceed the FTA severe noise impact criteria. As shown in **Table 3.11-9** for the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option is predicted to exceed the FTA moderate impact criteria at 28 residences and have no exceedances above the FTA severe impact criteria. The impact would be less than significant.

Montebello At-Grade Option

The operational impacts for Alternative 1 with the Montebello At-Grade Option would be very similar to the base Alternative 1 because there are no sensitive receptors adjacent to the Montebello At-Grade Option segment due to land use type (commercial and industrial). Therefore, as shown in **Table 3.11-9** for the base Alternative 1, Alternative 1 with the Montebello At-Grade Option is also predicted to

exceed the FTA moderate impact criteria at 28 residences and have no exceedances above the FTA severe impact criteria.

The Montebello At-Grade Option would include additional LRT guideway running at-grade, with a slightly reduced distance between the LRT vehicles and first floors of buildings and as a result, a slightly increased noise level than with an aerial guideway; however, the area is commercial and industrial and there are no sensitive receptors that are exposed to passbys from LRT vehicles.

The Montebello At-Grade Option has grade crossings at Garfield Avenue, Vail Avenue, Maple Avenue, and Greenwood Avenue; however, the area is commercial and industrial and there would be no impacts from grade crossing LRT vehicle warning bells.

Special trackwork (such as turnouts and crossovers) is proposed at one additional location for the Montebello At-Grade Option at Stationing 355+00 to provide operational flexibility. There are no sensitive receptors that would be exposed to noise from this special trackwork.

The location of the TPSS remain the same for Alternative 1 with the Montebello At-Grade Option. The impact would be less than significant.

There is one historic property adjacent to the Montebello At-Grade Option, the Kelly House at 860 Washington Boulevard; there is a moderate noise impact at this location, which would also occur under the base Alternative 1. The impact would be less than significant.

There are no parks, schools, or other institutional receptors adjacent to the Montebello At-Grade Option alignment. The impacts would be the same as the base Alternative 1. The impact would be less than significant.

Construction Impacts

Construction of Alternative 1 would produce noise from various construction activities. Demolition and site preparation would generally involve breakers, backhoes, excavators, dump trucks, concrete saws, cranes, and trucks. Equipment would also include compressors, generators, and handheld pneumatic tools for temporary work to secure the sites and construct enabling works. Guideway construction equipment would generally consist of concrete trucks, rubber-tired excavators, loaders, rubber-tired compactors, graders and small bulldozers, and water trucks for dust control. For aerial guideway construction, activities would include the placement of piles or support columns and girders to create a span between the bents.

Equipment required for the temporary shoring of the cut and cover excavation, temporary shoring of the underground stations, and construction of the aerial guideway and bridge replacements at the Rio Hondo and San Gabriel River would include pile drivers (vibratory or impact), drilling rigs, possibly specialized water jet excavators, trucks to remove excavated soil, concrete trucks and concrete pumps, specialized truck trailers to deliver pre-cast concrete beams, cranes, trucks to deliver forms, reinforcing steel, pavement saws, pre-cast concrete post tensioning jacks and related equipment, and water trucks for dust control. It was assumed that potholing and utility relocation would occur ahead of major construction to prepare for underground work. Some utility relocations must be carried out at night because these can involve road closures.

Pile driving requires a heavy-duty machine that would hammer prefabricated steel beams (i.e. piles) and drive them into the ground. Application of this high-impact machinery would create ground disturbance through the displacement and compression of the surrounding soil and therefore increase vibration and noise levels. The use of pile drivers as construction equipment would result in a potentially significant impact to noise and vibration.

The Project also includes a tunnel section, which would involve excavation and shoring of the launching and receiving pits and tunneling with the use of the TBM. Ventilation would be required during construction and operation of Alternative 1 for adequate circulation of air flow in the tunnels. Tunnel vent fans would be located at ground surface level and their activation would increase ambient noise levels for their surrounding areas and would therefore result in a potentially significant impact. Tunneling activities would require the use of machinery to remove excavation spoils (i.e., muck) from the TBM. Muck removal and heavy machinery such as excavators and mini-excavators to move TBM spoils would be a source of noise during construction activities that could increase ambient noise levels.

In addition to the tunneling portion, the Project would require grading, excavation, the movement of excavated material, resulting in an increase in truck traffic and associated noise. As further described in the Section 3.8, Hazards and Hazardous Materials, and Section 3.14, Transportation and Traffic, haul routes would be located along the Project corridor right-of-way (ROW) and/or major streets connecting to construction staging areas and the nearest freeways (e.g., State Route (SR) 60, Interstate (I) 5, and I-605). These haul routes would be identified during final design in cooperation with the jurisdictions along the alignment and implemented throughout the construction process. As discussed under **Section 3.11.3.10**, it takes a doubling of traffic volumes for noise levels to change by 3 dBA (FTA 2018); even assuming a higher noise factor for haul trucks compared to passenger vehicles, the addition of haul truck trips would not be so substantial as to result in an acoustically perceptible change in ambient noise levels.

Noise levels during construction vary depending on the types of construction activity and the types of equipment used for each stage of work. Heavy machinery, the major source of noise in construction, moves in unpredictable patterns and is not typically at one location for a long duration of time. In addition, activities associated with construction staging and/or material laydown areas can result in adverse noise impacts if they take place in noise-sensitive areas. Construction normally occurs during daylight hours when some residents are not at home, when residents who are at home are less sensitive to construction activities, and when other community noise sources contribute to higher ambient noise levels. However, since the proposed construction is expected to last about 12 to 18 months at any one location, depending on the type of activity, potentially significant noise impacts would occur, particularly for those receptors adjacent to the alignment.

To evaluate the change in noise levels during construction, the predicted future noise levels from construction of Alternative 1 are summarized in **Table 3.11-13** for the same representative receptor locations used to monitor current noise levels (see **Figure 3.11.2**) based on FTA criteria. The criteria are based on land use category, existing noise levels, and worst case construction noise levels as specified in the FTA general assessment.

Table 3.11-13. Summary of Construction Noise Levels at Representative Receptors from Alternative 1 Washington (in dBA)

Receptor		Land Use		FTA Criteria[2]		Significant Impact? (Construction noise greater than FTA Criteria)
ID No.[1]	Noise Measurement Location	Type	Construction Noise[2,3]	Daytime	Nighttime	
M01	376 S Woods Avenue	Residential	**103**	90	80	**Yes**
M02	5224 ½ Via Corona Street	Residential	**101**	90	80	**Yes**
M03	743 Amalia Avenue	Residential	**95**	90	80	**Yes**
M04	740 ½ Woods Avenue	Residential	**103**	90	80	**Yes**
M05	668 S Atlantic Boulevard[4,5]	Commercial	-	100	100	No
M06	860 Washington Boulevard	Residential	**93**	90	80	**Yes**
M07	6735 Keltonview Drive	Residential	**88**	90	80	**Yes**
M08	9122 Washington Boulevard[4]	Commercial	**97**	100	100	**Yes**
M09	6768 Washington Boulevard	Residential	**92**	90	80	**Yes**
M10	7857 Milna Avenue	Residential	**91**	90	80	**Yes**
M11	7904 Broadway Avenue	Residential	79	90	80	No
M12	7972 Calobar Avenue	Residential	**89**	90	80	**Yes**

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** or Attachment A of Appendix L of the Draft EIR for receptor locations.
2 Based on worst case, two impact pile driving rigs. Operation taken as 20 percent on time
3 One hour Leq, dB(A).
4 FTA does not separately identify schools or museums Commercial category applied here.
5 Alignment in tunnel close to receptor.

Construction normally occurs during the day, therefore construction impacts were evaluated based on the FTA daytime noise limits of 90 dBA at residential receptors and 100 dBA at commercial receptors. The distances at which an exceedance of the FTA daytime noise limits of 90 dBA at residential receptors is predicted range from 32 feet during station construction to 40 feet during at-grade track laying. The distances at which an exceedance of the FTA daytime noise limits of 100 dBA at commercial receptors would occur range from 10 feet during station construction to 13 feet during at-grade track-laying. As a result of these construction noise estimates, construction activities are predicted to exceed the FTA daytime noise limits at 70 noise sensitive receivers for Alternative 1 and a significant impact would occur. Construction at night is not expected to occur under typical conditions; however, unforeseen schedule or operational limitations may require certain construction activities to occur at night at points along the alignment. If construction at night must occur, construction noise activities would be predicted to exceed the FTA nighttime noise limits of 80 dBA at nearby residential receptors; therefore, a significant impact would occur as shown in **Table 3.11-13**.

Compliance with project measures discussed in **Section 3.11.7.1** would reduce potential noise impacts. As described in PM NOI-1, each TPSS would be designed in accordance with the Metro Rail Design Criteria (MRDC) of 45 dBA at 50 feet or at the setback line of the nearest building or occupied area, whichever is closer (Metro 2018). Additionally, as described in PM NOI-2, all construction activities would be carried out in compliance with Metro's baseline specifications Section 015619, Construction Noise and Vibration Control to reduce noise generation associated with construction activities to the

degree feasible by using methods that may include, but not be limited to, conducting construction in daytime hours, using construction equipment with noise-suppression devices, and using noise barriers or other noise control measures. Implementation of these project measures would reduce construction noise; however, additional mitigation measures identified in **Section 3.11.7.2** and summarized below would be required to further reduce noise impacts.

MM NOI-1 would require implementation of a noise control plan and construction monitoring plan that would meet, at minimum, the FTA general assessment noise criteria. MM NOI-2 would require Metro's contractor to use cast-in-drill hole (CIDH) or drilled piles rather than impact pile drivers except where these are impracticable to reduce excessive noise. MM NOI-3 would require the construction contractor to erect temporary noise barriers between noisy activities and noise sensitive receptors to ensure compliance with applicable noise limits. Noise barriers block the direct path of sound waves and would reduce noise impacts from receptors when applied. MM NOI-4 would require Metro's contractor to locate construction equipment and material staging areas away from sensitive receptors where practicable to increase the distance between receptors and noise generating construction equipment/material staging areas. MM NOI-5 would require construction traffic and haul route routing in areas without noise-sensitive receptors where practicable, thereby minimizing traffic noise. MM NOI-6 would require contractors to use best available control technologies (e.g., piling noise shrouds) to limit excessive noise when working near residences where practicable to muffle sounds created by Project-related construction equipment and therefore reduce noise levels. MM NOI-7 would require the contractor wherever practicable, to conduct construction activities during the daytime and during weekdays in residential areas, since noise is more disruptive at night and weekends when residents are more likely to be home. MM NOI-8 would require Metro to establish a Noise and Vibration Complaint Hotline to resolve noise issues arising from construction activities.

MM NOI-9 and MM NOI-10, identified in **Section 3.11.7.2**, would require using a muck removal conveyor for the TBM if practicable, with specifications to reduce noise generation, including using temporary tunnel track with smooth rail and wheels, limiting car speeds and removing the muck by truck during the day where the haul route impacts residences. Implementation of MM NOI-9 and MM NOI-10 would lessen noise associated with muck removal and minimize nighttime noise impacts. MM NOI-11 as discussed in in **Section 3.11.7.2** would reduce impacts from ventilation fans by requiring that they be placed away from sensitive receptors, thereby Increasing distance between sensitive receptors and noise generating ventilation fans.

Implementation of MM NOI-1 through MM NOI-11 would include implementation of noise control measures such as establishing a noise control plan that would specify construction noise limits for daytime or nighttime work near sensitive receivers. With implementation of mitigation measures, construction noise impacts would be reduced to less than significant.

Station Construction Staging Area Options

Two potential options have been identified for the construction staging area for each new or relocated station. The options and potential construction noise impacts are identified below. At staging sites occupied by existing structures, the existing structures would be demolished to accommodate the staging needs.

Atlantic Station (Relocated/Reconfigured) Construction Staging Area Options

Construction staging areas for the relocated/reconfigured Atlantic station, connection to the existing Metro system, and the TBM receiving pit would either be located on three commercial parcels to the

west of the alignment, or on three parcels to the east of the alignment. The sites to the west would have a construction noise impact on 10 residential properties and the sites to the east would have a construction noise impact on nine residential properties. Either construction staging area option would have a significant impact. Alternative 1 with either staging area site would require implementation of MM NOI-1 through MM NOI-11 as summarized previously and identified in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Commerce/Citadel Station Construction Staging Area Options

Construction staging areas for the underground Commerce/Citadel station would be either located on a property to the southwest of the alignment, or on a property to the northeast of the alignment. The site to the southwest and the site to the northeast would have no construction noise impact on adjacent properties. The impact would be less than significant.

Greenwood Station Construction Staging Area Options

Construction staging areas for Greenwood station would be located to the south of Washington Boulevard, either to the west or east. The site to the west would have construction noise impacts on two adjacent properties and the site to the east would have construction noise impacts on three residential properties. Either construction staging area option would have a significant impact. Alternative 1 with either staging area site would require implementation of MM NOI-1 through MM NOI-11 as summarized previously and identified in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Rosemead Station Construction Staging Area Options

Construction staging areas for Rosemead station would be located either to the south of the alignment or to the north. The site to the south would have no construction noise impact on adjacent properties and therefore, no significant noise impact would occur if this location is selected. The site to the north would have one construction noise impact on an adjacent property, and therefore, a significant noise impact would occur if this location is selected. Alternative 1 with either staging area site would require implementation of MM NOI-1 through MM NOI-11 as summarized previously and identified in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Norwalk Station Construction Staging Area Options

Construction staging areas for Norwalk station would be located either directly to the south of the station or southwest of the station. The site to the south would have no impact on adjacent properties and therefore, no significant noise impact would occur if this location is selected. The site to the southwest has construction noise impacts on eight residential properties, and therefore, a significant noise impact would occur if this location is selected. Alternative 1 with either staging area site would require implementation of MM NOI-1 through MM NOI-11 the Alternative 1 with the in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Lambert Station Construction Staging Area

Construction staging areas for Lambert Road would be located adjacent to Lambert station and would have no construction noise impact on adjacent properties. The impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Construction activities are predicted to exceed the FTA daytime noise limits at 70 Noise Sensitive Receivers for Alternative 1 with the Atlantic/Pomona Station Option, which is the same as the base Alternative 1. Therefore, a significant impact would occur. The construction noise impacts and mitigation measures associated with Alternative 1 with the Atlantic/Pomona Station Option would be the same as for the base Alternative 1. Alternative 1 with the Atlantic/Pomona Station Option would require implementation of MM NOI-1 through MM NOI-11 as summarized previously and identified in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Montebello At-Grade Option

Construction activities are predicted to exceed the FTA daytime noise limits at 70 Noise Sensitive Receivers for Alternative 1 with the Montebello At-Grade Option, which is the same as the base Alternative 1. Therefore, a significant impact would occur. The construction noise impacts and mitigation measures associated with the Montebello At-Grade Option would be the same as for the base Alternative 1. Alternative 1 with the Montebello At-Grade Option would require implementation of MM NOI-1 through MM NOI-11 as summarized previously and identified in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

3.11.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Passby Impacts from LRT Vehicles

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be underground except for where the alignment daylights after crossing Saybrook Avenue and transitioning to an aerial structure that then ends at the Commerce MSF. The area is commercial and industrial and there are no sensitive receptors within the screening distance for the LRT that are exposed to passbys from LRT vehicles. There would be no operational noise impacts from LRT passbys from the alignment.

Impacts from At-Grade Crossings

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no at-grade crossings, and, therefore, there would be no impacts from grade crossing LRT vehicle warning bells.

Impacts from Special Trackwork

Special trackwork (such as turnouts and crossovers) is proposed at several locations along the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to provide operational flexibility. Noise from switches or crossovers comes from a small gap in the central part of the switch known as a frog. Airborne noise from frogs is not an issue because most of the alignment is

underground, and the only aboveground section is commercial or industrial, and therefore there would be no impacts from special trackwork.

Impacts from Traction Power Substations

TPSS would be installed at several locations along the proposed rail corridor to provide adequate electrical power for LRT service. As identified in PM NOI-1, each TPSS would be located at-grade and designed in accordance with the MRDC noise guideline of 45 dBA at 50 feet or at the setback line of the nearest building or occupied area, whichever is closer. This operating noise level for the TPSS would be significantly lower than existing ambient noise levels (which range from 66 dBA Ldn to 73 dBA Leq) and LRT passby noise levels of 78 dBA at 50 feet. Therefore, noise generated by the TPSS would not exceed the FTA noise impact criteria at any receptors along the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, and a less than significant noise impact would occur.

Operational Noise Impacts at Historic Properties

There are no historic properties close to the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option that would be affected by noise. No impact would occur.

Operational Noise Impacts at Parks, Schools, and Other Institutional Receptors

Chet Holifield Library, Chet Holifield Park and Greenwood Elementary School are not within the FTA screening distance for noise impacts from the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. There are no parks, schools, and other institutional receptors adjacent to the alignment. No noise impact would occur.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would produce noise from the same types of construction activities as Alternative 1 and use the same types of equipment for those activities. Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a significant noise impact from general construction activities which could include the use of pile drivers, nighttime noise, tunnel ventilation, tunneling activities, and on-road truck traffic. Construction normally occurs during the day, therefore construction impacts were evaluated based on the FTA daytime noise limits of 90 dBA at residential receptors and 100 dBA at commercial receptors. The distances at which an exceedance of the FTA daytime noise limits of 90 dBA at residential receptors is predicted range from 32 feet during station construction to 40 feet during at-grade track laying. The distances at which an exceedance of the FTA daytime noise limits of 100 dBA at commercial receptors would occur range from 10 feet during station construction to 13 feet during at-grade track-laying. As a result of these construction noise estimates, construction activities are predicted to exceed the FTA daytime noise limits at 17 noise sensitive receptors for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. Construction at night is not expected to occur under typical conditions; however, unforeseen schedule or operational limitations may require certain construction activities to occur at night at points along the alignment. If construction at night must occur, construction noise activities would be predicted to exceed the FTA nighttime noise limits of 80 dBA at nearby residential receptors; therefore, a significant impact would occur.

Compliance with project measures and mitigation measures summarized in the construction evaluation in **Section 3.11.6.1.1** and identified in **Section 3.11.7.1** would reduce potential noise impacts. TPSS would be designed in accordance with MRDC and all construction activities would be carried out in compliance with Metro's Construction Noise and Vibration Control specifications as required by PM NOI-1 and PM NO1-2. Additionally, MM NOI-1 through MM NOI-11 summarized in **Section 3.11.6.1.1** and identified in **Section 3.11.7.2** would reduce construction noise levels experienced by sensitive receptors through means such as use of noise buffers, maximizing the distance between noise generating activities and sensitive receptors to the degree feasible, minimizing noise generation such as through the use of equipment mufflers to the degree feasible, and establishing a Noise and Vibration Complaint Hotline to resolve noise issue. Implementation of MM NOI-1 through MM NOI-11 would reduce construction noise impacts from the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to less than significant.

Station Construction Staging Area Options

Two options have been identified for the construction staging area for the two new or relocated station that would be implemented under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. See **Section 3.11.6.1.1** for additional information.

Atlantic Station (Relocated/Reconfigured) Construction Staging Area Options

As described in the construction evaluation in **Section 3.11.6.1.1,** construction staging for the relocated/reconfigured Atlantic station, connection to the existing Metro system, and the TBM receiving pit would have a significant construction noise impact on 10 residential properties if the staging area is located to the west of the alignment and a significant construction noise impact on nine residential properties if the staging area is located to the east of the alignment. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option with either staging area site would require implementation of MM NOI-1 through MM NOI-11 as described in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Commerce/Citadel Station Construction Staging Area Options

Construction staging areas for the underground Commerce/Citadel station would have no construction noise impact on adjacent properties. The impact would be less than significant.

3.11.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Passby Impacts from LRT Vehicles

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be underground until the alignment daylights after crossing Saybrook Avenue and links to either the Commerce MSF site option or Montebello MSF site option and terminates in an aerial configuration at Greenwood station. The area is commercial and industrial and there are no sensitive receptors that are exposed to passbys from LRT vehicles. Therefore, no impact would occur.

Impacts from At-Grade Crossings

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option has no at-grade crossings, and, therefore, there would be no impacts from grade crossing LRT vehicle warning bells.

Impacts from Special Trackwork

Special trackwork (such as turnouts and crossovers) is proposed at several locations along the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to provide operational flexibility. Airborne noise from frogs is not an issue because the land use surrounding the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option in its aboveground configuration is commercial or industrial. Therefore, no significant impact would occur.

Impacts from Traction Power Substations

TPSS would be installed at several locations along the proposed rail corridor to provide adequate electrical power for LRT service. As identified in PM NOI-1, each TPSS would be located at-grade and designed in accordance with the MRDC noise guideline of 45 dBA at 50 feet or at the setback line of the nearest building or occupied area, whichever is closer. This operating noise level for the TPSS would be significantly lower than existing ambient noise levels (which range from 66 dBA Ldn to 73 dBA Leq) and LRT passby noise levels of 78 dBA at 50 feet. Therefore, noise generated by the TPSS would not exceed the FTA noise impact criteria at any receptors along the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, and a less than significant noise impact would occur.

Operational Noise Impacts at Historic Properties

There is one historic property, the Kelly House at 860 Washington Boulevard, that is adjacent to the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. There would be a moderate noise impact at this location. This would be a less than significant impact.

Operational Noise Impacts at Parks, Schools, and Other Institutional Receptors

There are no parks, schools, or other institutional receptors adjacent to the aerial sections of the alignment and, therefore, no significant impacts would occur.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would produce noise from the same types of construction activities as Alternative 1 and use the same types of equipment for those activities. Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a significant noise impact from general construction activities, the use of pile drivers, nighttime noise, tunnel ventilation, tunneling activities, and on-road truck traffic. Construction normally occurs during the day, therefore construction impacts were evaluated based on the FTA

daytime noise limits of 90 dBA at residential receptors and 100 dBA at commercial receptors. The distances at which an exceedance of the FTA daytime noise limits of 90 dBA at residential receptors is predicted range from 32 feet during station construction to 40 feet during at-grade track laying. The distances at which an exceedance of the FTA daytime noise limits of 100 dBA at commercial receptors would occur range from 10 feet during station construction to 13 feet during at-grade track-laying. As a result of these construction noise estimates, construction activities are predicted to exceed the FTA daytime noise limits at 29 noise sensitive receptors for the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Construction at night is not expected to occur under typical conditions; however, unforeseen schedule or operational limitations may require certain construction activities to occur at night at points along the alignment. If construction at night must occur, construction noise activities would be predicted to exceed the FTA nighttime noise limits of 80 dBA at nearby residential receptors; therefore, a significant impact would occur.

Compliance with project measures and mitigation measures summarized in the construction evaluation in **Section 3.11.6.1.1** and identified in **Section 3.11.7.1** would reduce potential noise impacts. TPSS would be designed in accordance with MRDC and all construction activities would be carried out in compliance with Metro's Construction Noise and Vibration Control specifications as required by PM NOI-1 and PM NO1-2. Additionally, MM NOI-1 through MM NOI-11 summarized in **Section 3.11.6.1.1** and identified in **Section 3.11.7.2** would reduce construction noise levels experienced by sensitive receptors through means such as use of noise buffers, maximizing the distance between noise generating activities and sensitive receptors to the degree feasible, minimizing noise generation such as through the use of equipment mufflers to the degree feasible, and establishing a Noise and Vibration Complaint Hotline to resolve noise issue. Compliance with PM NOI-1 and PM NOI-2 and implementation of MM NOI-1 through MM NOI-11 would reduce construction noise impacts to less than significant.

Implementation of MM NOI-1 through MM NOI-11 would reduce construction noise impacts from construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to less than significant.

Station Construction Staging Area Options

As described in **Section 3.11.6.1.1,** two options have been identified for the construction staging area for the three new or relocated stations to be constructed under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. The potential construction noise impacts are identified below. See **Section 3.11.6.1.1** for additional information.

Atlantic Station (Relocated/Reconfigured) Construction Staging Area Options

Construction staging areas for the relocated/reconfigured Atlantic station, connection to the existing Metro system, and the TBM receiving pit would have a significant construction noise impact on 10 residential properties if the staging area is located to the west of the alignment and a significant construction noise impact on nine residential properties if the staging area is located to the east of the alignment. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with either staging area site would require implementation of MM NOI-1 through MM NOI-11 as described in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

Commerce/Citadel Station Construction Staging Area Options

Construction staging areas for the underground Commerce/Citadel station would have no construction noise impact on adjacent properties. The impact would be less than significant.

Greenwood Station Construction Staging Area Options

Construction staging areas for Greenwood station would be located to the south of Washington Boulevard would have a significant construction noise impact on two adjacent properties if the staging area is located to the west of the alignment and construction noise impacts on three residential properties if the staging area is located to the east of the alignment. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option with either staging area site would require implementation of MM NOI-1 through MM NOI-11 as described in **Section 3.11.7**, which would reduce construction noise impacts to less than significant.

3.11.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would accommodate daily maintenance, inspection and repairs, and storage of the LRT vehicles. The MSF site options would require an at-grade crossing where crossing gates and bells would be activated when the LRT accesses the facility. The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would be located in an industrial area and would have no noise-sensitive receptors (such as residences, schools, churches, or parks) within the FTA screening distance of 650 feet (where there are intervening buildings). Therefore, no moderate or severe noise impact would occur. The impact would be less than significant.

Construction Impacts

Commerce MSF

Construction of the Commerce MSF site option would require site demolition and facility construction, which would produce noise from various construction activities. Demolition and site preparation would generally involve breakers, backhoes, excavators, dump trucks, concrete saws, cranes, and trucks. Equipment would also include compressors, generators, and handheld pneumatic tools for temporary work to secure the sites and construct enabling works.

The Commerce MSF site option is located in an industrial area with the nearest sensitive receptors (such as residences, schools, churches, or parks) being more than 1,000 feet away with intervening buildings. Noise levels from construction would not exceed the FTA criteria for residential receivers of 90 dBA through the day or 80 dBA at night or 100 dBA through the day or night at commercial and industrial receivers. Impacts would be less than significant.

Montebello MSF and Montebello MSF At-Grade Option

Construction of the Montebello MSF site option or Montebello MSF At-Grade Option would be similar to that of the Commerce MSF site option described above. The Montebello MSF site option or Montebello MSF At-Grade Option is located in an industrial area with the nearest sensitive receptors (such as residences, schools, churches, or parks) being more than 1,000 feet away with intervening buildings. Noise levels from construction would not exceed the FTA criteria for residential receivers of 90 dBA through the day or 80 dBA at night. However, noise levels would exceed the FTA criteria for commercial or industrial receivers of 100 dBA through the day or 100 dBA at night at one industrial building immediately adjacent to the site. Therefore, a significant impact would occur.

Compliance with project measures and mitigation measures summarized in the construction evaluation in **Section 3.11.6.1.1** and identified in **Section 3.11.7.1** would reduce potential noise impacts. All construction activities would be carried out in compliance with Metro's Construction Noise and Vibration Control specifications as required by PM NO1-2. Additionally, MM NOI-1 through MM NOI-8 summarized in **Section 3.11.6.1.1** and identified in **Section 3.11.7.2** would reduce construction noise levels through means such as use of noise buffers, maximizing the distance between noise generating activities and sensitive receptors to the degree feasible, minimizing noise generation such as through the use of equipment mufflers to the degree feasible, and establishing a Noise and Vibration Complaint Hotline to resolve noise issues. Compliance with PM NOI-2 and implementation of MM NOI-1 through MM NOI-8 would reduce construction noise impacts to less than significant.

Implementation of MM NOI-1 through MM NOI-8 would reduce construction noise impacts to less than significant.

3.11.6.2 Impact NOI-2: Ground-Borne Vibration or Ground-Borne Noise

Impact NOI-2: Would a Build Alternative result in generation of excessive ground-borne vibration or ground-borne noise levels?

3.11.6.2.1 Alternative 1 Washington

Operational Impacts

Unlike noise, which is assessed using cumulative noise levels over a 24-hour period, transit vibration impacts are assessed based on individual events, such as when a train passes by, and the frequency of those events. The entire rail corridor would be constructed with CWR track. In the at-grade configuration, the track would be embedded. CWR track is continuous and therefore produces less vibration than non-CWR track because it does not have any breaks or gaps that could cause vibrations when a wheel passes over. Embedded track is vibration-isolated by a material which reduces transmitted vibration. Along aerial sections, elevated structures create additional separation between the train source and the ground-level receptors resulting in greater attenuation. At at-grade crossings, embedded track at cross streets is not expected to result in any vibration impacts, due to the short section limited to the width of the cross street. Along tunnel sections, train steel wheels over steel rails would input vibration into the track support structures and onwards to the ground. CWR track would reduce this vibration to some degree. All predicted vibration levels were compared with the FTA frequent impact criteria to assess the onset and severity of impact.

Alternative 1 would have three potential sources of vibration during operations, including LRT vehicle passbys along CWR track, LRT passbys through special trackwork such as switches along the corridor during revenue service, and switches at the MSF.

Passby Impacts from LRT Vehicles

To show the variation in vibration levels along Alternative 1, transit vibration levels were predicted at the same representative receptor locations as for the noise analysis. As summarized in **Table 3.11-14**, the maximum vibration levels from LRT vehicles are predicted to range from 48 VdB at representative Receptor M11 (a single-family residence along Broadway Avenue) to 80 VdB at representative Receptor M05 (Kipp Raices Academy on Atlantic Boulevard). Except for representative Receptors M05, M07 (single-family residence on Keltonview Drive), and M10 (single-family residence on Milna Avenue), all the vibration levels at the representative receptor sites are predicted to be below the FTA frequent impact criteria. As summarized in **Table 3.11-14**, the maximum vibration level from switches in the vicinity of representative Receptors M07 and M10 is predicted to exceed the FTA frequent criterion of 72 VdB for residential land uses along Alternative 1.

Table 3.11-14. Summary of Project Vibration Levels at Representative Receptors from Alternative 1 Washington (in VdB)

Receptor		Land Use		Build Vibration[3]	FTA Criteria	
ID No.[1]	Vibration Measurement Location	Type	FTA[2]		"Frequent"	Impact
M01	376 S Woods Avenue	SFR	2	66	72	No
M02	5224 ½ Via Corona Street	SFR	2	65	72	No
M03	743 Amalia Avenue	SFR	2	62	72	No
M04	740 ½ Woods Avenue	SFR	2	64	72	No
M05	668 S Atlantic Boulevard	School	2	**80**	75	**Yes**
M06	860 Washington Boulevard	SFR	2	70	72	No
M07	6735 Keltonview Drive	SFR	2	**73**	72	**Yes**
M08	9122 Washington Boulevard	Museum	3	69	75	No
M09	6768 Washington Boulevard	SFR	2	64	72	No
M10	7857 Milna Avenue	SFR	2	**76**	72	**Yes**
M11	7904 Broadway Avenue	SFR	2	48	72	No
M12	7972 Calobar Avenue	SFR	2	62	72	No

Source: AECOM, November 2010; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
3 Exceedances of the FTA frequent criteria are bold and underlined.
Key:
SFR = Single-family Residence

As summarized in **Table 3.11-15**, corridor-wide vibration levels are predicted to exceed the FTA frequent criterion of 72 VdB at 85 residences. These impacts are due to the proximity of residences to proposed switches and proximity to the tunnel section of the alignment. One vibration impact is predicted at an FTA Category 3 receptor, Kipp Raices Academy school close to the alignment at 668 Atlantic Boulevard. Additionally, vibration levels along Alternative 1 are predicted to exceed the FTA frequent criterion of 75 VdB at one other institutional receptor (a Contractors State License school along

Washington Boulevard at Keltonview Drive) due to the switches at Stationing 516+50. Therefore, a significant impact would occur. The predicted corridor-wide vibration impacts are shown graphically in Attachment A of Appendix L.

Table 3.11-15. Corridor-wide Project Vibration and GBN Impacts Along Alternative 1 Washington

Nearest ID No.[1]	Location	Type Use	Impact (Frequent)	No. Residences Affected	Major Source(s) Contributing to Impact[2]
FTA Category 2					
M01	376 South Woods Avenue	SFR	Frequent	10	Crossover/switch
M02	5224 ½ Via Corona Street	SFR MFR	Frequent	6 3	Crossover/switch
M07	Washington Boulevard at Keltonview Drive	SFR	Frequent	5	Crossover/switch
M10	Washington Boulevard at Milna Avenue	SFR	Frequent	15	Crossover/switch
M12	Calobar Avenue	SFR MFR	Frequent	1 1	Crossover/switch
M04	Area local to E Olympic Boulevard	SFR MFR	Frequent	28 7	Operations
Total FTA Category 2			Frequent	85	
FTA Category 3					
M05	668 S Atlantic Boulevard	School	Frequent	1	Operations
M07	8705 Washington Boulevard	School	Frequent	1	Operations
Total FTA Category 3			Frequent	2	
Total – All Uses			Total	87	

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 Major sources include LRT passbys, LRT warning bells, and switches or special trackwork. The MSF and TPSS are not expected to be a major source for impacts in any vibration-sensitive locations.
Key:
SFR = Single-Family Residence MFR = Multi-Family Residence

Mitigation measures would be implemented to reduce vibration impacts. MM NOI-12, identified in **Section 3.11.7.2**, would require the use of track support systems that incorporate resilience, such as ballast mats, high resilience track fasteners, resiliently supported ties or floating track slabs, which would reduce vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at residences. Implementation of MM NOI-13 would reduce vibration impacts from gaps at switches by requiring installation of ballast mats under conventional switches or using a "gapless" spring frog or other low vibration switches, which would reduce the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts from passbys to less than significant.

Impacts from Special Trackwork

Special trackwork is proposed at several locations along Alternative 1 to provide operational flexibility. Turnouts or switches allow trains to move from one track to another, while crossovers allow trains to move between parallel tracks. Vibration from switches or crossovers comes from a small gap in the central part of the switch known as a frog. Due to the rail discontinuities at switches, vibration levels from LRT vehicle passbys are predicted to range from below background to 76 VdB at representative Receptor M10 (a single-family residence at Milna Avenue). The vibration levels from LRT passby over switches are predicted to exceed the FTA impact criterion of 72 VdB at 85 residential land uses (FTA Category 2) and two schools (FTA Category 3 land use). Therefore, a significant impact would occur.

Compliance with MM NOI-12 and MM NOI-13 summarized previously and identified in **Section 3.11.7.2** would minimize potential vibration impacts by reducing vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at residences and by reducing the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts from special trackwork to less than significant.

Operational Vibration Impacts at Historic Properties

As summarized in **Table 3.11-16,** maximum vibration levels at historic resources along the proposed Washington Alternative are predicted to range from 67 VdB at the Golden Gate Theater to 71 VdB at the Steak Corral Restaurant (along Washington Boulevard).

Due to the strategic location of switches, none of the vibration levels predicted at historic properties are predicted to exceed the FTA frequent impact criteria along Alternative 1. Since the vibration levels predicted at historic properties are not predicted to exceed the FTA frequent impact criteria along Alternative 1, the vibration levels would also not exceed the FTA structural damage criteria along Alternative 1 (since the structural damage threshold is higher than the frequent impact criteria). The impact would be less than significant.

Table 3.11-16. Summary of Project Vibration Levels at Historic Properties Alternative 1 Washington (in VdB)

Receptor		Land Use		Build Vibration[3]	FTA Criteria	
ID No.[2][1]	Description	Type	FTA[1]		"Frequent"	Impact
HP1	Golden Gate Theater	Historic	2	67	75	No
HP2	Kelly House	Historic	2	68	72	No
HP3	Former AT&SF Depot	Historic	3	70	75	No
HP4	Cliff May-designed Ranch House	Historic	2	68	72	No
HP5	Steak Corral Restaurant	Historic	--	71	--	No

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
3 Exceedances of the FTA frequent criteria are bold and underlined.

Operational Vibration Impacts at Parks, Schools, and Other Institutional Receptors

As summarized in **Table 3.11-17**, maximum vibration levels at parks along Alternative 1 vary between below detectable levels at the Whittier Greenway and Chet Holifield Park to 64 VdB at the San Gabriel Coastal Basin Spreading Grounds.

Similarly, maximum vibration levels at schools and other institutional receptors along Alternative 1 are predicted to range from below detection at the Tri-Cities ROP, Washington Elementary School, and Pioneer High School to 80 VdB at the Kipp Raices Academy on Atlantic Boulevard. Based on the modeling analysis, the Kipp Raices Academy on Atlantic Boulevard is predicted to exceed the FTA frequent impact criteria. Therefore, a significant impact would occur.

Table 3.11-17. Summary of Project Vibration Levels at Parks, Schools, and Other Institutional Receptor Sites (in VdB)

Receptor		Land Use		Build Vibration	FTA Criteria	
ID No.	Description	Type	FTA		"Frequent"	Impact
201	San Gabriel Coastal Basin Spreading Grounds	Park	3	64	75	No
202	Whittier Greenway	Park	3	BD[1]	75	No
206	Chet Holifield Park	Park	3	BD[1]	75	No
301	Chet Holifield Library	Library	3	BD[1]	75	No
304	Tri-Cities ROP	School	3	BD[1]	75	No
305	Washington Elementary School	School	3	BD[1]	75	No
306	Pioneer High School	School	3	BD[1]	75	No
308	Greenwood Elementary School	School	3	22	75	No
M05	Kipp Raices Academy, 668 S Atlantic Boulevard	School	3	80	75	Yes
313	Presbyterian Intercommunity Hospital	Hospital	2	40	75	No

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Note:
Due to attenuation over large distances, the predicted vibration level is below detection level and well below the ambient background level. Therefore, it is not perceptible.

Compliance with MM NOI-12 and MM NOI-13 summarized previously and identified in **Section 3.11.7.2** would minimize potential vibration impacts by reducing vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at sensitive receptors and by reducing the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts on institutional receptors to less than significant.

Design Options

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option alignment is located east of Atlantic Boulevard and connects with the base Alternative 1 alignment just north of the proposed Atlantic/Whittier station. Because of the variation in the alignment, the location of the potential vibration impacts are different than that of the base Alternative 1. As summarized in **Table 3.11-18**, like the base Alternative 1, corridor-wide vibration levels are predicted to exceed the FTA frequent criterion of 72 VdB at 85 residences. These impacts are

due to the proximity of residences to proposed switches and proximity to the tunnel section of the alignment. Also like the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option would result in one predicted vibration impact at an FTA Category 3 receptor, Kipp Raices Academy school close to the alignment at 668 S Atlantic Boulevard, and one exceedance of the FTA frequent criterion of 75 VdB at one other institutional receptor (a Contractors State License school along Washington Boulevard at Keltonview Drive) due to crossover/switches. However, unlike the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option would result in potential vibration impacts to fewer residences near representative receptor M01 and more residences near representative receptor M02. This is due to the variation in the track alignment that would be required for the Atlantic/Pomona Station Option. The impact would be significant. The predicted corridor-wide vibration impacts are shown graphically in Attachment A in Appendix L.

Table 3.11-18. Corridor-wide Project Vibration and GBN Impacts Along Alternative 1 Washington with the Atlantic/Pomona Station Option

ID No.[1]	Location	Type Use	Impact (Frequent)	No. Residences Affected	Major Source(s) Contributing to Impact[2]
FTA Category 2					
M02	5224 ½ Via Corona Street	SFR MFR	Frequent	15 6	Crossover/switch
M07	Washington Boulevard at Keltonview Drive	SFR	Frequent	5	Crossover/switch
M10	Washington Boulevard at Milna Avenue	SFR	Frequent	15	Crossover/switch
M12	Calobar Avenue	SFR MFR	Frequent	1 1	Crossover/switch
M04	Area local to E Olympic Boulevard	SFR MFR	Frequent	28 7	Operations
Total FTA Category 2			Frequent	85	
FTA Category 3					
M05	668 S Atlantic Boulevard	School	Frequent	1	Operations
M07	8705 Washington Boulevard	School	Frequent	1	Operations
Total FTA Category 3			Frequent	2	
Total – All Uses			Total	87	

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 Major sources include LRT passbys, LRT warning bells, and switches or special trackwork. The MSF and TPSS are not expected to be a major source for impacts in any vibration-sensitive locations.
Key:
SFR = Single-Family Residence MFR = Multi-Family Residence

As with the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option would require implementation of MM NOI-12 and MM NOI-13 as identified in **Section 3.11.7**, which would reduce operational vibration impacts to less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would have three potential sources of vibration during operations, including LRT vehicle passbys along CWR track, LRT passbys through special

trackwork such as switches along the corridor during revenue service, and switches at the MSF site options. The corridor-wide Project vibration impacts along Alternative 1 with the Montebello At-Grade Option is the same as the base Alternative 1. The impact would be significant. As with the base Alternative 1, Alternative 1 with the Montebello At-Grade Option would require implementation of MM NOI-12 and MM NOI-13 as identified in **Section 3.11.7**, which would reduce operational vibration impacts to less than significant.

Construction Impacts

Vibration levels from construction activities are not cumulative but rather dependent on the type of activity and equipment used. Vibration is also dependent on the ground and terrain conditions, the presence of underground utilities, and the type and condition of the building at the receptor. As a result, except for digging and pounding activities in hard soils, most construction activities do not contribute to vibration impacts, due to the typically long distance between the activity and the sensitive receptor.

Tunneling activities could cause construction vibration. Operation of the TBM and machinery to remove excavation spoils from the TBM could result in vibration damage to structures and annoyance to residences and other FTA Category 2 land uses. Typically, vibration from the TBM would not be perceptible at any one residence for longer than one week in duration.

Other construction activities could cause construction vibration. Use of other construction related equipment and heavy-machinery such as bulldozers, dump trucks, vibratory rollers, and pile drivers could result in vibration damage to structures and annoyance to residences and other FTA Category 2 land uses.

In accordance with the FTA guidelines, the vibration limit is used to identify potential impacts. The FTA infrequent event category was used to assess impact from perceptible vibration events, since not all construction activity would be perceptible.

The distances at which an exceedance of the FTA vibration infrequent annoyance criterion of 80 VdB for residences and other FTA Category 2 land uses would occur range from 40 feet for trucks to 50 feet for bulldozers to 70 feet for vibratory rollers. The distances at which an exceedance of the FTA vibration damage criterion of 0.2 ips would occur (for typical timber and masonry residences) range from 15 feet for trucks to 20 feet for bulldozers to 35 feet for vibratory rollers, which is a much closer distance than the FTA vibration infrequent annoyance criterion. As a result of these preliminary construction vibration estimates, construction activities are predicted to exceed the FTA impact criteria at the closest residences and commercial properties. Therefore, a significant impact would occur.

Compliance with PM NOI-2 identified in **Section 3.11.7.1** would require all construction activities to be carried out in compliance with Metro's baseline specifications Section 015619, Construction Noise and Vibration Control, which would reduce vibration impacts. Additional mitigation measures identified in **Section 3.11.7.2** and summarized below to reduce construction vibration levels would be required to further reduce impacts.

MM NOI-2 would require Metro's contractor to use CIDH or drilled piles rather than impact pile drivers to reduce excessive vibration, except where these are impracticable, because pre-drilling reduces noise and vibration impacts by reducing the rate of displacement and compression of the surrounding soil. MM NOI-4 would require Metro's contractor to locate construction equipment and

material staging areas away from sensitive receptors to increase distance in relation to sensitive receptors and thereby reduce impacts. MM NOI-5 would require Metro's contractor to route construction traffic, and haul routes away from sensitive receptors where practicable to reduce vibratory impacts related to haul routes. MM NOI-7 would require the contractor wherever practicable, to conduct construction activities during the daytime and weekdays to reduce nighttime and weekend disruption when residents are more likely to be home. MM NOI-8 would require Metro to establish a Noise and Vibration Complaint Hotline to resolve vibration issues. MM NOI-9 would require using a muck removal conveyor for the TBM if practicable, with specifications to reduce vibration, including using temporary tunnel track with smooth rail and wheels.

MM NOI-14 would require Metro to conduct a survey of selected properties within 100 feet of the alignment to determine the baseline structural integrity and condition of walls and joints to provide a basis for comparison after construction is completed and to provide baseline data for monitoring vibration impacts and developing the construction vibration control plan and monitoring plan described in MM NOI-15. Under MM NOI-15, Metro would require the contractor to develop a construction vibration control plan and a construction vibration monitoring plan to minimize vibration impact and reduce the risk of damage to susceptible structures.

Implementation of MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 would reduce construction vibration impacts to less than significant.

Design Options

Atlantic/Pomona Station Option

The construction vibration impacts for Alternative 1 with the Atlantic/Pomona Station Option would be the same as the base Alternative 1. However, unlike the base Alternative 1, Alternative 1 with the Atlantic/Pomona Station Option would result in potential vibration impacts to fewer residences near representative receptor M01 and more residences near representative receptor M02. This is due to the variation in the track alignment that would be required for the Atlantic/Pomona Station Option. Construction activities are predicted to exceed the FTA impact criteria at the closest residences and commercial properties. Therefore, a significant impact would occur. Construction of Alternative 1 with the Atlantic/Pomona Station Option would require implementation of MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 as summarized above and identified in **Section 3.11.7**, which would reduce construction vibration impacts to less than significant.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would involve additional at-grade construction in place of aerial guideway construction as compared to the base Alternative 1. As discussed in **Section 3.11.6.1.1**, at-grade track laying or guideway construction equipment would generally consist of rubber-tired excavators, loaders, rubber-tired compactors, graders and small bulldozers, and water trucks for dust control.

As with the base Alternative 1, construction activities for Alternative 1 with the Montebello At-Grade Option are predicted to exceed the FTA impact criteria at the closest residences and commercial properties. Therefore, a significant impact would occur. Construction of Alternative 1 with the Montebello At-Grade Option would require implementation of MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI 8, MM NOI-9, MM NOI-14, and MM NOI-15 as summarized above and identified in **Section 3.11.7**, which would reduce construction vibration impacts to less than significant.

3.11.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

As with Alternative 1, the Alternative 2 rail corridor would be constructed with CWR track. In the at-grade configuration, the track would be embedded. CWR track is continuous and therefore produces less vibration than non-CWR track because it does not have any breaks or gaps that could cause vibrations when a wheel passes over. Embedded track is vibration-isolated by a material which reduces transmitted vibration. Along the aerial section, elevated structures create additional separation between the train source and the ground-level receptors resulting in greater attenuation. Along tunnel sections, train steel wheels over steel rails would input vibration into the track support structures and onwards to the ground. CWR track would reduce this vibration to some degree. All predicted vibration levels were compared with the FTA frequent impact criteria to assess the onset and severity of impact.

Alternative 2 would have three potential sources of vibration during operations, including LRT vehicle passbys along CWR track, LRT passbys through special trackwork such as switches along the corridor during revenue service, and switches at the Commerce MSF site option.

Passby Impacts from LRT Vehicles

To show the variation in vibration levels along Alternative 2, transit vibration levels were predicted at the same receptor locations as for the noise analysis. As summarized in **Table 3.11-19**, the maximum vibration levels from LRT vehicles are predicted to range from 62 VdB at representative Receptor M03 a single-family residence, to 80 VdB at representative Receptor M05 (Kipp Raices Academy at 668 S Atlantic Boulevard). Except for representative Receptor M05, all the vibration levels at the representative receptor sites are predicted to be below the FTA frequent impact criteria.

Table 3.11-19. Summary of Project Vibration Levels at Representative Receptors from Alternative 2 Atlantic to Commerce/Citadel IOS (in VdB)

Receptor		Land Use		Build Vibration[3]	FTA Criteria	
ID No.[1]	Vibration Measurement Location	Type	FTA[2]		"Frequent"	Impact
M01	376 S Woods Avenue	SFR	2	66	72	No
M02	5224 ½ Via Corona Street	SFR	2	65	72	No
M03	743 Amalia Avenue	SFR	2	62	72	No
M04	740 ½ Woods Avenue	SFR	2	64	72	No
M05	Kipp Raices Academy, 668 South Atlantic Boulevard	School	2	**80**	75	Yes

Source: AECOM, November 2010; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
3 Exceedances of the FTA frequent criteria are bold and underlined.
Key:
SFR = Single-family Residence

As summarized in **Table 3.11-20**, corridor-wide vibration levels are predicted to exceed the FTA frequent criterion of 72 VdB at 54 residences. These impacts are due to the proximity of residences to proposed switches, and proximity to the tunnel section of the alignment.

One vibration impact is predicted at an FTA Category 3 receptor, Kipp Raices Academy, at 668 Atlantic Boulevard. Therefore, a significant impact would occur. The predicted corridor-wide vibration impacts are shown in Attachment A of Appendix L.

Table 3.11-20. Corridor-wide Project Vibration and GBN Impacts Along Alternative 2 Atlantic to Commerce/Citadel IOS

Nearest ID No.[1]	Location	Type Use	Impact (Frequent)	No. Residences Affected	Major Source(s) Contributing to Impact[2]
FTA Category 2					
M01	376 S Woods Avenue	SFR	Frequent	10	Crossover
M02	5224 ½ Via Corona Street	SFR MFR	Frequent	6 3	Crossover
M04	Area local to East Olympic Boulevard	SFR MFR	Frequent	28 7	Operations
Total FTA Category 2			Frequent	54	
FTA Category 3					
M05	668 S Atlantic Boulevard	School	Frequent	1	Operations
Total FTA Category 3			Frequent	1	
Total – All Uses			Total	55	

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 Major sources include LRT passbys, and switches or special trackwork. The MSF and TPSS are not expected to be a major source for impacts in any noise-sensitive locations.
Key:
SFR = Single-family Residence MFR = Multi-family Residence

Mitigation measures would be implemented to reduce vibration impacts. As summarized in **Section 3.11.6.2.1** and identified in **Section 3.11.7.2**, MM NOI-12 would require the use of track support systems to reduce vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at residences and MM NOI-13 would reduce vibratory levels by reducing the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts from passbys to less than significant.

Operational Vibration Impacts at Historic Properties

Alternative 2 would not impact any vibration sensitive historic properties. Alternative 2 is primarily underground, and there are no historic properties located where they would be impacted by operational vibration. No impact would occur.

Operational Vibration Impacts at Parks, Schools, and Other Institutional Receptors

As summarized in **Table 3.11-21**, maximum vibration levels at one institutional receptor along Alternative 2 are predicted to reach 80 VdB at the Kipp Raices Academy on Atlantic Boulevard, exceeding the FTA frequent impact criteria. Therefore, a significant impact would occur.

Table 3.11-21. Summary of Project Vibration Levels at Parks, Schools, and Other Institutional Receptor Sites for Alternative 2 Atlantic to Commerce/Citadel IOS (in VdB)

Receptor		Land Use		Build Vibration[3]	FTA Criteria	
ID No.[1]	Description	Type	FTA[2]		"Frequent"	Impact
M05	Kipp Raices Academy, 668 South Atlantic Boulevard	School	3	**80**	75	Yes

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
3 Exceedances of the FTA frequent criteria are bold and underlined.

Compliance with MM NOI-12 and MM NOI-13 summarized in **Section 3.11.6.2.1** and identified in **Section 3.11.7.2** would minimize potential vibration impacts by reducing vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at sensitive receptors and by reducing the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts on institutional receptors to less than significant.

Design Option

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option guideway alignment is located east of Atlantic Boulevard and connects with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. Because of the variation in the alignment, the location of the potential vibration impacts are different than that of the base Alternative 2. Like the base Alternative 2, corridor-wide vibration levels are predicted to exceed the FTA frequent criterion of 72 VdB at 54 residences. These impacts are due to the proximity of residences to proposed switches and proximity to the tunnel section of the alignment. Also like the base Alternative 2, Alternative 2 with the Atlantic/Pomona Station Option would result in one predicted vibration impact at an FTA Category 3 receptor, Kipp Raices Academy school close to the alignment at 668 Atlantic Boulevard. However, unlike the base Alternative 2, Alternative 2 with the Atlantic/Pomona Station Option would result in potential vibration impacts to fewer residences near representative receptor M01 and more residences near representative receptor M02. This is due to the variation in the track alignment that would be required for the Atlantic/Pomona Station Option. The impact would be significant. The predicted corridor-wide vibration impacts are shown graphically in Attachment A in Appendix L.

As with the base Alternative 2, Alternative 2 with the Atlantic/Pomona Station Option would require implementation of MM NOI-12 and MM NOI-13 as summarized in **Section 3.11.6.2.1** and identified in **Section 3.11.7**, which would reduce operational vibration impacts to less than significant.

Construction Impacts

Base Alternative and Design Option

Construction of Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would produce vibration from the same types of construction activities as Alternative 1 and use the same types of equipment for those activities. Use of construction related equipment and heavy-machinery such as TBMs, bulldozers, dump trucks, vibratory rollers, pile drivers, and machinery to remove excavation spoils from the TBM could result in vibration damage to structures and annoyance to residences and other FTA Category 2 land uses. The distances at which an exceedance of the FTA vibration infrequent annoyance criterion of 80 VdB for residences and other FTA Category 2 land uses would occur range from 40 feet for trucks to 50 feet for bulldozers to 70 feet for vibratory rollers. The distances at which an exceedance of the FTA vibration damage criterion of 0.2 ips would occur (for typical timber and masonry residences) range from 15 feet for trucks to 20 feet for bulldozers to 35 feet for vibratory rollers, which is a much closer distance than the FTA vibration infrequent annoyance criterion. As a result of these preliminary construction vibration estimates, construction activities are predicted to exceed the FTA impact criteria at the closest residences and commercial properties.

Compliance with PM NOI-2 identified in **Section 3.11.7.1** requiring construction activities would be carried out in compliance with Metro's baseline specifications Section 015619, Construction Noise and Vibration Control would reduce impacts. Additional mitigation measures summarized in the construction evaluation in **Section 3.11.6.2.1** and identified in **Section 3.11.7.2** would be required to further reduce impacts. MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 would reduce vibration effects through means such as requiring use of equipment that produces less vibration, maximizing the distance between vibration generating activities and sensitive receptors to the degree feasible, establishing a Noise and Vibration Complaint Hotline to resolve vibration issues, surveying properties to determine the baseline structural integrity and condition, and developing a construction vibration control plan and monitoring plan. Implementation of MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 would reduce construction vibration impacts from construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option to less than significant.

3.11.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Montebello At Grade Option

As with Alternative 1, the base Alternative 3 or Alternative 3 with the Montebello At Grade Option rail corridor would be constructed with CWR track. In the at-grade configuration, the track would be embedded. CWR track is continuous and therefore produces less vibration than non-CWR track because it does not have any breaks or gaps that could cause vibrations when a wheel passes over. Embedded track is vibration-isolated by a material which reduces transmitted vibration. Along the aerial section, elevated structures create additional separation between the train source and the ground-level receptors resulting in greater attenuation. Along tunnel sections, train steel wheels over steel rails would input vibration into the track support structures and onwards to the ground. CWR track would reduce this vibration to some degree. All predicted vibration levels were compared with the FTA frequent impact criteria to assess the onset and severity of impact.

The base Alternative 3 or Alternative 3 with the Montebello At Grade Option would have three potential sources of vibration during operations, including LRT vehicle passbys along CWR track, LRT passbys through special trackwork such as switches along the corridor during revenue service, and switches at the MSF.

Passby Impacts from LRT Vehicles

To show the variation in vibration levels along the base Alternative 3 or Alternative 3 with the Montebello At Grade Option, transit vibration levels were predicted at the same receptor locations as for the noise analysis. As summarized in **Table 3.11-22**, the maximum vibration levels from LRT vehicles are predicted to range from 62 VdB at representative Receptor M03 a single-family residence, to 80 VdB at representative Receptor M05 (Kipp Raices Academy, 668 S Atlantic Boulevard). Except for representative Receptor M05, all of the vibration levels at the representative receptor sites are predicted to be below the FTA frequent impact criteria.

Table 3.11-22. Summary of Project Vibration Levels at Representative Receptors from Alternative 3 Atlantic to Greenwood IOS (in VdB)

Receptor		Land Use		Build Vibration[3]	FTA Criteria	
ID No.[1]	Vibration Measurement Location	Type	FTA[2]		"Frequent"	Impact
M01	376 S Woods Avenue	SFR	2	66	72	No
M02	5224 ½ Via Corona Street	SFR	2	65	72	No
M03	743 Amalia Avenue	SFR	2	62	72	No
M04	740 ½ Woods Avenue	SFR	2	64	72	No
M05	Kipp Raices Academy, 668 South Atlantic Boulevard	School	2	**80**	75	Yes

Source: AECOM, November 2010; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix L for receptor locations.
2 FTA Land Use Categories: Category 1 – high sensitivity, Category 2 – residential, and Category 3 – institutional.
3 Exceedances of the FTA frequent criteria are bold and underlined.
Key:
SFR = Single-family Residence

As summarized in **Table 3.11-23**, corridor-wide vibration levels are predicted to exceed the FTA frequent criterion of 72 VdB at 54 residences. These impacts are due to the proximity of residences to proposed switches, and proximity to the tunnel section of the alignment. One vibration impact is predicted at an FTA Category 3 receptor, Kipp Raices Academy, 668 Atlantic Boulevard close to the alignment. Therefore, a significant impact would occur. The predicted corridor-wide vibration impacts are shown in Attachment A of Appendix L.

Table 3.11-23. Corridor-wide Project Vibration and GBN Impacts Along Alternative 3 Atlantic to Greenwood IOS

Nearest ID No.[1]	Location	Type Use	Impact (Frequent)	No. Residences Affected	Major Source(s) Contributing to Impact[2]
FTA Category 2					
M01	376 South Woods Avenue	SFR	Frequent	10	Crossover
M02	5224 ½ Via Corona Street	SFR MFR	Frequent	6 3	Crossover
M04	Area local to East Olympic Boulevard	SFR MFR	Frequent	28 7	Operations
Total FTA Category 2			Frequent	54	
FTA Category 3					
M05	Kipp Raices Academy, 668 South Atlantic Boulevard	School	Frequent	1	Operations
Total FTA Category 3			Frequent	1	
Total – All Uses			Total	55	

Source: AECOM, February 2011; Morgner, December 2019 and July 2021.
Notes:
1 See **Figure 3.11.2** and Attachment A of Appendix Lfor receptor locations.
2 Major sources include LRT passbys, LRT warning bells, and switches or special trackwork. The MSF and TPSS are not expected to be a major source for impacts in any noise-sensitive locations.
Key:
SFR = Single-Family Residence MFR = Multi-Family Residence.

Mitigation measures would be implemented to reduce vibration impacts. As summarized in **Section 3.11.6.2.1** and identified in **Section 3.11.7.2**, MM NOI-12 would require the use of track support systems to reduce vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at residences and MM NOI-13 would reduce vibratory levels by reducing the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts from passbys to less than significant.

Operational Vibration Impacts at Historic Properties

The base Alternative 3 or Alternative 3 with the Montebello At Grade Option would not impact any vibration sensitive historic properties. There are no historic properties located where they would be impacted by operational vibration. No impact would occur.

Operational Vibration Impacts at Parks, Schools, and Other Institutional Receptors

As with Alternative 2 and summarized in **Table 3.11-21** in **Section 3.11.6.2.2**, maximum vibration levels at one institutional receptor along the base Alternative 3 or Alternative 3 with the Montebello At Grade Option are predicted to reach 80 VdB at the Kipp Raices Academy on Atlantic Boulevard, exceeding the FTA frequent impact criteria. Therefore, a significant impact would occur. Compliance with MM NOI-12 and MM NOI-13 summarized in **Section 3.11.6.2.1** and identified in **Section 3.11.7.2** would minimize potential vibration impacts by reducing vibratory impacts caused by steel wheels rolling over steel rails at rail joints during the passby of LRT vehicles at sensitive receptors and by reducing the width of gaps at joints when steel wheels roll over steel rails at rail joints. Implementation of MM NOI-12 and MM NOI-13 would reduce operational vibration impacts on institutional receptors to less than significant.

Design Option

Atlantic/Pomona Station Option

The Atlantic/Pomona Station Option guideway alignment is located east of Atlantic Boulevard and connects with the base Alternative 3 alignment just north of the proposed Atlantic/Whittier station. Because of the variation in the alignment, the location of potential vibration impacts are different than that of the base Alternative 3. Like the base Alternative 3, corridor-wide vibration levels are predicted to exceed the FTA frequent criterion of 72 VdB at 54 residences. These impacts are due to the proximity of residences to proposed switches and proximity to the tunnel section of the alignment. Also like the base Alternative 3, Alternative 3 with the Atlantic/Pomona Station Option would result in one predicted vibration impact at an FTA Category 3 receptor, Kipp Raices Academy school close to the alignment at 668 S Atlantic Boulevard. However, unlike the base Alternative 3, Alternative 3 with the Atlantic/ Pomona Station Option would result in potential vibration impacts to fewer residences near representative receptor M01 and more residences near representative receptor M02. This is due to the variation in the track alignment that would be required for the Atlantic/Pomona Station Option. The impact would be significant. The predicted corridor-wide vibration impacts are shown graphically in Attachment A in Appendix L.

As with the base Alternative 3, Alternative 3 with the Atlantic/Pomona Station Option would require implementation of MM NOI-12 and MM NOI-13 summarized in **Section 3.11.6.2.1** and identified in **Section 3.11.7**, which would reduce operational vibration impacts to less than significant.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would produce vibration from the same types of construction activities as Alternative 1 and use the same types of equipment for those activities. As with Alternative 1, use of construction related equipment and heavy-machinery such as TBMs, bulldozers, dump trucks, vibratory rollers, pile drivers, and machinery to remove excavation spoils from the TBM could result in vibration damage to structures and annoyance to residences and other FTA Category 2 land uses. As with Alternative 1, the distances at which an exceedance of the FTA vibration infrequent annoyance criterion of 80 VdB for residences and other FTA Category 2 land uses would occur range from 40 feet for trucks to 50 feet for bulldozers to 70 feet for vibratory rollers. The distances at which an exceedance of the FTA vibration damage criterion of 0.2 ips would occur (for typical timber and masonry residences) range from 15 feet for trucks to 20 feet for bulldozers to 35 feet for vibratory rollers, which is a much closer distance than the FTA vibration infrequent annoyance criterion. As a result of these preliminary construction vibration estimates, construction activities are predicted to exceed the FTA impact criteria at the closest residences and commercial properties.

Compliance with PM NOI-2 identified in **Section 3.11.7.1** requiring construction activities would be carried out in compliance with Metro's baseline specifications Section 015619, Construction Noise and Vibration Control would reduce impacts. Additional mitigation measures summarized in the construction evaluation in **Section 3.11.6.2.1** and identified in **Section 3.11.7.2** would be required to further reduce impacts. MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 would reduce vibration effects through means such as requiring use of equipment that produces less vibration, maximizing the distance between vibration generating

activities and sensitive receptors to the degree feasible, establishing a Noise and Vibration Complaint Hotline to resolve vibration issues, surveying properties to determine the baseline structural integrity and condition, and developing a construction vibration control plan and monitoring plan. Implementation of MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 would reduce construction vibration impacts from the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option to less than significant.

3.11.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would accommodate daily maintenance, inspection and repairs, and storage of the LRT vehicles. Unlike noise, which is assessed using cumulative noise levels over a 24-hour period, transit vibration impacts are assessed based on individual events, such as when a train passes by.

A potential source of vibration during operations would include LRT vehicle passbys along special trackwork such as switches at the MSFs. However, since the MSF site options are located in a predominantly industrial area, there are no vibration-sensitive receptors (such as residences, schools, churches, or parks) identified within the FTA screening distance of 150 feet. Therefore, vibration generated from slow-moving LRT vehicles over switches and other activities at the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not exceed the FTA vibration impact criteria at any of the closest receptors and a less than significant vibration impact would occur.

Construction Impacts

MSF Site Options and Design Option

The construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would involve similar work to installation of the alignment and construction of stations. Since the MSF site options are located in a predominantly industrial area, there are no adjacent vibration-sensitive receptors, and a less than significant vibration would occur.

3.11.7 Project Measures and Mitigation Measures

3.11.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option.

Operational Project Measures include:

PM NOI-1: Operational (post-Project) design standards for the Build Alternative may include but are not limited to:

- Design efforts per Metro Rail Design Criteria (MRDC) to reduce operational noise of the TPSSs which would mandate the location of traction power substations (TPSS) to be 45 dBA at 50 feet or at the setback line of the nearest building or occupied area, whichever is closer (Metro 2018).

Construction Project Measures shall include:

PM NOI-2: Construction activities shall comply with Metro's baseline specifications Section 015619, Construction Noise and Vibration Control. Although Metro, as a state-chartered transportation agency, is exempt from local noise ordinances, the agency is committed to consistency with local construction noise limits whenever feasible and reasonable in accordance with its own construction specifications. Metro's contractor shall utilize control measures from Metro's specifications that effectively minimize noise and vibration impacts in the community. Some mitigation measures shown in **Section 3.11.7.2** are based on the provisions set forth in Section 015619 and are refined to have more specificity towards the Project-related impacts concerning noise and vibration. Under PM NOI-2, the Project shall comply with the entirety of Metro's baseline specifications Section 015619 and Metro's contractor would utilize control measures from its own specifications that effectively minimize noise and vibration impacts in the community, such as:

- Conducting construction activities during the daytime whenever practicable.
- Requiring special permits for construction within a specified distance and a specified time period for residential zones during the nighttime and weekends.
- Using construction equipment with effective noise-suppression devices whenever feasible.
- Using noise control measures, such as enclosures and noise barriers, as necessary to protect the public and achieve compliance with Metro's noise limits.
- Conducting all operations in a manner that will minimize, to the greatest extent practicable, disturbance to the public in areas adjacent to the construction activities and to occupants of nearby buildings.

3.11.7.2 Mitigation Measures

As identified in **Section 3.11.6**, the Build Alternatives and Build Alternatives with the design option(s), and the MSF site options would have significant impacts on construction noise and operational and construction vibration under Impact NOI-1 (Ambient Noise) and Impact NOI-2 (Ground-Borne Vibration). Mitigation measures to reduce the impacts are presented herein MM NOI-1 through MM NOI-15 would apply to all Build Alternatives and Build Alternatives with the design option(s) and MSF site option(s).

Following the mitigation measure, **Table 3.11-24** identifies the applicable mitigation measure and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM NOI-1: Metro shall require the Contractor to develop a construction noise control plan and a construction noise monitoring plan to minimize noise impacts. The construction noise plan shall include construction noise performance criteria. The performance criteria may not exceed the FTA general assessment construction noise criteria of 80 dBA for nighttime work and 90 dBA for daytime work at residential properties or 100 dBA at commercial or industrial properties for daytime or nighttime work, as measured at the boundary of any occupied property where the noise is being received.

MM NOI-2: Metro shall require the Contractor to use construction methods that avoid pile-driving at locations containing noise- and vibration-sensitive receptors, such as residences, schools, and hospitals where practicable. Metro's Contractor shall use cast-in-drilled-hole (CIDH) or drilled piles rather than impact pile drivers to reduce excessive noise, except where CIDH or drilled piles are impracticable.

MM NOI-3: Metro shall require the Contractor to erect temporary noise barriers between noisy activities and noise sensitive receptors to ensure compliance with applicable noise limits.

MM NOI-4: Metro shall require the Contractor to locate construction equipment and material staging areas away from sensitive receptors where practicable.

MM NOI-5: Metro shall require the Contractor to route construction traffic and haul routes along roads in areas without receptors sensitive to noise and vibration, where practicable.

MM NOI-6: Metro shall require contractors to use best available control technologies to limit excessive noise when working near residences (e.g., piling noise shrouds) where practicable.

MM NOI-7: Metro shall require the Contractor wherever practicable, to conduct construction activities during the daytime and during weekdays in residential areas.

MM NOI-8: Metro shall notify the public of construction operations and schedules. Metro shall provide a construction-alert publication and set up a Noise and Vibration Complaint Hotline that shall reply to complaints within 2 working days.

MM NOI-9: Metro shall require the Contractor to use a muck removal conveyor for the TBM unless otherwise impracticable. If a temporary tunnel track is installed it shall have smooth rail and wheels, and car speeds shall be limited to limit structure-borne noise and vibration.

MM NOI-10: Metro shall require the Contractor to store muck on site overnight where feasible and remove by truck through the day where the haul route traverses residential areas at night.

MM NOI-11: Metro shall require temporary and permanent tunnel vent fans to be located away from residences. Metro shall require that noise from these shall be attenuated to comply with the noise control plan and local code requirements for fixed stationary heating, ventilation, and air conditioning (HVAC) or other machinery noise.

MM NOI-12: Within the tunnel, Metro shall reduce operational vibration impacts through use of track support systems which incorporate resilience, such as ballast mats, high resilience track fasteners, resiliently supported ties or floating track slabs.

MM NOI-13: Metro shall reduce vibration impacts due to gaps at switches by installing ballast mats under conventional switches to "decouple" the train vibration from the track supporting structure or using a "gapless" spring frog or other low vibration switches for the entire alignment.

MM NOI-14: Metro shall conduct a survey of selected properties within 100 feet of the alignment to determine the baseline structural integrity and condition of walls and joints. These surveys shall include the installation of strain gauges or a photographic documentation of the interior walls and/or exterior façade as a basis for comparison after construction is completed.

MM NOI-15: Metro shall require the Contractor to develop a construction vibration control plan and a construction vibration monitoring plan to minimize vibration impact and reduce the risk of damage to susceptible structures. The construction vibration control plan shall specify implementation of vibration control measures to ensure that vibration during construction activities shall not exceed ppv 0.2 ips at any non-engineered timber and masonry building.

3.11.8 Significance After Mitigation

As identified in **Table 3.11-24**, with implementation of MM NOI-1 through MM NOI-15 for Impact NOI-1 and Impact NOI-2, **all impacts would be reduced to less than significant for all Build Alternatives and design options and MSF site option(s)**.

Table 3.11-24. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
NOI-1 Ambient Noise	Applicable Mitigation	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11	MM NOI-1 MM NOI-2 MM NOI-3 MM NOI-4 MM NOI-5 MM NOI-6 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-10 MM NOI-11
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
NOI-2 Ground Borne Vibration	Applicable Mitigation	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15	MM NOI-2 MM NOI-4 MM NOI-5 MM NOI-7 MM NOI-8 MM NOI-9 MM NOI-12 MM NOI-13 MM NOI-14 MM NOI-15
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.12 Population and Housing

3.12.1 Introduction

This section discusses the Project setting in relation to population and housing. It describes existing conditions, the current regulatory setting, and potential impacts from operation and construction of the Build Alternatives including design options and MSF site options.

The population and housing study area encompasses the GSA, which includes low-income, and heavily transit-dependent communities with major activity centers within the Gateway Cities subregion of Los Angeles County. Information in this section is based on the Eastside Transit Corridor Phase 2 Community and Neighborhoods Impacts Report (Appendix M).

3.12.2 Regulatory Framework

3.12.2.1 State

3.12.2.1.1 California Relocation Act

The provisions of the California Relocation Act apply in the absence of federal funds and/or involvement if a public entity undertakes a project and consequently must provide relocation assistance and benefits. The California Relocation Act seeks to (1) ensure consistent and fair treatment of owners of real property, (2) encourage and expedite acquisition by agreement to avoid litigation and relieve congestion in the courts, and (3) promote confidence in the public land acquisitions process.

Owners of private property have state constitutional guarantees that their property will not be acquired, taken, or damaged for public use unless they first receive an offer of just compensation. A just compensation amount is measured by the "fair market value" (FMV) of the real estate property interests and rights acquired, where FMV is considered to be the:

> "Highest price on the date of valuation that would be agreed to by a seller, being willing to sell, but under no particular or urgent necessity for so doing, nor obliged to sell; and a buyer, being ready, willing and able to buy but under no particular necessity for so doing, each dealing with the other with the full knowledge of all the uses and purposes for which the property is reasonably adaptable and available." (Code of Civil Procedure Section 1263.320a.)

The establishment of FMV of a property is determined by an independent appraisal opinion of value of a property's worth that is just and equitable on the open market and confirmed by an outside independent review appraisal.

3.12.2.2 Local

The Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization that oversees regional planning efforts for the six-county region consisting of Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial counties. SCAG's planning efforts focus on strategies to minimize traffic congestion, protect environmental quality, and provide

adequate housing throughout the region. Adopted in September 2020, the SCAG's Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (2020 RTP/SCS) is a long-range visioning plan that builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Connect SoCal projects growth in employment, population, and households at the regional, county, city, town and neighborhood levels. These projections take into account economic and demographic trends, as well as feedback reflecting on-the-ground conditions from SCAG's jurisdictions. The impacts analysis uses these projections to establish the magnitude of impacts related to growth.

The general plan policies of the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier include elements key to population and housing. In general, they all encourage the preservation, rehabilitation and maintenance of existing housing and residential neighborhoods. They also promote the development of new housing to meet the needs of existing and future residents. More information about these general plan policies is available in Appendix M.

3.12.3 Methodology

The impacts analysis is based on demographic information (i.e., population, household, employment) and housing unit data, which was collected at the census tract level from the U.S. Census Bureau American Community Survey (ACS), 5-year Estimates, 2015-2019, and at the jurisdictional level from SCAG's 2020 RTP/SCS. A qualitative assessment of impacts on population and housing was conducted based on the Build Alternatives' anticipated effect to existing and projected growth within the GSA and the potential indirect effects on housing. Additionally, the potential for direct effects on housing, including potential displacement due to Project construction, is evaluated within the DSA.

3.12.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to population and housing if it would:

Impact PPH-1: Induce substantial unplanned population growth in an area, either directly (for example, by proposing new housing and businesses) or indirectly (for example, through extension of roads or other infrastructure).

Impact PPH-2: Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

3.12.5 Existing Setting

The GSA is approximately 82 square miles, or about two percent of Los Angeles County geographically. It includes all or portions of 19 cities and areas of unincorporated Los Angeles County. Per the SCAG 2020 RTP/SCS, Los Angeles County's population was estimated at 10,407,326 persons and is anticipated to increase by approximately 0.49 percent annually and 12.2 percent by 2045. As shown in **Table 3.12-1**, by 2045, the cities in which the GSA is located are anticipated to grow between 0 to 0.65 percent annually in population and between 0 to 19 percent by 2045. As shown in **Table 3.12-2, t**he number of households is anticipated to grow from 0 to 1.16 percent annually in the GSA and 0.75

percent in Los Angeles County. As shown in **Table 3.12-3**, the annual employment growth rate is expected to be between 0 to 0.74 percent in the GSA and 0.45 in Los Angeles County. Thus, the jurisdictions in the GSA have varied rates of population, household and employment growth, and there are areas with growth rates that are both greater and less than the Los Angeles County average. Because population and housing trends occur at the regional level, the GSA is the appropriate scale for this type of analysis.

Table 3.12-1. GSA Population Trends

Geography	2020 Population	2045 Population	Total % Growth (2020 to 2045)	Average Annual Growth per Year
Alhambra	87,218	91,215	4.6%	0.18%
Baldwin Park	76,230	81,691	7.2%	0.29%
Bell	36,498	37,070	1.6%	0.06%
Bell Gardens	42,967	44,337	3.2%	0.13%
Commerce	13,172	13,759	4.5%	0.18%
Downey	113,998	119,207	4.6%	0.18%
El Monte	115,533	137,503	19.0%	0.76%
Industry	440	440	0.0%	0.00%
Los Angeles	4,105,974	4,771,326	16.2%	0.65%
Montebello	64,353	67,808	5.4%	0.21%
Monterey Park	61,983	65,591	5.8%	0.23%
Norwalk	105,766	106,989	1.2%	0.05%
Pico Rivera	63,905	67,387	5.4%	0.22%
Rosemead	55,248	60,257	9.1%	0.36%
San Gabriel	41,217	45,836	11.2%	0.45%
Santa Fe Springs	18,368	20,627	12.3%	0.49%
South El Monte	21,026	22,613	7.5%	0.30%
Vernon	211	211	0.0%	0.00%
Whittier	89,731	98,904	10.2%	0.41%
Los Angeles County	10,407,326	11,673,937	12.2%	0.49%
SCAG Region	19,517,731	22,503,899	15.3%	0.61%

Source: SCAG, 2020 Connect SoCal RTP/SCS.

Table 3.12-2. GSA Household Trends

Geography	2020 Households	2045 Households	Total % Growth (2020 to 2045)	Average Annual Growth per Year
Alhambra	30,304	32,031	5.7%	0.23%
Baldwin Park	17,311	19,234	11.1%	0.44%
Bell	8,994	9,214	2.4%	0.10%
Bell Gardens	9,732	10,216	5.0%	0.20%
Commerce	3,447	3,684	6.9%	0.28%
Downey	32,840	34,072	3.8%	0.15%
El Monte	28,172	36,343	29.0%	1.16%
Industry	64	64	0.0%	0.00%
Los Angeles	1,436,882	1,793,035	24.8%	0.99%
Montebello	19,418	21,066	8.5%	0.34%
Monterey Park	20,370	22,209	9.0%	0.36%
Norwalk	26,812	27,280	1.7%	0.07%
Pico Rivera	16,778	18,475	10.1%	0.40%
Rosemead	14,462	16,508	14.1%	0.57%
San Gabriel	12,992	15,269	17.5%	0.70%
Santa Fe Springs	5,546	6,461	16.5%	0.66%
South El Monte	4,743	5,298	11.7%	0.47%
Vernon	76	76	0.0%	0.00%
Whittier	30,472	33,474	9.9%	0.39%
Los Angeles County	3,471,759	4,119,336	18.7%	0.75%
SCAG Region	6,333,458	7,633,451	20.5%	0.82%

Source: SCAG, 2020 Connect SoCal RTP/SCS.

Table 3.12-3. GSA Employment Trends

Geography	2020 Employment	2045 Employment	Total % Growth (2020 to 2045)	Average Annual Growth per Year
Alhambra	37,861	40,634	7.3%	0.29%
Baldwin Park	25,023	26,531	6.0%	0.24%
Bell	12,516	13,187	5.4%	0.21%
Bell Gardens	9,683	10,289	6.3%	0.25%
Commerce	53,865	56,038	4.0%	0.16%
Downey	43,315	45,822	5.8%	0.23%
El Monte	31,345	37,109	18.4%	0.74%
Industry	80,388	80,388	0.0%	0.00%
Los Angeles	1,890,709	2,135,892	13.0%	0.52%
Montebello	29,684	31,294	5.4%	0.22%
Monterey Park	45,869	48,022	4.7%	0.19%
Norwalk	26,421	28,126	6.5%	0.26%
Pico Rivera	25,294	27,150	7.3%	0.29%
Rosemead	16,673	18,070	8.4%	0.34%
San Gabriel	15,151	16,682	10.1%	0.40%
Santa Fe Springs	57,831	60,979	5.4%	0.22%
South El Monte	16,944	17,724	4.6%	0.18%
Vernon	43,675	44,567	2.0%	0.08%
Whittier	36,393	38,900	6.9%	0.28%
Los Angeles County	4,838,458	5,382,235	10%	0.45%
SCAG Region	8,695,427	10,048,822	13%	0.62%

Source: SCAG, 2020 Connect SoCal RTP/SCS.

As shown in **Table 3.12-4**, there are 119,759 persons living in the census tracts that are within 0.5 miles of the stations along the full alignment (Alternative 1). Of those persons, 49 percent report as a Minority and 51 percent report as White only (non-Hispanic or Latino) according to the 2015-2019 ACS 5-Year population estimates. In addition, 34 percent of the total population is either a student (21 percent) or senior (13 percent) who may be transit-dependent. Around 15 percent of people within 0.5 miles of stations are transit-dependent and below the federal poverty level.

As shown in **Table 3.12-5**, of the total number of housing units, 44.5 percent are owner occupied and 50.8 percent are renter occupied. In comparison, there are a low number of vacant units (4.5 percent). The median home value is estimated at around $483,274 under 2019 conditions. The median household income is $59,420 annually and the average household size is 3.6 persons per household.

Table 3.12-4. General Demographic Characteristics of Census Tracts within 0.5 Miles of Stations

	Persons	% of Population
Race		
White	60,584	51%
Black or African American	1,238	1%
American Indian and Alaska Native	1,014	1%
Asian	5,155	4%
Native Hawaiian / Other Pacific Islander	170	0%
Some other race	49,122	41%
Two or more races	2,476	2%
Ethnicity		
Hispanic or Latino (of any race)	106,823	N/A
Transit-Dependent Population Groups		
Students Age 5-19	25,062	21%
Age 65+ Years	14,802	13%
Mode of Transportation to Work		
Car, Truck or Van – Drove Alone	41,143	77%
Car, Truck or Van – Carpool	5,987	11%
Public Transportation for Work	2,650	5%
Work from Home	1,421	3%
Walked	1,327	2%
Taxicab, Motorcycle, Bicycle or other Means	731	1%
Poverty Levels		
Total Population Below Poverty Level	18,205	15%

Source: 2015-2019 American Community Survey (ACS) 5-Year Estimates for Census Tracts.

Table 3.12-5. Housing Characteristics of Census Tracts within 0.5 Miles of Stations

	Persons	% of Population
Housing		
Total Housing Units	198,522	NA
Vacant Units	9,054	4.5%
Occupied	189,468	95.4%
Owner-Occupied	88,460	44.5%
Renter-Occupied	101,008	50.8%
Households		
Total Population	119,759	NA
Median Home Value	$483,274	NA
Median Household Income	$59,420	NA
Average Household Size of Owner-Occupied	3.67	NA
Average Household Size of Renter-Occupied	3.52	NA

Source: 2015-2019 American Community Survey (ACS) 5-Year Estimates for Census Tracts.

3.12.6 Impact Evaluation

3.12.6.1 Impact PPH-1: Unplanned Population Growth

Impact PPH-1: Would a Build Alternative induce substantial unplanned population growth in an area, either directly or indirectly?

3.12.6.1.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would not result in substantial changes to the existing population in the GSA or DSA. Alternative 1 would not include development of new housing or businesses that would directly induce population growth. However, implementation of Alternative 1 could indirectly affect growth and development in the DSA by providing enhanced transit connections that could make station areas more desirable locations for residences and businesses and could encourage growth and economic development in the surrounding communities. There are state and regional planning programs and policies to encourage and incentivize development near transit stations. For example, the County of Los Angeles identifies Transit Orient Districts where specific development standards can be established to encourage in-fill development, pedestrian-friendly, and community-serving uses near transit stops. Metro also supports local jurisdictions in developing and adopting transit-supportive policies and programs to leverage the value of transit investments and increase ridership. Metro does not have land use authority in Los Angeles County. However, the Metro L (Gold) Line extension itself would not on its own dramatically stimulate development or change property values; this would also be influenced by factors related to public policies to encourage development, local zoning requirements, station area demographics, effective service and design, real estate market trends and property availability, and station area/neighborhood design. Rather, the Project would expand transit

service in the region which would allow for increased development around station areas consistent with local policies and zoning requirements and restrictions. Therefore, any development that could result in the vicinity of the proposed stations is anticipated to be consistent with local polices and requirements and local growth projections. Therefore, operation of Alternative 1 is not anticipated to change existing growth and development patterns and any such housing and business development growth would be contingent upon local city zoning regulations and approvals, which would also consider a development's consistency with local general plans and transit oriented development policies. As such, operation of Alternative 1 would not induce unplanned population growth or dramatically stimulate development; the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Alternative 1 with the Atlantic/Pomona Station Option would not affect population growth differently than the base Alternative 1. No substantial population changes are anticipated in the GSA or DSA as a result of the operation of Alternative 1 with the Atlantic/Pomona Station Option. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not induce unplanned population growth or dramatically stimulate development; the impact would be less than significant.

Montebello At-Grade Option

Alternative 1 with the Montebello At-Grade Option would not affect population growth differently than the base Alternative 1. The at-grade segment of the Montebello At-Grade Option would operate within the median of Washington Boulevard. No substantial population changes are anticipated in the GSA or DSA as a result of operation of Alternative 1 with the Montebello At-Grade Option. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not induce unplanned population growth or dramatically stimulate development; the impact would be less than significant.

Construction Impacts

Construction activities under Alternative 1 would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. While construction activities would result in approximately 630 new temporary employment opportunities at the peak of construction activities, it is not anticipated that there would be any substantial population growth in the GSA or DSA, either directly or indirectly, as a result of temporary construction jobs. The workers would likely come from the existing large labor pool within the greater Los Angeles region and would not result in new workers relocating to the area. As such, construction of Alternative 1 would not induce unplanned population growth; the impact would be less than significant.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect population growth differently than the base Alternative 1. Construction of Alternative 1 with the Atlantic/Pomona Station Option would not include the development of housing or infrastructure that could result in unplanned population growth and would result in temporary employment. Thus, construction of Alternative 1 with the Atlantic/Pomona Station Option would not induce or result in substantial

population growth, either directly or indirectly, within the GSA or DSA; the impact would be less than significant.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not affect population growth differently than the base Alternative 1. Construction of Alternative 1 with the Montebello At-Grade Option would not include the development of housing or infrastructure that could result in unplanned population growth and would result in temporary employment. Thus, construction of Alternative 1 with the Montebello At-Grade Option would not induce or result in substantial population growth, either directly or indirectly, within the GSA or DSA; the impact would be less than significant.

3.12.6.1.2 Alternative 2 Atlantic to Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial changes to the existing population in the GSA or DSA as it would not include development of new housing or businesses that would directly induce population growth. Implementation of the Project could indirectly affect growth and development in the DSA by providing enhanced transit connections that would make station areas more desirable locations for residences and businesses. This, in turn, could encourage growth and economic development in the surrounding communities. However, the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would not independently stimulate development or change property values without enabling policy factors like public plans and policies that encourage development and control zoning. Housing and business development growth would be contingent upon local city zoning regulations and approvals which would consider a development's consistency with local general plans and transit oriented development policies. As such, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not induce unplanned population growth or dramatically stimulate development; the impact would be less than significant.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. While construction activities would result in approximately 340 new temporary employment opportunities at the peak of construction activities, it is not anticipated that there would be any substantial population growth in the GSA or DSA, either directly or indirectly, as a result of temporary construction jobs. The workers would likely come from the existing large labor pool within the greater Los Angeles region and would not result in new workers relocating to the area. As such, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not induce unplanned population growth; the impact would be less than significant.

3.12.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial changes to the existing population in the GSA or DSA as it would not include development of new housing or businesses that would directly induce population growth. Implementation of the Project could indirectly affect growth and development in the DSA by providing enhanced transit connections that would make station areas more desirable locations for residences and businesses. This, in turn, could encourage growth and economic development in the surrounding communities. However, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not independently stimulate development or change property values without enabling policy factors like public plans and policies that encourage development and control zoning. Housing and business development growth would be contingent upon local city zoning regulations and approval, which would consider consistency with local general plans and transit oriented development policies. As such, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not induce unplanned population growth or dramatically stimulate development; the impact would be less than significant.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. While construction activities would result in approximately 400 new temporary employment opportunities at the peak of construction activities, it is not anticipated that there would be any substantial population growth in the GSA or DSA, either directly or indirectly, as a result of temporary construction jobs. The workers would likely come from the existing large labor pool within the greater Los Angeles region and would not result in new workers relocating to the area. As such, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not induce unplanned population growth; the impact would be less than significant.

3.12.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in substantial changes to the existing population in the GSA or DSA. The MSF site options would not include development of new housing or businesses that would directly induce population growth. While there would be approximately 350 new permanent employment opportunities associated with operation of the MSF facilities, the increase in employment

needs is not expected to result in population in-migration or relocation because of the large size of the workforce that currently exists in the Los Angeles region as a whole. Given the size of the existing labor pool and the prevalence of cross-county and intercommunity commuting by workers between their places of work and places of residence, it is unlikely that workers would change their place of residence in response to the employment opportunities associated with the MSF site options; subsequently, there would not be an increased need for new housing. As such, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not induce unplanned population growth; the impact would be less than significant.

Construction Impacts

MSF Site Options and Design Option

Construction activities for the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. It is not anticipated that there would be any substantial population growth in the GSA or DSA, either directly or indirectly, as a result of temporary construction workers and increased job opportunities. The workers would likely come from the existing large labor pool within the greater Los Angeles region and would not result in new workers relocating to the area. As such, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not induce unplanned population growth; the impact would be less than significant.

3.12.6.2 Impact PPH-2: Displacement

Impact PPH-2: Would a Build Alternative displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

3.12.6.2.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would occur within the transportation ROW and at the new stations. Under Alternative 1, no acquisition of residential structures would occur; therefore, no people or housing would be displaced. Therefore, operation of Alternative 1 would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere and no impact would occur.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not result in substantial displacement of people or housing as no residential structures would be acquired; no impact would occur.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not result in substantial displacement of people or housing as no residential structures would be acquired; no impact would occur.

Construction Impacts

While construction of Alternative 1 would result in acquisition of non-residential properties, no residential parcels would be acquired. Therefore, there would be no displacement of any people or housing and there would be no need for replacement housing. No impact would occur.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not displace people or housing as no residential parcels would be acquired. Therefore, there would be no need for replacement housing. No impact would occur.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not displace people or housing as no residential parcels would be acquired. Therefore, there would be no need for replacement housing. No impact would occur.

3.12.6.2.2 Alternative 2 Atlantic to Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would occur within the transportation ROW and at the new stations. No acquisition of residential structures would occur and no people or housing would be displaced. Therefore, operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur.

Construction Impacts

Base Alternative and Design Option

While construction of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would result in acquisition of non-residential properties, no residential parcels would be acquired. Therefore, construction of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would not displace substantial numbers of people or housing and there would be no need for replacement housing. No impact would occur.

3.12.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would occur within the transportation ROW and at the new stations. No acquisition of residential structures would occur, and no people or housing would be displaced. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere. No impact would occur.

Construction Impacts

Base Alternative and Design Options

While construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would result in acquisition of non-residential properties, no residential parcels would be acquired. Therefore, there would be no displacement of any people or housing and there would be no need for replacement housing. Therefore, construction of the base Alternative 3 or Alternative 3 with Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not displace substantial numbers of people or housing and there would be no need for replacement housing. No impact would occur.

3.12.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would operate entirely within an industrial area and its operations would not displace any people or housing units. Therefore, operation of the MSF site options would not result in a need for replacement housing. No impact would occur.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would be constructed within an industrial area and would not include the acquisition of residential structures or displacement of any people. Therefore, construction of the MSF site options would not result in a need for replacement housing. No impact would occur.

3.12.7 Project Measures and Mitigation Measures

As identified in **Section 3.12.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on population and housing under Impact PPH-1 (Unplanned Population Growth) and no impact on population and housing under Impact PPH-2 (Displacement). The MSF site options would have less than significant impacts under Impact PPH-1 (Unplanned Population Growth) and no impact under PPH-2 (Displacement). No project measures or mitigation measures would be required for operation or construction. **Table 3.12-6 i**dentifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

3.12.8 Significance After Mitigation

As identified in **Table 3.12-6, no mitigation is required** for the Build Alternatives and Build Alternatives with the design option(s). Less than significant impacts would remain under Impact PPH-1 and no impact would remain under Impact PPH-2.

Table 3.12-6. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact PPH-1: Unplanned Population Growth	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
PPH-2 Displacement	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.13 Public Services and Recreation

3.13.1 Introduction

This section discusses the Project setting in relation to public services and recreation. It describes existing conditions, the current regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options.

The public services and recreation study area encompasses the GSA and DSA. Information in this section is based on the Eastside Transit Corridor Phase 2 Community and Neighborhoods Impacts Report (Appendix M).

3.13.2 Regulatory Framework

3.13.2.1 Federal

3.13.2.1.1 National Fire Protection Code

The National Fire Protection Association (NFPA) has set forth a range of safety codes for a variety of environments and applications. The National Fire Protection Code —NFPA 130, Standard for Fixed Guideway Transit and Passenger Rail Systems —provides fire protection and life-safety requirements for underground, surface and elevated fixed guideway transit and passenger rail systems. This also includes storage facilities, train ways, stations, emergency ventilation systems, and communications and control systems. The purpose of NFPA 130 is to establish minimum requirements that will provide a reasonable degree of safety from fire and its related hazards in fixed guideway transit and passenger rail system environments. NFPA 130 regulates the type of materials, material fire safety properties (e.g., flammability, combustibility, and smoke production), and potential fire hazards.

3.13.2.2 State

3.13.2.2.1 California Fire Code

Title 24, Part 9 of the California Code of Regulations, also referred to as the California Fire Code, is part of the California Building Code and provides building standard regulations regarding fire protection and notification systems for residential and commercial buildings. It delineates fire safety requirements and regulations, including the implementation of fire protection devices such as fire extinguishers and smoke alarms; establishment of fire resistance standards for fire doors, building materials, and types of construction; fire apparatus access to buildings; and fire suppression training. The California Fire Code is applicable to all occupancies in California except if adopted local regulations are more stringent.

3.13.2.2.2 California Penal Code

All law enforcement agencies within the State of California are organized and operated in accordance with the applicable provisions of the California Penal Code. This code sets forth the authority, rules of conduct, and training for peace officers. Under State law, all sworn municipal and county officers are state peace officers.

3.13.2.2.3 California Public Park Preservation Act

The California Public Park Preservation Act of 1971 is codified as PRC Sections 5400–5409. Cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the acquired parkland.

3.13.2.2.4 Quimby Act

The Quimby Act was established by the California State Legislature in 1965 and codified as California Government Code Section 66477. The Quimby Act allows the legislative body of a city or county to require, by ordinance, the dedication of land, payment of fees in lieu thereof, or a combination of both for park or recreational purposes as a condition to the approval of a tentative tract map or parcel map.

3.13.2.3 Regional and Local

3.13.2.3.1 Metro

Metro's *Grade Crossing Safety Policy for Light Rail Transit* (2010) provides a structured process for evaluating potential grade separations versus at-grade operation along light rail lines. The policy is a three-step process that is described in Appendix M.

Metro's *Rail System Emergency Response Plan* (1999) establishes guidelines for standard operating policy and procedures for the mobilization of Metro employees and resources during an emergency. The plan is shared with other public safety organizations and agencies to provide a fast, controlled, and coordinated response to the various emergencies that may occur on the Metro rail system. The goal of the plan is to establish guidelines that would impact the fewest number of responders, allowing the emergency to be mitigated with as little impact to the system as practicable and service to be restored as quickly as possible.

Metro's *Rail Design Criteria* (MRDC) (2013) identifies the methods to construct, maintain, and monitor the relative safety of LRT facilities. It was most recently updated with the 2018 adoption of the *Metro Systemwide Station Design Standards Policy*. The MRDC provides specific direction regarding the categorization of potential hazards and the actions, including suspension of LRT operations, should a potential safety and security risk arise. The MRDC also requires the preparation of a Functional Hazard Analysis that analyzes the potential for a loss or malfunction of each and every LRT operational function and categorizes its effect on the equipment, personnel, patrons and general public to determine the associated hazard level. The MRDC also outlines the following basic methods of resolving or addressing any potential safety and security concerns:

- Elimination through design/redesign
- Minimization through the provision of additional safety features

- Installation of warning devices to shall be used to detect the condition and to generate an adequate warning signal to correct the hazard or to provide for operating personnel/public reaction
- Specialized procedures and training

3.13.2.3.2 Los Angeles County and Municipalities

The general plans of Los Angeles County and the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier include policies relevant to public services and recreation. In general, they all aim to maintain an adequate emergency response system, ensure that law enforcement services meet the public safety needs of the community, encourage the expansion of school facilities, and enhance the existing park and recreational facilities to the extent that they can continue to provide residents with the best possible recreational opportunities. More information about these general plan policies is available in Appendix M.

3.13.3 Methodology

Fire and police stations are identified within the DSA to address whether the Build Alternatives would affect emergency response times and capabilities resulting in the need for new or expanded facilities to maintain adequate levels of service, as well as the potential for any fire and police stations within the DSA to be directly impacted as a result of new construction or operations. In addition, the assessment also considers the potential for change in population characteristics and criminal activity that may result in increased demand or other needs for new or physically altered public safety facilities to maintain adequate levels of service. Schools and other public facilities (i.e., libraries and governmental centers) are identified within 0.25 miles of the Build Alternatives to address the potential for any direct impacts to facilities or access to such facilities, and to assess the potential for indirect impacts on levels of service if the Build Alternatives were to induce new population growth to the region. Each public facility and service is qualitatively assessed to determine the potential for the Build Alternatives to result in the need for such facilities to make physical alterations to maintain levels of service that could result in environmental impacts.

Parks and recreational facilities are identified within 0.25 miles of the Build Alternatives. A qualitative assessment of impacts on parks and recreational facilities evaluates the potential for the Build Alternatives to generate new growth that would burden existing parks and recreation facilities, resulting in deterioration of those facilities and/or generating the need for new facilities.

General population growth trends are addressed on a regional scale with the GSA, while emergency services and other local services are best analyzed on a more local scale – for example, emergency vehicles and personnel operate out of stations at specific sites and typically serve a defined service area – making the DSA the appropriate geography for analysis.

3.13.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, an alternative would have a significant impact related to public services and recreation if it would:

Impact PSR-1: Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities (the construction of which could cause significant environmental impacts), in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

- **Fire protection**
- **Police protection**
- **Schools**
- **Parks**
- **Other public facilities**

Impact PSR-2: Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Impact PSR-3: Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

3.13.5 Existing Setting

3.13.5.1 Fire and Police Protection

3.13.5.1.1 Metro

Policing of Metro facilities is shared between the Los Angeles County Sheriff's Department (LASD), Los Angeles Police Department (LAPD), and Long Beach Police Department (LBPD). The LAPD and LBPD handle much of the policing in the cities of Los Angeles and Long Beach, respectively, with the LASD handling areas outside those cities, including within the DSA.

On the Metro system, quality of life enforcement, such as responding to serious crimes, is the primary duty of these law enforcement agencies. In addition, under the direction of these agencies, Metro's in-house transit security officers and contracted private security personnel primarily focus on fare evasion and passenger complaints and generally do not respond to more serious crime events.

3.13.5.1.2 Local

Fire prevention, protection, and emergency medical services in the DSA are provided by the Los Angeles County Fire Department (LACFD) in unincorporated Los Angeles County (East Los Angeles and West Whittier-Los Nietos) and the cities of Commerce, Pico Rivera, and Whittier. These services are provided by the Montebello Fire Department and Santa Fe Springs Department of Fire-Rescue in Montebello and Santa Fe Springs, respectively. Law enforcement, police services, and civil processes in the DSA are provided by the LASD in unincorporated Los Angeles County (East Los Angeles and West Whittier-Los Nietos) and the cities of Commerce and Pico Rivera. These services are provided by the Montebello Police Department in Montebello and the Whittier Police Department in Whittier and Santa Fe Springs. **Table 3.13-1** and **Table 3.13-2** identify the fire stations and police and sheriff

departments, respectively, within the Alternative 1 DSA and **Figure 3.13.1** shows their locations. The LACFD Fire Station 50 located at Saybrook Avenue in Commerce and Los Angeles County Sheriff's Department - East Los Angeles located on East 3rd Street in East Los Angeles are the closest facilities to the Project.

Table 3.13-1. Alternative 1 DSA Fire Stations

Map ID	Jurisdiction	Address	City
1	Los Angeles County Fire Department - Station 103	7300 S. Paramount Blvd.	Pico Rivera
2	Los Angeles County Fire Department - Station 17	12006 Hadley St.	Whittier
3	Los Angeles County Fire Department - Station 22	928 S. Gerhart Ave.	Commerce
4	Los Angeles County Fire Department - Station 28	7733 Greenleaf Ave.	Whittier
5	Los Angeles County Fire Department - Station 3	930 S. Eastern Ave.	Los Angeles
6	Los Angeles County Fire Department - Station 40	4864 S. Durfee Ave.	Pico Rivera
7	Los Angeles County Fire Department - Station 50	2327 S. Saybrook Ave.	Commerce
8	Montebello Fire Department - Station No. 2	1166 S. Greenwood Ave.	Montebello
9	Montebello Fire Department - Station No. 3	2950 Via Acosta	Montebello
10	Santa Fe Springs Department of Fire and Rescue - Station 2	8634 Dice Rd.	Santa Fe Springs

Source: Los Angeles County GIS Program, 2020.

Table 3.13-2. Alternative 1 DSA Police Stations

Map ID	Jurisdiction	Address	City
11	Commerce Public Safety Division	2535 Commerce Way	Commerce
12	Montebello Police Department	600 West Beverly Blvd.	Montebello
13	Whittier Police Department	7315 South Painter Ave.	Whittier
14	Los Angeles County Sheriff's Department - East Los Angeles	5019 E. 3rd St.	East Los Angeles
15	Los Angeles County Sheriff's Department - Pico Rivera	6631 S. Passons Blvd.	Pico Rivera

Source: Los Angeles County GIS Program, 2019.

Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.13.1. Public Services Locations

3.13.5.2 Schools

Table 3.13-3 identifies public and private schools within one quarter mile of the Build Alternatives and **Figure 3.13.1** shows their locations. As shown on **Figure 3.13.1**, several of the school are located near or adjacent to the alignment, including Garfield High School, Fourth Street Elementary School, Greenwood Elementary School, Ada S. Nelson Elementary School, and Washington Elementary School.

Table 3.13-3. Schools within 0.25 Miles of Build Alternatives

Map ID	School Type	Name	Address	City
16	Public Elementary	Fourth Street	420 South Amalia Ave	Los Angeles
17	Public Elementary	Ada S. Nelson	8140 South Vicki Dr	Whittier
18	Public Elementary	Greenwood	900 South Greenwood Ave	Montebello
19	Public Elementary	George Washington	7804 S. Thornlake Ave	Whittier
20	Public Middle	David Wark Griffith	4765 East Fourth St	Los Angeles
21	Public High	Monterey Continuation	466 South Fraser St	Los Angeles
22	Public High	James A. Garfield Senior	5101 East Sixth St	Los Angeles
23	Public High	Pioneer	10800 Benavon St	Whittier
24	Public Charter	KIPP Raices Academy	668 Atlantic Blvd	Los Angeles
25	Public Charter	KIPP Promesa Prep	5156 Whittier Blvd	Los Angeles
26	Public Charter	Arts in Action Elementary	5115 Via Corona St	Los Angeles
27	Private	Calvary Chapel Christian Academy	931 South Maple Ave	Montebello
28	Private	St. Alphonsus School	552 South Amalia Ave	Los Angeles

3.13.5.3 Other Public Facilities

Table 3.13-4 identifies the other public facilities within one quarter mile of the Build Alternatives and **Figure 3.13.1** shows their locations.

Table 3.13-4. Other Public Facilities within 0.25 Miles of Build Alternatives

Map ID	Service Type	Jurisdiction	Address	City
29	Library	Chet Holifield Library	1060 Greenwood Ave	Montebello
30	Library	East Los Angeles Library	4837 E 3rd St	Los Angeles
31	Governmental	Los Angeles County East Los Angeles Civic Center	4848 Civic Center Way	Los Angeles

Source: Los Angeles County GIS Program, 2020

3.13.5.4 Parks and Recreational Facilities

Table 3.13-5 identifies the parks and recreational facilities within one quarter mile of the Build Alternatives and **Figure 3.13.1** shows their locations. Parks and recreational facilities in closest proximity to the Project are Atlantic Avenue Park on Atlantic Boulevard, Chet Holifield Park on Greenwood Avenue, and the Rio Hondo and San Gabriel River Spreading Grounds and bike trails.

Table 3.13-5. Parks and Recreational Facilities within 0.25 Miles of Build Alternatives

Map ID	Name	Address	City
32	Chet Holifield Park and Community Center	1060 S. Greenwood Ave	Montebello
33	Woods Avenue Park	Verona St. and Woods Ave	Los Angeles
34	Atlantic Avenue Park	570 South Atlantic Blvd	Los Angeles
35	Belvedere Park Lake	3rd St and La Verne Ave	Los Angeles
36	Rio Hondo Spreading Grounds and Bike Trail	Not available	Pico Rivera
37	San Gabriel River Spreading Grounds and Bike Trail	Not available	Pico Rivera
38	Whittier Greenway Trail	Not available	Whittier

Source: Los Angeles County, Department of Parks and Recreation, 2021.
Note:
Whittier Greenway Trail is not within 0.25 miles of the Build Alternatives but is included due to its regional network influence.

3.13.6 Impact Evaluation

3.13.6.1 Impact PSR-1: Public Services

Impact PSR-1: Would a Build Alternative result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the need for new or physically altered governmental facilities (the construction of which could cause significant environmental impacts), in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services, including fire protection, police protection, schools, parks, or other public facilities?

3.13.6.1.1 Alternative 1 Washington

Operational Impacts

Fire and Police Protection

Operation of Alternative 1 would potentially increase fire and police protection response times as a result of delays at new grade crossings. Grade crossings, particularly those along Washington Boulevard between Greenwood Boulevard and Lambert Road, could potentially delay fire and police protection vehicles if they arrive at a crossing at the same time as a passing train. This segment of Washington Boulevard experiences higher traffic volumes and land uses with higher rates of trip generation, which increases the likelihood of delay. In comparison, delays resulting from LRT operation would be brief due to the short length of the LRT trainsets and the short time required for

LRT vehicles to enter and exit the crossings. Given that trains would be operating in exclusive street-running right-of-way (ROW) at these locations, it would be possible for trains to clear signaled and unsignalized intersections quickly to allow emergency vehicles to pass. Although the transition from at-grade to underground along 3rd Street between South La Verne Avenue and Woods Avenue is located directly in front of the East Los Angeles Sheriff Station, the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street and operation of Alternative 1 is unlikely to impact existing response times to or from the station. The Presbyterian Intercommunity Hospital (PIH), which includes emergency care services, is located on Washington Boulevard near Lambert Road. The intersection of Washington Boulevard and Lambert Road would be preserved because the alignment curves southward approximately one block west of the intersection and does not impact the intersection. Therefore, the intersection would continue to facilitate the ingress and egress of emergency vehicles to and from the PIH. As standard practice and as set forth in PM PSR-1, Metro shall coordinate with fire and police protection officials when designing grade crossings to ensure that access for police and fire protection services is maintained under Alternative 1.

In addition, all new LRT facilities and crossings would be designed in accordance with the *Metro Rail Design Criteria*, including the Fire/Life Safety Criteria described in greater detail below, to ensure safety and minimize potential hazards at all locations. Further, compliance with code requirements pertaining to emergency vehicle access and building standards also ensure that response times are maintained at acceptable levels. Operation of the underground and aerial configuration portions of Alternative 1 would not have any material impact to fire and police protection response times since those segments would not affect emergency vehicles travelling on surface streets. Consequently, fire and police protection response times are anticipated to remain at acceptable levels and would not require new or physically altered fire or police protection facilities under the operation of Alternative 1.

Operation of Alternative 1 would potentially increase the demand for fire and police protection services from incidents or emergencies at the new LRT stations, facilities, and grade crossings. Incidents or emergencies occurring at LRT stations or grade crossings could result in an increase in overall response calls within the local jurisdictions. Fire safety is primarily addressed through design. Metro's Fire/Life Safety Criteria outline specific requirements for fire protection at stations, along the alignment, and within LRVs. Metro's standard fire life safety certification process would be followed during station design to ensure compliance with National Fire Protection Association (NFPA) 130 Standard for Fixed Guideway Transit and Passenger Rail Systems and Metro's Fire/Life Safety Criteria. This process ensures that stations are designed and constructed to ensure safe and secure operation, including use of non-combustible construction materials, adequate emergency ventilation in below-grade portions, emergency lighting, emergency egress, emergency access, emergency back-up power, fire detection and suppression and communications. All Metro L (Gold) Line LRVs currently in service are equipped with fire extinguishers in case of fire. The LRVs have been built using vehicle specifications to minimize fire hazards that include use of materials with minimum burning rates, smoke generation, and toxicity characteristics. Any new LRVs purchased would have similar specifications and equipment.

Security issues, such as fare evasion, assault or robbery, could potentially occur at stations. As standard operating practice and as set forth in PM PSR-1, Metro shall supplement existing police protection services by providing Transit Services Bureau officers and contracted police services at all new LRT facilities, as needed to ensure that adequate police protection services are provided. In the fall of 2022, Metro would launch a three-year pilot transit ambassador program which would deploy trained contract personnel on Metro's buses, bus stops, trains, and stations. Ambassadors would be unarmed and travel the system or be at fixed stations to promote safety for riders and operators. The primary role of the transit ambassador program is to be a visible presence (Metro, 2022).

Consequently, the demand for fire and police protection is anticipated to remain at acceptable levels and would not require new fire or police protection facilities or physical alterations to existing fire or police protection facilities.

As discussed above, although operation of Alternative 1 would potentially result in an increase to fire and police protection response times, with implementation of the standard coordination and design practices identified above, it is anticipated that emergency response times would remain at acceptable levels and new or physically altered fire or police protection facilities to maintain adequate service would not be required. Likewise, although operation of Alternative 1 would potentially result in an increase in demand for fire and police protection services, implementation of the standard coordination and design practices identified above is anticipated to maintain response times at acceptable levels and would not require new or physically altered fire or police protection facilities. As a result, operation of Alternative 1 would have a less than significant impact with respect to fire and police protection services.

Schools

As discussed in Section 3.12, Population and Housing, operation of Alternative 1 would not result in substantial changes to the existing population in the GSA or DSA. While it may encourage growth in surrounding areas, that growth would be contingent upon local city zoning regulations and approvals, which would consider a development's consistency with local general plans and transit oriented development policies; therefore, any growth is anticipated to be consistent with local polices and requirements, and local growth projections. Any growth not currently planned would not occur without modification of local zoning ordinances and/or general plans. Therefore, Alternative 1 would not induce any population changes that could alter the number of students at public schools or require physical alterations to schools to accommodate an increased student population.

As identified in **Section 3.13.5.2**, there are several schools located adjacent to Alternative 1. Alternative 1 would not result in the need for new or physically altered schools. No physical alterations to Garfield High School or Fourth Street Elementary School would be required for the schools to continue operating or to maintain school access because the LRT guideway would operate below the ROW of Atlantic Boulevard, and the schools would not be impacted.

The proposed surface parking facility associated with the aerial Greenwood station would be immediately adjacent to Greenwood Elementary School. However, no physical alterations to the school would be required and school facilities, school access, and operations would not be affected. The physical barrier (fence) that currently divides the school and existing parcel where the parking facility is proposed would remain. Furthermore, the school drive and parking would separate the parking facility from the school building. Thus, the operation of Alternative 1 would not affect the school such that any new school construction or physical alterations would be required.

Alternative 1 would run at-grade in the vicinity of Ada S. Nelson Elementary School and Washington Elementary School, and both schools are separated from the at-grade LRT guideway by single- and multi-story buildings and school facilities. School operations and access would not be affected. Operation of Alternative 1 would not affect the school such that any new school construction or physical alterations would be required.

Operation of Alternative 1 would not result in the need for new construction or physical alterations to schools that could cause significant environmental impacts to maintain acceptable service; therefore, operation of Alternative 1 would have a less than significant impact on schools.

Parks and Recreational Facilities

Alternative 1 does not include construction of any new housing and, therefore, would not directly increase the demand for parks and recreational facilities associated with new residents moving into the area. As discussed in Section 3.12, Population and Housing, operation of Alternative 1 would not result in substantial changes to the existing population in the GSA or DSA. While it may encourage growth in surrounding areas, that growth would be contingent upon local city zoning regulations and approvals, which would consider a development's consistency with local general plans and transit oriented development policies; therefore, any growth is anticipated to be consistent with local polices and requirements, and local growth projections. Any growth not currently planned would not occur without modification of local zoning ordinances and/or general plans. Therefore, Alternative 1 would not induce any population changes that could alter the demand for parks and recreational facilities or require physical alterations to parks and recreation facilities to accommodate an increased population.

However, Alternative 1 would construct new transit stations in areas near parks and recreational facilities which would provide transit to these facilities and enable transit riders to visit them. The introduction of the stations and improved access opportunities, could result in a small increase in visitors to parks and recreational facilities in the DSA, however, it is unlikely that the user demand for parks and recreational facilities would increase so greatly as to require significant construction or alterations to maintain or expand the facilities. Transit ridership is driven primarily by weekday commuting and, although a minor share of transit riders may visit surrounding parks and recreational facilities, the demand for nearby parks and recreational facilities is not anticipated to significantly change nor require significant alterations or construction.

Operation of Alternative 1 would not result in impacts to parks. There would be no acquisitions or reduction of access to parks that could require alteration or new construction of parks and recreational facilities in order to maintain park and recreation services. No physical alterations or impacts to Atlantic Avenue Park would occur because the LRT guideway would be underground. Chet Holifield Park is proximate to the aerial Greenwood station. Although the proposed station would provide additional access to the park, attendance is not likely to increase since this is a neighborhood-scale park that is unlikely to attract visitors from beyond the immediate vicinity. Similarly, the use of both the Rio Hondo and San Gabriel River Spreading Ground and associated bike trails would not be affected, and trail use is not anticipated to notably increase.

Operation of Alternative 1 would not result in the need for new construction or physical alterations to parks and recreation facilities which could cause significant environmental impacts to maintain acceptable services; therefore, operation of Alternative 1 would have a less than significant impact on parks and recreational facilities.

Other Public Facilities

Alternative 1 does not include construction of any new housing and, therefore, would not result in direct population growth that could increase demand for libraries or other public facilities. As discussed in Section 3.12, Population and Housing, operation of Alternative 1 would not result in substantial changes to the existing population in the GSA or DSA. While it may encourage growth in surrounding areas, that growth would be contingent upon local city zoning regulations and approvals, which would consider a development's consistency with local general plans and transit oriented development policies; therefore, any growth is anticipated to be consistent with local polices and requirements, and local growth projections. Any growth not currently planned would not occur without

modification of local zoning ordinances and/or general plans. Therefore, Alternative 1 would not induce any population changes that could alter the demand libraries and other facilities or require physical alterations to public facilities to accommodate an increased population.

However, Alternative 1 would construct new transit stations in areas near libraries and other public facilities which would enable transit riders to visit these facilities. Despite the introduction of the stations and possible increase in visitors to libraries and other public facilities in the DSA, it is unlikely that the user demand for libraries and recreational facilities would increase so greatly as to require significant construction or alterations to maintain acceptable services to the public. Transit ridership is driven primarily by weekday commuting and, although a minor share of transit riders may visit surrounding libraries and other public facilities, the demand for nearby libraries and other public facilities is not anticipated to significantly change nor require the need for new or expanded facilities.

Operation of Alternative 1 would not directly impact facilities or operations at the East Los Angeles Civic Center, the East Los Angeles Library, or the Chet Holifield Library. Additionally, access to both library and civic center facilities would be maintained.

Operation of Alternative 1 would not result in the need for new construction or physical alterations to libraries or other public facilities which could cause significant environmental impacts to maintain acceptable levels of service; therefore, operation of Alternative 1 would have a less than significant impact on other public facilities.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not affect public services differently than the base Alternative 1. The Atlantic/Pomona Station Option would operate under the existing transportation ROW of Atlantic Boulevard and/or acquired commercial and industrial properties and would not result in the need for new construction or physical alterations to public facilities which could cause significant environmental impacts to maintain acceptable services. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact on public services.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not affect public services differently than the base Alternative 1. Operation of the Montebello At-Grade Option would not disrupt facilities or services provided at Chet Holifield Park and Greenwood Elementary School, which are located in the vicinity of the at-grade Greenwood station that would be implemented under the Montebello At-Grade Option. No physical alterations to the park or school would be required and the facilities and access to the facilities would be maintained, and operations would not be affected.

The Montebello At-Grade Option would include more at-grade crossings compared to the aerial guideway and station configuration of the base Alternative 1, primarily between Yates Avenue and the Greenwood station along Washington Boulevard. As discussed under **Section 3.13.6.1.1**, Fire and Police Protection, at-grade crossings are not anticipated to cause a significant delay to fire and police protection vehicles. Any delay would be brief due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings. Given that trains would be operating in exclusive street-running ROW at these locations, it would be possible for trains to clear signaled and

unsignalized intersections quickly to allow emergency vehicles to pass. As standard practice and as set forth in PM PSR-1, Metro shall coordinate with fire and police officials when designing grade crossings to ensure that access for police and fire protection services is maintained. In addition, the LRT station and crossings would be designed in accordance with *Metro Rail Design Criteria*, including Fire/Life Safety Criteria, to ensure safety and minimize potential hazards at all locations. Consequently, fire and police protection response times are anticipated to remain at acceptable levels and would not require new or physically altered fire or police protection facilities under the operation of the Montebello At-Grade Option.

The Montebello At-Grade Option would operate within the existing transportation ROW of Washington Boulevard and would not result in the need for new construction or physical alterations to public facilities which could cause significant environmental impacts to maintain acceptable services. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact on public services.

Construction Impacts

Fire and Police Protection

Construction of Alternative 1 would not result in substantial changes to the existing population as construction jobs are temporary and there is a substantial employment base and residential population in the region to fill any construction-related jobs resulting from Alternative 1. Therefore, construction would not result in an increase in demand for fire and police services due to an increase in population. Construction of Alternative 1 would potentially temporarily increase fire and police protection response times as a result of periodic construction-related street closures or detours. Specifically, access to the East Los Angeles Sheriff Station on 3rd Street would be temporarily obstructed by construction activities, although the other access points to the station via South Mednik Avenue and South Gleason Street would remain open and accessible. In addition, temporary closure of the entire bridge over the Rio Hondo and San Gabriel River would be required to demolish one side of the bridge; this would be a short-term full closure to minimize impacts to traffic circulation. As set forth in PM TRA-2, identified in Section 3.14, Transportation and Traffic, Metro shall coordinate with staff of the East Los Angeles Sheriff Station in advance of any construction activities to preserve station access. Metro standard practices, as set forth in PM TRA-2, shall require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing. Section 3.14, Transportation and Traffic, and Appendix N include an analysis of the potential effect on emergency access during construction and proposes a transportation management plan to help reduce the impacts on traffic movement in the construction work zones. The plan would include provisions to ensure safe access of police, fire, and other emergency vehicles would be maintained. With implementation of a construction Traffic Management Plan, fire and police protection response times during the construction period would be maintained at acceptable levels and would not require new or physically altered fire or police protection facilities.

Construction activities for Alternative 1 would potentially temporarily increase the demand for fire and police protection services from incidents or emergencies at construction sites. The construction sites are in areas currently served by the fire departments and law enforcement departments listed in **Section 3.13.5.1.2**. Because construction sites can sometimes experience loitering and illegal activity, to

supplement local law enforcement services, Metro or its construction contractors would secure all construction sites, including fencing and security patrols as needed, to prevent intrusion and illegal activities during construction. Consequently, the demand for fire and police protection demand during the construction period is anticipated to remain at acceptable levels and would not require new or physically altered fire or police protection facilities. Construction of Alternative 1 would have a less than significant impact with respect to fire and police protection services.

Schools

Construction of Alternative 1 would not result in substantial changes to the existing population as construction jobs are temporary and there is a substantial employment base and residential population in the region to fill any construction-related jobs resulting from Alternative 1. Therefore, construction would not affect student population.

Alternative 1 would not require any physical alterations at nearby schools including: Griffith Middle School, Garfield High School, Fourth Street Elementary School, Greenwood Elementary School, Ada S. Nelson Elementary School, and Washington Elementary School to accommodate an increased population or construction activities. Further, as described in Section 3.14, Transportation and Traffic, and Appendix N, a transportation management plan would be implemented to help reduce the impacts on traffic movement in the construction work zones and would ensure that adequate and safe access would remain available to schools and other facilities within and near the Project construction zone. Construction of Alternative 1 would not result in the need for new construction or physical alterations to schools which could cause significant environmental impacts to maintain acceptable service; therefore, construction of Alternative 1 would result in a less than significant impact on schools.

Parks and Recreational Facilities

Construction would not increase the use of parks and recreational facilities or otherwise generate increased demand for such facilities through population growth as a result of construction job opportunities. Construction jobs are temporary in nature and the employment opportunities resulting from construction are not anticipated to result in population growth that would increase existing demand for park facilities. Further, construction of Alternative 1 would not require physical alterations to any parks or recreational facilities.

Bridge replacement at the Rio Hondo and the San Gabriel River may inhibit access or require temporary closure of their respective bike trails. A short, temporary re-routing of the bike trail around the construction area would allow it to remain open continuously. The re-routing would not require substantial physical alterations or construction and would be accomplished with signage and ground markings. While access to the bike trails would be limited in the vicinity of the bridges while construction is occurring, access to other portions of the trail would be maintained uninterrupted during construction. As set forth in PM TRA-2, identified in Section 3.14, Transportation and Traffic, Metro standard practices shall include timing closures to minimize disruptions and developing a Traffic Management Plan for construction activities for parks and recreational facilities. Detours would be provided to provide safe access around the construction areas and access to the bike trails and other parks and recreational facilities would remain available; there would be no need for new or physically altered parks and recreation, the construction of which could cause significant environmental impacts, in order to maintain acceptable service levels. Therefore, construction of Alternative 1 would have less than significant impacts on parks and recreational facilities.

Other Public Facilities

Construction of Alternative 1 would not result in substantial changes to the existing population in the region as construction jobs are temporary and there is a substantial employment base and residential population in the region to fill any construction-related jobs resulting from Alternative 1. No physical alterations to public libraries would occur during construction and services would be open and accessible. The East Los Angeles Civic Center and East Los Angeles Library are located immediately adjacent to 3rd Street where Alternative 1 would tie into the existing at-grade guideway at the east end of the East Los Angeles Civic Center Station. The Chet Holifield Library is located at Greenwood Avenue and Frankel Avenue, south of the proposed aerial Greenwood station. Construction activities would not result in any loss of access to the parking lots and/or building entrance of these facilities. Despite some potential construction-related lane and sidewalk closures during business hours, access to the libraries would be maintained and the libraries would be able to maintain services throughout the construction phase of the project, and there would be no need for new or physically altered facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service levels. Therefore, construction of Alternative 1 would have less than significant impacts on other public facilities.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not affect public services differently than the base Alternative 1. Construction of the Atlantic/Pomona Station Option would potentially temporarily increase the demand for fire and police protection services from incidents or emergencies at construction sites. Because construction sites can sometimes experience loitering and illegal activity, to supplement local law enforcement services, Metro or its construction contractors would secure all construction sites, including fencing and security patrols as needed, to prevent intrusion and illegal activities during construction. Consequently, the demand for fire and police protection demand during the construction period is anticipated to remain at acceptable levels and would not require new or physically altered fire or police protection facilities. In addition, construction of the Atlantic/Pomona Station Option would not require any physical alterations at nearby schools or parks and recreational facilities. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant impacts on public services.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not affect public services differently than the base Alternative 1. Construction of the Montebello At-Grade Option would generally have similar impacts to public services as the aerial crossing at this location, including no impacts to Chet Holifield Park and Greenwood School, which are located in the vicinity of the at-grade Greenwood station that would be implemented under the Montebello At-Grade Option. Construction would not require physical alterations to the park or school; further, construction would not increase the use of the park or otherwise generate increased demand through population growth as a result of construction job opportunities. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts on public services.

3.13.6.1.2 Alternative 2 Atlantic to Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would operate primarily below the transportation ROW and acquired commercial and industrial property and, as a result, would not interfere with fire and police protection response times or require new or physically altered fire or police protection facilities. No physical alterations or disruptive impacts to the schools located in the vicinity of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option because the LRT guideway would operate primarily below the ROW of Atlantic Boulevard.

No physical alterations to Garfield High School or Fourth Street Elementary School would be required to continue operating or maintain school access. Operation of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would not result in direct or indirect impacts to parks. There would be no acquisitions or reduction of access to parks that could require alteration or new construction of parks and recreational facilities in order to maintain park and recreation services. Although the transition from at-grade to underground along 3rd Street between South La Verne Avenue and Woods Avenue is located directly in front of the East Los Angeles Sheriff Station, the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street and operation of Alternative 1 is unlikely to impact existing response times to or from the station. No physical alterations or disruptive impacts to Atlantic Avenue Park or East Los Angeles Civic Center and East Los Angeles Library would occur because the LRT guideway would operate in the median and then transition to underground. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact on public services.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would potentially temporarily increase fire and police protection response times as a result of periodic construction-related street closures or detours. As set forth in PM TRA-2, identified in Section 3.14, Transportation and Traffic, Metro shall coordinate with staff of the East Los Angeles Sheriff Station in advance of any construction activities to preserve station access. Metro standard practices, as set forth in PM TRA-2, shall require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing. With implementation of a construction Traffic Management Plan, fire and police protection response times during the construction period would be maintained at acceptable levels and would not require new or physically altered fire or police protection facilities.

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial changes to the existing population as construction jobs are temporary. Therefore, construction would not affect student population in the GSA or DSA. Since the construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would primarily take place underground, no physical alterations would occur at nearby schools and parks and recreational

facilities, including Griffith Middle School, Garfield High School, Fourth Street Elementary School, Atlantic Avenue Park, or Belvedere Park Lake. Construction activities would not result in any loss of access to the parking lots and/or building entrance of these facilities. There would be no need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service levels. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts on public services.

3.13.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option design options would primarily operate within or below the transportation ROW and acquired commercial and industrial property and would not interfere with fire and police protection response times or require new or physically altered fire or police protection facilities. From Saybrook Avenue to the terminus at Greenwood station, the base Alternative 3 would operate aboveground in an aerial configuration with no at-grade crossings. Although the transition from at-grade to underground along 3rd Street between South La Verne Avenue and Woods Avenue is located directly in front of the East Los Angeles Sheriff Station, the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street and operation of Alternative 3 is unlikely to impact existing response times to or from the station. The Montebello At-Grade Option would have an approximately 0.5 mile aerial confirmation and 1.1 mile at-grade configuration with four at-grade crossings. Grade crossings could potentially delay fire and police protection vehicles if they arrive at a crossing at the same time as a passing train. However, such delays would be brief due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings. As standard practice and as set forth in PM PSR-1, Metro shall coordinate with fire and police protection officials when designing grade crossings to ensure that access for police and fire protection services is maintained.

No physical alterations or disruptive impacts to the schools on Atlantic Boulevard would occur under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option because the LRT guideway would operate underground. The proposed surface parking facility associated with the aerial (base Alternative 3) or at-grade (Montebello At-Grade Option) Greenwood station would be immediately adjacent to Greenwood Elementary School. However, no physical alterations to the school would occur. The physical barrier (fence) that currently divides the school and existing parcel where the parking facility is proposed would remain.

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not result in direct or indirect impacts to parks or public libraries. There would be no acquisitions or reduction of access to such facilities that would require alteration or new construction of parks and recreational facilities in order to maintain access. No physical alterations or impacts to Atlantic Avenue Park, East Los Angeles Civic Center and Library or the Chet Holifield Library would occur because the LRT guideway would operate below the Atlantic Boulevard ROW. Chet Holifield Park is proximate to the aerial Greenwood station. Although the proposed station would provide additional access to the park, attendance is not likely to increase since this is a neighborhood-scale park that is unlikely to attract visitors from beyond the immediate vicinity. In addition, access to these recreational facilities would not be affected.

Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would result in a less than significant impact on public services.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would potentially temporarily increase fire and police protection response times as a result of periodic construction-related street closures or detours. As set forth in PM TRA-2, identified in Section 3.14, Transportation and Traffic, Metro shall coordinate with staff of the East Los Angeles Sheriff Station in advance of any construction activities to preserve station access. Metro standard practices, as set forth in PM TRA-2, shall require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing. With implementation of a construction Traffic Management Plan, fire and police protection response times during the construction period would be maintained at acceptable levels and would not require new or physically altered fire or police protection facilities.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would not result in substantial changes to the existing population as construction jobs are temporary. Therefore, construction would not affect student population in the GSA or DSA. Since the construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would primarily take place underground, no physical alterations would occur at nearby schools and parks and recreational facilities, including Griffith Middle School, Garfield High School, Fourth Street Elementary School, Greenwood Elementary School, Atlantic Avenue Park, Belvedere Park Lake, and Chet Holifield Park and Library. Construction activities would not result in any loss of access to the parking lots and/or building entrance of these facilities. There would be no need for new or physically altered public facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service levels. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or Montebello At-Grade Option would result in less than significant impacts on public services.

3.13.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would be located in an industrial area. There are no schools, parks and recreational facilities, or other public facilities located adjacent to these Project components. Operation of the MSF site options would not affect any buildings that provide public services or emergency vehicles traveling on surface streets and, therefore, would not interfere with fire and police protection response times.

Operation of the MSF site options would result in permanent closures of Corvette Street for the Commerce MSF site option or the elimination of through access on Acco Street for the Montebello MSF At-Grade Option. As set forth in PM TRA-3, the access into and around any of the MSF site options, including surrounding streets, shall be required to provide for adequate emergency access to the MSF and surrounding businesses. This includes compliance with the California Fire Code that specifies minimum access requirements for fire apparatus. Therefore, fire and police protection access and response times would be maintained.

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would potentially increase the demand for fire and police protection services from incidents or emergencies at the new facilities. Incidents or emergencies occurring at the facility could result in an increase in overall response calls within the local jurisdictions. As standard operating practice and as set forth in PM PSR-1, Metro would supplement existing local fire and police protection services by providing Transit Services Bureau officers and contracted police services at the MSF site options, as needed. In addition, Metro enforces strict access and security protocols at maintenance facilities, further reducing the potential demand on fire and police protection services. With this considered, the frequency of any fire or police response calls occurring at the MSF site options is likely to be negligible and would not cause a noticeable increase in the overall demand for fire and police protection services. Consequently, the demand for fire and police protection is anticipated to remain at acceptable levels and would not require new fire or police protection facilities or physical alterations to existing fire or police protection facilities.

An estimated total of approximately 350 people is expected to staff the MSF. As discussed further in Section 3.12, the workers would likely come from the existing large labor pool within the greater Los Angeles region and would not result in new workers relocating to the area that could result in increased demand for public services. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact on public services.

Construction Impacts

MSF Site Options and Design Option

The construction staging areas for the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would be located within an industrial area. Construction activities would potentially increase the demand for fire and police protection services from incidents or emergencies at construction sites. While construction sites can sometimes experience loitering and illegal activity, to supplement local law enforcement services Metro or its construction contractors would secure all construction sites, including fencing and security patrols as needed, to prevent intrusion and illegal activities during construction. Consequently, the demand for fire and police protection during the construction period is anticipated to remain at acceptable levels and would not require new or physically altered fire or police protection facilities.

Construction of the lead tracks into the MSF would result in periodic construction-related street closures or detours. As set forth in PM TRA-2, Metro shall coordinate with local fire and police protection service providers in advance of any construction activities to preserve emergency access. Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan is prepared and approved in coordination with local fire and police departments prior to construction. With implementation of a construction Traffic

Management Plan, fire and police protection response times during the construction period would be maintained at acceptable levels and would not require new or physically altered fire or police protection facilities.

West of intersection of Gayhart Street and Washington Boulevard, the alignment with the Montebello MSF site option and Montebello MSF At-Grade Option would be located within the median of Washington Boulevard while the alignment with the Commerce MSF site option would be located parallel to Washington Boulevard. As described above, with implementation of a construction Traffic Management Plan, fire and police protection response times during periodic street closures or detours during the construction period associated with construction within Washington Boulevard would be maintained at acceptable levels and would not require new or physically altered fire or police protection facilities.

Therefore, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have a less than significant impact on public services.

3.13.6.2 Impact PSR-2: Increased Recreation

Impact PSR-2: Would a Build Alternative increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

3.13.6.2.1 Alternative 1 Washington

Operational Impacts

Alternative 1 does not include rezoning for residential use or increased residential density that would result in population increases and associated increased use of parks and recreational facilities; therefore, operational activities would not directly lead to the substantial physical deterioration of parks and recreational facilities. Further, as discussed in Section 3.12, Population and Housing, operation of Alternative 1 would not result in substantial changes to the existing population in the GSA or DSA. While it may encourage growth in surrounding areas, that growth would be contingent upon local city zoning regulations and approvals, which would consider a development's consistency with local general plans and transit oriented development policies; therefore, any growth is anticipated to be consistent with local polices and requirements, and local growth projections. Any growth not currently planned would not occur without modification of local zoning ordinances and/or general plans. Therefore, operation of Alternative 1 would not induce any population changes that could alter the demand for parks or require physical alterations to parks to accommodate an increased population.

There is the potential for an indirect impact given that new transit stations would be constructed in areas near parks and recreational facilities which would enable transit riders to visit these facilities, such as Chet Holifield Park which is located near the Greenwood station, and the Rio Hondo and San Gabriel River Spreading Grounds and associated bike trails located in the vicinity of Norwalk station. However, as discussed in **Section 3.13.6.1.1**, local residents are the primary users of these parks and recreational facilities, and it is not anticipated that Alternative 1 would induce a substantial number of new visitors to parks and recreational facilities such that substantial deterioration would occur. Therefore, operation of Alternative 1 would have a less than significant impact from increased recreation.

Design Options

Atlantic/Pomona Station Option

Operation of the Atlantic/Pomona Station Option would not result in a substantial number of new visitors to nearby parks and recreational facilities in the vicinity of the Project. Therefore, Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact from increased recreation.

Montebello At-Grade Option

Operation of the Montebello At-Grade Option would not result in a substantial number of new visitors to Chet Holifield Park or other parks and recreational facilities in the vicinity of the Project. Therefore, Alternative 1 with the Montebello At-Grade Option would have a less than significant impact from increased recreation.

Construction Impacts

Construction of Alternative 1 would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities. Construction activities associated with Alternative 1 could result in temporary nuisances associated with intermittent increases in noise, dust, odors, and traffic delays, which could affect the use and physical quality of adjacent parks and recreational facilities, including Chet Holifield Park, the Rio Hondo and San Gabriel River Spreading Grounds, and associated bike trails. As discussed in Section 3.2 Air Quality, Section 3.11 Noise and Vibration, and Section 3.14 Transportation, however, these impacts would be less than significant with implementation of standard control measures. Further, these impacts would not lead to increased use of parks or other recreational facilities. Construction activities would likely require intermittent sidewalk and lane closures and detours which could inhibit access to recreational facilities. The reconstruction of the Rio Hondo and San Gabriel River bridges may require temporary closure or re-routing of the bike trails. As set forth in PM TRA-2, Metro standard practices include timing closures to minimize disruptions and developing a Traffic Management Plan for construction activities as discussed in Section 3.14, Transportation and Traffic, and Appendix N. Thus, access to parks and recreational facilities would be maintained during construction. Additionally, construction of Alternative 1 would not increase use of the parks and recreational facilities through population growth as a result of construction job opportunities. Construction jobs are temporary in nature and the employment opportunities resulting from construction are not anticipated to result in population growth that would increase the use and physical deterioration of park and recreational facilities. Therefore, construction of Alternative 1 would have a less than significant impact from increased recreation.

Design Options

Atlantic/Pomona Station Option

Construction of the Atlantic/Pomona Station Option would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities. Further, construction activities would result in temporary nuisances associated with noise, dust, odors, and traffic delays, but access to facilities would be maintained during construction, and no increased use of facilities is anticipated. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact from increased recreation.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities. Further, construction activities would result in temporary nuisances associated with noise, dust, odors, and traffic delays, but access to facilities would be maintained during construction, and no increased use of facilities is anticipated. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact from increased recreation.

3.13.6.2.2 Alternative 2 Atlantic to Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not induce population growth or otherwise result in a substantial number of new visitors to parks and recreational facilities. There is the potential for an indirect impact given that new transit stations would be constructed in areas near parks and recreational facilities, which would enable transit riders to visit these facilities, such as Belvedere Park Lake and Atlantic Avenue Park located near Atlantic station (relocated/reconfigured) and Whittier Boulevard station respectively. Local residents are the primary users of these facilities and it is not anticipated that the Project would induce a substantial number of new visitors to parks and recreational facilities. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not directly lead to the substantial physical deterioration of parks and recreational facilities, and would have a less than significant impact.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities. Construction activities would result in temporary nuisances associated with noise, dust, odors, and traffic delays, which could affect the use and physical quality of nearby parks, including Belvedere Park Lake and Atlantic Avenue Park. As discussed in Section 3.2, Air Quality, Section 3.11, Noise and Vibration, and Section 3.14, Transportation and Traffic, however, these impacts would be less than significant with implementation of standard control measures. Further, these impacts would not lead to increased use of parks or other recreational facilities. Construction activities would likely require intermittent sidewalk and lane closures and detours which could inhibit access to this park and associated recreational facilities. Metro standard practices include timing closures to minimize disruptions and developing a Traffic Management Plan for construction activities. It is anticipated that access to Belvedere Park would be maintained during construction. Additionally, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not increase use of the parks and recreational facilities through population growth as a result of construction job opportunities. Construction jobs are temporary in nature and the employment opportunities resulting from construction are not anticipated to result in population growth that would increase the use and physical deterioration of park and recreational facilities. Therefore, construction of the base Alternative

2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact from increased recreation.

3.13.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not include residential uses that would result in increased demand for use of parks and recreational facilities, and therefore operational activities would not directly lead to the substantial physical deterioration of parks and recreational facilities. There is the potential for an indirect impact given that new transit stations would be constructed in areas near parks and recreational facilities, including Chet Holifield Park located near Greenwood station, which would enable transit riders to visit these facilities. However, this is not likely given local residents are the primary users of this park and it is not anticipated that the Project would induce a substantial number of new visitors to parks and recreational facilities that could lead to substantial physical deterioration of the parks and recreational facilities. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact from increased recreation.

Construction Impacts

Base Alternative and Design Options

Construction of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities during construction. Construction activities associated with the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could result in temporary nuisances associated with intermittent increases in noise, dust, odors, and traffic delays, which could affect the use and physical quality of adjacent parks and recreation facilities such as the Chet Holifield Park. As discussed in Section 3.2, Air Quality, Section 3.11, Noise and Vibration, and Section 3.14, Transportation and Traffic, however, these impacts would be less than significant with implementation of standard control measures. Further, these impacts would not lead to increased use of parks or other recreational facilities. Construction activities would likely require intermittent sidewalk and lane closures and detours which could inhibit access to this park and associated recreational facilities. Metro standard practices include timing closures to minimize disruptions and developing a Traffic Management Plan for construction activities. It is anticipated that access to Chet Holifield Park would be maintained during construction. Additionally, construction would not increase use of the parks and recreational facilities through population growth as a result of construction job opportunities. Construction jobs are temporary in nature and the employment opportunities resulting from construction are not anticipated to result in population growth that would increase the use and physical deterioration of park and recreational facilities. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact from increased recreation.

3.13.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Existing and surrounding land uses within and near the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option consist of light and heavy industrial and commercial uses; there are no parks or recreational facilities at or in close proximity to the site. Operation of one of the MSF site options would result in new employment opportunities, but given the large existing labor pool in Los Angeles, this is unlikely to result in workers relocating to the GSA or DSA. Operation of the MSF site option sites are not expected to induce population growth to the region that could increase use of parks and recreational facilities and lead to the substantial physical deterioration. Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not affect the use of park and recreation facilities and no impact would occur.

Construction Impacts

MSF Site Options and Design Option

The Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would be located in an industrial area and there are no parks or recreational facilities at or in close proximity to the site. Construction of the MSF site options would not induce population growth that could result in increased use of the parks and recreational facilities leading to substantial physical deterioration as a result of construction job opportunities. Therefore, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not affect the use of park and recreation facilities and no impact would occur.

3.13.6.3 Impact PSR-3: New Recreation Facilities

Impact PSR-3: Would a Build Alternative include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

3.13.6.3.1 Alternative 1 Washington

Operational and Construction Impacts

No new recreational facilities, or expansion of existing recreational facilities, would be included as part of the operation and construction of Alternative 1. Therefore, there would be no physical effect on the environment from the construction or expansion of recreational facilities and no impact would occur.

Design Options

Atlantic/Pomona Station Option

No new recreational facilities, or expansion of existing recreational facilities, would be included as part of the operation and construction of Alternative 1 with Atlantic/Pomona Station Option. Therefore, there would be no physical effect on the environment from the construction or expansion of recreational facilities and no impact would occur.

Montebello At-Grade Option

No new recreational facilities, or expansion of existing recreational facilities, would be included as part of the operation and construction of Alternative 1 with the Montebello At-Grade Option. Therefore, there would be no physical effect on the environment from the construction or expansion of recreational facilities and no impact would occur.

3.13.6.3.2 Alternative 2 Atlantic to Citadel IOS

Operational and Construction Impacts

Base Alternative and Design Option

No new recreational facilities, or expansion of existing recreational facilities, would be included as part of the operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. Therefore, there would be no physical effect on the environment from the construction or expansion of recreational facilities and no impact would occur.

3.13.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Options

No new recreational facilities, or expansion of existing recreational facilities, would be included as part of the operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. Therefore, there would be no physical effect on the environment from the construction or expansion of recreational facilities and no impact would occur.

3.13.6.3.4 Maintenance and Storage Facilities

Operational and Construction Impacts

MSF Site Options and Design Option

No new recreational facilities, or expansion of existing recreational facilities, would be included as part of the operation and construction of the Commerce MSF site option, the Montebello MSF site option,

or the Montebello MSF At-Grade Option. Therefore, there would be no physical effect on the environment from the construction or expansion of recreational facilities and no impact would occur.

3.13.7 Project Measures and Mitigation Measures

3.13.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and MSF site options and MSF design option.

PM PSR-1: Operational (post-Project) BMPs for the Build Alternatives may include (but would not be limited to):

- Metro shall coordinate with fire and police protection officials when designing grade crossings to ensure that access for police and fire protection services is maintained.
- Metro shall supplement existing police protection services by providing Transit Services Bureau officers and contracted police services at all new LRT facilities, as needed to ensure that adequate police protection services are provided.

PM TRA-2 and PM TRA-3 shall be implemented for the construction of the Build Alternatives. For more details on these project measures, see Section 3.14.7.1 in Section 3.14, Transportation and Traffic.

3.13.7.2 Mitigation Measures

As identified in **Section 3.13.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on public services and recreation under Impact PSR-1 (Public Services) and Impact PSR-2 (Increased Recreation) and no impact under Impact PSR-3 (New Recreation Facilities). The MSF site options would have less than significant impacts under Impact PSR-1 (Public Services) and no impact under Impact PSR-2 (Increased Recreation) and Impact PSR-3 (New Recreation Facilities). No mitigation measures would be required for operation or construction. **Table 3.12-3 i**dentifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

For more details on MM TRA-1, which would require the development of a Traffic Management Plan prior to construction, see Section 3.14.7.2. The Traffic Management Plan would include measures to minimize disrupt during construction to reduce impacts on emergency access.

3.13.8 Significance After Mitigation

As identified in **Table 3.13-6**, **no mitigation is required** for the Build Alternatives and Build Alternatives with the design option(s). Less than significant impacts would remain under Impact PSR-1 and Impact PSR-2 and no impact would remain under Impact PSR-3.

Table 3.13-6. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact PSR-1: Public Services	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact PSR-2: Increased Recreation	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact PSR-3: New Recreation Facilities	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.14 Transportation and Traffic

3.14.1 Introduction

This section discusses the Project setting in relation to transportation and traffic. It describes existing conditions, current applicable regulatory setting, and potential impacts from operation and construction of the Build Alternatives and the No Project Alternative. The study area for transportation and traffic is the General Study Area (GSA) for analyses related to transit ridership and regional transportation/VMT. Other potential transportation impacts (pedestrian and bicycle impacts, and emergency access) are analyzed within the Detailed Study Area (DSA). The study area for transportation and traffic is the GSA for assessing regional conditions and the DSA for assessing local conditions and Project impacts. Information in this section is based on the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report (Appendix N).

3.14.2 Regulatory Framework

3.14.2.1 Federal

There are no existing federal regulations applicable to transportation that are applicable to this Project.

3.14.2.2 State

Assembly Bill (AB) 1358 – Complete Streets Act. AB 1358 requires cities and counties to include complete streets policies as part of their general plans so that roadways are designed to safely accommodate all users, including bicyclists, pedestrians, transit riders, children, older people, and disabled people, as well as motorists.

Senate Bill (SB) 743, which was codified in Public Resources Code Section 21099, required the California Office of Planning and Research (OPR) to establish new CEQA Guidelines "for determining the significance of transportation impacts of projects within transit priority areas. Those criteria shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." The new criteria were required to move away from vehicle delay and level-of-service (LOS) and move toward more multimodal concepts "that may include, but are not limited to, vehicle miles traveled (VMT), vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated."

In 2018, Section 15064.3 was added to the CEQA Guidelines to reflect the provisions of Senate Bill 743. The section addresses both land use and transportation projects, and broadly describes the methodology, including the potential for qualitative analysis, used to assess VMT. The overall guidance for transportation projects is that they are presumed to have a less-than-significant project impact if they reduce VMT (CEQA Guidelines, §15064.3(b)(2)). Agencies are given "broad discretion" to select the methodology for analysis, or even apply a qualitative approach. As described in Section 1.5.6 of the Transportation Impact Analysis Report, the analysis and impact determinations have used a VMT-based approach.

3.14.2.3 Local

Metro is the state-designated planning and programming agency for Los Angeles County and submits recommended transportation projects and programs to Southern California Association of Governments (SCAG) for inclusion in the Regional Transportation Plan (RTP). The *2016-2040 Regional Transportation Plan/Sustainable Communities Strategy* (2016 RTP/SCS) is the tool used for identifying the transportation priorities of the SCAG region. The *2016 RTP/SCS* includes the Project among the list of projects in the Strategic Plan. In 2020, the *2016 RTP/SCS* was updated to the *Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (*2020 RTP/SCS*), which prioritizes project investments through the year 2045. The Project is included in the list of projects anticipated to be initiated or completed through the *2020 RTP/SCS*'s horizon year of 2045.

The Project is also listed in the *Los Angeles Country Transportation Expenditure Plan* (2016) developed by Metro for implementing the transportation projects funded by Measure M, a sales tax measure to fund infrastructure expansion throughout Los Angeles County. Other Metro plans include the Metro Grade Crossing Safety Policy (2010), Transit-Oriented Communities (TOC) Policy (2018) and *TOC Implementation Plan* (2020), *NextGen Bus Plan* (2020), Metro's Title 8 Metro Parking Ordinance (2020), the *2020 Long Range Transportation Plan* (LRTP), and Metro's *First/Last Mile Guidelines* (2021).

Other local planning and regulatory tools that help to guide transportation planning and development in the region include the Gateway Cities Council of Governments (GCCOG)'s *Strategic Transportation Plan* (2016) that outlines goals and objectives for transportation improvements in cities of southern Los Angeles County, and county and general plans, specific plans, and master plans. The *Los Angeles County 2035 General Plan* (adopted October 2015) provides guidelines for unincorporated areas of Los Angeles County that are located within the GSA. The County of Los Angeles Department of Public Works' 2012 *Bicycle Master Plan* covers the entire county's plans and currently acts as the long range bicycle plan for the county. Additionally, *Step by Step Los Angeles County: Pedestrian Plans for Unincorporated Communities* provides a policy framework for how the County proposes to get more people walking, make walking safer, and support healthy active lifestyles. The framework includes Community Pedestrian Plans for unincorporated communities in Los Angeles County. A *Community Pedestrian Plan for East Los Angeles* is being prepared and is currently receiving public input to identify safety and walkability enhancements. The *Community Pedestrian Plan for West Whittier-Los Nietos* was adopted in 2019 by the Los Angeles County Board of Supervisors. The General Plans, Circulation Elements and corresponding Specific Plans for the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs and Whittier provide local regulatory frameworks and policies related to transportation and traffic issues. General and Specific Plans for each of the jurisdictions are discussed in more detail in Appendix N.

3.14.3 Methodology

The GSA is utilized for analyses related to transit ridership and regional transportation/VMT. Other potential transportation impacts (pedestrian and bicycle impacts, and emergency access) are analyzed within the DSA. The transportation area of potential impact focuses on transit, regional transportation, pedestrian, bicycle and personal mobility circulation in the vicinity of the proposed stations for the Build Alternatives and design options, and within one-quarter mile of each potential MSF site options. It also includes all signalized intersections along the Alternatives that would cross at-grade. As detailed in Attachment A of Appendix N, Metro consulted with jurisdictions within the GSA to confirm the methodology and collect additional data.

3.14.3.1 Transit

Data on the existing transit network within the GSA were obtained from the individual transit providers for the base year, including operator, type, service area, hours of operation, and current ridership. The existing transit network data for the base year was obtained in 2019. The base year ridership data is from 2018, the most recent available data at the time of the study. The same transit data is being used for consistency with the previous analysis and with the baseline data. The proposed transit improvements in the GSA are described in the transit impact analysis section including the *Measure M Expenditure Plan*, as presented in the latest 2018 Los Angeles County Metro's regional travel demand forecasting model, the Corridor Based Model 2018 (CBM18).

Ridership forecasts, VMT estimates, and other travel demand modeling projections are based on the results of the CBM18. The base year data in the CBM18 is from 2017 and represents the data that was most recently available when the model was created in 2018. This data has been used to represent 2019, the base year in this study. Future projections reflect conditions in 2042, the model's horizon forecast year. The CBM18 was updated and refined specifically for use in this study to ensure that major roadway and transit improvements expected to be completed by 2042 were included. The travel demand modeling analysis includes Metro Measure M projects identified in the *Measure M Expenditure Plan* and included in the CBM18 identified to be completed by 2042. Similarly, any roadway improvement projects specified by GSA jurisdictions are included in the travel demand modeling analysis. Projects expected to be completed by the year 2042 are included in the No Project and Build Alternatives.

3.14.3.2 Regional Transportation

Data on the existing regional transportation network for the GSA and region were obtained for the base year, including roadway infrastructure and regional travel performance measures. The existing roadway network was itemized for freeway and arterial segments in 2019. Regional transportation performance measures were extracted from the Metro travel demand model, CBM18, including VMT, vehicle hours traveled (VHT), average vehicle speed in miles per hour (mph), and AM and PM peak vehicle trips for both the region and GSA. The proposed transit improvements in the region are described in the Existing Setting section including the *Measure M Expenditure Plan*, as presented in CBM18. Detailed information on the TDM methodology is provided in Appendix N.

3.14.3.3 Pedestrian and Bicyclists

Existing and planned pedestrian and bicycle facilities within the DSA were obtained from the *Los Angeles County Bicycle Master Plan* (Los Angeles County 2012), *Metro Active Transportation Strategic Plan* (Metro 2016), *Gateway Cities Strategic Transportation Plan* (GCCOG/Metro 2016), *San Gabriel Valley Regional Active Transportation Plan and Greenway Network Study* (SGV ATP 2019), *Montebello Bicycle Master Plan* (Montebello 2018), *Santa Fe Springs Active Transportation Plan* (Santa Fe Springs 2020), Pico Rivera's *Urban Greening Plan* (Pico Rivera 2018), Whittier's *Bicycle Transportation Plan* (Whittier, 2013), and Commerce's *Bicycle and Pedestrian Plan* (Commerce 2020). Facility and bicycle route and potential conflict locations were observed through field surveys conducted in April 2019. Bicycle and pedestrian counts were conducted at 39 intersections within the DSA at the same time as the vehicular counts during the typical weekday peak commute hours of 7:00 to 9:00 am and 4:00 to 6:00 pm during the regular school year on Tuesday, March 19 and Wednesday, March 20, 2019. The future projections for weekday pedestrian trips to and from the project stations were estimated using the Metro Travel Demand Model for each Build Alternative.

3.14.3.4 Emergency Access

Fire and police stations are identified within the DSA to address whether the Build Alternatives would affect emergency response times and capabilities resulting in the need for new or expanded facilities to maintain adequate levels of service, as well as the potential for any fire and police stations within the DSA to be directly impacted as a result of new construction or operations.

3.14.3.5 Impact Designation

The impact evaluation methodologies are presented in Section 4.3 of Appendix N for transit, VMT, traffic circulation, pedestrian circulation, bicycle and personal mobility circulation, construction, and MSF options. Environmental impacts were evaluated for the period of Project construction and operation. A construction impact is considered temporary and occurs only during the time of constructing a Build Alternative, whereas an operational impact is considered a permanent impact occurring during the operation of a Build Alternative.

3.14.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to Transportation and Traffic if it would:

Impact TRA-1: Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

Impact TRA-2: Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

Impact TRA-3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

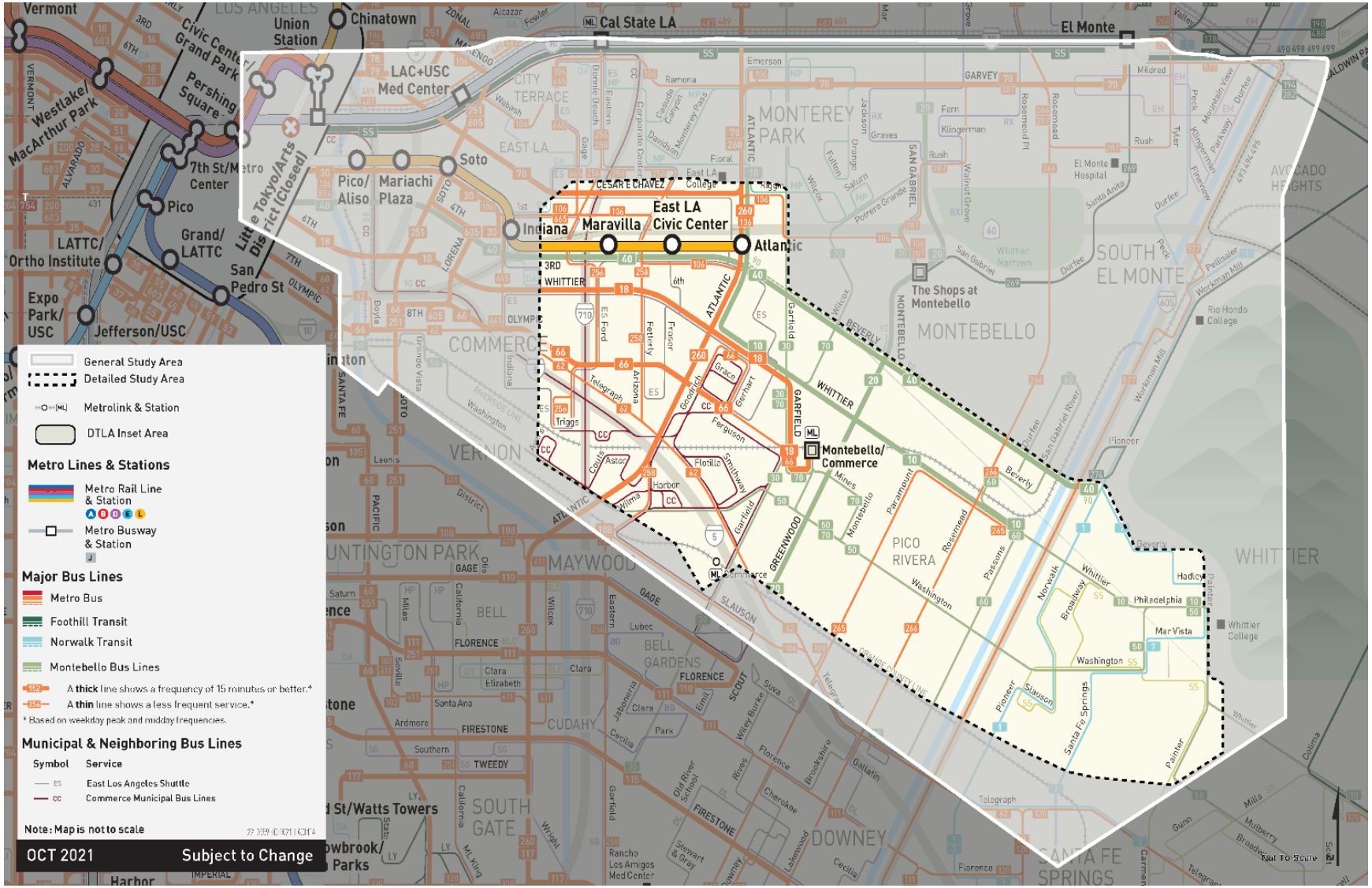
Impact TRA-4: Result in inadequate emergency access.

3.14.5 Existing Setting

3.14.5.1 Transit

The DSA is served by local and regional transit agencies, including Metro bus and rail services, Metrolink commuter rail, Montebello Bus Lines, Commerce Municipal Bus Lines, Norwalk Transit, Foothill Transit, and El Sol Shuttle (East Los Angeles Shuttle) as shown in **Figure 3.14.1**. Transit service types within the DSA include rapid bus, express bus, limited bus, LRT, commuter rail, and local bus lines. Commuter and intercity rail service within the DSA are provided by Metrolink with stations in the cities of Montebello and Commerce. There are no existing or planned direct routes that would parallel the Project corridor without several transit transfers. **Table 3.14-1** shows that the ridership on existing bus lines in the DSA is high, with 55 percent of the bus routes operating with over 1,000 riders per day (27 out of 49 bus routes).

As part of the approved *NextGen Bus Plan*, buses would arrive every 5 to 10 minutes for 83 percent of current riders (compared to around 48 percent prior to implementation). This would be achieved by increasing frequency of buses, improving service on most routes, and allocating more buses in areas with the greatest demand. Under the *NextGen Bus Plan*, existing local and rapid bus routes would be combined into new lines, rerouted, or have other efficiency improvements. Frequencies would be adjusted on new lines to align with passenger demand. Transit signal priority that has been a key part of rapid service would also be seamlessly incorporated into the operation of these new lines. The anticipated result would be faster door-to-door trips for riders. The majority of Metro bus lines within the DSA would be revised per the *NextGen Bus Plan*.



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 3.14.1. Detailed Study Area Transit Routes

Table 3.14-1. Detailed Study Area Transit Routes and Lines (Rail and Bus)

Transit Line	Operating Route			Frequency Weekday (Minutes)			Average Daily Ridership[1]
	From/To	To/From	Via	am	Mid-Day	pm	
Metro Rail							
Metro L (Gold) Line	APU/Citrus College Station	Atlantic Station	Metro L (Gold) Line Corridor, 1st Street & 3rd Street	7	7-12	7-20	52,183
Metrolink Commuter Rail							
Riverside Line	Riverside – Downtown	Union Station	UPRR	30-80	180	180	4,400
Metro Local Bus Lines to/from Downtown Los Angeles[2]							
18	Koreatown	Montebello	Whittier Blvd.	5-10	6-12	20-60	18,167
62	Hawaiian Gardens	Boyle Heights	Telegraph Blvd.	20-60	20-60	30-60	4,154
66	Wilshire/Western D Line Station	Montebello	Olympic Blvd.	5-20	19-37	20-60	11,300
68	Mariachi Plaza L Line Station	Atlantic Blvd. / Pomona Blvd.	Cesar Chavez Avenue	15-30	20-40	20-60	5,215
Metro Local Bus East-West Lines[2]							
176	El Monte	Highland Park	Mission Dr. & Garfield Avenue	45	45	50	1,636
Metro Local Bus North-South Lines[2]							
258	Alhambra	Paramount	Fremont Avenue & Eastern Avenue	40	41	40-60	2,494
260	Altadena	Artesia A (Blue) Line Station	Fair Oaks Avenue & Atlantic Avenue	15-20	20-30	15-60	10,159
265	Pico Rivera	Lakewood Center Mall	Paramount Blvd.	40	60	55	1,389
Metro Express Bus North-South Line[2]							
577	El Monte J Line Station	VA Medical Center	Pomona Blvd, Santa Anita Avenue & Park Road	40-45	45	40-50	989

Transit Line	Operating Route			Frequency Weekday (Minutes)			Average Daily Ridership[1]
	From/To	To/From	Via	am	Mid-Day	pm	
Metro Rapid Bus Service[2]							
720	Santa Monica	Commerce	Whittier Blvd.	3-15	10-20	10-20	27,253
762	Pasadena	Compton	Fair Oaks Avenue & Atlantic Blvd.	17-30	30	35-70	3,593
770	Downtown Los Angeles	El Monte	Cesar Chavez Avenue & Garvey Avenue	13	16	30	6,546
Montebello Bus Lines							
10	Monterey Park	Pico Rivera & Whittier	Atlantic Blvd. & Whittier Blvd.	10-30	12-24	6-15	3,610
20	Commerce	Rosemead & San Gabriel	Montebello Blvd. & San Gabriel Blvd.	20-40	20-40	20-25	4,704
30	South Gate	Alhambra	Garfield Avenue	48	48	40	5,086
40	Downtown Los Angeles	Whittier	Beverly Blvd.	12-20	12-20	12	1,783
50	Downtown Los Angeles	La Mirada	Washington Blvd.	30	30	35-40	3,811
70	Commerce	Montebello Town Center	Via Campo & Wilcox Avenue	45	45	50	4,215
90X	Taylor Ranch	Downtown Los Angeles	Beverly Blvd.	20	-	20-40	733
Commerce Municipal Bus Lines							
Blue	City Circulator Service		Triggs Street, Eastern Avenue, Goodrich Blvd. & Washington Blvd.	80	80	80	-
Red	City Circulator Service		Same as Blue	75-80	70	70	-
Green	City Circulator Service		Garfield Avenue, Bandini Blvd. & Washington Blvd.	65	65	65	-
Orange	City Circulator Service		Same as Green	85	85	85	-
Yellow	City Circulator Service		Same as Green	70	80-85	80	-

Transit Line	Operating Route			Frequency Weekday (Minutes)			Average Daily Ridership[1]
	From/To	To/From	Via	am	Mid-Day	pm	
Purple	City Circulator Service		Olympic Blvd., Triggs Street, Atlantic Blvd., Telegraph Road & Garfield Avenue	70	70-80	70	-
Citadel Outlets Express	Hoefner Avenue (Citadel Outlets)	Hoefner Avenue (Citadel Outlets)	Hoefner Avenue, Tuberway Avenue, Washington Blvd.	5-60	3-30	13-65	-
Norwalk Transit Bus Lines							
1	Bellflower	Rio Hondo College	Santa Fe Springs Blvd. & Pioneer Blvd.	30	30	30	481
7	Whittwood Town Center	Northwest Whittier	Whittier Blvd., Norwalk Blvd. & Beverly Blvd.	40-45	45	40-50	-
Foothill Transit Bus Lines							
269	El Monte J Line Station	Montebello Town Center	Santa Anita Avenue & Dufree Avenue	30	30	30	404
274	West Covina	Industry / Whittier	Puente Avenue & Workman Mill Road	60	60	60	437
El Sol (East Los Angeles Shuttle)							
Union Pacific / Salazar Park	3rd Street & La Verne Avenue	3rd Street & La Verne Avenue	3rd Street, 6th Street, Eastern Avenue, Indiana Street	60	60	60	-
Whittier Blvd./ Saybrook Park	3rd Street & La Verne Avenue	3rd Street & La Verne Avenue	3rd Street, 6th Street, Westside Dr., Whittier Blvd.	60	60	60	-
City Terrace / East Los Angeles College	3rd Street & La Verne Avenue	3rd Street & La Verne Avenue	3rd Street, Rowan Avenue, Floral Dr., Cesar Chavez Avenue	60	60	60	-

Source: CDM Smith/AECOM JV, 2019 from Metro, Metrolink; Foothill Transit; the cities of Montebello, Monterey Park, Commerce, Norwalk; and Los Angeles County Public Works.
Notes:
1 Average daily ridership (boardings) obtained from each jurisdiction represent numbers from Fiscal Year 2018.
2 Metro Bus routes and lines/or frequency are anticipated to be altered based on information in the NextGen Bus Plan.

3.14.5.2 Regional Transportation

The GSA is well-served by multiple Interstate Highways, a State Highway, and multiple north-south and east-west arterial streets, including some of the most prominent freeways in the region. The freeways and highways within the GSA include Interstate-605 (I-605), I-5, I-70, and State Route 60 (SR-60). The freeways in the GSA link the Port of Los Angeles and Port of Long Beach to the nation's Interstate System. These freeways carry among the highest volumes of goods movement in the country. Additionally, several roadway arterials in the GSA are heavily used by truck traffic for goods movement. Arterials in Commerce and western Montebello serve a dense industrial, manufacturing, and commercial business district. Arterials adjacent to freeways also serve as alternative trucking routes. All freeways in the GSA carry more than 3,000 trucks daily during the mid-day peak period. Washington Boulevard and Garfield Avenue both carry 400 and 800 trucks during the mid-day peak period. Other roadways carry 400 or fewer trucks during the mid-day peak period. **Table 3.14-2** presents transportation statistics throughout the region for existing conditions in the base year, and for AM and PM peak hour data for the GSA.

Table 3.14-2. Regional Transportation Statistics for Existing Conditions

Region-wide Statistics	Existing Conditions
Regional	
Vehicle Miles Traveled (VMT)	475,761,000
Vehicle Hours Traveled (VHT)	14,414,000
Average Vehicle Speed (mph)	33.0
AM Peak Vehicle Trips	8,298,500
PM Peak Vehicle Trips	11,113,200
General Study Area	
VMT	12,070,000
VHT	410,000
Average Vehicle Speed (mph)	29.4
AM Peak VMT	2,612,000
AM Peak VHT	115,000
AM Peak Average Speed (mph)	22.7
AM Peak Vehicle Trips	278,100
PM Peak VMT	3,255,000
PM Peak VHT	130,000
PM Peak Average Speed (mph)	25.0
PM Peak Vehicle Trips	367,100

Source: CDM Smith/AECOM JV, 2019; Metro CBM18.

3.14.5.3 Roadway Characteristics Summary

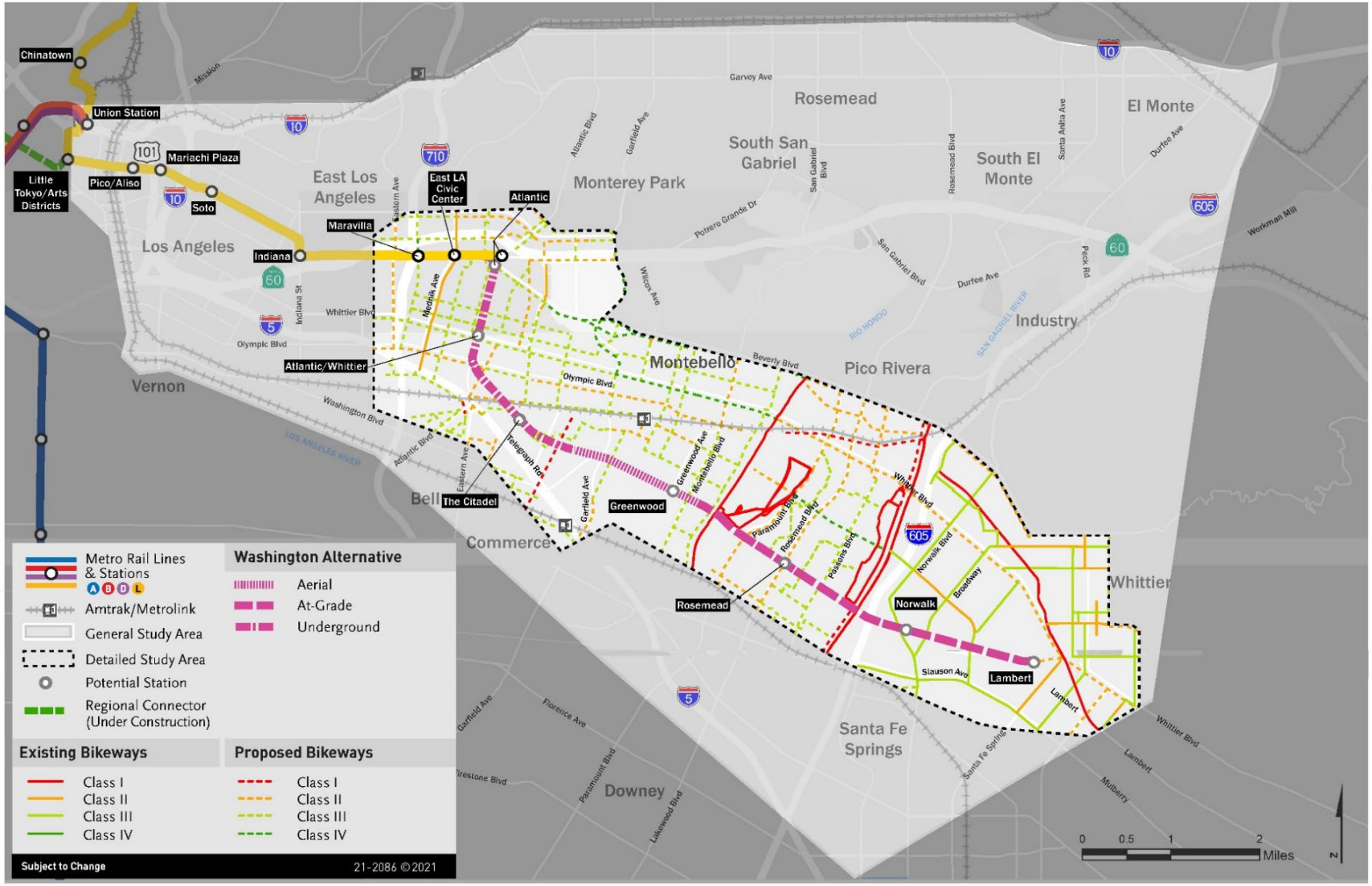
There are several key arterial roadways in the DSA. Key north/south roadways include Atlantic Boulevard, Garfield Avenue, Greenwood Avenue, Paramount Boulevard, Rosemead Boulevard, Passons Boulevard, Pioneer Boulevard, Norwalk Boulevard, Broadway, and Sorensen Avenue. Key east/west roadways include Pomona Boulevard/Via Campo, Beverly Boulevard, Whittier Boulevard, Olympic Boulevard, Washington Boulevard, and Telegraph Road. Characteristics of these key arterial roadways were compiled based on fieldwork conducted in the GSA. A summary of roadway characteristics, off-street and on-street parking in the vicinity of the Project stations and along the Build Alternatives, and daily traffic volumes along the key arterials, is provided in Appendix N.

3.14.5.4 Pedestrian and Bicycle Circulation

The entire arterial street system network is considered open to pedestrian traffic, either on sidewalks or road shoulders, except for locations where no shoulder exists. In many locations in the DSA, pedestrian flow is impeded due to missing, inadequate or unsafe sidewalks and crossings. Existing pedestrian conditions throughout the DSA are qualitatively assessed near each of the Project stations. The number of pedestrians observed during the peak period ranges from 0 to 223 per hour and the number of bicyclists ranges from 0 to 9 per hour, depending on the intersection. Pedestrian and bicycle activity are higher on arterials in the denser neighborhoods along Atlantic Boulevard and significantly lower along arterials in lower density neighborhoods along Washington Boulevard and freeway-adjacent streets. Attachment B of Appendix N provides detailed counts by intersection for pedestrian and bicycle existing conditions within DSA.

The existing bicycle circulation in the DSA consists of a network of approximately 51 miles of Class I, II, III, and IV bicycle facilities. This includes approximately 15.6 miles of Class I bicycle paths. The Class I bicycle paths are located along the west side of the Rio Hondo and along the east and west sides of the San Gabriel River. The San Gabriel River trail is a multi-use trail running north-south extending from Azusa to Seal Beach. The Rio Hondo Bike Path extends between Monrovia and South Gate, where it connects to the Los Angeles River bicycle path. Additional Class I bike paths exist along the Whittier Greenway Trail and a circular path within the Rio Hondo Floodplains.

There are 8.8 miles of Class II bicycle lanes and 23.7 miles of Class III bicycle lanes in the DSA that are concentrated within Pico Rivera, Whittier, and in East Los Angeles. The bicycle lanes in Pico Rivera are on Mines Boulevard and Hadley Street and serve as a connection to the Class III bicycle routes along Norwalk Boulevard, Broadway, Sorenson Avenue, and other minor residential roadways in the southeast part of the DSA. Whittier's bicycle network includes Class II bicycle lanes and Class III bicycle routes throughout the city that provide connections to the 4.5-mile Whittier Greenway Trail. East Los Angeles has limited bicycle facilities within the DSA. Approximately three miles of Class IV bicycle boulevards along Woods Avenue and Hubbard Street connect to the Class II and Class III facilities on Mednick Avenue, Ford Boulevard, and Sadler Avenue. Existing and planned bikeways are shown on **Figure 3.14.2.**



Sources: County of Los Angeles (2012), Metro (2016), Montebello (2018); Gateway Cities Council of Governments/Metro (2016); Pico Rivera (2018); Whittier (2013), Commerce (2020).
Note: Map may not be consistent with ground markings and signs.

Figure 3.14.2. Existing and Planned Bicycle Facilities (2042)

3.14.5.5 Emergency Access

Fire prevention, protection, and emergency medical services in the DSA are provided by the Los Angeles County Fire Department (LACFD) in unincorporated areas of Los Angeles County (East Los Angeles and West Whittier-Los Nietos), and the cities of Commerce, Pico Rivera, and Whittier. Fire protection services are also provided by the Montebello Fire Department in Montebello and by the Santa Fe Springs Department of Fire-Rescue in Santa Fe Springs.

Law enforcement, police services, and civil processes in the DSA are provided by the Los Angeles County Sherriff's Department in unincorporated areas of Los Angeles County (East Los Angeles and West Whittier-Los Nietos), and the cities of Commerce and Pico Rivera. Police protection services are also provided by the Montebello Police Department in Montebello and the Whittier Police Department in Whittier and Santa Fe Springs.

Fire stations, police and sheriff departments, and hospitals/key medical facilities within the DSA are identified in Appendix N. The closest facilities to the Project include LACFD Fire Station 50 on Saybrook Avenue in Commerce, Los Angeles County Sheriff's Department - East Los Angeles on East 3rd Street in East Los Angeles, the Kaiser Permanente East Los Angeles Medical Offices, and Presbyterian Intercommunity Hospital (PIH) Whittier Hospital in the city of Whittier.

I-605 freeway is identified as a primary disaster route and Washington Boulevard is identified as a secondary disaster route for the Los Angeles County Operational Area and both are designated as emergency evacuation routes for the cities within the DSA (i.e., cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier) (Los Angeles County 2012).[1]

3.14.6 Impact Evaluation

3.14.6.1 Impact TRA-1: Conflict with Programs, Plans, and Policies

Impact TRA-1: Would a Build Alternative conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

3.14.6.1.1 Alternative 1 Washington

Operational Impacts

Alternative 1 is forecasted to increase countywide transit travel by approximately 7,700 new transit trips daily compared to the No Project Alternative (difference between daily linked transit trips for Alternative 1 and the No Project Alternative), and approximately 15,000 total weekday boardings. Travel time between the Atlantic station (relocated/reconfigured) and the Lambert station for Alternative 1 would be approximately 22.6 minutes, which would be approximately 9 minutes faster than the projected auto travel time (32 minutes) between these two points. Local bus operating speeds may decrease along Washington Boulevard from east of Garfield Avenue to east of Carob Way due to

[1] Disaster routes are freeway, highway, or arterial routes pre-identified for use during times of crisis. These routes are utilized to bring in emergency personnel, equipment, and supplies to impacted areas in order to save lives, protect property, and minimize impacts to the environment. An evacuation route is used to move the affected population out of an impacted area.

proposed traffic lane reconfigurations, which would result in reduction of roadway capacity along Alternative 1. As such, re-routing and/or relocating existing bus stops on Montebello Line 50 may be required. In addition, Alternative 1 may result in minor increases in ridership for bus lines that provide connections or feeder services to the alignment. However, existing bus routes have capacity, and with anticipated improvements described in the *NextGen Bus Plan*, additional efficiencies and improvement will be made to local services. Additionally, Alternative 1 would not conflict with future transit services but would provide travel time savings benefits and would enhance transit connectivity with the existing local bus network. Alternative 1 would support several regional and local plans and policies and would not conflict with adopted regional or local policies or plans related to roadway circulation or transit. Alternative 1 would also enhance transit connectivity between the stations and the surrounding areas and thereby increase ridership countywide. Therefore, operation of Alternative 1 would result in less than significant impacts related to transit.

Alternative 1 would result in a reduction in general-purpose travel lanes from three lanes to two lanes, and the elimination of ingress/egress movements at driveways and selected cross streets along Washington Boulevard, which could require some changes to truck ingress/egress for industrial properties in Commerce and Montebello. Approach and departure routes for trucks, for example, might need to change slightly to accommodate new turn restrictions at selected locations. However, Alternative 1 would not preclude vehicle or truck access along Washington Boulevard, and left-turn movements would continue to be allowed to and from major cross-streets (e.g., Garfield Avenue, Greenwood Avenue) at signalized intersections as set forth in PM TRA-1 (**Section 3.14.7.1**). In addition, parallel east–west routes (e.g., Telegraph Road, Olympic Boulevard, Whittier Boulevard) would continue to serve as alternatives to Washington Boulevard, providing additional connections to and from the regional freeway network. As such, changes in general-purpose travel lanes would be consistent with local and regional circulation elements and plans. Therefore, operation of Alternative 1 would result in less than significant impacts related to traffic circulation.

Alternative 1 would provide bicycle circulation and enhanced access in the immediate station areas, such as bike parking and connections to existing nearby bike facilities within up to a 600-foot radius for improved bicycle-to-transit connections, which would be determined during preliminary engineering. At some locations along the alignment, sidewalks would be relocated, widened, and/or replaced with the same widths where possible to accommodate the light rail guideway, TPSS, stations, or other related infrastructure, but only in the immediate area adjacent to these elements; however, these would be improvements to existing conditions by enhancing the overall walkability and bike accessibility of the proposed station areas. Sidewalks would not be altered to the extent that pedestrian circulation would be impaired or in violation of American Disabilities Act (ADA) standards as set forth in PM TRA-1. Alternative 1 would attract approximately 330 to 940 peak hour walk and bike trips per station, with lower volumes throughout the day and on weekends. This level of pedestrian activity would not create severe overcrowding during the peak period that would interfere with pedestrian accessibility, as current pedestrian volumes are relatively low. As such, the surrounding pedestrian facilities would have sufficient capacity to accommodate the increase in pedestrian volumes and the peak hour walk trips.

There are no existing bicycle facilities along Alternative 1. The following are the proposed bicycle facilities along Alternative 1:

- Class III on Woods Avenue between Dorner Drive and Olympic Boulevard (Los Angeles County)
- Class III on Beverly Boulevard between 3rd Street and Gerhart Avenue (Los Angeles County)

- Class III on Smithway Street between Flotilla Avenue and Tubeway Avenue (Commerce)
- Class I as Edison Utility right-of-way between Ferguson Drive and Gage Avenue (Commerce)
- Class III on Yates Avenue between Flotilla and Gage Avenue (Commerce)
- Class III on Montebello Boulevard between Montebello Way/Truck Way and Sycamore Street (Montebello)
- Class III on Bluff Road between Whittier Boulevard and Sycamore Street (Montebello)
- Class III on Paramount Boulevard between Gallatin Road and Telegraph Road (Pico Rivera)
- Class III on Crossway between Coffman Pico Road and Washington Boulevard (Pico Rivera)
- Class II on Rosemead Boulevard between Gallatin Road and Telegraph Road (Pico Rivera)
- Class III on Loch Alene Avenue between Balfour Street and Nan Street (Pico Rivera)
- Class II/III on Passons Blvd between Jackson Street and Telegraph Road (Pico Rivera)
- Class I along Pico Rivera Trail (Pico Rivera)
- Class III on Washington Boulevard between Lambert Road and Santa Fe Springs Road (Whittier)

The proposed Class III bicycle routes would still be accommodated through roadway striping during operations and would not conflict with Alternative 1. Additional Class III bicycle routes that cross Atlantic Avenue are proposed, but Alternative 1 would be in an underground configuration with roadways restored for operations and therefore not conflict with Alternative 1. The proposed Class I and Class II bicycle facilities would not be located along Washington Boulevard and only cross Washington Boulevard at applicable intersections where bicycle and pedestrian traffic would be allowed to cross with bicycle and pedestrian facilities remaining accessible as set forth in PM TRA-1. Therefore, operation of Alternative 1 would result in less than significant impacts related to pedestrian and bicycle circulation.

Design Options

Atlantic/Pomona Station Option

Operational impacts would be similar to those described under the base Alternative 1, because Alternative 1 with the Atlantic/Pomona Station Option would be underground from the transition from at-grade to underground on Pomona Boulevard, and underneath Atlantic Boulevard south of 4th Street. As such, there are no additional impacts to other transit routes, traffic circulation, pedestrian circulation, or bicycle circulation compared to the base Alternative 1. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Montebello At-Grade Option

Under the Montebello At-Grade Option, operational impacts would be similar to those described under the base Alternative 1. The approach and departure routes for trucks may need to change slightly to accommodate turn restrictions for the at-grade option at selected locations between Yates Avenue and Carob Way where the Montebello At-Grade Option reconnects with the base Alternative 1. However, the Montebello At-Grade Option would not preclude vehicle or truck access along Washington Boulevard, and left-turn movements would continue to be allowed to and from major cross-streets (e.g., Garfield Avenue, Greenwood Avenue) at signalized intersection as set forth in PM TRA-1. In addition, parallel east-west routes (e.g., Telegraph Road, Olympic Boulevard, Whittier Boulevard) would continue to serve as alternative routes to Washington Boulevard, providing additional connections to and from the regional freeway network. However, the Montebello At-Grade Option would require narrower sidewalk widths (five to eight feet) than the aerial configuration (12 feet) to accommodate the at-grade track alignment along Washington Boulevard. The adjustment in sidewalk width would occur along Washington Boulevard from 620 feet west of South Vail Avenue to the intersection of Washington Boulevard and South Vail Avenue intersection. The adjusted sidewalk would be compliant with ADA requirements and as set forth in PM TRA-1 (**Section** Project Measures**3.14.7.1**) and would not result in an impediment to pedestrian circulation. Operation of Alternative 1 would not result in a significant impact to bicycle circulation and the Montebello At-Grade Option would not create any significant impacts as the proposed Class III bicycle route on Yates Avenue between Garfield Ave and Flotilla Street would still maintain through access for bicyclists. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact.

Construction Impacts

Construction of Alternative 1 would require temporary closures of intersections, lanes, or sidewalks, which may result in disruptions to bus service along Atlantic Boulevard, Flotilla Street, Smithway Street, and Washington Boulevard. As the Project would be constructed in segments, these temporary lane closures and turn restrictions would not affect all intersections simultaneously. During construction, temporary re-routing and relocation of bus stops may be needed for the following transit lines:

- Metro Line 260
- Montebello Bus Lines 10, 40, and 90
- Commerce Purple City Circulator (on Atlantic Boulevard)
- Commerce Blue and Orange City Circulator (on Smithway Street)
- Montebello Bus Lines 20 (on Greenwood Avenue), 30, and 70 (on Garfield Avenue)
- Montebello Line 50 (on Washington Boulevard)

As such, construction of Alternative 1 would result in a significant impact related to transit circulation, as construction activities would disrupt the circulation system through temporary roadway closures, lane closures, and sidewalk closures. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and implementing a public outreach program

in coordination with transit agencies for temporary bus stop relocation, which would reduce impacts to less than significant.

Construction activities for Alternative 1 would require temporary closures and detours that would cause a reduction in capacity along affected roads, particularly along Washington Boulevard, which is an important truck route. Trucks using Washington Boulevard would be affected due to temporary closures and associated detours. At the proposed Commerce/Citadel station, industrial properties that rely on Smithway Street as their only access point for trucks would also be affected during project construction if access is unable to be maintained during construction. Prohibiting access to these properties would be considered a significant impact. Furthermore, construction of the transition segment from at-grade to underground near the intersection of 3rd Street and Atlantic Boulevard would require temporary lane reconfiguration between La Verne Avenue and the existing Atlantic Station to accommodate the open cut trench for the transition, but through-traffic and existing turning movements would be maintained on 3rd Street. Additionally, the bridges over the Rio Hondo and San Gabriel River would be replaced, and construction would require a temporary reduction in the number of travel lanes on the two bridges. The bridge reconstruction would occur in two phases (one for each side of the bridge) and the roadways would be partially closed for an extended period of time. This would result in a significant impact related to traffic circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require the preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and coordinating with local business owners, which would reduce impacts to less than significant.

Excavated material would be loaded into trucks and transported along designated truck routes within the Project corridor right-of-way (ROW) and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Consistent with local plans, truck routes that may be used for transporting and hauling construction-related materials include Atlantic Boulevard, Saybrook Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard, Slauson Avenue, and Whittier Boulevard. Actual volumes of material and specific routes would depend on a number of factors, including the construction contract limits, individual contractor's choices, and coordination with the city jurisdictions. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements as set forth in PM TRA-2. Further, implementation of MM TRA-1, discussed in **Section 3.14.7**, would include the identification of haul routes that are consistent with local land use and mobility plans. In cooperation with the corridor cities and implemented throughout the construction process, these routes would be situated to minimize noise, vibration, and other possible impacts, which would ensure impacts to traffic circulation associated with haul routes would be less than significant.

Temporary sidewalk closures would be required along construction areas, including during construction of the at-grade and aerial segments and along 3rd Street during construction of the transition from the existing at-grade alignment to an underground configuration. For the aerial segment, the erection of falsework (temporary support structures) and the installation of the aerial guideway columns may affect sidewalk access. For at-grade segments, roadway and guideway construction on Washington Boulevard east of Montebello Boulevard may require temporary sidewalk closures for extended periods. Temporary sidewalk closures may also occur at other locations along Alternative 1, including cut and cover segments near the Atlantic station (relocated/reconfigured) and east of Greenwood Avenue and in the vicinity of the aerial and at-grade station construction, as well as the bridges on Washington Boulevard crossing over the Rio Hondo and San Gabriel River. Pedestrian through-access and access to adjacent properties along these segments would need to be maintained during construction as set forth in PM TRA-2 (**Section** Project Measures**3.14.7.1**). Although temporary,

the potential disruptions to pedestrian circulation would result in a significant impact to pedestrian conditions during project construction.

Alternative 1 would require temporary lane or roadway closures during construction that could affect existing and proposed bike routes. There are proposed bicycle facilities crossing Atlantic Avenue, but the underground segment would be constructed using a TBM and therefore, roadways and bicycle lanes would not be disrupted. Construction on Woods Avenue and Beverly Boulevard for the Atlantic station (relocated/reconfigured) would require temporary closures to sidewalks and roadways due to cut and cover construction near this station. There are proposed bicycle facilities at this location which could temporarily be affected bicycle circulation.

Construction of the aerial and at-grade segments would require temporary roadway closures that could affect bicycle circulation. Although there are no existing or proposed facilities on Washington Boulevard, there are proposed bicycle facilities that cross Washington Boulevard along Montebello Boulevard and Garfield Avenue and which would be temporarily impacted during falsework installation if the bicycle lanes are constructed before the construction of Alternative 1. Additionally, construction along Washington Boulevard would shift some of the through-traffic movements to Mines Avenue, portions of which that are located between Paramount Boulevard and Sorenson Avenue are designated as Class II bicycle lanes and Class III bicycle routes. Consequently, the flow of bicycle traffic would be hampered due to increased traffic volumes on Mines Avenue.

Temporary lane closures may affect proposed north-south bike routes at all of the proposed station locations. Bicycle traffic movements would be maintained during construction, but lane reductions and street closures would inhibit the flow of bicycle traffic and may require detours. In addition, during demolition and reconstruction of the bridges on Washington Boulevard crossing over the Rio Hondo and San Gabriel River, the Class I bicycle paths would be temporarily affected. This may include temporary closures limiting passage on the paths that extend under the bridges. Although temporary, the potential disruptions to bicycle circulation would result in a significant impact to bicycle conditions during project construction.

As described herein, construction of Alternative 1 would result in a significant impact related to bicycle and pedestrian circulation. Implementation of MM TRA-1, identified in **Section 3.14.7**, would require a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing pedestrian and bicycle detour routes, temporary pedestrian shelters, and wayfinding signage, which would reduce impacts to less than significant.

Design Options

Atlantic/Pomona Station Option

The transition from at-grade to underground would be similar for the Atlantic/Pomona Station Option as the base Alternative 1, but would require less cut-and-cover construction on Pomona Boulevard as the alignment would turn at a shallower angle through the Pomona/Beverly intersection for placement of the station platform. Similarly, there would be less cut-and-cover construction on Atlantic Boulevard as the underground trackwork would be located under the parcels to the east of Atlantic Boulevard instead of under the public ROW. Two small additional segments of Atlantic Boulevard (just north of Beverly Boulevard) and Beverly Boulevard (just east of Atlantic Boulevard) would require cut-and-cover construction to accommodate the turn from the station to the parcels just east of Atlantic Boulevard. Cut-and-cover segments would require temporary lane closures and may also require temporary sidewalk closures for construction activities. Additionally, the same temporary roadway, lane, and

sidewalk closures for the base Alternative 1 would occur during construction of Alternative 1 with the Atlantic/Pomona Station Option; however, less would be needed under the design option as the cut-and-cover construction would be out of the public ROW as compared to the base Alternative 1 with cut-and-cover construction occurring underneath Atlantic Boulevard at this location. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a significant impact related to the disruptions to transit and traffic, pedestrian, and bicycle circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require preparation of a Traffic Management Plan that specifies measures to minimize disruption of transit and traffic, pedestrian, and bicycle circulation during construction, and would thus reduce impacts to less than significant.

Montebello At-Grade Option

Construction impacts would be similar to those described under the base Alternative 1 with an aerial alignment at this location. For the Montebello At-Grade Option, Washington Boulevard may require lane closures for extended periods and may also require temporary sidewalk closures for construction activities. Specifically for the Montebello At-Grade Option, temporary lane and sidewalk closures would be needed to construct the transition from aerial to at-grade between Garfield Avenue to Montebello Boulevard, but through-traffic and pedestrian access to buildings would be maintained. The same temporary closures for the base Alternative 1 would occur during construction of Alternative 1 with the Montebello At-Grade Option. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would result in a significant impact related to the disruptions to transit, traffic, pedestrian, and bicycle circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require preparation of a Traffic Management Plan that specifies measures to minimize disruption of transit and traffic, pedestrian, and bicycle circulation during construction, and would thus reduce impacts to less than significant.

3.14.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option are forecasted to increase countywide transit travel by almost 4,000 new transit trips daily compared to the No Project Alternative (difference between daily linked transit trips for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option and the No Project Alternative). The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option are forecasted to have over 7,800 total weekday boardings. Because the alignments would operate almost entirely underground, local traffic or bus operations would be maintained to accommodate through-traffic and existing turning movements. In addition, minor increases in ridership for bus lines may occur that provide connections or feeder services to the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. The Project would support several regional and local plans and policies, would not conflict with adopted regional or local policies or plans, and would enhance transit connectivity between the stations and the surrounding areas, thereby increasing ridership countywide when compared to the No Project Alternative. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts related to transit services.

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in minor changes to lane configurations at intersections to accommodate new or modified circulation patterns,

such as near the intersection of 3rd Street and Atlantic Boulevard between La Verne Ave and the existing Atlantic Station to accommodate the open cut trench for the transition, but through-traffic and existing turning movements would be maintained. New traffic signals or modifications to existing traffic signals (e.g., signal phasing changes) to accommodate light rail movements, traffic circulation patterns at intersections, and grade crossings and to facilitate pedestrian access to/from stations (e.g., mid-block crossings at stations) would be required. As set forth in PM TRA-1, these changes would be designed according to applicable Metro Rail Design Criteria (MRDC) and standards and would provide for adequate emergency access and would not result in a substantial or measurable increase in VMT. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts related to traffic circulation.

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option 2 would provide bicycle circulation and access amenities in the immediate station areas as set forth in PM TRA-1, such as bike parking and connections to existing nearby bike facilities within up to a 600-foot radius to improve bicycle-to-transit connections, which would be determined during preliminary engineering. At some locations along the alignment, sidewalks would be relocated, widened, and/or replaced with the same widths where possible to accommodate the related infrastructure but only in the immediate area adjacent to these elements; however, these would be improvements to existing conditions by enhancing the overall walkability and bike accessibility of the proposed station areas. In no instances would sidewalks be altered to the extent that pedestrian circulation would be impaired or in violation of ADA standards and as set forth in PM TRA-1.

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would attract approximately 385 to 945 peak hour walk and bike trips per station, with lower volumes throughout the day and on weekends. This level of pedestrian activity would not create severe overcrowding during the peak period that would interfere with pedestrian accessibility, as current pedestrian volumes are relatively low. As such, the surrounding pedestrian facilities would have sufficient capacity to accommodate the increase in pedestrian volumes and the peak hour walk trips.

There are no existing bicycle facilities along the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. The following bicycle facilities are proposed along the alignments:

- Class III on Woods Avenue between Dorner Drive and Olympic Boulevard(Los Angeles County)
- Class III on Beverly Boulevard between 3rd Street and Gerhart Avenue (Los Angeles County)
- Class III on Smithway Street between Flotilla Avenue and Tubeway Avenue (Commerce)

The proposed Class III bicycle routes would be accommodated through roadway striping during operations and would not conflict with the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option. Additional Class III bicycle routes that cross Atlantic Avenue are proposed; however, these routes would not conflict with the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option as the alignment would be primarily underground and roadways would be restored for operations. The proposed bicycle facilities that intersect the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would remain accessible and allow bicyclists and pedestrians to cross at the Atlantic Boulevard intersections as set forth in PM TRA-1. Overall, the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would enhance walkability in the proposed station areas, include improvements coordinated with the local

jurisdictions, and would not conflict with any identified local programs, plans, or policies as set forth in PM TRA-1. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts related to pedestrian and bicycle circulation.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would include the construction of bored tunnels and transition structures. At locations with cut-and-cover underground segments, temporary closures of some intersections, lanes, or sidewalks may be necessary during construction, which may disrupt bus service along Atlantic Boulevard, Flotilla Street, and Smithway Street. As the Project would be constructed in segments, these temporary lane closures and turn restrictions would not affect all intersections simultaneously. During construction, temporary re-routing and relocation of bus stops may be needed for the following transit lines:

- Metro Line 260
- Montebello Bus Lines 10, 40, and 90
- Commerce Purple City Circulator (on Atlantic Boulevard)
- Commerce Blue and Orange City Circulator (on Smithway Street)
- Citadel Outlet shuttle service (on Smithway Street)

Due to the temporary roadway closures, lane closures, and sidewalk closures, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in significant impacts. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and implementing a public outreach program, and would thus reduce impacts to less than significant.

At the proposed Commerce/Citadel station, industrial properties that depend on Smithway Street as their only access point for trucks would be affected during project construction if access is unable to be maintained during construction. Prohibiting access to these properties would be considered a significant impact. Furthermore, construction of the transition segment from at-grade to underground near the intersection of 3rd Street and Atlantic Boulevard would require temporary lane reconfigurations to accommodate the cut-and-cover for the underground transition. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in significant impacts related to traffic circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require the preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and coordinating with local business owners, and would thus reduce impacts to less than significant.

Excavated material would be loaded into trucks and transported along designated truck routes within the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Consistent with local plans, truck routes that may be used for transporting and hauling construction-related materials include Atlantic Boulevard, Saybrook

Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard, Slauson Avenue, and Whittier Boulevard. Cooperation with the corridor cities would occur throughout the construction process. Restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements as mandated by MM TRA-2. Further, implementation of MM TRA-1, discussed in **Section 3.14.7**, would include the identification of haul routes that are consistent with local land use and mobility plans. In cooperation with the corridor cities and implemented throughout the construction process, these routes would be situated to minimize noise, vibration, and other possible impacts, which would ensure impacts to traffic circulation associated with haul routes would be less than significant.

Temporary sidewalk closures would be required during construction along the cut-and-cover section on 3rd Street during construction of the transition from the existing at-grade alignment to an underground configuration. Construction of Alternative 2 with the Atlantic/Pomona Station Option would require less cut-and-cover construction on Pomona Boulevard and Atlantic Boulevard as compared to the base Alternative 2, but cut-and-cover construction would still be required. Additional temporary sidewalk closures may occur at other locations along Alternative 2, including cut and cover segments near the Atlantic station (relocated/reconfigured). Access to adjacent properties would need to be maintained during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, but disruptions to pedestrian circulation would occur. Although temporary, the potential disruptions to pedestrian circulation would result in a significant impact to pedestrian conditions during project construction.

There are multiple proposed bicycle facilities crossing Atlantic Avenue, but the base Alternative 2 or Alternative 2 with the Atlantic/Pomona would be constructed almost entirely underground using a tunnel boring machine, and, therefore, would not disrupt the roadways at those locations. Bicycle facilities are proposed on Woods Avenue and Beverly Boulevard along the cut-and-cover segment near the Atlantic station (relocated/reconfigured) that would be impacted during construction and require temporary sidewalk and roadway closures, which would temporarily impact bicycle circulation. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona would result in a significant impact related to pedestrian and bicycle circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing pedestrian and bicycle detour routes, temporary pedestrian shelters, and wayfinding signage, and would thus reduce impacts to less than significant.

3.14.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are forecasted to increase countywide transit travel by almost 6,000 new transit trips daily compared to the No Project Alternative (difference between daily linked transit trips for the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option and the No Project Alternative), and approximately 11,000 total weekday boardings. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would save 9 and 16 minutes of travel time between the Atlantic station and Greenwood station as compared to the No Project Alternative average auto travel time and average peak

northbound bus travel time respectively. Local bus operating speeds may decrease due to proposed traffic lane reconfigurations along Washington Boulevard, which would result in the reduction of roadway capacity along the alignments. As such, re-routing and/or relocating existing bus stops on Montebello Line 50 may be required. In addition, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option may result in minor increases in ridership for bus lines that provide connections or feeder services. Additionally, Alternative 3 would not conflict with future transit services, but would provide travel time savings benefits compared to the No Project Alternative, and would enhance transit connectivity with the existing local bus network. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would support several regional and local plans and policies, would not conflict with adopted regional or local policies or plans, and would enhance transit connectivity between the stations and the surrounding areas. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would thereby increase ridership countywide when compared to the No Project Alternative. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in less than significant impacts related to transit.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in the reduction in the number of general-purpose travel lanes on portions of the alignment along Washington Boulevard from three lanes to two lanes to allow for the placement of columns to support the aerial segments between Garfield Avenue and Montebello Boulevard). Minor changes to lane configurations at intersections could also be required to accommodate new or modified traffic circulation patterns, such as near the intersection of 3rd Street and Atlantic Boulevard to accommodate the open cut trench for the transition, but through traffic and existing turning movement would be maintained. New traffic signals or modifications to existing traffic signals (e.g., signal phasing changes) to accommodate light rail movements and traffic circulation patterns at intersections and grade crossings and to facilitate pedestrian access to/from stations (e.g., mid-block crossings at stations). Access changes would occur at selected cross streets due to LRT aerial crossings or at-grade crossings for the Montebello At-Grade Option, including prohibition of left-turn ingress/egress or through access. As set forth in PM TRA-1 (**Section 3.14.7.1**), these changes would be designed according to applicable MRDC and standards, would provide for adequate emergency access, and would not result in a substantial or measurable increase in VMT.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not preclude vehicle or truck access along Washington Boulevard, and left-turn movements would continue to be allowed to and from major cross-streets (e.g., Garfield Avenue, Greenwood Avenue) at signalized intersections, as set forth in PM TRA-1. In addition, parallel east–west routes (e.g., Telegraph Road, Olympic Boulevard, Whittier Boulevard) would continue to serve as alternative travel routes to Washington Boulevard, providing additional connections to and from the regional freeway network. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in less than significant impacts related to traffic circulation.

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would ensure that adequate sidewalk widths are maintained along aerial segments, both along the corridor and at station locations, so that pedestrian circulation would not be impaired or in violation of ADA standards or as set forth in PM TRA-1. Additional enhancements to the existing signalized crosswalks, such as marked crosswalks, would serve to further improve pedestrian circulation and non-motorized access to transit stations as set forth in PM TRA-1. In addition, other amenities, such as pedestrian-level lighting at stations, would improve the attractiveness and

perception of safety. Although, the Montebello At-Grade Option would require narrower sidewalk widths (five to eight feet) than the aerial configuration (12 feet) to accommodate the at-grade track alignment along Washington Boulevard from 620 feet west of South Vail Avenue to the intersection of Washington Boulevard and South Vail Avenue intersection, the adjusted sidewalk would be compliant with ADA requirements and would not result in an impediment to pedestrian circulation. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would attract approximately 460 to 870 peak hour walk and bike trips per station with lower volumes throughout the day and on weekends. This level of pedestrian activity would not create severe overcrowding during the peak period that would interfere with pedestrian accessibility, as current pedestrian volumes are relatively low. As such, the surrounding pedestrian facilities would have sufficient capacity to accommodate the increase in pedestrian volumes and the peak hour walk trips.

There are no existing bicycle facilities along the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option. The following bicycle facilities are proposed along Alternative 3:

- Class III on Woods Avenue between Dorner Drive and Olympic Boulevard(Los Angeles County)
- Class III on Beverly Boulevard between 3rd Street and Gerhart Avenue (Los Angeles County)
- Class III on Smithway Street between Flotilla Avenue and Tubeway Avenue (Commerce)
- Class I as Edison Utility right-of-way between Ferguson Drive and Gage Avenue (Commerce)
- Class III on Yates Avenue between Flotilla and Gage Avenue (Commerce)

The proposed Class III bicycle routes would still be accommodated through roadway striping during operations and would not conflict with the Project. Additional Class III bicycle routes that cross Atlantic Avenue are proposed; however, these routes would not conflict with the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option as these alignments would be underground and roadways would be restored for operations. The proposed Class I and Class II bicycle facilities would not be located along Washington Boulevard and only intersect Washington Boulevard at applicable intersections where bicycle and pedestrian traffic would be allowed to cross with bicycle and pedestrian facilities remaining accessible as set forth in PM TRA-1. Overall, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would enhance walkability in the immediate vicinity of the proposed station areas and include improvements coordinated with the local jurisdictions, and would not conflict with any identified local programs, plans, or policies as set forth in PM TRA-1. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in less than significant impacts related to pedestrian and bicycle circulation.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would include construction of bored tunnels, cut-and-cover

underground segments, transition structures, and aerial and at-grade segments. At locations with cut-and-cover underground segments and aerial segments, temporary closures of some intersections, lanes, or sidewalks may be necessary during construction, which may disrupt bus service along Atlantic Boulevard, Flotilla Street, Smithway Street, and Washington Boulevard. As the Project would be constructed in segments, these temporary lane closures and turn restrictions would not affect all intersections simultaneously. During construction, temporary re-routing and relocation of bus stops may be needed for the following transit lines:

- Metro Line 260
- Montebello Bus Lines 10, 40, and 90
- Commerce Purple City Circulator (on Atlantic Boulevard)
- Commerce Blue and Orange City Circulator (on Smithway Street)
- Citadel Outlet shuttle service (on Smithway Street)
- Montebello Bus Lines 20 (on Greenwood Avenue), 30 and 70 (on Garfield Avenue)
- Montebello Line 50 (on Washington Boulevard)

Due to the temporary roadway closures, lane closures, and sidewalk closures, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in significant impacts related to transit during construction. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and implementing a public outreach program, and would thus reduce impacts to less than significant.

Construction activities for the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would require temporary closures and detours that would cause a reduction in capacity along affected roads, particularly along Washington Boulevard, which is an important truck route. Trucks using Washington Boulevard would be affected due to these closures and associated detours. At the proposed Commerce/Citadel station, industrial properties that rely on Smithway Street as their only access point for trucks would also be affected during project construction if access is unable to be maintained during construction. Prohibiting access to these properties would be considered a significant impact. Furthermore, construction of the transition segment from at-grade to underground near the intersection of 3rd Street and Atlantic Boulevard would require temporary lane reconfiguration between La Verne Avenue and the existing Atlantic Station to accommodate the open cut trench for the transition, but through-traffic and existing turning movements would be maintained on 3rd Street. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require the preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and coordinating with local business owners, and would thus reduce impacts to less than significant.

Excavated material would be loaded into trucks and transported along designated truck routes within the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Consistent with local plans, truck routes that may be used for transporting and hauling construction-related materials include Atlantic Boulevard, Saybrook Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard,

Slauson Avenue, and Whittier Boulevard. Actual volumes of material and specific routes would depend on a number of factors, including the construction contract limits, individual contractor's choices, and coordination with the city jurisdictions. As set forth in PM TRA-2 (**Section 3.14.7.1**), cooperation with the corridor cities would occur throughout the construction process and restrictions on haul routes can be incorporated into the construction specifications according to local permitting requirements. Further, implementation of MM TRA-1, discussed in **Section 3.14.7**, would include the identification of haul routes that are consistent with local land use and mobility plans. These routes would be situated to minimize noise, vibration, and other possible impacts, which would ensure impacts to traffic circulation associated with haul routes would be less than significant.

Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a significant impact related to traffic circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require the preparation of a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing detour routes and coordinating with local business owners, and would thus reduce impacts to less than significant.

Temporary sidewalk closures would be required along construction areas, including during construction of at-grade and aerial segments and along 3rd Street during construction of the transition from the existing at-grade alignment to an underground configuration. For the aerial segment, the erection of falsework (temporary support structures) and the installation of the aerial guideway columns may affect sidewalk access. Temporary sidewalk closures may also occur at other locations along the alignment, including cut and cover segments near the Atlantic station (relocated/reconfigured). Specifically, for the Montebello At-Grade Option, temporary lane and sidewalk closures would be needed to construct the transition from aerial to at-grade between Garfield Avenue to Montebello Boulevard, but through-traffic and pedestrian access to buildings would be maintained. Pedestrian access to adjacent properties would need to be maintained during construction as set forth in PM TRA-2. Although temporary, the potential disruptions to pedestrian circulation would result in a significant impact to pedestrian conditions during project construction.

Temporary lane closures may affect existing and proposed bike routes. There are multiple proposed bicycle facilities crossing Atlantic Avenue, but the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be constructed using a TBM in this segment and therefore would not disrupt the roadways at those locations during construction. There are proposed bicycle facilities along the cut-and-cover segment near the Atlantic station (relocated/reconfigured). Construction on Woods Avenue and Beverly Boulevard would require temporary closures to sidewalks and roadways at these locations, which would temporarily affect bicycle circulation. In addition, temporary lane closures may affect north-south bike routes at proposed station locations. Bicycle traffic movements would be maintained during construction, but lane reductions and street closures would inhibit the flow of bicycle traffic and may require detours. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a significant impact related to bicycle and pedestrian circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing pedestrian and bicycle detour routes, temporary pedestrian shelters, and wayfinding signage, and would thus reduce impacts to less than significant.

3.14.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would not conflict with local or regional transit operations or with adopted regional or local policies or plans. Therefore, operation of an MSF site option would result in less than significant impacts related to regional and local transit.

The Commerce MSF site option would involve only minor changes to traffic circulation, including new or modified driveways and the permanent closure of a portion of Corvette Street (between Saybrook Avenue and Davie Avenue). The closure of Corvette Street would have a negligible effect on traffic circulation, as adjacent properties would become part of the MSF, and alternative east–west connections would be provided by Fleet Street to the north and Gayhart Street to the south.

The Montebello MSF site option or the Montebello MSF At-Grade Option would involve only minor changes to traffic circulation, including new or modified driveways. If the Montebello MSF site option is selected, the aerial structure would be located in the median of Washington Boulevard between Gayhart Street and Yates Avenue and would require roadway reconfiguration and restriping. There would still be sufficient space for through-traffic on Washington Blvd and existing left-turn movements would continue to be allowed to and from major cross-streets (e.g., Garfield Avenue). The tracks leading to the Montebello MSF site option under Alternative 1 would be in an aerial configuration over Acco Street and therefore, would not require closure of this roadway during operations. For the Montebello MSF At-Grade Option, Acco Street would be closed to through access and cul-de-sacs are proposed to either side of the lead tracks. Alternative east–west connections would be provided by Flotilla Street to the north and Washington Boulevard to the south. Access would be maintained to properties to the west of the vacated portion of Acco Street via Yates Avenue as set forth in PM TRA-3 (**Section 3.14.7.1**).

As described above, the operation of an MSF site option would result in less than significant impacts related to traffic circulation.

The Commerce MSF site option would acquire ROW on Corvette Street from the city of Commerce. Pedestrian access along this roadway would be permanently decommissioned as a result of this alternative. The land use in this area is industrial with little existing pedestrian activity and sidewalk facilities are intermittent or non-existent; therefore, a substantial increase in pedestrian activity due to the LRT and MSF is not anticipated, and the potential for conflicts between pedestrians and LRT operations would be minimal. No plans or programs are approved that would expand or enhance the pedestrian network immediately surrounding the Commerce MSF site option. Therefore, elimination of pedestrian access along Corvette Street and around the proposed Commerce MSF site option would have a less than significant impact on pedestrian conditions during operations.

The city of Commerce has proposed a Class III Bicycle Route along Flotilla Street and Saybrook Avenue along the perimeter roadways of the proposed Commerce MSF site option. The city of Montebello has proposed bicycle facilities along Flotilla Street and Vail Avenue along the perimeter roadways of the proposed Montebello MSF site option and the Montebello MSF At-Grade Option. The potential for conflicts between bicyclists and Project operations would be minimal or non-existent, and the

proposed bicycle facilities would not conflict, nor be blocked by the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option during operations. Therefore, operation of an MSF site option would have a less than significant impact related to bicycle and pedestrian circulation.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would include standard methods associated with construction of trackwork and buildings, including demolition of existing facilities, leveling of land, and construction of new sheds and maintenance buildings, as well as trackwork for storage of light rail vehicles (LRVs). During construction, temporary roadway and lane closures would be required, resulting in potential disruptions to bus service. Two bus lines would be affected due to construction of the Commerce MSF site option just west of Garfield Avenue and north of Gayhart Street. The city of Commerce's Blue and Orange Lines that operate on Smithway Street and Washington Boulevard would require temporary rerouting and relocation of bus stops during construction. Additionally, Montebello Bus Line 50, which operates on Washington Boulevard, would require temporary rerouting and relocation of bus stops during construction of the Montebello MSF site option. Therefore, construction of the Commerce MSF site option or the Montebello MSF At-Grade Option would result in significant impacts related to transit circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing vehicle and pedestrian detour routes and implementing a public outreach program, and would thus reduce impacts to less than significant.

Construction of the Commerce MSF site option would require closure of a portion of Corvette Street (between Saybrook Avenue and Davie Avenue) that would eventually become part of the Commerce MSF site option, and could also require other temporary changes to traffic circulation and controls, such as lane closures or detours. Construction of the Montebello MSF site option would require a temporary closure of a portion of Acco Street, and could also require other temporary changes to traffic circulation and controls, such as lane closures or detours to construct the aerial guideway for the tracks on Washington Boulevard and those leading from Washington Boulevard to the Montebello MSF site option. Construction of the Montebello MSF At-Grade Option would require the permanent closure of Acco Street to through traffic and cul-de-sacs would be constructed on either side of the lead tracks. These effects would, however, be minor, and would be localized to the immediate vicinity of the proposed Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option, and along roadways that are generally lightly used and primarily accommodate local access (as opposed to through-traffic). As set forth in PM TRA-4 (**Section 3.14.7.1**), access to nearby properties would be maintained throughout the course of construction, and alternative routes would be available for any streets requiring a full closure (e.g., use of Corvette Street would be routed to Fleet Street for the Commerce MSF site option, or Gayhart Street, and use of Acco Street would be routed to Flotilla Street or Washington Boulevard for the Montebello MSF site option and Montebello MSF At-Grade Option). Therefore, construction of an MSF site option would result in less than significant impacts related to traffic circulation.

The Commerce MSF site option would temporarily decommission roadways and sidewalks and permanently decommission a portion of Corvette Street. The Montebello MSF site option would temporarily close Acco Street, however, the Montebello MSF At-Grade Option would permanently

close Acco Street and decommission sidewalks in the area. The Commerce MSF site option and the Montebello MSF site options are located in an industrially zoned area where pedestrian activity is minimal and sidewalk facilities are intermittent or non-existent. The decommissioning of sidewalks in the neighborhood around the proposed Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would have minimal impacts to pedestrian circulation during construction, as there are no planned pedestrian improvement programs in these areas. Therefore, construction of an MSF site option would result in less than significant impacts related to pedestrian circulation.

There is a proposed Class III Bicycle Route along Flotilla Street and Saybrook Avenue that construction activities for the Commerce MSF site option could interfere with, and may require temporary closures. Additionally, proposed bicycle facilities along Flotilla Street and Vail Avenue could interfere with and could require temporary closures during construction activities of the Montebello MSF site option. Therefore, construction of an MSF site option would result in significant impacts related to bicycle circulation. Implementation of MM TRA-1, discussed in **Section 3.14.7**, would require a Traffic Management Plan that specifies measures to minimize disruption during construction, such as establishing bicycle detour routes and wayfinding signage, and would thus reduce impacts to less than significant.

3.14.6.2 Impact TRA-2: Conflict with CEQA Guidelines

Impact TRA-2: Would a Build Alternative cconflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

3.14.6.2.1 Alternative 1 Washington

Operational Impacts

Alternative 1 would result in reduced VMT (approximately 10,000 daily) compared to the No Project Alternative. Alternative 1 includes various changes to traffic circulation, including travel lane reductions, lane configuration changes, new or modified traffic signals and pedestrian crossings, and access changes at selected cross streets. The Governor's OPR technical guidance specifies that transit and active transportation projects, including all passenger rail, bus and BRT, and bicycle and pedestrian infrastructure projects generally reduce VMT and are therefore anticipated to cause less than significant impacts on transportation. Thus, streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing GHG emissions, increasing multimodal transportation networks, and facilitating mixed use development. Additionally, as set forth in PM TRA-1 (**Section 3.14.7.1**), components of the Project shall include new or modifications to existing traffic signals to accommodate light rail movements and traffic circulation patterns at intersections, enhancements to existing signalized crosswalks, and bicycle circulation and access amenities in immediate station areas. As such, operation of Alternative 1 would not likely lead to a substantial or measurable increase in vehicle travel. Therefore, operation of Alternative 1 would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and no impacts would occur.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would result in some differences in station design and access, but the general location of proposed stations would remain unchanged from the base Alternative 1. Changes to traffic circulation would be implemented in accordance with OPR technical guidance and as set forth in PM TRA-1 (**Section 3.14.7.1**) as described under the base Alternative 1. There may be minor differences in travel time under this design option, but ridership and VMT would generally remain the same as the base Alternative 1**.** Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and no impacts would occur.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would result in some differences in station design and access, but the location of proposed stations would remain unchanged from the base Alternative 1. Changes to traffic circulation would be implemented in accordance with OPR technical guidance and as set forth in PM TRA-1 (**Section 3.14.7.1**) as described under the base Alternative 1. There may be minor differences in travel time under this design option, but ridership and VMT would generally remain the same as the base Alternative 1**.** Therefore, operation of Alternative 1 with the Montebello At-Grade Option would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and no impacts would occur.

Construction Impacts

Construction of Alternative 1 would temporarily generate additional VMT related to construction work activities, the transport of excavated materials, and transport of construction equipment and supplies. This additional VMT would terminate upon completion of construction and would not be in effect during operation of Alternative 1. Given the temporary nature of construction-related VMT and that construction-related traffic circulation changes (e.g., detours) would generally be localized to the work area as set forth in PM TRA-2 (**Section 3.14.7.1**), they would not result in a substantial or long-term change in regional travel patterns. Therefore, construction of Alternative 1 would result in less than significant impacts.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, construction of Alternative 1 with the Atlantic/Pomona Station Option would involve a temporary increase in VMT related to construction work activities and the transport of excavated materials and construction equipment and supplies. Any additional VMT would terminate upon completion of construction and would not be in effect during operation of the Project, when there would be an overall reduction in VMT compared to the No Project Alternative. Given the temporary nature of construction-related VMT and that construction-related traffic circulation changes would be generally localized to the work area as set forth in PM TRA-2 (**Section 3.14.7.1**), the construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Montebello At-Grade Option

As with the base Alternative 1, construction of Alternative 1 with the Montebello At-Grade Option would involve a temporary increase in VMT related to construction work activities and the transport of excavated materials and construction equipment and supplies. Any additional VMT would terminate upon completion of construction and would not be in effect during operation of the Project, when there would be an overall reduction in VMT compared to the No Project Alternative. Given the temporary nature of construction-related VMT and that construction-related traffic circulation changes would be generally localized to the work area as set forth in PM TRA-2 (**Section 3.14.7.1**), construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact.

3.14.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in reduced VMT (approximately 5,000 daily) compared to the No Project Alternative. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would include various changes to traffic circulation, including lane configuration changes and new or modified traffic signals and pedestrian crossings. OPR technical guidance specifies that transit and active transportation projects, including all passenger rail, bus and BRT, and bicycle and pedestrian infrastructure projects generally reduce VMT and are therefore anticipated to cause less than significant impacts on transportation. Thus, streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing GHG emissions, increasing multimodal transportation networks, and facilitating mixed use development. Additionally, as set forth in PM TRA-1 (**Section 3.14.7.1**), components of the Project shall include new or modifications to existing traffic signals to accommodate light rail movements and traffic circulation patterns at intersections, enhancements to existing signalized crosswalks, and bicycle circulation and access amenities in immediate station areas. Thus, these changes would not likely lead to a substantial or measurable increase in vehicle travel. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and there would be no impact.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would temporarily generate additional VMT related to construction work activities and the transport of excavated materials and construction equipment and supplies. This additional VMT would terminate upon completion of construction and would not be in effect during operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, when there would be an overall reduction in VMT compared to the No Project Alternative. Given the temporary nature of construction-related VMT and that construction-related traffic circulation changes would be generally localized to the work area as set forth in PM TRA-2 (**Section 3.14.7.1**), construction of the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact.

3.14.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in reduced VMT (approximately 8,000 daily) compared to the No Project Alternative. OPR technical guidance specifies that transit and active transportation projects, including all passenger rail, bus and BRT, and bicycle and pedestrian infrastructure projects generally reduce VMT and are therefore anticipated to cause less than significant impacts on transportation. Thus, streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing GHG emissions, increasing multimodal transportation networks, and facilitating mixed use development. Additionally, as set forth in PM TRA-1 (**Section 3.14.7.1**), components of the Project shall include new or modifications to existing traffic signals to accommodate light rail movements and traffic circulation patterns at intersections, enhancements to existing signalized crosswalks, and bicycle circulation and access amenities in immediate station areas. Thus, these changes would not likely lead to a substantial or measurable increase in vehicle travel. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), and no impacts would occur.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would temporarily generate additional VMT related to construction work activities and the transport of excavated materials and construction equipment and supplies. This additional VMT would terminate upon completion of construction and would not be in effect during operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, when there would be an overall reduction in VMT compared to the No Project Alternative. Given the temporary nature of construction-related VMT and that construction-related traffic circulation changes (e.g., detours) would generally be localized to the work area as set forth in PM TRA-2 (**Section 3.14.7.1**), construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in a substantial or long-term change in regional travel patterns such that there would be a significant impact related to VMT. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact.

3.14.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

As described above, transit and active transportation projects generally reduce VMT and are therefore presumed to cause a less than significant impact on transportation. The Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option are not stand-alone projects and would only be constructed in conjunction with the larger project to build and operate an extension of the existing Metro rail network. The MSF is a necessary component of the larger project, providing critical functions for the daily operation and maintenance of the proposed transit service. Thus, the VMT reductions with operation of the proposed transit service (whether under Alternative 1, Alternative 2, or Alternative 3 [the Montebello MSF site option would not be implemented under Alternative 2]) would not be possible without an MSF, and those VMT reductions would offset the operational VMT attributable to the MSF (e.g., maintenance workers commuting to/from the MSF). Furthermore, the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would be located in relatively close proximity to the core of the greater Los Angeles metropolitan area and would involve a light industrial use (transit fleet maintenance) taking place at an infill site within an established light industrial district. Changes to traffic circulation would be implemented in accordance with OPR technical guidance and as set forth in PM TRA-1 (**Section 3.14.7.1**). The Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would therefore be unlikely to generate substantially different VMT characteristics than the surrounding existing uses such that they could result in a significant impact related to VMT. Therefore, operation of an MSF site option would result in a less than significant impact.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would temporarily generate additional VMT related to construction work activities and the transport of excavated materials and construction equipment and supplies. Compared to the Montebello MSF site option, the Montebello MSF At-Grade Option would involve some differences in the scope and nature of construction activities. This may involve a temporary increase in VMT related to construction work activities and the transport of excavated materials and construction equipment and supplies, compared to the Montebello MSF site option. This additional VMT for an MSF site option would terminate upon completion of construction and would not be in effect during operation of an MSF site option. Given the temporary nature of construction-related VMT and that construction-related traffic circulation changes (e.g., detours) would generally be localized to the work area as set forth in PM TRA-2, there would not be a substantial or long-term change in regional travel patterns such that construction an MSF site option would have a significant impact related to VMT. Therefore, construction of an MSF site option would result in a less than significant impact.

3.14.6.3 Impact TRA-3: Design Hazards or Incompatible Uses

Impact TRA-3: Would a Build Alternative substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

3.14.6.3.1 Alternative 1 Washington

Operational Impacts

Alternative 1 uses the existing street alignment and ROW for at-grade or aerial segments, and would not substantially increase hazards due to a geometric design feature. Alternative 1 would be designed, constructed, and operated per applicable State, Metro, and city design criteria and standards, including adherence to design codes and standards such as the Occupational Safety and Health Administration (OSHA), California OSHA, California Public Utilities Commission (CPUC), California Manual of Uniform Traffic Control Devices (CA MUTCD), and Metro safety and security programs and standards (i.e., MRDC and Metro Systemwide Station Design Standards Policy). Stations and grade crossings would be designed in accordance with MRDC, including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations, as set forth in PM TRA-1 (**Section 3.14.7.1**). There would be no impact from the underground segments. For at-grade and aerial segments, station platforms would be located in the median of the roadway and would be accessible from signalized crosswalks. The possibility of conflicts between automobiles and pedestrians would arise if pedestrians do not use designated, signalized crosswalks to access station platforms. As set forth in PM TRA-1, best practice safety measures would be implemented to minimize potential conflicts including mid-block crosswalks, signal-protected pedestrian movements, channelization, high visibility curbs between the guideway and roadway to prohibit vehicles from driving onto the tracks, barriers to protect and route pedestrians, ADA-compliant curb ramps, and warning signs to provide for convenient and safe access to station platforms.

An initial screening (Milestone 1) analysis according to Metro's Grade Crossing Policy indicates that all proposed grade crossings under Alternative 1 would fall under the least restrictive category "At Grade Operation Should Be Feasible", with the exception of the crossing at the Lambert Road terminal approach. At this location, the alignment would be at-grade and cross eastbound traffic on Washington Boulevard to access the station platform. The initial screening shows that this location would fall under the "Possible At Grade Operation" category. This grade crossing, like the others proposed elsewhere on the line, would be designed according to applicable MRDC and standards and would include traffic signal coordination and upgrades to avoid conflicts between LRVs and eastbound traffic along Washington Boulevard. Nomographs for the initial screening analysis are provided in Attachment C of Appendix N.

As is common for at-grade LRT in Los Angeles County (including the at-grade portions of the first phase of the Eastside Transit Corridor that opened in 2009), and as set forth in PM TRA-1, vehicular and pedestrian crossings across the at-grade segments of the alignment would be limited to intersections controlled by traffic signals. Uncontrolled mid-block vehicular crossings of tracks and mid-block left-turns would not be permitted and would be physically prohibited by a curb between the roadway and at-grade guideway with a fence between the two tracks in the center of the guideway whenever feasible, as set forth in PM TRA-1. These changes may result in changes to approach and departure traffic patterns for some properties with existing vehicle access along Washington Boulevard (e.g., for parking lots, loading docks, etc.), but would not preclude access completely. Traffic can be expected to increase slightly at locations where left-turn movements would continue to be allowed as a

result of these changes in circulation patterns, and treatments such as additional left-turn storage or signal timing/phasing adjustments would be incorporated to help accommodate these changes, where deemed feasible and appropriate in subsequent detailed design of the project. Therefore, operation of Alternative 1 would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Under Alternative 1 with the Atlantic/Pomona Station Option, there would be no impact for the underground segments. As set forth in PM TRA-1 (**Section 3.14.7.1**), the Atlantic/Pomona Station Option would be designed, constructed, and operated per applicable State, Metro, and city design criteria and standards, including adherence to design codes and standards such as the OSHA, California OSHA, CPUC, MUTCD, and Metro safety and security programs and standards (i.e., MRDC and Metro Systemwide Station Design Standards Policy). Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Montebello At-Grade Option

Similar to other at-grade segments of the alignment, the Montebello At-Grade Option would be designed per applicable State, Metro, and city design criteria and standards as set forth in PM TRA-1 (**Section 3.14.7.1**). An initial screening (Milestone 1) analysis according to Metro's Grade Crossing Policy indicates that all grade crossings under the Montebello At-Grade Option would fall under the least restrictive category "At Grade Operation Should Be Feasible", with the exception of the crossing at the Lambert Road terminal approach. At this location, the alignment would be at-grade and cross eastbound traffic on Washington Boulevard to access the station platform. The initial screening shows that this location would fall under the "Possible At Grade Operation" category. As set forth in PM TRA-1 (**Section 3.14.7.1**), this grade crossing would be designed according to applicable MRDC and standards and would include traffic signal coordination and upgrades to avoid conflicts between LRVs and eastbound traffic along Washington Boulevard. Nomographs for the initial screening analysis are provided in Attachment C of Appendix N. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in less than significant impacts.

Construction Impacts

During construction, pedestrians, bicyclists, and motorists would experience temporary safety hazards in the DSA localized around construction activities. This would result from temporary lane closures and the number and proximity of people and vehicles adjacent to the construction activities around station staging areas, and aerial and at-grade segments. The potential for such significant safety impacts would be minimized by compliance with OSHA, California OSHA, and Metro safety and security programs as set forth in PM TRA-2 (**Section 3.14.7.1**), which are designed to reduce potential impacts during construction to less than significant levels. Safety for pedestrians, bicyclists, and motorists would be maintained during construction using signage, partial lane closures, construction barriers, and supervision by safety and security personnel at access points and throughout construction sites. Therefore, because of compliance with the programs listed above, construction of Alternative 1 would result in less than significant impacts.

Design Options

Atlantic/Pomona Station Option

Construction impacts for Alternative 1 with the Atlantic/Pomona Station Option would be similar to those described under the base Alternative 1. The transition from at-grade to underground would be similar to the base Alternative 1 but would require less cut-and-cover construction on Pomona Boulevard as the alignment would turn at a shallower angle through the Pomona/Beverly intersection for placement of the station platform. Similarly, there would be less cut-and-cover construction on Atlantic Boulevard as the underground trackwork would be located under the parcels to the east of Atlantic Boulevard instead of under the public ROW. Two small additional segments of Atlantic Boulevard (just north of Beverly Boulevard) and Beverly Boulevard (just east of Atlantic Boulevard) would require cut-and-cover construction to accommodate the turn from the station to the parcels just east of Atlantic Boulevard. Overall, there would be less cut-and-cover construction, but the cut-and-cover segments would result in temporary safety hazards in the DSA localized around construction activities for pedestrians, bicyclists, and motorists. As with the base Alternative 1 and as set forth in PM TRA-2 (**Section 3.14.7.1**), construction of Alternative 1 with the Atlantic/Pomona Station Option would occur in compliance with OSHA, California OSHA, and Metro safety and security programs, which are designed to reduce potential impacts during construction to less than significant levels. Therefore, because of compliance with the programs listed above, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Montebello At-Grade Option

For the Montebello At-Grade Option, construction within the roadway for guideway operations on Washington Boulevard may require lane closures for extended periods and may also require temporary sidewalk closures for construction activities. As with the base Alternative 1 and as set forth in PM TRA-2 (**Section 3.14.7.1**), construction activities would occur in compliance with OSHA, California OSHA, and Metro safety and security programs, which are designed to reduce potential impacts during construction to less than significant levels. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would have less than significant impacts.

3.14.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would operate almost entirely in an underground configuration, which would result in no impacts related to hazards due to geometric design or incompatible land uses. Physical changes to transportation facilities and circulation at ground level, including the transition from the existing rail line to the new alignment and the aerial lead tracks to the MSF, would generally be minor in nature. These facilities under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be designed, constructed, and operated per applicable State, Metro, and city design criteria and standards, including adherence to design codes and standards such as the OSHA, California OSHA, CPUC, CA MUTCD, and Metro safety and security programs and standards (i.e., MRDC and Metro Systemwide Station Design Standards Policy) as identified in PM TRA-1 (see **Section 3.14.7.1**). Therefore, operation

of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts.

Construction Impacts

Base Alternative and Design Option

During construction, pedestrians, bicyclists, and motorists would experience temporary safety hazards in the DSA localized around construction activities. This would result from temporary lane closures and the number and proximity of people and vehicles adjacent to the construction activities around station staging areas. However, these impacts would be minimal because the alignment for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be almost entirely underground. Alternative 2 with the Atlantic/Pomona Station Option would transition from at-grade to underground and would require less cut-and-cover construction on Pomona Boulevard compared to the base Alternative 2, as the alignment would turn at a shallower angle through the Pomona/Beverly intersection for placement of the station platform. Similarly, there would be less cut-and-cover construction on Atlantic Boulevard for Alternative 2 with the Atlantic/Pomona Station Option, since the underground trackwork would be located under the parcels to the east of Atlantic Boulevard instead of under the public ROW as required for construction of the base Alternative 2. Two small additional segments of Atlantic Boulevard (just north of Beverly Boulevard) and Beverly Boulevard (just east of Atlantic Boulevard) would require cut-and-cover construction for Alternative 2 with the Atlantic/Pomona Station Option to accommodate the turn from the station to the parcels just east of Atlantic Boulevard. The potential for such significant safety impacts would be minimized by compliance with OSHA, California OSHA, and Metro safety and security programs and as set forth in PM TRA-2 (**Section 3.14.7.1**), which are designed to reduce potential impacts during construction to less than significant levels. Safety for pedestrians, bicyclists, and motorists would be maintained during construction using signage, partial lane closures, construction barriers, and supervision by safety and security personnel at access points and throughout construction sites. Therefore, because of compliance with the programs listed above, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts.

3.14.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option use the existing street alignment and ROW for aerial segments and would not substantially increase hazards due to a geometric design feature. Additionally, the short 0.1-mile at-grade segment east of the underground tunnel portal would not introduce a new hazard as the existing Metro L (Gold) Line is already at-grade along this segment of 3rd Street. As set forth in PM TRA-1 (**Section 3.14.7.1**), the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be designed, constructed, and operated per applicable State, Metro, and city design criteria and standards, including adherence to design codes and standards such as the OSHA, CA OSHA, CPUC, CA MUTCD, and Metro safety and security programs and standards (i.e., MRDC and Metro Systemwide Station Design Standards Policy). There would be no impact from the underground segments. For aerial segments, station platforms would be located in the median of the roadway and would be accessible from signalized crosswalks. The Montebello At-

Grade Option would operate at-grade (in lieu of an aerial alignment) through Montebello between approximately Yates Avenue and Montebello Boulevard. This design option would include new grade crossings on this segment of the route, as well as an at-grade station at Greenwood Avenue, in lieu of the aerial station proposed under the base Alternative 3. The possibility of conflicts between automobiles and pedestrians would arise if pedestrians do not use designated, signalized crosswalks to access station platforms. As set forth in PM TRA-1, best practice safety measures would be implemented to minimize potential conflicts; measures could include mid-block crosswalks, signal-protected pedestrian movements, channelization, high visibility curbs between the guideway and roadway to prohibit vehicles from driving onto the tracks, barriers to protect and route pedestrians, ADA-compliant curb ramps, along with warning signs to provide for convenient and safe access to station platforms.

Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in less than significant impacts.

Construction Impacts

Base Alternative and Design Options

During construction, pedestrians, bicyclists, and motorists would experience temporary safety hazards in the DSA localized around construction activities. This would result from temporary lane closures and the number and proximity of people and vehicles adjacent to the construction activities around station location staging areas and aerial and at-grade guideway segments. As discussed in **Section 3.14.6.3.2**, there would be less cut-and-cover construction required for the construction of the Atlantic/Pomona Station Option. The potential for such significant safety impacts would be minimized by compliance with OSHA, California OSHA, and Metro safety and security programs as set forth in PM TRA-2 (**Section 3.14.7.1**), which are designed to reduce potential impacts during construction to less than significant levels. Safety for pedestrians, bicyclists, and motorists would be maintained during construction using signage, partial lane closures, construction barriers, and supervision by safety and security personnel at access points and throughout construction sites. Therefore, because of compliance with the programs listed above, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact.

3.14.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would include some minor changes to traffic circulation, such as new or modified driveways and the closure of a portion of Corvette Street (between Saybrook Avenue and Davie Avenue) for the Commerce MSF site option, but these changes would be designed according to applicable State, Metro, and city design criteria and standards as set forth in PM TRA-3 (**Section 3.14.7.1**). An initial screening (Milestone 1) analysis according to Metro's Grade Crossing Policy indicates that the yard lead crossing across westbound Washington Boulevard (west of Vail Avenue) serving the Montebello MSF site option would fall under the "Possible At Grade Operation" category. As set forth in PM TRA-1, this crossing would be designed according to applicable standards

and would include traffic signal coordination and upgrades to avoid conflicts between LRVs and westbound traffic along Washington Boulevard. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in less than significant impacts.

Construction Impacts

MSF Site Options and Design Option

During construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option, pedestrians, bicyclists, and motorists would experience temporary safety hazards localized around construction activities in the industrial areas around the MSF site options. This would result from temporary lane closures and the number and proximity of people and vehicles adjacent to the construction activities for the aerial connection to the Commerce MSF site option, or the at-grade segment of the Montebello MSF At-Grade option. The potential for such significant safety impacts would be minimized by compliance with OSHA, California OSHA, and Metro safety and security programs as set forth in PM TRA-2 (**Section 3.14.7.1**), which are designed to reduce potential impacts during construction to less than significant levels. Safety for pedestrians, bicyclists, and motorists would be maintained during construction using signage, partial lane closures, construction barriers, and supervision by safety and security personnel at access points and throughout construction sites. Therefore, because of compliance with the programs listed above, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in less than significant impacts.

3.14.6.4 Impact TRA-4: Inadequate Emergency Access

Impact TRA-4: Would a Build Alternative result in inadequate emergency access?

3.14.6.4.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would potentially increase fire and police protection response times as a result of delays at new grade crossings. Grade crossings, particularly those along Washington Boulevard between Greenwood Boulevard and Lambert Road, could potentially delay fire and police protection vehicles if they arrive at a crossing at the same time as a passing train. This segment of Washington Boulevard experiences higher traffic volumes and land uses with higher rates of trip generation, which increases the likelihood of delay. In comparison, delays resulting from LRT operation would be less than delays from high traffic volumes due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings. Given that trains would be operating in exclusive street-running ROW at these locations, trains would clear signaled and unsignalized intersections more quickly to allow emergency vehicles to pass, as compared to vehicles in the thru-lanes which may not be able to clear the intersection as quickly due to traffic delays.

Although the transition from an at-grade to underground segment along 3rd Street between La Verne Avenue and Woods Avenue would be located directly in front of the East Los Angeles Sheriff Station and the Kaiser Permanente East Los Angeles Medical Offices, the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street, and operation of Alternative 1 is unlikely to impact existing response times to or from the station or the Kaiser Permanente offices. PIH Health Whittier

Hospital, which includes emergency care services, is located on Washington Boulevard near Lambert Road. The intersection of Washington Boulevard and Lambert Road would be preserved as-is and would continue to facilitate the ingress and egress of emergency vehicles to and from the hospital. As standard practice and as set forth in PM TRA-1, Metro would coordinate with fire and police protection officials when designing grade crossings to ensure that access for police and fire protection services would be maintained under Alternative 1. In addition, all new LRT facilities and crossings would be designed in accordance with the MRDC, including the Fire/Life Safety Criteria, to ensure safety and minimize potential hazards at all locations. Further, compliance with code requirements pertaining to emergency vehicle access and building standards also ensure that response times are maintained at acceptable levels. Operation of the underground and aerial segments of Alternative 1 would not have any material impact to fire and police protection response times since those segments would not affect emergency vehicles travelling on surface streets. Consequently, fire and police protection response times are anticipated to remain at acceptable levels during operation of Alternative 1. Although operation of Alternative 1 would potentially result in an increase to fire and police protection response times, with implementation of the standard coordination and design practices identified above and as set forth in PM TRA-1, it is anticipated that emergency response times would remain at acceptable levels. Therefore, operation of Alternative 1 would result in a less than significant impact.

Design Options

Atlantic/Pomona Station Option

Under Alternative 1 with the Atlantic/Pomona Station Option, no facilities would be affected in the vicinity of the Atlantic/Pomona Station. The Atlantic/Pomona Station Option would be in an underground alignment and would not create any additional grade crossings or otherwise affect emergency response times. Underground segments of Alternative 1 with the Atlantic/Pomona Station Option would not have any material impact to fire and police protection response times since those segments would not affect emergency vehicles traveling on surface streets. Consequently, fire and police protection response times are anticipated to remain at acceptable levels during operations. As a result, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact.

Montebello At-Grade Option

Under Alternative 1 with the Montebello At-Grade Option, no facilities would be affected in the vicinity of the Greenwood station. Compared to the base Alternative 1, the Montebello At-Grade Option would include five more at-grade crossings (including one pedestrian only at-grade crossing at Greenwood station) primarily between Yates Avenue and Montebello Boulevard along Washington Boulevard. As discussed above, at-grade crossings are not anticipated to cause a significant delay to fire and police protection vehicles. Any delay would be brief due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings. Given that trains would be operating in exclusive street-running ROW at these locations, trains would clear signaled and unsignalized intersections more quickly to allow emergency vehicles to pass, as compared to vehicles in the thru-lanes which may not be able to clear the intersection as quickly due to traffic delays. As standard practice and as set forth in PM TRA-1 (**Section 3.14.7.1**), Metro would coordinate with fire and police officials when designing grade crossings to ensure that access for police and fire protection services would be maintained. In addition, the LRT station and crossings would be designed in accordance with Metro Rail Design Criteria, including the Fire/Life Safety Criteria, to ensure safety and minimize potential hazards at all locations. Consequently, fire and police protection response times are

anticipated to remain at acceptable levels and would not require new or physically altered fire or police protection facilities for Alternative 1 with the Montebello At-Grade Option. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in less than significant impacts.

Construction Impacts

Construction activities for Alternative 1 would temporarily increase fire and police protection and response times as a result of periodic construction-related street closures or detours. Specifically, access to the East Los Angeles Sheriff Station on 3rd Street would be temporarily obstructed by construction activities, although the other access points to the station via Mednik Avenue and Gleason Street would remain open and accessible. The TBM would be launched from a vacant parcel used for miscellaneous utilities, east of Saybrook Avenue, across from the LACFD Fire Station 50. A temporary construction easement on part of the LACFD Fire Station 50 parcel would be acquired for the purposes of general construction activities. However, as set forth in PM TRA-2 (**Section 3.14.7.1**), access to the LACFD Fire Station 50 on Saybrook Avenue would be maintained during construction and the launch of the TBM. PIH Health Whittier Hospital, which includes emergency care services, is located on Washington Boulevard near Lambert Road. The intersection of Washington Boulevard and Lambert Road would be preserved as-is and would continue to facilitate the ingress and egress of emergency vehicles to and from the hospital, but could be impacted temporarily with road closures during construction activities for the Lambert Station. As set forth in PM TRA-2, Metro would coordinate with staff of the East Los Angeles Sheriff Station, LACFD Fire Station 50, and PIH Health Whittier Hospital in advance of any construction activities to preserve station access. Metro standard practices, as set forth in PM TRA-2, require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan, including detour routes, is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing. Therefore, construction of Alternative 1 would result in less than significant impacts.

Design Options

Atlantic/Pomona Station Option

Construction of the Atlantic/Pomona Station Option would not be located directly adjacent to fire, police, or medical facilities. As such, there would be no potential for construction activities to temporarily block access or otherwise disrupt operations. The remainder of Alternative 1 would have the same impacts as the base Alternative 1. Therefore, construction of Alternative 1 with the Atlantic/Pomona Option would result in a less than significant impact.

Montebello At-Grade Option

Construction of the Montebello At-Grade Option would not be located directly adjacent to fire, police, or medical facilities. As such, there would be no potential for construction activities to temporarily block access or otherwise disrupt operations. The remainder of Alternative 1 would have the same impacts as the base Alternative 1. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would result in less than significant impacts.

3.14.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not interfere with fire and police protection response times because it would occur almost entirely underground, and the guideway would not affect emergency vehicles traveling on surface streets. Although the transition from an at-grade to underground alignment along 3rd Street between La Verne Avenue and Woods Avenue is located directly in front of the East Los Angeles Sheriff Station and the Kaiser Permanente East Los Angeles Medical Offices, the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street, and operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is unlikely to impact existing response times to/from the station or the Kaiser Permanente offices. Consequently, fire and police protection response times are anticipated to remain at acceptable levels under the operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option. As discussed above, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is not anticipated to affect fire and police protection response times. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts.

Construction Impacts

Base Alternative and Design Option

Construction activities for the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would potentially temporarily increase fire and police protection response times as a result of periodic construction-related street closures or detours. Specifically, access to the East Los Angeles Sheriff Station on 3rd Street would be temporarily obstructed by construction activities, although the other access points to the station via Mednik Avenue and Gleason Street would remain open and accessible. The TBM would be launched from a vacant parcel used for miscellaneous utilities, east of Saybrook Avenues, across from the LACFD Fire Station 50. A temporary construction easement on part of the LACFD Fire Station 50 parcel would be acquired for the purposes of general construction activities. However, access to the LACFD Fire Station 50 on Saybrook Avenue would be maintained during construction and the launch of the TBM. Metro would coordinate with staff of the East Los Angeles Sheriff Station and LACFD Fire Station 50 in advance of any construction activities to preserve station access. As set forth in PM TRA-2, Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan, including detours routes, is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in less than significant impacts.

3.14.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would potentially increase fire and police protection response times as a result of response delays at new grade crossings. Compared to the base Alternative 3, Alternative 3 with the Montebello At-Grade Option would include five more at-grade crossings (including one pedestrian only at-grade crossing at Greenwood station). Grade crossings could potentially delay fire and police protection vehicles if they arrive at a crossing at the same time as a passing train. However, such delays would be less than delays from high traffic volumes due to the short length of the LRT trainsets and the short time required for LRT vehicles to enter and exit the crossings. Given that trains would be operating in exclusive street-running ROW at these locations, trains would clear signaled and unsignalized intersections more quickly to allow emergency vehicles to pass, as compared to vehicles in the thru-lanes which may not be able to clear the intersection as quickly due to traffic delays.

Although the transition from an at-grade to underground alignment along 3rd Street between La Verne Avenue and Woods Avenue is located directly in front of the East Los Angeles Sheriff Station and the Kaiser Permanente East Los Angeles Medical Offices, the Metro L (Gold) Line already operates at-grade along this segment of 3rd Street and operation of the Project is unlikely to impact existing response times to/from the station or the Kaiser Permanente offices. The underground and aerial configuration portions of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not have any material impact to fire and police protection response times since those segments would not affect emergency vehicles travelling on surface streets. As standard practice and as set forth in PM TRA-1, Metro would coordinate with fire and police protection officials when designing grade crossings to ensure that access for police and fire protection services would be maintained. In addition, all new LRT facilities and crossings would be designed in accordance with MRDC, including Fire/Life Safety Criteria, to ensure safety and minimize potential hazards at all locations. Further, compliance with code requirements pertaining to emergency vehicle access and building standards also ensure that response times are maintained at acceptable levels. Although operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would potentially result in an increase to fire and police protection response times, with implementation of the standard coordination and design practices identified above and as set forth in PM TRA-1, it is anticipated that emergency response times would remain at acceptable levels. As a result, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in less than significant impacts.

Construction Impacts

Base Alternative and Design Options

Construction activities for the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would temporarily increase fire and police protection response times as a result of periodic construction-related street closures or detours. Specifically, access to the East Los Angeles Sheriff Station on 3rd Street would be temporarily obstructed by construction activities, although the other access points to the station via Mednik Avenue and Gleason

Street would remain open and accessible. The TBM would be launched from a vacant parcel used for miscellaneous utilities, east of Saybrook Avenues, across from the LACFD Fire Station 50. A temporary construction easement on part of the LACFD Fire Station 50 parcel would be acquired for the purposes of general construction activities. However, access to the LACFD Fire Station 50 on Saybrook Avenue would be maintained during construction and the launch of the TBM. Metro would coordinate with staff of the East Los Angeles Sheriff Station and LACFD Fire Station 50 in advance of any construction activities to preserve station access. As set forth in PM TRA-2, Metro standard practices require that lane and/or road closures are scheduled to minimize disruptions and that a Traffic Management Plan, including detours, is prepared and approved in coordination with local fire and police departments prior to construction. The nearest local first responders would be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in less than significant impacts.

3.14.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

The Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would be located in an industrial area. Operation of an MSF site option would not affect any buildings that provide emergency response services and would not affect emergency vehicles travelling on surface streets and therefore not interfere with emergency response times. The closure of a portion of Corvette Street would have a negligible effect on traffic circulation, as adjacent properties would become part of the Commerce MSF site option and alternative east–west connections are provided by Fleet Street to the north and Gayhart Street to the south. The decommissioning of sidewalks in the area around the proposed Montebello MSF site option and the Montebello MSF At-Grade Option would have a less than significant impact to pedestrian circulation during construction as there are no planned pedestrian improvement programs in this area. As set forth in PM TRA-3, any roadway changes would be designed according to applicable MRDC, including Fire/Life Safety Design Criteria and standards, and would provide adequate emergency access. Therefore, operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would result in less than significant impacts.

Construction Impacts

MSF Site Options and Design Option

The construction staging areas for the Commerce MSF site option, Montebello MSF site option, and the Montebello MSF At-Grade Option would be located in an industrial area with already limited points of access. The roadways, including the decommissioning of a portion of Corvette Street for the Commerce MSF site option, and the closure of Acco Street for the Montebello MSF site option and the Montebello MSF At-Grade Option, would not be located directly adjacent to fire, police, or medical facilities and are not primary emergency access routes nor provide direct access to emergency facilities. Therefore, construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would result in less than significant impacts.

3.14.7 Project Measures and Mitigation Measures

3.14.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives, design options, and. MSF site options and MSF design option.

PM TRA-1: Operational BMPs for the Build Alternatives shall include the following:

- Sidewalks shall not be altered to the extent that pedestrian circulation would be impaired or in violation of ADA standards.
- Additional enhancements to the existing signalized crosswalks, such as marked crosswalks, shall further improve pedestrian circulation and non-motorized access to transit stations.
- Metro shall coordinate with local jurisdictions to enhance walkability in the immediate vicinity of the proposed station areas.
- Operation of the Project shall not conflict with any identified local programs, plans, or policies for circulation elements in coordination with local jurisdictions.
- New traffic signals or modifications to existing traffic signals (e.g., signal phasing changes) to accommodate light rail movements, traffic circulation patterns at intersections, grade crossings, and to facilitate pedestrian access to/from stations (e.g., mid-block crossings at stations) shall be designed in accordance with Metro Rail Design Criteria (MRDC) and standards.
- Bicycle circulation and access amenities shall be provided in the immediate station areas. Amenities may include bike parking and connections to existing nearby bike facilities within up to a 600-foot radius to improve bicycle-to-transit connections, and shall be determined during preliminary engineering.
- Proposed bicycle facilities that intersect the Build Alternatives at applicable intersections shall remain accessible and allow bicyclists and pedestrians to cross at those intersections.
- Project operations shall not preclude vehicle or truck access along Washington Boulevard, and left-turn movements shall continue to be allowed to and from major cross-streets (e.g., Garfield Avenue, Greenwood Avenue) at signalized intersections.
- Stations and grade crossings shall be designed in accordance with Metro Rail Design Criteria (MRDC), including Fire/Life Safety Design Criteria, to ensure safety and minimize potential hazards at all locations.

- The Project shall be operated per applicable State, Metro, and city design criteria and standards, including adherence to design codes and standards such as the Occupational Safety and Health Administration (OSHA), California OSHA, California Public Utilities Commission (CPUC), California Manual of Uniform Traffic Control Devices (CA MUTCD), and Metro safety and security programs and standards (i.e., MRDC and Metro Systemwide Station Design Standards Policy), to ensure emergency vehicle access and building standards ensure that response times are maintained and at acceptable levels.

- Best practice safety measures shall be implemented to minimize potential conflicts between vehicles and pedestrians. Measures may include mid-block crosswalks, signal-protected pedestrian movements, channelization, barriers high visibility curbs between the guideway and roadway to prohibit vehicles from driving onto the tracks, barriers to protect and route pedestrians, ADA-compliant curb ramps, and warning signs to provide for convenient and safe access to station platforms.

- Uncontrolled mid-block vehicular crossings of tracks and mid-block left-turns shall not be permitted and shall be physically prohibited by a curb between the roadway and at-grade guideway with a fence between the two tracks in the center of the guideway whenever feasible.

- Grade crossings shall include traffic signal coordination and upgrades in accordance with MRDC to avoid conflicts between LRVs and eastbound traffic along Washington Boulevard.

- Vehicular and pedestrian crossings across the at-grade segments of the alignment shall be limited to intersections controlled by traffic signals.

PM TRA-2: Construction BMPs for the Build Alternatives shall include the following**:**

- Cooperation with the corridor cities shall occur throughout the construction process. Restrictions on haul routes may be incorporated into the construction specifications according to local permitting requirements.

- Pedestrian access to adjacent properties along the Build Alternatives shall be maintained during construction.

- Construction-related traffic circulation changes shall generally be localized to the work area.

- Construction activities shall comply with OSHA, California OSHA, and Metro safety and security programs.

- Safety for pedestrians, bicyclists, and motorists shall be maintained during construction using signage, partial lane closures, construction barriers, and supervision by safety and security personnel at access points and throughout construction sites.

- Access to the LACFD Fire Station 50 on Saybrook Avenue shall be maintained during construction and the launch of the TBM.
- Metro shall coordinate with staff of the East Los Angeles Sheriff Station, LACFD Fire Station 50, and PIH Health Whittier Hospital in advance of any construction activities to preserve station access.
- Lane and/or road closures shall be scheduled to minimize disruptions, including detour routes, in coordination with local fire and police departments prior to construction. The nearest local first responders shall be notified, as appropriate, of traffic control measures in the plan during construction to coordinate emergency response routing.
- The Project shall be designed and constructed per applicable State, Metro, and city design criteria and standards, including adherence to design codes and standards such as the Occupational Safety and Health Administration (OSHA), California OSHA, California Public Utilities Commission (CPUC), California Manual of Uniform Traffic Control Devices (CA MUTCD), and Metro safety and security programs and standards (i.e., MRDC and Metro Systemwide Station Design Standards Policy).

PM TRA-3: Operational BMPs for the MSF Site Options include the following:

- Access shall be maintained to properties to the west of the vacated portion of Acco Street via Yates Avenue.
- Minor changes to traffic circulation, such as new or modified driveways and the closure of a portion of Corvette Street (between Saybrook Avenue and Davie Avenue) for the Commerce MSF site option shall be designed according to applicable State, Metro, and city design criteria and standards.
- Any roadway changes shall be designed according to applicable MRDC, including Fire/Life Safety Design Criteria and standards, and shall provide adequate emergency access.

PM TRA-4: Construction BMPs for the MSF Site Options (must include but not be limited to):

- Access to nearby properties shall be maintained throughout the course of construction, and alternative routes shall be available for any streets requiring a full closure (e.g., use of Corvette Street would be routed to Fleet Street for the Commerce MSF site option, or Gayhart Street, and use of Acco Street shall be routed to Flotilla Street or Washington Boulevard for the Montebello MSF site option and Montebello MSF At-Grade Option).

3.14.7.2 Mitigation Measures

As identified in **Section 3.14.6**, the Build Alternatives and Build Alternatives with the design option(s), and MSF site options would have significant impacts on transportation under Impact TRA-1 (Conflict with Programs, Plans, and Policies). Mitigation measures to reduce the impacts are presented herein. MM TRA-1 applies to all Build Alternatives, the Build Alternatives with the design option(s), and the MSF site options. Mitigation Measure (MM) TRA-1 will be implemented to require development of a Traffic Management Plan that includes measures to minimize disruption during construction to reduce impacts on transit, traffic circulation and pedestrian and bicycle circulation.

Following the mitigation measures, **Table 3.14-3** identifies applicable measures and the combined impact after mitigation of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s).

MM TRA-1: Metro shall prepare a Traffic Management Plan as needed to facilitate the flow of traffic in and around construction zones. The Traffic Management Plan shall include, at minimum, the following measures:

- Schedule a majority of construction-related travel (i.e., deliveries, hauling, and worker trips) during off-peak hours, and, where feasible, maintain two-way traffic circulation along affected roadways during peak hours.
- Designated routes for project haul trucks shall be located along the Project corridor ROW and/or major streets connecting to construction staging areas and the nearest freeways (e.g., SR-60, I-5, and I-605). Major streets may include Atlantic Boulevard, Saybrook Avenue, Telegraph Road, Washington Boulevard, Paramount Boulevard, Rosemead Boulevard, Slauson Avenue, and Whittier Boulevard. In cooperation with the jurisdictions along the alignment and implemented throughout the construction process, these routes shall be consistent with local land use and mobility plans and situated to minimize noise, vibration, and other possible impacts.
- Develop detour routes to facilitate traffic movement through construction zones without significantly increasing cut-through-traffic in adjacent residential areas.
- Develop and implement an outreach program and public awareness campaign in coordination with transit agencies to inform the general public about the construction process and planned roadway closures, potential impacts, and mitigation measures, including temporary bus stop relocation.
- Develop and implement a program with business owners to minimize effects to businesses during construction activity, including but not limited to signage programs and identification of detours (particularly for truck access).
- Where feasible, temporarily restripe roadways to maximize the vehicular capacity at locations affected by construction closures.

- Where feasible, temporarily remove on-street parking to maximize the vehicular capacity at locations affected by construction closures.
- Where feasible, station traffic control officers at major intersections during peak hours to minimize delays related to construction activities.
- Provide wayfinding signage, lighting and access to specify pedestrian safety amenities (such as handrails, fences, and alternative walkways) during construction.
- Where construction encroaches on sidewalks, walkways and crosswalks, special pedestrian safety measures shall be used, such as detour routes and temporary pedestrian shelters.
- Provide on-street bicycle detour routes and signage to address temporary effects to bicycle circulation and minimize inconvenience (e.g., lengthy detours) as to minimize users potentially choosing fewer safe routes if substantially rerouted.

3.14.8 Significance After Mitigation

As identified in **Table 3.14-3**, **with implementation of mitigation measures MM TRA-1, impacts related to conflicts with Programs, Plans, and Policies (Impact TRA-1) would be reduced to less than significant for all Build Alternatives, design options, and MSF site options.**

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Table 3.14-3. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact TRA-1 Conflict with Programs, Plans, and Policies	Applicable Mitigation	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1	MM TRA-1
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TRA-2 Conflict with CEQA Guidelines	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TRA-3 Design Hazards or Incompatible Uses	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TRA-4 Inadequate Emergency Access	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.15 Tribal Cultural Resources

3.15.1 Introduction

This section discusses the Project setting in relation to tribal cultural resources (TCR). It describes existing conditions, the current regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options. Additionally, this section summarizes the consultation conducted in compliance with the Native American notification and consultation efforts performed for compliance with Assembly Bill (AB) 52 and a records search at the South Central California Information Center (SCCIC) of the California Historical Resources Information System, California State University, Fullerton in 2019. AB 52 consultation efforts resulted in the identification of zero TCRs.

Information in this section is based on the Eastside Transit Corridor Phase 2 Tribal Cultural Resources Impacts Report (Appendix O). For the purposes of this analysis, the specialized study area is the Area of Direct Impacts (ADI), which consists of the three-dimensional limits of proposed ground disturbance, including temporary ground disturbance.

3.15.2 Regulatory Framework

TCRs are a specific set of resources defined by the State of California. They include Native American historic, cultural, and sacred sites, as well as sites, features, places, objects, and landscapes that have cultural value to California Native American tribes. Although federal law offers certain protections to resources of Native American origin and value, TCRs are specifically defined and protected by the State of California.

3.15.2.1 Federal

Tribal Cultural resources within the ADI are protected by federal laws, including the National Historic Preservation Act, which established the National Register of Historic Places (NRHP). The NRHP recognizes properties that are significant at the national, state, and/or local levels. Resources that may be eligible for listing in the NRHP include districts, sites, buildings, structures, and objects that are at least 50 years old and are significant in American history, prehistory, architecture, archaeology, engineering, and/or culture. Resources younger than 50 years may be eligible if they have exceptional importance and meet specific criteria.

The NRHP includes Traditional Cultural Property (TCP). TCP is one class of resources that is eligible for inclusion in the NRHP based on associations with the cultural practices, traditions, beliefs, lifeways, arts, crafts, or social institutions of a living community. TCPs are often, but not always, places of importance to Native American tribes.

3.15.2.2 State

Applicable state laws and regulations include the California Historical Landmarks (CHLs), the California Native American Historical, Cultural, and Sacred Sites Act, which applies to both state and private lands, CEQA, and Assembly Bill (AB) 52 which established TCRs as a new class of resources

under CEQA. CEQA and the CEQA Guidelines require the evaluation of potential impacts to "historical resources" that are defined as resources listed in or eligible for listing in the California Register of Historic Resources (CRHR). Under California Public Resources Code (PRC) Section 5024.1, the CRHR was established to serve as an authoritative guide to the state's significant historical and archaeological resources. In addition to historic properties listed in or eligible for listing based on the criteria for listing in the NRHP, the CRHR includes designated California Historic Landmarks, California Points of Historical Interest (PHI), and certain locally identified historic resources. Resources that are listed or eligible for listing in the CRHR are automatically considered historical resources under CEQA.

3.15.3 Methodology

This analysis is undertaken to determine if the Build Alternatives may have a significant impact on TCRs, thus requiring the adoption of mitigation measures in accordance with CEQA. The analysis covers all program components that could physically change the environment and potentially result in a physical impact to the environment.

3.15.3.1 Project Area of Direct Impacts

This analysis follows the methodology of the archaeological study for the Project (see Section 3.4, Cultural Resources, and Appendix E, Eastside Transit Corridor Phase 2 Cultural Resources Impacts Report). For the purpose of analyzing potential impacts to TCRs, the specialized study area is the ADI, which consists of the three-dimensional limits of proposed ground disturbance, including temporary ground disturbance. The ADI includes the proposed LRT right-of-way (ROW) and any areas of direct ground disturbance during Project construction, including staging areas. The ADI is documented on a series of maps provided in Attachment A of Appendix O.

3.15.3.2 Identification of Register-Eligible Resources

In accordance with PRC Section 21074, resources are identified within the ADI that are listed in, or eligible for listing in, the CRHR or a local register of historical resources. These resources are also eligible for consideration as potential TCRs. Local historical and ethnographic literature was reviewed to establish the prehistoric and ethnohistoric context of the ADI and to identify potentially significant tribal resources.

A records search for the Project was conducted at the SCCIC in 2010 and an updated records search was conducted in 2019. The SCCIC, an affiliate of the California Office of Historic Preservation, is the official state repository of cultural resources records and studies for Los Angeles County. The search included a review of all recorded prehistoric archaeological sites within a 1-mile radius of the Project and a review of all recorded historic archaeological and architectural sites and cultural resource reports on file within a 0.5-mile radius of the Project. In addition, the California PHI, CHL, the CRHR, the NRHP, the California State Historic Resources Inventory, and the City of Whittier Historic Landmarks and Districts were reviewed. Historical United States Geological Survey (USGS) quadrangle maps were also reviewed. Results of the SCCIC records search are provided in Attachment C of Appendix E to the EIR. Additionally, a field survey was conducted of the ADI in order to identify archaeological resources that may also be TCRs, including portable artifacts such as arrowheads; non-portable "features" such as cooking hearths; and residues such as food remains and charcoal.

3.15.3.3 Identification of Consulting Parties

Metro contacted the Native American Heritage Commission (NAHC) by letter and provided them with a brief project description and a map of the GSA. The NAHC responded to Metro on November 22, 2019, with an AB 52 consultation list of tribes and tribal contacts who are traditionally and culturally affiliated with the Project area. The NAHC also provided the results of the Sacred Lands File Search (SLF) search. The SLF search was positive and the NAHC requested Metro contact the Gabrieleño Band of Mission Indians – Kizh Nation and the Gabrieleño/Tongva San Gabriel Band of Mission Indians for more information.

On December 3, 2019, a letter was sent to each of the AB 52 tribes on the consultation list. The letter was intended to initiate consultation with the tribes on both the state and federal level, in order to comply with AB 52 and the terms of Section 106 of the National Historic Preservation Act.[1] Letters describing the GSA and USGS topographic maps were sent to the following Native American representatives, identified by the NAHC as potentially having knowledge of the GSA:

- Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson, Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrieleño/Tongva Nation
- Robert Dorame, Chairperson, Gabrieleño Tongva Indians of California Tribal Council
- Charles Alvarez, Gabrieleño-Tongva Tribe

On December 10, 2019, Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation, responded and requested consultation. Accordingly, a consultation meeting was held between Chairperson Andrew Salas and Tribal Biologist Matthew Teutimez, representing the Gabrieleño Band of Mission Indians – Kizh Nation, and Project Manager Jenny Cristales-Cevallos, Lauren Cencic, Eva Moir, Michael Tauchen, Marc Beherec, and Jaime Guzman representing Metro, on March 25, 2020. On April 27, 2020, the Gabrieleño Band of Mission Indians – Kizh Nation provided additional information regarding their tribal lineage and ties to the ADI via email. Correspondence received and meeting minutes may be found in Confidential Attachment B of Appendix O to this EIR (this appendix is not part of the EIR pursuant to PRC Section 21082.3(c)(1)).

3.15.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to TCRs if it would cause a substantial adverse change in the significance of a TCR, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe. Therefore, a Build Alternative would have a significant impact related to TCRs if it would:

1 Section 106 of the National Historic Preservation Act requires federal agencies to consider whether proposed activities have the potential to have an adverse effect on historic properties. In February 2020, the Metro Board approved the discontinuation of the National Environmental Policy Act (NEPA) analysis of the Project and, therefore, the Section 106 evaluation was also discontinued.

Impact TCR-1: Cause a substantial adverse change in a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Impact TCR-2: Cause a substantial adverse change in a TCR that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

An impact to a TCR would include destruction or partial destruction of the resource or the integrity of the resource which would reduce the resource's cultural significance to a California Native American tribe.

3.15.5 Existing Setting

This section describes the tribal cultural resources within the Build Alternatives ADI. The background research, records search, and survey identified one resource within the ADI that is a listed CHL and appears to be eligible for listing in the CRHR as described below. The full details and results of the background research, records search and survey are documented in Appendix O.

3.15.5.1 Battle of Rio San Gabriel

One potential archaeological resource was identified in the ADI. It is CHL No. 385, the Site of the Battle of Rio San Gabriel as detailed in Appendix O. This resource is eligible for the CRHR and therefore a historical resource for the purposes of CEQA. Located at the northeast corner of Bluff Road and Washington Boulevard, on the border of Montebello and Pico Rivera, is the approximate Site of the Battle of Rio San Gabriel, which occurred on January 8, 1847, during the Mexican-American War. The Rio Hondo was then known as the Rio San Gabriel, before the San Gabriel River shifted its banks.

There are two historical documents that indicate that a place with the Native American name "Curunga" existed at the site of the Battle of Rio San Gabriel, and therefore possibly within the ADI. The earliest history of Los Angeles County notes that the battle occurred at a place "the Californians always called CURUNGA" (Warner et al. 1876:31). The name Curunga appears to be Gabrielino in origin. However, it is unclear what the word means or what place specifically was Curunga. It is also unclear whether Curunga was all or only part of the battlefield. It is unclear whether Curunga is located within the ADI.

Although the Battle of Rio San Gabriel took place in the geographical location, there is no evidence of a connection between the battle that gives CHL No. 385 its significance (which appears to make it eligible for listing in the CRHR), and the historical resource termed Curunga. Based on currently available information the site of the Battle of Rio San Gabriel is therefore not a TCR.

3.15.5.2 AB 52 Consultation Results

The NAHC SLF search was positive, and the NAHC identified five Native American tribal governments with ancestral ties to areas within the ADI who may have knowledge of TCRs that may be impacted by the Project, as described in **Section 3.15.3.3**. These five tribal governments were invited to consult on the Project. One of these, the Gabrieleño Band of Mission Indians – Kizh Nation, represented by

Chairperson Andrew Salas and Tribal Biologist Matthew Teutimez, responded to the request for consultation.

Details of tribal consultation are confidential; however, the tribe stressed that the corridor passes through overlapping village territories, as well as within the boundaries of the ranchos for which tribes provided labor. Trade routes crisscrossing the ADI were also identified. In particular, the tribe noted that the vicinity of the river crossings and of a lake that formerly existed near the intersection of I-5 and Washington Boulevard provided natural resources to local Native American villages, thereby increasing the sensitivity of the ADI for TCR.

The tribe asserted that the negative findings of the records search and survey of the Project cultural study are likely because the area was developed before CEQA laws were in place rather than because no resources exist there. No specific resources that may be evaluated as potential TCRs were identified specifically within the ADI as a result of consultation. The Gabrieleño Band of Mission Indians – Kizh Nation asserted that the entire alignment is sensitive for potential buried TCRs and recommended Native American monitoring for ground-disturbing activities; protocols for the unanticipated discovery and treatment of Tribal Cultural resources, archaeological resources, human remains and/or funerary objects; and professional standards for monitoring personnel. Correspondence and meeting notes are included in Confidential Attachment B of Appendix O to this EIR (this appendix is not part of the EIR pursuant to PRC Section 21082.3(c)(1)).

3.15.6 Impact Evaluation

3.15.6.1 Impact TCR-1: Historical Resources

Impact TCR-1: Would a Build Alternative cause a substantial adverse change in a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k)?

3.15.6.1.1 Alternative 1 Washington

Operational Impacts

As identified in **Section 3.15.5.1,** one resource listed as a CHL was identified within the Alternative 1 ADI (CHL No. 385). The resource is significant as a battlefield of the Mexican-American War and is not a TCR because its significance is associated with the Battle of the Rio San Gabriel in 1847 and not any resource of value to Native American tribes. No TCRs were identified within the ADI as a result of the background research, field survey, or tribal consultation. Although unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI, operation of Alternative 1 would not require additional ground-disturbance that could disturb buried resources.

Project operations would consist of LRT and would not directly or indirectly affect the integrity or significance of any known or potentially resources that are eligible for inclusion in the CRHR or local register that may be TCRs. Thus, operation of Alternative 1 would not impact or adversely change a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Design Options

Atlantic/Pomona Station Option

One resource listed as a CHL was identified within the ADI. However, the resource is significant as a battlefield of the Mexican-American War, and its significance is not as a TCR. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not directly or indirectly affect the integrity or significance of any known or potential resources that are eligible for inclusion in the CRHR or local register that may be TCRs.

Montebello At-Grade Option

One resource listed as a CHL was identified within the ADI. However, the resource is significant as a battlefield of the Mexican-American War, and its significance is not as a TCR. Operation of Alternative 1 with the Montebello At-Grade Option would not directly or indirectly affect the integrity or significance of any known or potential resources that are eligible for inclusion in the CRHR or local register that may be TCRs.

Construction Impacts

One resource listed as a CHL identified within the ADI is a battlefield of the Mexican-American War, and its significance is not as a TCR. Numerous village locations and trade routes were also identified by the consulting tribe in the vicinity of the ADI, and tribal consultation findings indicate that the entire alignment is sensitive for potential buried unidentified TCRs. Construction related ground disturbance, including grading, excavation, boring/tunneling, has the potential to disturb and destroy unknown TCRs.

The tunnel boring machine (TBM) would be used in this area that is sensitive for TCRs. The TBM does not allow for discovery of intact archaeological resources because the method of construction limits observation of impacted soils. However, the TBM would only be used at depths containing soils deposited prior to human occupation and, thus, TCRs are not anticipated to be present in areas where the TBM would be used. To launch the TBM, a pit would be dug to a depth of approximately 44 to 48 feet below ground surface (bgs). Similarly, the extraction of the TBM would also occur from a pit of a similar depth. The operation of the TBM would occur from approximately 44 to 60 feet bgs. These deeper soil levels are not likely to contain buried resources because they are too old to have been available for human occupation before they were buried by subsequent geomorphic processes. A paleontological records search conducted for the Project described in Section 3.6, Geology, Soils, Seismicity, and Paleontological Resources, identified fossils in the vicinity at depths that are shallower than the proposed construction method (i.e., 20 to 35 feet bgs) which also indicates a low likelihood for TCRs to occur at depths where tunneling would occur. Therefore, because TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown TCRs and impacts associated with tunnel boring are less than significant.

However, ground disturbance, including grading and excavation at lesser depths has the potential to disturb and destroy unknown TCRs. Although the ADI is heavily disturbed and urbanized, some of the construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other

development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. Tribal consultation identified the entire alignment as sensitive. If unmitigated, this potential disturbance of TCRs during construction of Alternative 1 would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as discussed in **Section 3.15.7**, would be implemented. MM TCR-1 requires all construction personnel involved in ground-disturbing activities to be provided with appropriate Tribal Cultural Resources training prior to any ground-disturbing activities. MM TCR-2 requires a Native American monitor to be retained for work at locations identified as sensitive during tribal consultation and agreed upon between the lead agency and the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government. MM TCR-3 requires a project–wide Cultural Resources Monitoring and Mitigation Plan (CRMMP) to be developed and implemented by Metro. This document would address areas where potentially significant prehistoric and historic archaeological deposits and Tribal Cultural Resources are likely to be located within the ADI based on background research, a geoarchaeological analysis, and Tribal consultation. Implementation of MM TCR-1 through MM TCR-3 would ensure that workers have a clear understanding of TCRs that may be present in the construction area as well as procedures and plans for safely handling TCRs; thus, impacts would be reduced to less than significant.

Design Options

Atlantic/Pomona Station Option

Excavation for the Atlantic/Pomona Station Option would be less deep than for a fully underground station and would have the potential to disturb and destroy TCRs that are currently unknown. If unmitigated, this potential disturbance of TCRs during construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a significant impact. MM TCR-1, MM TCR-2, and MM TCR-3, as summarized above and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

Montebello At-Grade Option

Although excavation for the at-grade option would be relatively shallow, excavations have the potential to disturb and destroy TCRs that are currently unknown. If unmitigated, this potential disturbance of TCRs during construction of Alternative 1 with the Montebello At-Grade Option would result in a significant impact. MM TCR-1, MM TCR-2, and MM TCR-3, as summarized above and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

No TCRs or any other prehistoric resources or other resources of Native American significance were identified within the ADI as a result of the background research, field survey, or tribal consultation. Although unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI. Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not require additional ground-disturbance that could impact these resources. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impact or adversely change a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Construction Impacts

Base Alternative and Design Option

Numerous village locations and trade routes were identified in the vicinity of the ADI. The TBM may run through these areas, however the TBM does not allow for discovery of intact archaeological resources because the method of construction limits observation of impacted soils. As discussed in **Section 3.15.6.1.13.15.6.1.1**, ground disturbance for this construction method would occur approximately 44 to 60 feet bgs. These deeper soil levels are not likely to contain buried resources because they are too old to have been available for human occupation before they were buried by subsequent geomorphic processes. A paleontological records search conducted for the Project identified fossils in the vicinity at depths that are shallower than the proposed construction method suggesting a lower likelihood for TCRs to be impacted by TBM. Therefore, because TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown TCRs and impacts associated with tunnel boring are less than significant.

Construction related ground disturbance, including grading and excavation, of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option, of Holocene deposits would have the potential to disturb and destroy TCRs that are currently unknown. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. Although the ADI is heavily disturbed and urbanized, some of these activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. If unmitigated, potential disturbance of TCRs during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely

handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

No TCRs or any other prehistoric resources or other resources of Native American significance were identified within the ADI as a result of the background research, field survey, or tribal consultation. Although unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI. Operational activities would not require additional ground-disturbance. Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impact or adversely change a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Construction Impacts

Base Alternative and Design Options

Numerous village locations and trade routes were identified in the vicinity of the ADI. The TBM may run through these areas, however the TBM does not allow for discovery of intact archaeological resources because of the method of construction. As discussed in **Section 3.15.6.1.13.15.6.1.1**, ground disturbance for this construction method would occur approximately 44 to 60 feet bgs. These deeper soil levels are not likely to contain buried resources because they are too old to have been available for human occupation before they were buried by subsequent geomorphic processes. A paleontological records search conducted for the Project identified fossils in the vicinity at depths that are shallower than the proposed construction method suggesting a low likelihood for TCRs to be impacted by TBM. Therefore, because TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown TCRs and impacts associated with tunnel boring are less than significant.

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would require ground-disturbing activities, including grading and excavation of Holocene deposits. These activities would have the potential to disturb and destroy TCRs that are currently unknown. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. Although the ADI is heavily disturbed and urbanized, some of these construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. If unmitigated, this potential disturbance of TCRs during construction of base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

No resources eligible for or listed in a local register or the CRHR were identified within the footprint of either of the Commerce MSF site option, the Montebello MSF site option, or Montebello MSF At-Grade Option. No TCRs or any other prehistoric resources or other resources of Native American significance were identified within the ADI as a result of the background research, field survey, or tribal consultation. Although unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI, operations would not require additional ground-disturbance. Thus, operation of MSF site options would not impact or adversely change a TCR that is listed or eligible for listing in the CRHR, or in a local register of historical resources as defined in PRC Section 5020.1(k).

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, or Montebello MSF At-Grade Option would require ground-disturbing activities, including grading and excavation in Holocene deposits. These activities would have the potential to disturb and destroy TCRs that are currently unknown. Tribal consultation findings indicate that the entire ADI is sensitive for potential buried, unidentified TCRs.

Although the ADI is heavily disturbed and urbanized, some of these construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. If unmitigated, this potential disturbance of TCRs during construction of the of the Commerce MSF site option, Montebello MSF site option, or Montebello MSF At-Grade Option would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.2 Impact TCR-2: Native Tribal Significance

Impact TCR-2: Would a Build Alternative cause a substantial adverse change in a TCR that is determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

3.15.6.2.1 Alternative 1 Washington

Operational Impacts

No specific surviving resources of tribal significance were identified within the ADI. Consultation did indicate that unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI. However, operational activities would not require additional ground-disturbance. Thus, operation of Alternative 1 would not impact or adversely change a TCR that is significant to a California Native American tribe.

Design Options

Atlantic/Pomona Station Option

Project operations would not directly or indirectly affect the integrity or significance of any known or potentially resources that are eligible for inclusion in the CRHR or local register that may be TCRs. Thus, operation of Alternative 1 with the Atlantic/Pomona Station Option would not impact or adversely change a TCR that is significant to a California Native American tribe.

Montebello At-Grade Option

Project operations would not directly or indirectly affect the integrity or significance of any known or potentially resources that are eligible for inclusion in the CRHR or local register that may be TCRs. Thus, operation of Alternative 1 with the Montebello At-Grade Option would not impact or adversely change a TCR that is significant to a California Native American tribe.

Construction Impacts

Numerous village locations and trade routes were identified in the vicinity of the ADI. The TBM may run through these areas, however the TBM does not allow for discovery of intact archaeological resources because of the method of construction. As discussed in **Section 3.15.6.1.1**, ground disturbance for this construction method will occur approximately 44 to 60 feet bgs. These deeper soil levels are not likely to contain buried resources because they are too old to have been available for human occupation before they were buried by subsequent geomorphic processes. A paleontological records search conducted for the Project identified fossils in the vicinity at depths that are shallower than the proposed construction method suggesting a low likelihood for TCRs to be impacted by TBM. Therefore, because TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown TCRs and impacts associated with tunnel boring are less than significant.

Construction activities related to ground disturbance, including grading and excavation, would have the potential to disturb and destroy TCRs that are currently unknown in Holocene deposits. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs.

Although the ADI is heavily disturbed and urbanized, some of these construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. If unmitigated, this potential disturbance of TCRs during construction of Alternative 1 would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

Design Options

Atlantic/Pomona Station Option

Excavation for the Atlantic/Pomona Station Option would be less deep than for a fully underground station but would have the potential to disturb and destroy TCRs that are currently unknown. If unmitigated, this potential disturbance of TCRs during construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a significant impact. MM TCR-1, MM TCR-2, and MM TCR-3, as summarized above and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

Montebello At-Grade Option

Although excavation for the Montebello At-Grade Option would be relatively shallow, excavations have the potential to disturb and destroy TCRs that are currently unknown. If unmitigated, this potential disturbance of TCRs during construction of Alternative 1 with the Montebello At-Grade Option would result in a significant impact. MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

No specific resources of tribal significance were identified within the ADI. Consultation did indicate that unknown, buried resources may exist within the ADI. However, operational activities would not require additional ground-disturbance. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not impact or adversely change a TCR that is significant to a California Native American tribe.

Construction Impacts

Base Alternative and Design Option

Numerous village locations and trade routes were identified in the vicinity of the ADI. The TBM may run through these areas, however the TBM does not allow for discovery of intact archaeological resources because of the method of construction. As discussed in **Section 3.15.6.1.13.15.6.1.1**, ground disturbance for this construction method would occur approximately 44 to 60 feet bgs. These deeper soil levels are not likely to contain buried resources because they are too old to have been available for human occupation before they were buried by subsequent geomorphic processes. A paleontological records search conducted for the Project identified fossils in the vicinity at depths that are shallower than the proposed construction method suggesting a low likelihood for TCRs to be impacted by TBM. Therefore, because TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown TCRs and impacts associated with tunnel boring are less than significant.

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would require ground-disturbing activities, including grading and excavation in Holocene deposits. These activities would have the potential to disturb and destroy TCRs that are currently unknown. Although the ADI is heavily disturbed and urbanized, some of these construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. If unmitigated, this potential disturbance of TCRs during construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

No specific resources of tribal significance were identified within the ADI. Consultation did indicate that unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI. However, operational activities would not require additional ground-disturbance. Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not impact or adversely affect a TCR that is significant to a California Native American tribe.

Construction Impacts

Base Alternative and Design Options

Numerous village locations and trade routes were identified in the vicinity of the ADI. The TBM may run through these areas, however the TBM does not allow for discovery of intact archaeological resources because of the method of construction. As discussed in **Section 3.15.6.1.13.15.6.1.1**, ground disturbance for this construction method would occur approximately 44 to 60 feet gds. These deeper soil levels are not likely to contain buried resources because they are too old to have been available for human occupation before they were buried by subsequent geomorphic processes. A paleontological records search conducted for the Project identified fossils in the vicinity at depths that are shallower than the proposed construction method suggesting a low likelihood for TCRs to be impacted by TBM. Therefore, because TBM would be used at depths with soils deposited prior to human occupation, tunneling is not expected to disturb or destroy unknown TCRs and impacts associated with tunnel boring are less than significant.

Construction activities that cause ground disturbance, including grading and excavation in Holocene deposits would have the potential to disturb and destroy TCRs that are currently unknown. Although the ADI is heavily disturbed and urbanized, some of these construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. If unmitigated, this potential disturbance of TCRs during construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

No specific resources of tribal significance were identified within the ADI. Consultation did indicate that unknown, buried resources that may be eligible for inclusion in the CRHR may exist within the ADI. However, project operations would not require additional ground-disturbance. MSF operations would not directly or indirectly affect the integrity or significance of any known or potential resources that are eligible for inclusion in the CRHR or local register that may be TCRs. There would be no operational impact on a TCR that is significant to a California Native American tribe.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, or Montebello MSF At-Grade Option would require activities that cause ground disturbance, including grading and excavation, and would have the potential to disturb and destroy TCRs in Holocene deposits that are currently unknown. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. Although the ADI, including the Commerce MSF site option, the Montebello MSF site option, or Montebello MSF At-Grade Option, is heavily disturbed and urbanized, some of these construction activities would extend below the disturbed surface and into undisturbed Holocene deposits which have the potential to preserve buried cultural resources. If present, these undisturbed soils would lie below artificial fill, pavement, and other recent disturbances and would overlie older Quaternary, pre-human occupation soils. Cultural resources may be buried in these Holocene soils beneath natural alluvial deposits near watercourses or hidden beneath pavement and other development at unknown locations. No precontact archaeological sites were identified in the ADI, so precise locations with a higher potential to contain such resources cannot be identified. Tribal consultation findings indicate that the entire alignment is sensitive for potential buried, unidentified TCRs. If unmitigated, this potential disturbance of TCRs during construction of the MSF site options would result in a significant impact.

MM TCR-1, MM TCR-2, and MM TCR-3, as summarized in **Section 3.15.6.1.1** and identified in **Section 3.15.7**, would ensure that workers have a clear understanding of TCRs that may be present in the construction area, and that procedures and plans would be in place for monitoring for and safely handling TCRs. Implementation of MM TCR-1 through MM TCR-3 would reduce impacts to less than significant.

3.15.7 Project Measures and Mitigation Measures

3.15.7.1 Project Measures

No project measures are required for the Build Alternatives, MSF Site Options, or Design Options.

3.15.7.2 Mitigation Measures

As identified in **Section 3.15.6**, the Build Alternatives and Build Alternatives with the design option(s), and the MSF site options would have significant impacts on tribal cultural resources under Impact TCR-1 (Historical Resources) and Impact TCR-2 (Native Tribal Significance). Mitigation measures to reduce the impacts are presented herein. MM TCR-1through MM TCR-3 would apply to all Build Alternatives, the Build Alternatives with the design option(s), and the MSF site options. As identified in **Table 3.15-1**, implementation of MM TCR-1 through MM TCR-3 for Impact TCR-1 (Historical Resources) and Impact TCR-2 (Native Tribal Significance) would reduce all impacts to less than significant for all Build Alternatives, the Build Alternatives with the design option(s), and the MSF site options.

MM TCR-1: **Tribal Cultural Resources Training.** Prior to any ground-disturbing activities, all construction personnel involved in ground-disturbing activities shall be provided with appropriate Tribal Cultural Resources training. The training shall instruct the personnel regarding the legal framework protecting Tribal Cultural Resources, typical kinds of Tribal Cultural Resources that may be found within the project area, and proper procedures and notifications if Tribal Cultural Resources are inadvertently discovered.

MM TCR-2 **Retain a Native American Monitor.** A Native American monitor shall be retained for work at locations identified as sensitive during tribal consultation and agreed upon between the lead agency and the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government. The monitor shall only be present on-site during the construction phases that involve ground disturbing activities where areas of ground disturbance and/or removed spoils are visible for inspection. If during cultural resources monitoring the qualified archaeologist or Native American Monitor determines that the sediments being excavated are previously disturbed or unlikely to contain significant cultural materials, the qualified archaeologist or Native American Monitor can recommend that monitoring be reduced or eliminated.

MM TCR-3 **Unknown Tribal Cultural Resources.** A project–wide Cultural Resources Monitoring and Mitigation Plan (CRMMP) shall be developed and implemented by Metro. This document shall address areas where potentially significant prehistoric and historic archaeological deposits, and Tribal Cultural Resources are likely to be located within the ADI based on background research, a geoarchaeological analysis, and Tribal consultation. The CRMMP shall encompass both archaeological and Tribal Cultural Resources and shall be kept confidential. Preparation of the CRMMP shall necessitate the completion of pedestrian survey of the private property parcels in the ADI that were not accessible during the preparation of this Eastside Transit Corridor Phase 2 EIR.

The CRMMP shall include a detailed prehistoric and historic context that clearly demonstrates the themes under which any identified resources would be determined significant. Should significant deposits be identified during earth-moving activities, where feasible, the CRMMP shall address methods for data recovery, anticipated artifact types, artifact analysis, report writing, repatriation of human remains and associated grave goods, and curation or other methods of disposition in consultation with the Tribe.

The CRMMP shall also require that an archaeologist qualified in prehistoric and historical archaeology and a Native American monitor who is both approved by the Gabrieleño Band of Mission Indians-Kizh Nation Tribal Government and is listed under the NAHC's Tribal Contact list for the area of the project location be retained prior to ground-disturbing activities. The CRMMP shall be a guide for monitoring activities. If buried Tribal Cultural Resources or cultural resources, such as flaked or ground stone, historic debris, building foundations, or non-human bone, are discovered during ground-disturbing activities, work shall stop in that area and within 50 feet of the find until a qualified archaeologist and Native American Monitor can assess the significance of the find and, if necessary, develop appropriate treatment measures. If resources are Native American in origin and may also be Tribal Cultural Resources, treatment and curation of these resources shall be determined in consultation with the Tribe. Treatment measures typically include development of avoidance strategies, capping with fill material, or mitigation of impacts through data recovery programs such as excavation or detailed documentation.

3.15.8 Significance After Mitigation

As identified in **Table 3.15-1,** with implementation of mitigation measures MM TCR-1, MM TCR-2, and MM TCR-3, impacts related to tribal historic resources (Impact TRC-1) and tribal cultural resources (Impact TRC-2), would be reduced to **less than significant for all Build Alternatives and design options, with the MSF site option(s)**.

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Table 3.15-1. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact TCR-1: Historical Resources	Applicable Mitigation	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
Impact TCR-2: Native Tribal Significance	Applicable Mitigation	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3	MM TCR-1, MM TCR-2, MM TCR-3
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.16 Utilities and Service Systems

3.16.1 Introduction

This section discusses the Project setting in relation to utilities and service systems. It describes existing conditions, the current regulatory setting, and potential impacts from operation and construction of the Build Alternatives, including design options and MSF site options.

The utilities and service system study area encompasses the GSA and DSA. Information in this section is based on the Eastside Transit Corridor Phase 2 Utilities Service/Systems and Energy Conservation Impacts Report (Appendix F).

3.16.2 Regulatory Framework

3.16.2.1 Federal

3.16.2.1.1 Electricity

The Federal Power Act of 1935 gave the Federal Power Commission (succeeded by the Federal Energy Regulatory Commission in 1977) the power to regulate the sale and transport of electric power.

3.16.2.1.2 Solid Waste

The Resource Conservation and Recovery Act (RCRA) (42 United States Code Section 6901 et seq.) was enacted in 1976 to oversee proper management of solid and hazardous wastes, from their generation to ultimate disposal or destruction. Implementation of the RCRA has largely been delegated to federally approved state waste management programs and, under Subtitle D, further promulgated to local governments for management of planning, regulation, and implementation of nonhazardous solid waste disposal. The U.S. Environmental Protection Agency (USEPA) retains oversight of state actions. Where facilities are found to be inadequate, 40 CFR Section 256.42 requires that necessary facilities and practices be developed by the responsible state and local agencies or by the private sector. In California, that responsibility was created under the California Integrated Waste Management Act of 1989 and AB 939.

3.16.2.1.3 Telecommunications

The Communications Act of 1934 replaced the Federal Radio Commission with the Federal Communications Commission (FCC). It also transferred regulation of interstate telephone services from the Interstate Commerce Commission to the FCC. The FCC regulates interstate and international communications by radio, television, wire, satellite and cable in all 50 states, the District of Columbia and United States territories. An independent United States government agency overseen by Congress, the FCC is the United States' primary authority for communications law, regulation and technological innovation. The FCC's rules and regulations are in Title 47 of the CFR.

3.16.2.1.4 Water

The Clean Water Act (CWA) of 1977 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters, by outlawing the discharge of any pollutant from a point source into navigable waters unless a permit is obtained. Under the CWA's National Pollutant Discharge Elimination System (NPDES) program, USEPA regulates discharges of pollutants from municipal and industrial wastewater treatment plants, sewer collection systems, and stormwater discharges from industrial facilities and municipalities. USEPA enforces requirements to ensure that industries pre-treat pollutants in their wastes in order to protect local sanitary sewers and wastewater treatment plants. NPDES permits establish limits and conditions for discharges from municipal wastewater treatment facilities to waters of the United States.

The Safe Drinking Water Act (SDWA) of 1996 is the principal federal law in the United States intended to ensure safe drinking water for the public. Pursuant to the act, the USEPA is required to set standards for drinking water quality and oversee all states, localities, and water suppliers that implement the standards.

3.16.2.2 State

3.16.2.2.1 Solid Waste

Under commercial recycling law (Chapter 476, Statutes of 2011), AB 341 directed California Department of Resources Recycling and Recovery (CalRecycle) to develop and adopt regulations for mandatory commercial recycling and declared a state policy goal that not less than 75 percent of solid waste generated be source reduced, recycled, or composted by the year 2020 and annually thereafter.

The Integrated Waste Management Act (AB 939) passed in 1989 requires the implementation of solid waste management programs, including requiring each city or county to divert solid waste from landfill disposal through source reduction, recycling, and composting, and achieve a 50 percent diversion. The law also requires every county and city in the state to prepare a Source Reduction and Recycling Element (SRRE) which identifies programs that the county or city will implement to achieve the required solid waste disposal reduction goal and submit an annual report to CalRecycle to provide an update on progress in achieving this goal. AB 939 would apply to all businesses and public entities that generate four cubic yards or more of solid waste per week. AB 939 would also further apply to private waste haulers, construction contractors, recyclers that enter into a contract for a construction or demolition project. Therefore, they would be required to have a recycling program. The reuse and recycling of certain portions of construction and demolition debris would be essential to further the efforts to reduce solid waste and comply with AB 939 mandates.

Construction and Demolition Waste Materials Diversion Requirements (SB 1374) was signed into law in 2002 to assist jurisdictions with diverting construction and demolition waste material. The bill requires that jurisdictions provide a summary of progress made in diverting construction and debris waste in the annual AB 939 report to CalRecycle.

Organic Waste Reduction (SB 1383), signed into law in 2016, establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The bill establishes an additional target that not less than 20 percent of currently disposed edible food is recovered for human consumption by 2025.

The California Solid Waste Reuse and Recycling Access Act of 1991 (AB 1327) requires jurisdictions to mandate any "development project" for which an application for a building permit is submitted to provide an adequate storage area for collection and removal of recyclable materials. The areas to be utilized must be adequate in capacity, number, and distribution to serve the project.

3.16.2.2.2 Stormwater

The Construction General Permit, Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ, requires dischargers whose project disturbs one or more acres but are part of a larger common plan of development that in total disturbs one or more acres, to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity.

3.16.2.2.3 Wastewater

The state regulates wastewater discharges to surface waters through the NPDES program. The NPDES Permit Program controls water pollution by regulating point sources that discharge pollutants, including storm drain and sewer effluent, into waters of the United States. The NPDES Program is a Federal program which has been delegated to the State of California for implementation through the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs), which are collectively known as the Water Boards. The Project is located in the Los Angeles RWQCB region.

3.16.2.2.4 Water

Executive Order B-29-15, passed in 2014, mandates the SWRCB to impose restrictions to achieve a statewide 25 percent reduction in potable urban water usage through February 28, 2016. Water reductions are measured as compared with 2013 levels. Areas with high per capita water usage should achieve proportionally greater reductions than those areas with lower per capita water usage. The Executive Order additionally directs the California Department of Water Resources to work with local agencies to collectively replace 50 million square feet of lawns and ornamental turf with drought tolerant landscapes.

Metropolitan Water District Act of 1928

The Metropolitan Water District (MWD) of Southern California was established by the California Legislature in 1928 through the Metropolitan Water District Act. While the primary purpose of the act was to construct and operate the 242-mile Colorado River Aqueduct, the act also authorizes MWD to:

- Levy property taxes within its service area
- Establish water rates
- Impose charges for water standby and service availability
- Incur general obligation bonded indebtedness and issue revenue bonds, notes, and short-term revenue certificates
- Execute contracts
- Exercise the power of eminent domain for the purpose of acquiring property

California Water Code

When a city or county is the CEQA lead agency for a project meeting certain criteria, California Water Code Sections 10910 through 10915 require that the relevant water service provider determine whether the water demands of the proposed project were accounted for in the most recent urban water management plan (UWMP). If the project's water demand was not accounted for in the UWMP, the water service provider must prepare a Water Supply Assessment (WSA) demonstrating there are sufficient supplies to meet the anticipated needs of the project. If the provider determines that potable water supplies are, or will be, insufficient, the project applicant must submit plans for acquiring additional potable water supplies. With respect to this Project, the CEQA lead agency is Metro and not a county or city and, therefore, Water Code Sections 10190 through 10915 do not apply. Further, the Project does not meet the criteria identified for requiring preparation of a WSA.

California Water Code Section 10610-10656 require every urban water supplier that either provides over 3,000 acre-feet of water annually, or serves more than 3,000 urban connections, to submit an UWMP every five years to the California Department of Water Resources. UWMPs support long-term planning to ensure that adequate supplies are available to meeting existing and future water needs. The UWMPs assess water sources over a 20-year planning period, describe management measures and water shortage contingency plans, and report progress towards meeting a water demand reduction goals.

State Water Resources Control Board, Division of Drinking Water, Source Water Assessment Program

The 1996 SDWA Amendments require each state to develop and implement a Source Water Assessment Program. Section 11672.60 of the California Health and Safety Code requires the Department of Health Services (DHS), (the precursor to California Department of Public Health) to develop and implement a program to protect sources of drinking water, specifying that the program must include both a source water assessment program and a wellhead protection program. In response, DHS developed the Drinking Water Source Assessment and Protection (DWSAP) Program, which addresses both groundwater and surface water sources.

3.16.2.2.5 Other Utilities

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned electric, natural gas, telecommunications, water, railroad, rail transit, and passenger transportation companies. The CPUC is tasked with ensuring that consumers have safe, reliable utility service at reasonable rates, and protecting against fraud. Specifically related to utilities, the CPUC has authority over, and is responsible under numerous General Orders outlined in Appendix F.

California Code of Regulations

The California Code of Regulations includes authoritative sections regarding public utilities in Title 20 (Public Utilities and Energy), Division 1 (Public Utilities Commission). Additionally, the California Health and Safety Code and the California Water Code contain information regarding sanitary and water utilities. The Public Utilities Code, Division 1 (Regulation of Public Utilities) gives specific regulation on public utilities, including the CPUC.

California Government Code Section 4216

Section 4216 of the California Government Code (Protection of Underground Infrastructure) requires that an excavator must contact a regional notification center (e.g., Underground Service Alert) at least 2 days before excavation of any subsurface installations. An Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the excavation. Representatives of the utilities are required to mark the specific locations of their facilities within the work area prior to the start of excavation. The construction contractor is required to probe and expose the underground facilities by hand prior to using power equipment.

California Plumbing Code

The California Plumbing Code is codified in Title 24, California Code of Regulations, Part 5. The Plumbing Code contains regulations including, but not limited to, plumbing materials, fixtures, water heaters, water supply and distribution, ventilation, and drainage. More specifically, Part 5, Chapter 4 contains provisions requiring the installation of low-flow fixtures and toilets (SB 407 [2009] Civil Code Sections 1101.1 et seq.).

3.16.2.3 Regional

3.16.2.3.1 Los Angeles County Metropolitan Transportation Authority

Metro's adopted policies related to utilities, water, and waste include the following:

- **Construction and Demolition Debris Recycling and Reuse Policy** (2007) – As required by this policy, Metro must give preference to recyclable and recycled products in the selection of construction materials to the maximum extent feasible during design and construction of Metro or Metro-funded capital projects.
- **Water Use and Conservation Policy** (2009) – It is the policy of Metro to conserve the use of potable water resources at its facilities in the most cost-effective and efficient manner. The use of water for construction, operations, and maintenance purposes must be consistent with local, state, or federal water conservation measures.

Applicable procedures relating to water use and conservation required by Metro include:

- **Procedure 2.1 – Using Potable Water for Pressure Washing Activities.** Metro shall prioritize facility locations that require regular pressure washing, apply conservation and efficiency measures and use water efficient equipment when conducting pressure washing activities, use water efficient equipment, and capture and dispose generated wastewater to an appropriate facility.
- **Procedure 2.2 – Using Potable Water for Construction.** Metro shall develop a plan for dust suppression purposes to comply with applicable environmental statutes, regulations, and guidelines and only use potable water as a dust suppression agent if no other alternative is feasible or cost-effective.

- **Procedure 2.3 – New Construction Planning, Design and Construction; Existing Buildings Operations.** Metro shall use water conservation and efficiency guidelines outlined in applicable Leadership in Energy and Environmental Design (LEED) reference books for all planning, procurement, design, construction, operation, and maintenance of Metro's linear and non-linear facilities. Metro shall prepare operation manuals to ensure that water efficiency and conservation technologies are adopted and maintained.

Moving Beyond Sustainability Strategic Plan

The *Moving Beyond Sustainability* (MBS) strategic plan, released in 2020, outlines a comprehensive sustainability strategy that incorporates aspects of water quality and conservation, as well as solid waste stream reductions. Targets listed in the plan include reducing potable water use, increasing runoff infiltration and stormwater capture capacity, reducing annual operational solid waste disposal, and diverting waste from landfills. Specific target metrics are discussed in Appendix F.

Sustainable Rail Plan

Metro's 2013 *Sustainable Rail Plan* has the objective of reducing energy consumption, as discussed further in **Section 3.16.2.3.1.** The plan examines strategies to reduce energy consumption from rail operations, which account for the majority of Metro's electricity use, and analyzes the costs and potential energy savings for many of these strategies.

Water Action Plan

Metro's 2010 *Water Action Plan* is intended to determine the potential for water conservation opportunities and cost-saving measures consistent with Metro's environmental policies and its future implementation of an Environmental Management System. This will inform other Metro projects as part of the overall sustainability program for water use to be strategically aligned with other resource elements (e.g., fuel use, GHG emissions, etc.).

3.16.2.3.2 Metropolitan Water District of Southern California

The MWD of Southern California provides water to 19 million Californians (MWD 2021a). MWD aims to ensure water reliability through climate change, droughts, earthquakes and other challenges. To do this, they emphasize the importance of planning and have developed several plans to ensure water reliability in the region, such as an Integrated Resource Plans (*IRP), UWMP,* the *Water Surplus and Drought Management Plan (WSDM),* and the *Long-Term Conservation Plan.* These plans are discussed in more detail in Appendix F.

3.16.2.3.3 Southern California Association of Governments

The 2008 Southern California Association of Governments (SCAG) *Regional Comprehensive Plan's* Water Chapter recommends the implementation of Constrained Policy WA-34, in which the state and regional agencies should design and operate regional transportation facilities so that stormwater runoff does not contaminate surrounding watershed ecosystems.

The Energy Chapter lists as a recommendation Constrained Policy EN-11, in which developers and local governments should submit projected electricity and natural gas demand calculations to the local electricity or natural gas provider for any project anticipated to require substantial utility

consumption. Any infrastructure improvements necessary for project construction should be completed according to the specifications of the energy provider.

The Solid Waste Chapter identifies that construction and demolition debris account for 21.7 percent of the solid waste stream statewide. As such, Constrained Policy SW-14 recommends integrating green building measures into project design. These measures are discussed in more detail in Appendix F.

3.16.2.3.4 Los Angeles County

The Local Water Resources Section of the *Los Angeles County 2035 General Plan Conservation and Natural Resources Element* focuses primarily on ensuring adequate protection and management of local water resources. Multiple sections of the *Public Services and Facilities Element* relate to utilities and service systems. The Drinking Water Section identifies policies related to water resources, such as supporting water conservation measures. The Sanitary Sewers Section discusses policies related to improving aging and deficit wastewater systems, ensuring the proper design of sewage treatment and disposal facilities, and evaluating stormwater treatment methods. The Solid Waste Section outlines policies of reducing waste generation, enhancing diversion, and encouraging use of recyclable materials and renewable energy sources. Relevant policies are discussed in Appendix F.

The Los Angeles County Green Building Code, Title 31 has a stated purposed to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact, or positive environmental impact, and encouraging sustainable construction practices. Provisions include mandating: (1) at a minimum for energy efficiency, design and construction of new buildings must comply the provisions of the California Energy Code; (2) cool roof requirements for reduction of heat island effect; and (3) recycling and/or salvaging a minimum of 65 percent of non-hazardous construction and demolition debris.

3.16.2.4 Local

Los Angeles County and the cities within the Build Alternative DSAs have local regulations related to utilities and service systems. These regulations include the relevant general plan policies, ordinances, and municipal codes of the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. Generally, these policies and ordinances aim to conserve water and energy and maintain adequate wastewater systems. More information about these laws and policies is in Appendix F.

3.16.3 Methodology

The utilities analysis addresses construction and operational impacts of the Build Alternatives on the existing network of utilities and whether there would be any associated physical impacts that have not already been addressed as part of the Project. Utilities and service systems considered as part of the analysis included above and underground electrical lines; storm drains; gas lines; water supply lines; and the type, size, and location of the infrastructure potentially impacted by the Project.

The analysis of potential impacts to utilities and services systems evaluates the potential changes in demands on utilities that the Project would generate, then evaluates the potential consequences of the changes in demand based on existing facilities and whether facilities that would provide services to the Project would have sufficient resources and/or capacity to accommodate project-related increase in utility demand. The analysis considers increases in utility demand associated with the Build Alternatives and existing natural resources, existing utility capacity, and consistency with existing

regulations and plans for utilities. Impacts were determined based on the thresholds of significance for CEQA analysis described in **Section 3.16.4**.

3.16.4 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, a Build Alternative would have a significant impact related to utilities and energy if it would:

Impact UTL-1: Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.

Impact UTL-2: Not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

Impact UTL-3: Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Impact UTL-4: Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.

Impact UTL-5: Fail to comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

3.16.5 Existing Setting

3.16.5.1 Water Supply

Within Los Angeles County, water supply is comprised of a complex system made up of state agencies and local water districts operating aqueducts, reservoirs, and groundwater basins. Due to the County's dependence on imported water supply sources, such as the Colorado River and the Bay-Delta in Northern California, and its vulnerability to drought, the county is consistently working to develop a diverse range of water resources (Los Angeles County 2015). The MWD of Southern California is the principal water distributor of imported water in southern California, providing water to 26 public water agencies across southern California, including agencies located with the GSA (MWD 2021b). The Central Basin Municipal Water District is member agency that receives supplies from the MWD and subsequently supplies that water to local supply agencies in the DSA.

In addition to imported supplies from the MWD and the Central Basin Municipal Water District, local water supply sources include groundwater and surface water from mountain runoff and recycled water. Local water supplies in the DSA are provided by the California Water Service (Cal Water) East Los Angeles District, which serves the cities of Commerce, Montebello, and unincorporated East Los Angeles (Cal Water 2021); the South Montebello Irrigation District, which serves south Montebello (Los Angeles Water Hub 2017); the Pico Rivera Water Authority, which serves approximately three-quarters of the area within the city of Pico Rivera (City of Pico Rivera 2016); the Pico Water District, which serves approximately 26 percent of the city of Pico Rivera (Pico Water District 2021); the San Gabriel Valley Water Company, which serves portions of West Whittier-Los Nietos in unincorporated

Los Angeles and portions of Santa Fe Springs (San Gabriel Valley Water Company 2021); and Suburban Water Systems, which serves the city of Whittier (Suburban Water Systems 2021). The service areas of the regional and local water supply agencies are shown in **Figure 3.16.1**.

3.16.5.2 Sanitary Sewer

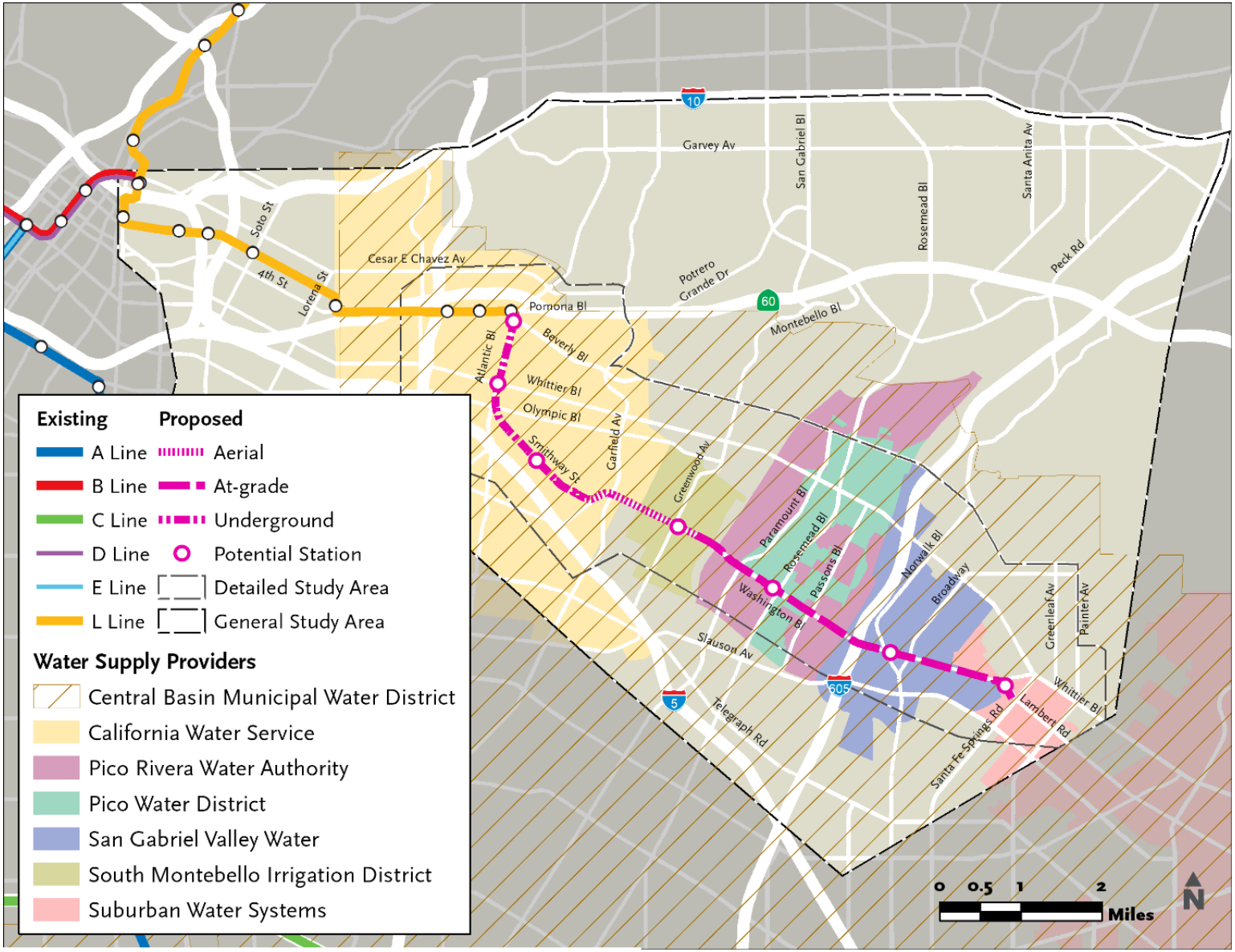
The Sanitation Districts of Los Angeles County (LACSD), which is comprised of 24 independent districts, provide wastewater treatment services to approximately 5.6 million residents in 78 cities and unincorporated areas in Los Angeles County. The DSA is served by District 2 and District 18, which are a part of the Joint Outfall System, a shared regional interconnected sewerage system shared by 17 of the LACSD districts.

LACSD operates ten water reclamation plants (WRPs) and one ocean discharge facility (Joint Water Pollution Control Plant). Additionally, within the Sanitation Districts' service area, there are approximately 9,500 miles of sewers that are owned and operated by the cities and county that are tributary to the Sanitation Districts' wastewater collection system. The Sanitation Districts own, operate, and maintain approximately 1,400 miles of sewers.

Local sewers within the DSA, except for Montebello and Whittier, are operated by the LACDPW Consolidated Sewer Maintenance District (CSMD). Most flows from these local sewers discharge into the County Sanitation Districts of Los Angeles County facilities for treatment and disposal. Local sewers within Montebello are owned and operated by Montebello Public Works. Local sewers within Whitter are owned and operated by the Whittier Public Works Department. Flows are carried out of the city to county facilities for treatment.

3.16.5.3 Storm Drains

Urban run-off in the DSA is diverted to the appropriate storm drains and into catch basins. The collected stormwater flows through a network of pipes and open channels and is then typically released directly into the Pacific Ocean. Los Angeles County Flood Control District stormwater infrastructure, including drains, channels, catch basins, and debris basins, is present throughout the DSA. Additionally, within city boundaries, local storm drain facilities are owned and operated by each city's public works departments.



Source: Los Angeles County Department of Public Works and University of California Los Angeles (UCLA), 2017.

Figure 3.16.1. Water Service Providers

3.16.5.4 Solid Waste

LACSD serves the solid waste management needs of a large portion of Los Angeles County, including the DSA, with several solid waste landfills, recycling centers, materials recovery/transfer facilities, anaerobic digestion facilities, composting/chipping and grinding facilities and waste to energy facilities. The County annually monitors landfill capacity and disposal rates to ensure that there is sufficient 15-year disposal capacity for the 88 cities within the county and unincorporated communities (LACDPW 2020). The County anticipates adequate solid waste disposal capacity to be available over the next 15-year planning period (2019 to 2034) with implementation of actions such as increasing waste and diversion efforts, encouraging development of alternative technologies, export of waste to out-of-facilities, and utilizing the Waste-by-Rail system to the Mesquite Regional Landfill in Imperial County (LACDPW 2020).

The Los Angeles County Public Health Department manages enforcement and permitting for facilities that receive and dispose of solid waste. **Table 3.16-1** lists the largest active and regulatory permitted solid waste facilities that are serving Los Angeles County with the permitted capacity and anticipated closure date.

Table 3.16-1. Solid Waste Disposal Landfills

Landfill Site Name	Location	Max. Permit Capacity	Remaining Capacity	Remaining Capacity Date	Closure Date
		Cubic Yards			
Antelope Valley Public	Palmdale	30,200,000	17,911,225	10/31/2017	4/1/2044
Azusa Land Reclamation Co.	Azusa	58,900,00	9,900,000	4/7/2011	4/1/2030
Chiquita Canyon Sanitary	Castaic	110,366,00	60,408,000	8/24/2018	1/1/2047
Clean Harbors Buttonwillow	Buttonwillow	13,250,000	NA	NA	1/1/2040
Lancaster Landfill and Recycling Center	Lancaster	27,700,000	14,514,648	8/25/2012	3/1/2044
Savage Canyon	Whittier	19,337,450	9,510,833	12/31/2011	12/31/2055
Sunshine Canyon	Sylmar	140,900,000	77,900,000	5/31/2018	10/31/2037

Source: CalRecycle 2021.

3.16.5.5 Telecommunications

Telecommunication services including phone, internet, and television cable are provided by private companies throughout the GSA. Cable service providers include Dish Network, DirectTV, and Spectrum. Phone service providers include AT&T, Charter Communications, and Verizon. Internet service providers include Spectrum, AT&T, and Frontier. Transmission of internet service is available through dial-up or various broadband technologies such as fiber-optic, cable, fixed wireless, or satellite. According to the CPUC's Interactive Broadband Mapper, the GSA is well serviced by a variety of internet service providers and internet transmission infrastructure and has extensive mobile phone coverage (CPUC 2021).

3.16.6 Impact Evaluation

3.16.6.1 Impact UTL-1: Relocation or Construction

Impact UTL-1: Would a Build Alternative require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

3.16.6.1.1 Alternative 1 Washington

Operational Impacts

Water Facilities

Water service providers in the DSA are identified in **Section 3.16.5.1** and shown in **Figure 3.16.1**. The proposed LRT guideway and stations under Alternative 1 would have a water demand for landscaping irrigation and to supply fire sprinkler systems when and if needed. It is anticipated that the Project elements would result in a slight increase in water use; however, the amount consumed would be significantly less than the projected future capacity and would not have any substantial effect on the water supply. Therefore, operation of Alternative 1 would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on water supply facilities.

Wastewater Treatment Facilities

The proposed LRT stations under Alternative 1 would not have public restrooms and, as a result, would not generate wastewater. Elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed treatment capacity. Therefore, operation of Alternative 1 would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on wastewater treatment facilities.

Stormwater Facilities

The Project is located in an urbanized area that is largely impervious and has existing storm drain infrastructure. The proposed LRT guideway and stations under Alternative 1 would result in a minimal increase in impervious surfaces, but not to an extent that would lead to increased runoff. The Project elements (e.g., station canopy) would include drainage facilities with adequate slopes to facilitate adequate drainage flow and help avoid localized ponding or flooding during storm events. Therefore, operation of Alternative 1 would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on stormwater drainage facilities.

Electric Power

The proposed LRT guideway and stations under Alternative 1 would consume electricity from traction power and lighting, respectively. The amount consumed would be less than the projected future capacity. For detailed information about energy use, refer to Section 3.5, Energy, and Appendix F. Therefore, operation of Alternative 1 would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on electric power facilities.

Natural Gas

The proposed LRT guideway and stations under Alternative 1 would not consume natural gas. Therefore, operation of Alternative 1 would not require the expansion of an existing facility or construction of a new facility and would result in no impact on natural gas facilities.

Telecommunication

Minor telecommunication connections for equipment like emergency phones may be installed at stations and in certain locations along the guideway. However, the proposed LRT guideway and stations under Alternative 1 would not include telecommunication features that would require expansion of existing telecommunications facilities that could result in an environmental impact. Therefore, operation of Alternative 1 would not require the expansion of an existing facility or construction of a new facility and would result in no impact on telecommunication facilities.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would have the same effects on utilities service and systems as the base Alternative 1. Operation of Alternative 1 with the Atlantic/Pomona Station Option would not require the expansion of an existing water, wastewater treatment, stormwater, electrical power, or natural gas facility or construction of a new water, wastewater treatment, stormwater, electrical power, or natural gas facility and would result in a less than significant impact on water, stormwater and electrical power facilities and no impact on wastewater treatment, natural gas, and telecommunication facilities.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would have the same effects on utilities service and systems as the base Alternative 1. Operation of Alternative 1 with the Montebello At-Grade Option would not require the expansion of an existing water, wastewater treatment, stormwater, electrical power, or natural gas facility or construction of a new water, wastewater treatment, stormwater, electrical power, or natural gas facility and would result in less than significant impact on water, stormwater and electrical power facilities and no impact on wastewater treatment, natural gas, and telecommunication facilities.

Construction Impacts

Construction of Alternative 1 would require relocating, temporarily rerouting, protecting in place or otherwise avoiding some utility supply lines or other facilities. The construction impacts of utility work (e.g., temporary disruption of service) would be localized, occurring generally at or near street intersections and have been evaluated as part of the Project in context with other physical effects on the environment in this EIR. During the Final Design phase, the Project team would coordinate with utility companies to request information, identify conflict locations between construction activities and existing facilities, and determine if relocation would be required or if utility lines could be protected in-place. Most utilities traversing the alignment would be protected in place with sleeve casing or other methods consistent with the Metro Rail Design Criteria. Preliminary relocation concepts would be developed and presented to each utility owner with affected facilities.

Water Facilities

Alternative 1 is located in highly urbanized areas of Los Angeles County that are well served by existing potable water infrastructure, including existing supply mains, trunk lines and services lines. Construction of Alternative 1 would require minimal water, mostly for dust control, which would not necessitate the relocation or expansion of potable water infrastructure. Water usage during construction would be temporary and intermittent. Water appurtenances (e.g., fire hydrants and water meters) would be relocated and/or adjusted to accommodate project elements, such as the underground configuration and LRT stations. These facilities would be relocated in close proximity to existing facilities. Relocations would require minimal ground disturbance, which has been evaluated as part of the Project in context with other physical effects on the environment in this EIR. Construction of Alternative 1 would not require or result in any notable relocation or construction of new water facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of Alternative 1 would result in a less than significant impact on water supply facilities.

Wastewater Facilities

Alternative 1 is located in an urbanized area with existing sewer infrastructure. Alternative 1 would generate wastewater during construction through the use of temporary worker restrooms. This would occur intermittently and would not exceed sewer capacity. Alternative 1 would not generate notable wastewater or necessitate the relocation or expansion of wastewater facilities. Sewer service feeds that are connected to the utility mainline could be relocated if conflicting with Project elements, such as the underground guideway, station foundations, and other subsurface infrastructure related to the Project. The potential need for relocation has been evaluated as part of the Project in context with other physical effects on the environment in this EIR. Construction of Alternative 1 would not require or result in any notable relocation or construction of new or expanded wastewater facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of Alternative 1 would result in a less than significant impact on wastewater facilities.

Stormwater Facilities

Alternative 1 is located in a developed area with existing stormwater infrastructure that is largely covered with impervious surfaces such as asphalt, concrete, buildings, and other land uses which concentrate storm runoff. Alternative 1 would be constructed mostly along public right-of-way (ROW) with and/or adjacent to storm drains and others drainage features (e.g., curbs and gutters, catch basins, and pipes). Construction activities, such as earthwork, would include relocations and modifications to the existing storm drains and maintenance holes, which would temporarily be taken out of service while the modifications are completed. During construction, there would be more exposed earth and grading activity, resulting in a slight increase in pervious surfaces compared to existing conditions. Incorporation of construction best management practices (BMPs) (e.g., installation of temporary stormwater conveyance systems), however, would reduce runoff generated at the construction sites and maintain appropriate stormwater drainage patterns, which would serve to redirect stormwater flows around open construction areas, thus avoiding flooding during construction. Construction BMPs related to stormwater runoff are discussed in more detail in Section 3.9, Hydrology and Water Quality and the Eastside Transit Corridor Phase 2 Hydrology and Water Quality Impacts Report (Appendix J). Construction would not require or result in any notable relocation or construction of new or expanded stormwater facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of Alternative 1 would have a less than significant impact on stormwater drainage facilities.

Electric Power

Construction of Alternative 1 would consume electricity for construction trailers and electrically powered construction equipment (most construction equipment is not electrically powered). During construction, it is anticipated that minimal amounts of electrical power would be required. Electricity demand from construction would not require any notable relocation or construction of new or expanded power generation facilities which could result in significant environmental effects. Therefore, construction of Alternative 1 would have a less than significant impact on electric power facilities.

Natural Gas

Construction of Alternative 1 would consume minimal, if any, natural gas used for construction equipment. Natural gas consumption during construction would be temporary and intermittent. Construction activities would mostly take place within existing public ROW and no natural gas facilities have been identified in the construction zone that would require relocation. Construction of Alternative 1 would not require or result in any notable relocation or construction of new or expanded natural gas facilities which could cause significant environmental effects. Therefore, construction of Alternative 1 and would have a less than significant impact on natural gas facilities.

Telecommunication

Alternative 1 is located in highly urbanized areas of Los Angeles County that are well served by existing phone, cable television, and internet service. Construction of Alternative 1 may require the relocation of telecommunication facilities (e.g., cell towers and 5G-enabled small cell antennas) to accommodate Project elements, such as the LRT guideway and stations. If relocated, the telecommunication facilities would be relocated in close proximity to their previous location. Construction of Alternative 1 would not require or result in any notable expansion of possible relocated telecommunication facilities or

construction of new facilities that could cause significant environmental effects. Therefore, construction of Alternative 1 would have a less than significant impact on telecommunication facilities.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not require the expansion of an existing facility or construction of a new facility beyond those already addressed as part of the Project and would result in a less than significant impact on water, wastewater, stormwater, electricity, natural gas, and telecommunication facilities.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not require the expansion of an existing facility or construction of a new facility beyond those already addressed as part of the Project and would result in a less than significant impact on water, wastewater, stormwater, electricity, natural gas, and telecommunication facilities.

3.16.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Water Facilities

The proposed LRT guideway and stations under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a water demand for landscaping irrigation and to supply fire sprinkler systems when/if needed. It is anticipated that the Project elements would result in a slight increase in water use; however, the amount consumed would be significantly less than the projected future capacity and would not have any substantial effect on the water supply. Therefore, operation of the base Alternative 2 or Alternative 2 with Atlantic/Pomona Station Option would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on water supply facilities.

Wastewater Treatment Facilities

The proposed LRT stations under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not have public restrooms and, as a result, would not generate wastewater. Elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on wastewater treatment facilities.

Stormwater Facilities

The Project is located in an urbanized area that is largely impervious and that has existing storm drain infrastructure. The proposed LRT guideway and stations under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would result in a minimal increase in impervious surfaces, but not to an extent that would lead to increased runoff. The Project elements (e.g., station portal) would include drainage facilities with adequate slopes to facilitate adequate drainage flow and help avoid localized ponding or flooding during storm events. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on stormwater drainage facilities.

Electric Power

The proposed LRT guideway and stations under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would consume electricity from traction power and lighting, respectively. The amount consumed would be significantly less than the projected future capacity. For more information about energy use, refer to Section 3.5, Energy, and Appendix F. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on electric power facilities.

Natural Gas

The proposed LRT guideway and stations under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not consume natural gas. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not require the expansion of an existing facility or construction of a new facility and would result in no impact on natural gas facilities.

Telecommunication

Minor telecommunication connections for equipment like emergency phones may be installed at stations and in certain locations along the guideway. However, the proposed LRT guideway and stations under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not include telecommunication features that would require expansion of existing telecommunications facilities that could result in an environmental impact. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would not require the expansion of an existing facility or construction of a new facility and would result in no impact on telecommunication facilities.

Construction Impacts

Base Alternatives and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would require relocating, temporarily rerouting, or otherwise avoiding some utility supply lines or other facilities. The construction impacts of utility work (e.g., temporary disruption of service) would be localized, occurring generally at or near street intersections and have been evaluated as part of the Project in context with other physical effects on the environment in this EIR. During the Final Design phase, the Project team would coordinate with utility companies to request information, identify conflict locations between construction activities and existing facilities, and determine if relocation would be required or

if equipment could be protected in-place. Most utilities traversing the alignment would be protected in place with sleeve casing or other methods consistent with the Metro Rail Design Criteria. Preliminary relocation concepts would be developed and presented to each utility owner with affected facilities.

Water Facilities

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station are located in highly urbanized areas of Los Angeles County that are well served by existing potable water infrastructure, including existing supply mains, trunk lines and services lines provide service throughout the GSA. Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would require minimal water, mostly for dust control, which would not necessitate the relocation or expansion of potable water infrastructure. Water usage during construction would be temporary and intermittent. Water appurtenances (e.g., fire hydrants and water meters) would be relocated and/or adjusted to accommodate project elements, such as the underground configuration and LRT stations. These facilities would be relocated in close proximity to existing facilities. Relocations would require minimal ground disturbance, which has been evaluated as part of the Project in context with other physical effects on the environment in this EIR. Construction would not require or result in the relocation or construction of new water facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact on water supply facilities.

Wastewater Facilities

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station are located in an urbanized area with existing sewer infrastructure. Construction activities would generate wastewater through the use of temporary worker restrooms. This would occur intermittently and would not exceed sewer capacity. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not generate notable wastewater or necessitate the relocation or expansion of wastewater facilities. Sewer service feeds that are connected to the sewer mainline could be relocated if conflicting with Project elements, such as the underground guideway, station foundations, and other subsurface infrastructure related to the Project. The potential need for relocation has been evaluated as part of the Project in context with other physical effects on the environment in this EIR. Construction would not require or result in the relocation or construction of new or expanded wastewater facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would result in a less than significant impact on wastewater facilities.

Stormwater Facilities

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option are located in a developed area with existing stormwater infrastructure that is largely covered with impervious surfaces such as asphalt, concrete, buildings, and other land uses which concentrate storm runoff. The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option would be constructed mostly along public ROW with and/or adjacent to storm drains and others drainage features (e.g., curbs and gutters, catch basins, and pipes). Construction activities, such as earthwork, would include relocations and modifications to the existing storm drains and maintenance holes, which would temporarily be taken out of service while the modifications are completed. These modifications would not include culvert widening or conversion of open channels to closed conduits. During the construction period, there would be more exposed earth and grading activity, resulting in a slight increase in pervious

surfaces compared to existing conditions. Incorporation of construction BMPs (e.g., installation of temporary stormwater conveyance systems), however, would reduce runoff generated at the construction sites and maintain appropriate stormwater drainage patterns, which would serve to redirect stormwater flows around open construction areas, thus avoiding flooding during construction. Construction BMPs related to stormwater runoff are discussed in more detail in Section 3.9, Hydrology and Water Quality, and Appendix J. Construction would not require or result in the relocation or construction of new or expanded stormwater facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would result in a less than significant impact on stormwater drainage facilities.

Electric Power

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would consume electricity for construction trailers and electrically powered construction equipment (most construction equipment is not electrically powered). During construction, it is anticipated that minimal amounts of electrical power would be required. Electricity demand from construction would not require any notable relocation or construction of new or expanded power generation facilities which could result in significant environmental effects. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would result in a less than significant impact on electric power facilities.

Natural Gas

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would consume minimal natural gas used for construction equipment. Natural gas consumption during construction would be temporary and intermittent. Construction activities would mostly take place within existing public ROW and no natural gas facilities have been identified in the construction zone that would require relocation. Construction would not require or result in any notable relocation or construction of new or expanded natural gas facilities which could cause significant environmental effects. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would have a less than significant impact on natural gas facilities.

Telecommunication

The base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station are located in highly urbanized areas of Los Angeles County that are well served by existing phone, cable television, and internet service. Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option may require the relocation of telecommunication facilities (e.g., cell towers and 5G-enabled small cell antennas) to accommodate Project elements, such as the LRT guideway and stations. If relocated, the telecommunication facilities would be relocated in close proximity to their previous location. Construction would not require or result in any notable expansion of possible relocated telecommunication facilities or construction of new facilities that could cause significant environmental effects. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station would have a less than significant impact on telecommunication facilities.

3.16.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternatives and Design Options

Water Facilities

The proposed LRT guideway and stations under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a water demand for landscaping irrigation and to supply fire sprinkler systems when/if needed. It is anticipated that the Project elements would result in a slight increase in water use; however, the amount consumed would be significantly less than the projected future capacity and would not have any substantial effect on the water supply. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on water supply facilities.

Wastewater Treatment Facilities

The proposed LRT stations under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not have public restrooms and, as a result, would not generate wastewater. Elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on wastewater treatment facilities.

Stormwater Facilities

The Project is located in an urbanized area that is largely impervious and that has existing storm drain infrastructure. The proposed LRT guideway and stations under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a minimal increase in impervious surfaces, but not to an extent that would lead to increased runoff. The Project elements (e.g., station entrance canopy) would include drainage facilities with adequate slopes to facilitate adequate drainage flow and help avoid localized ponding or flooding during storm events. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require the expansion of an existing facility or construction of a new facility and would result in a less than significant impact on stormwater drainage facilities.

Electric Power

The proposed LRT guideway and stations under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would consume electricity from traction power and lighting, respectively. The amount consumed would be significantly less than the projected future capacity. For detailed information about energy use, refer to Section 3.5, Energy,

and Appendix F. Therefore, the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on electric power facilities during operation.

Natural Gas

The proposed LRT guideway and stations would not consume natural gas. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require the expansion of an existing facility or construction of a new facility and would result in no impact on natural gas facilities.

Telecommunication

Minor telecommunication connections for equipment like emergency phones may be installed at stations and in certain locations along the guideway. However, the proposed LRT guideway and stations under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not include telecommunication features that would require expansion of existing telecommunications facilities that could result in an environmental impact. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not require the expansion of an existing facility or construction of a new facility and would result in no impact on telecommunication facilities.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would require relocating, temporarily rerouting, or otherwise avoiding some utility supply lines or other facilities. The construction impacts of utility work (e.g., temporary disruption of service) would be localized, occurring generally at or near street intersections and have been evaluated as part of the Project in context with other physical effects on the environment in this EIR. During the Final Design phase, the Project team would coordinate with utility companies to request information, identify conflict locations between construction activities and existing facilities, and determine if relocation would be required or if the equipment could be protected in-place. Most utilities traversing the alignment would be protected in place with sleeve casing or other methods consistent with the Metro Rail Design Criteria. Preliminary relocation concepts would be developed and presented to each utility owner with affected facilities.

Water Facilities

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located in highly urbanized areas of Los Angeles County that are well served by existing potable water infrastructure, including existing supply mains, trunk lines and services lines. Construction would require minimal water, mostly for dust control, which would not necessitate the relocation or expansion of potable water infrastructure. Water usage during construction would be temporary and intermittent. Water appurtenances (e.g., fire hydrants and water meters) would be relocated and/or adjusted to accommodate project elements, such as the underground configuration and LRT stations. These facilities would be relocated in close proximity to existing facilities. Relocations would require minimal ground disturbance, which has been evaluated as

part of the Project in context with other physical effects on the environment in this EIR. Construction would not require or result in the relocation or construction of new water facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact on water supply facilities.

Wastewater Facilities

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located in an urbanized area where existing sewer lines provide service throughout the GSA. Construction activities would generate wastewater through the use of temporary worker restrooms. This would occur intermittently and would not exceed sewer capacity. Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not generate significant wastewater or necessitate the relocation or expansion of wastewater facilities. Sewer service feeds that are connected to the sewer mainline could be relocated if conflicting with Project elements, such as the underground guideway, station foundations, and other subsurface infrastructure related to the Project. Construction would not require or result in the relocation or construction of new or expanded wastewater facilities which could cause significant environmental effects. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact on wastewater facilities.

Stormwater Facilities

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located in a developed area with existing stormwater infrastructure that is largely covered with impervious surfaces such as asphalt, concrete, buildings, and other land uses which concentrate storm runoff. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be constructed mostly along public ROW with and/or adjacent to storm drains and others drainage features (e.g., curbs and gutters, catch basins, and pipes). Construction activities, such as earthwork, would include relocations and modifications to the existing storm drains and maintenance holes, which would temporarily be taken out of service while the modifications are completed. These modifications would not include culvert widening or conversion of open channels to closed conduits. During the construction period, there would be more exposed earth and grading activity, resulting in a slight increase in pervious surfaces compared to existing conditions. Incorporation of construction BMPs (e.g., installation of temporary stormwater conveyance systems), however, would reduce runoff generated at the construction sites and maintain appropriate stormwater drainage patterns, which would serve to redirect stormwater flows around open construction areas, thus avoiding flooding during construction. Construction BMPs related to stormwater runoff are discussed in more detail in Section 3.9, Hydrology and Water Quality, and Appendix J. Construction would not require or result in the relocation or construction of new or expanded stormwater facilities which could cause significant environmental effects beyond those already addressed as part of the Project. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact on stormwater drainage facilities.

Electric Power

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would consume electricity for construction trailers and small electrically powered construction equipment (most construction equipment is not electrically powered). During construction, it is anticipated that minimal amounts of electrical power would be required. Electricity demand from construction would not require any notable relocation or construction of new or expanded power generation facilities which could result in significant environmental effects. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact on electric power facilities.

Natural Gas

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would consume minimal natural gas used for construction equipment. Natural gas consumption during construction would be temporary and intermittent. Construction activities would mostly take place within existing public ROW and no natural gas facilities have been identified in the construction zone that would require relocation. Construction would not require or result in any notable relocation or construction of new or expanded natural gas facilities which could cause significant environmental effects. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact on natural gas facilities.

Telecommunication

The base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are located in highly urbanized areas of Los Angeles County that are well served by existing phone, cable television, and internet service. Construction may require the relocation of telecommunication facilities (e.g., cell towers and 5G-enabled small cell antennas) to accommodate Project elements, such as the LRT guideway and stations. If relocated, the telecommunication facilities would be relocated in close proximity to their previous location. Construction would not require or result in any notable expansion of possible relocated telecommunication facilities or construction of new facilities that could cause significant environmental effects. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact on telecommunication facilities.

3.16.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Water Facilities

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would consume water for landscaping irrigation, vehicle washing, and typical employee breakroom/kitchen uses. It is anticipated that the Project elements would result in a slight increase in water use; however, the amount consumed would be significantly less than the projected

future capacity and would not have any substantial effect on the water supply. Therefore, operation of an MSF site option would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on water supply facilities.

Wastewater Treatment Facilities

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would include employee restrooms and, as a result, would generate wastewater. However, it is anticipated that the generation of wastewater would be minimal and significantly less than the projected future capacity. Therefore, operation of an MSF site option would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on wastewater treatment facilities.

Stormwater Facilities

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in a minimal increase in impervious surfaces, but not to an extent that would lead to increased runoff. Project elements (e.g., office and storage facilities) would include drainage facilities with slopes to facilitate adequate drainage flow and help avoid localized ponding or flooding during storm events. Therefore, operation of an MSF site option would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on stormwater drainage facilities.

Electric Power

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would consume electricity from traction power, lighting, and powering of maintenance equipment. The amount consumed would be significantly less than the projected future capacity. For detailed information about energy use, refer to Section 3.5, Energy, and Appendix F. Therefore, operation of an MSF site option would not require any notable expansion of an existing facility or construction of a new facility and would result in a less than significant impact on electric power facilities. Further, opportunities for solar PV arrays on roof and parking lot surfaces would be available. This would potentially offset some electric power demand.

Natural Gas

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option could consume natural gas for routine maintenance activities and heating, if the required equipment is fueled by natural gas instead of electricity. The amount consumed would be significantly less than the projected future capacity. Therefore, operation of an MSF site option would not require any notable expansion of an existing facility or construction of a new facility and would result in no impact on natural gas facilities.

Telecommunication

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would include telecommunications infrastructure (e.g., server rooms, network equipment, cabling systems, intercom systems, phones). However, operation of an MSF site option would not require any notable expansion of an existing facility or construction of a new facility (e.g.,

cell towers and 5G-enabled small cell antennas) and would result in a less than significant impact on telecommunication facilities.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would require new utility connections (e.g., water, sewer, electrical service, cable conduit, telephone) to existing area utility service. For water facilities, construction would include the relocation and installation of new domestic water and fire water pipelines. Minimal water would be required during construction, mostly for dust control. For wastewater facilities, new sewer lines would also connect to the existing municipal sewer system. Construction activities would not generate any wastewater requiring new or expanded wastewater treatment. For stormwater facilities, new stormwater piping and drains would be constructed. Construction would not create or contribute runoff water that would exceed the capacity of the stormwater drainage system. Construction activities would maintain the existing drainage patterns. Construction activities would consume electricity for construction trailers and electrically powered construction equipment (most construction equipment is not electrically powered). During construction, it is anticipated that minimal amounts of electrical power would be required. Construction would consume minimal, if any, natural gas used for construction equipment. Natural gas consumption during construction would be temporary and intermittent. Construction would also include the relocation and installation of electric lines and gas pipelines to accommodate the site layout. Installation and relocation of utilities to accommodate and serve the MSF site options have been evaluated as part of the Project in context with other physical effects on the environment in this EIR.

Therefore, construction of an MSF site option would not require or result in any notable relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities beyond those already addressed as part of the Project. Construction of the MSF site options would result in a less than significant impact on these facilities.

3.16.6.2 Impact UTL-2: Water Supplies

Impact UTL -2: Would a Build Alternative have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

3.16.6.2.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would result in a minimal increase in municipal water use. Operational activities or features that would require long-term, permanent sources of water use may include, but would not be limited to fire water systems and landscape irrigation. This water demand would be a slight increase and would not affect water supplies. Further, any water use would be in compliance with Metro's Water Use and Conservation Policy, which specifies that water efficiency and conservation methods would be adopted and maintained. Operation of Alternative 1 would not significantly deplete municipal water supplies during normal, dry, or multiple dry years. Therefore, operation of Alternative 1 would have a less than significant impact on water supplies.

Design Options

Atlantic/Pomona Station Option

Under Alternative 1 with the Atlantic/Pomona Station Option, operational activities or features that would require long-term, permanent sources of municipal water use may include, but would not be limited to fire water systems and landscape irrigation. This water demand would be a slight increase and would not affect water supplies. Additionally, any water use would comply with Metro's Water Use and Conservation Policy. Operational activities would not significantly deplete municipal water supplies during normal, dry, or multiple dry years. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact on water supplies.

Montebello At-Grade Option

Under Alternative 1 with the Montebello At-Grade Option, operational activities or features that would require long-term, permanent sources of municipal water use may include, but would not be limited to fire water systems and landscape irrigation. This water demand would be a slight increase and would not affect water supplies. Additionally, any water use would comply with Metro's Water Use and Conservation Policy. Operational activities would not significantly deplete municipal water supplies during normal, dry, or multiple dry years. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact on water supplies.

Construction Impacts

Under Alternative 1, construction activities would not result in the use of notable amounts of municipal water resources. Water would be used for dust suppression of exposed soils during excavation and grading. Water used for dust control would likely be provided by water trucks that are filled off-site and typically use recycled water. The water use during construction would be temporary and intermittent. The amount of water used would vary depending on the amount of exposed soil requiring dust suppression and the weather conditions when soil is exposed (e.g., increased frequency of wetting exposed soils would be required during hot and dry conditions as opposed to a lower frequency during cool and moist conditions). Therefore, the amount of water used during construction would be highly variable; however, overall short-term use would require minimal water supplies when compared to regional water use associated with land use developments. Further, any water use would be in compliance with Metro's Water Use and Conservation Policy, which limits use of potable water during construction when feasible. Construction-related water use would not necessitate new water deliveries to the region. Construction activities would not significantly deplete water supplies during normal, dry, or multiple dry years. Therefore, construction of Alternative 1 would have a less than significant impact on water supplies.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would not result in the use of notable amounts of municipal water resources. A short-term use of minimal water supplies would be required during construction activities (e.g., for dust control), which would not necessitate new water deliveries to the region. Construction activities would not significantly deplete water supplies during

normal, dry, or multiple dry years. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would have a less than significant impact on water supplies.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would not result in the use of notable amounts of municipal water resources. A short-term use of minimal water supplies would be required during construction activities (e.g., for dust control), which would not necessitate new water deliveries to the region. Construction activities would not significantly deplete water supplies during normal, dry, or multiple dry years. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would have a less than significant impact on water supplies.

3.16.6.2.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a minimal increase in municipal water use. Operational activities or features that would require long-term, permanent sources of water use may include, but would not be limited to fire water systems and landscape irrigation. This water demand would be a slight increase and would not affect water supplies. Further, any water use would comply with Metro's Water Use and Conservation Policy, which specifies that water efficiency and conservation methods would be adopted and maintained. Operational activities would not significantly deplete municipal water supplies during normal, dry, or multiple dry years. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact on water supplies.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in the use of notable amounts of municipal water resources. Water would be used for dust suppression of exposed soils during excavation and grading. Water used for dust control would likely be provided by water trucks that are filled off-site and typically use recycled water. The water use during construction would be temporary and intermittent. The amount of water used would vary depending on the amount of exposed soil requiring dust suppression and the weather conditions when soil is exposed (e.g., increased frequency of wetting exposed soils would be required during hot and dry conditions as opposed to a lower frequency during cool and moist conditions). Therefore, the amount of water used during construction would be highly variable; however, overall short-term use would require minimal water supplies when compared to regional water use associated with land use developments. Further, any water use would comply with Metro's Water Use and Conservation Policy, which limits use of potable water during construction when feasible. Construction-related water use would not necessitate new water deliveries to the region. Construction activities would not significantly deplete water supplies during normal, dry, or multiple dry years. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact on water supplies.

3.16.6.2.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a minimal increase in municipal water use. Operational activities or features that would require long-term, permanent sources of water use may include, but would not be limited to fire water systems and landscape irrigation. This water demand would be a slight increase and would not affect water supplies. Further, any water use would comply with Metro's Water Use and Conservation Policy, which specifies that water efficiency and conservation methods would be adopted and maintained. Operational activities would not significantly deplete municipal water supplies during normal, dry, or multiple dry years. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact on water supplies.

Construction Impacts

Base Alternative and Design Options

Under the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option, construction activities would not result in the use of significant amounts of municipal water resources. Water would be used for dust suppression of exposed soils during excavation and grading. Water used for dust control would likely be provided by water trucks that are filled off-site and typically use recycled water. The water use during construction would be temporary and intermittent. The amount of water used would vary depending on the amount of exposed soil requiring dust suppression and the weather conditions when soil is exposed (e.g., increased frequency of wetting exposed soils would be required during hot and dry conditions as opposed to a lower frequency during cool and moist conditions). Therefore, the amount of water used during construction would be highly variable; however, overall short-term use would require minimal water supplies when compared to regional water use associated with land use developments. Further, any water use would comply with Metro's Water Use and Conservation Policy, which limits use of potable water during construction when feasible. Construction-related water use would not necessitate new water deliveries to the region. Construction activities would not significantly deplete water supplies during normal, dry, or multiple dry years. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact on water supplies.

3.16.6.2.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in a minor increase in municipal water use. Operational activities or features that would require long-term, permanent sources of water use may include, but would not be

limited to fire water systems, employee breakroom and restrooms, and vehicle washing and rinsing. The associated buildings would, at a minimum, fully comply with current state and city codes, including the California Plumbing Code and the California Green Building Code, which mandate installation of water conserving plumbing fixtures and fittings (e.g., water efficient toilets). Additionally, any water use would be in compliance with Metro's Water Use and Conservation Policy, which specifies that water efficiency and conservation methods would be adopted and maintained including for pressure washing activities. Operation of an MSF site option would not significantly deplete municipal water supplies during normal, dry, or multiple dry years and would therefore have less than significant impacts on water supplies.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in the use of significant amounts of municipal water resources. During the construction phase, water would be used for dust suppression of exposed soils during excavation and grading, which would not necessitate new water deliveries to the region. Water used for dust suppression would likely be provided by water trucks that are filled off-site and typically use recycled water. The water use during construction would be temporary and intermittent. The amount of water used would vary depending on the amount of exposed soil requiring dust suppression and the weather conditions when soil is exposed (e.g., increased frequency of wetting exposed soils would be required during hot and dry conditions as opposed to a lower frequency during cool and moist conditions). Temporary construction activities associated with the MSF site options would not significantly deplete water supplies during normal, dry, or multiple dry years. Therefore, construction of an MSF site option would have less than significant impacts on water supplies.

3.16.6.3 Impact UTL-3: Wastewater

Impact UTL-3: Would a Build Alternative result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

3.16.6.3.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would not include a new source of wastewater and would not directly generate population growth that would require wastewater services. Restrooms would not be provided at LRT stations. Elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of Alternative 1 would result in a less than significant impact on wastewater capacity.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option would not include a new source of wastewater. As with the base Alternative 1, elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact on wastewater capacity.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option would not include a new source of wastewater. As with the base Alternative 1, elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact on wastewater capacity.

Construction Impacts

Construction of Alternative 1 would generate wastewater through the use of temporary worker restrooms. Wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system and would not overburden the system. Therefore, construction of Alternative 1 would result in a less than significant impact on wastewater capacity.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same effects on wastewater generation as the base Alternative 1. Construction of Alternative 1 with the Atlantic/Pomona Station Option would generate wastewater through the use of temporary worker restrooms. Wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system and would not overburden the system. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact on wastewater capacity.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would have the same effects on wastewater generation as the base Alternative 1. Construction of Alternative 1 with the Montebello At-Grade Option would generate wastewater through the use of temporary worker restrooms. Wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system

and would not overburden the system. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact on wastewater capacity.

3.16.6.3.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not include a new source of wastewater and would not directly generate population growth that would require wastewater services. Restrooms would not be provided at LRT stations. Elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact on wastewater capacity.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would generate wastewater during construction through the use of temporary worker restrooms. This would occur intermittently and would not exceed sewer capacity. Wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system and would not overburden the system. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact on wastewater capacity.

3.16.6.3.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not include a new source of wastewater and would not directly generate population growth that would require wastewater services. Restrooms would not be provided at LRT stations. Elevators would have emergency ejector pits and underground stations and control rooms at at-grade stations would be equipped with sump pumps/clarifiers that would drain to the sewer in the event of a flood. Any discharges associated with these connections would be subject to a wastewater discharge permit and would be intermittent and irregular. Such irregular discharges, should they be necessary, would not exceed capacity. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact on wastewater capacity.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would generate wastewater through the use of temporary worker restrooms. Wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system and would not overburden the system. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact on wastewater capacity.

3.16.6.3.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would result in an increase in potable water use and additional wastewater-generating facilities (e.g., sinks, toilets, vehicle washing). The quantity of wastewater generated by the MSF site options is anticipated to increase slightly or to be similar as currently generated by the existing industrial land uses. The MSF site options would include new efficient plumbing that would comply with water conservation requirements, such as CALGreen and the California Plumbing Code, which mandate installation of water conserving plumbing fixtures and fittings (e.g., low-flow water fixtures and high-efficiency toilets and urinals. This would reduce the amount of wastewater entering the sewer system. In addition, the MSF site options would be required to conform to all applicable wastewater standards set forth by the Los Angeles Regional Water Quality Control Board and would not result in the construction of new wastewater treatment facilities or expansion of existing facilities. Therefore, operation of an MSF site option would result in a less than significant impact on wastewater capacity.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would generate wastewater through the use of temporary worker restrooms. Wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system and would not overburden the system. Therefore, construction of an MSF site option would result in a less than significant impact on wastewater capacity.

3.16.6.4 Impact UTL-4: Solid Waste

Impact UTL -4: Would a Build Alternative generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

3.16.6.4.1 Alternative 1 Washington

Operational Impacts

Operation of Alternative 1 would not include a direct source of solid waste. Indirectly, solid waste would be generated by transit users. Stations would include waste bins and recycle bins. The disposal of solid waste collected at each station would have no notable potential to affect landfill capacity or impair attainment of solid waste reduction goals. Operation of Alternative 1 would not result in a net increase in project-related solid waste generation in excess of state or local standards outlined in **Section 3.16.2.2** and **Section 3.16.2.3** respectively, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Therefore, operation of Alternative 1 would result in a less than significant impact related to solid waste generation.

Design Options

Atlantic/Pomona Station Option

Operation of Alternative 1 with the Atlantic/Pomona Station Option have the same effects on solid waste generation as the base Alternative 1 and would not include a direct source of solid waste. Indirect solid waste generated by transit users would be collected in waste and recycle bins and would have no notable potential to affect landfill capacity or impair attainment of solid waste reduction goals. Therefore, operation of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact related to solid waste generation.

Montebello At-Grade Option

Operation of Alternative 1 with the Montebello At-Grade Option have the same effects on solid waste generation as the base Alternative 1 and would not include a direct source of solid waste. Indirect solid waste generated by transit users would be collected in waste and recycle bins and would have no notable potential to affect landfill capacity or impair attainment of solid waste reduction goals. Therefore, operation of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact related to solid waste generation.

Construction Impacts

The construction of Alternative 1 would involve the generation and removal of solid waste to accommodate the various demolition and construction activities. At the proposed LRT station areas, generated waste may include bulky, heavy materials such as concrete, wood, metals, glass, and building components. For construction of underground and surface elements, the removal of debris (e.g., soil, asphalt, concrete) is anticipated. This would result in an incremental and temporary increase in solid waste disposal at landfills and other waste disposal facilities. While it is anticipated that some excavated soil would be reused on-site, the remaining materials would be hauled off-site for disposal at any of the area landfills that accept and/or recycle construction/demolition materials.

As discussed in Section 3.8, Hazards and Hazardous Materials and the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report (Appendix I), the existing buildings to be demolished, to accommodate the construction of the LRT station areas, may contain asbestos and lead-based paint. The Department of Toxic Substances Control require the abatement of asbestos-containing materials and removal or stabilization of lead-based paint prior to demolition.

Contaminated soils and hazardous building materials would be disposed of at a local landfill, such as Azusa Land Reclamation, Antelope Valley Public, Clean Harbors Buttonwillow, or Lancaster landfills, which are authorized to accept certain types of contaminated soils (e.g., petroleum hydrocarbon-impacted soils with hydrocarbon concentrations below specified limits) and asbestos-containing debris. These materials and wastes would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler.

There would be adequate capacity available in Los Angeles County to handle anticipated solid waste generation during the construction period and, thus, temporary solid waste generation associated with construction of Alternative 1 would not create a need for additional solid waste disposal facilities. In addition, the construction contractor would comply with AB 939, which requires a Solid Waste Diversion Program and diversion of at least 50 percent of the solid waste from landfills to recycling facilities; therefore, the construction of Alternative 1 would not conflict with policies and objectives to reduce the amount of solid waste disposed in landfills.

Construction of Alternative 1 would not generate solid waste in excess of state or local standards outlined in **Section 3.16.2.2** and **Section 3.16.2.3**, respectively, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Furthermore, construction would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, construction of Alternative 1 would have a less than significant impact related to solid waste generation.

Design Options

Atlantic/Pomona Station Option

Construction of Alternative 1 with the Atlantic/Pomona Station Option would have the same effects on solid waste generation as the base Alternative 1. Construction of Alternative 1 with the Atlantic/ Pomona Station Option would involve the generation and removal of solid waste to accommodate the various demolition and construction activities. There would be adequate capacity available in Los Angeles County to handle anticipated solid waste generation during the construction period and, thus, temporary solid waste generation associated with construction activities would not create a need for additional solid waste disposal facilities. Hazardous materials would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler. Therefore, construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact related to solid waste generation.

Montebello At-Grade Option

Construction of Alternative 1 with the Montebello At-Grade Option would involve the generation and removal of solid waste. There would be adequate capacity available in Los Angeles County to handle anticipated solid waste generation during the construction period and, thus, temporary solid waste generation associated with construction activities would not create a need for additional solid waste disposal facilities. Hazardous materials would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler. Therefore, construction of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact related to solid waste generation.

3.16.6.4.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not include a direct source of solid waste. Indirectly, solid waste would be generated by transit users. Stations would include waste bins and recycle bins. The disposal of solid waste from each station would have no notable potential to affect landfill capacity or impair attainment of solid waste reduction goals. Therefore, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact related to solid waste generation.

Construction Impacts

Base Alternative and Design Option

Construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would involve the generation and removal of solid waste, such as wood, concrete, soil, and asphalt, to accommodate the various demolition and construction activities. This would result in an incremental and temporary increase in solid waste disposal at landfills and other waste disposal facilities. While it is anticipated that some excavated soil would be reused on-site, the remaining materials would be hauled off-site for disposal at any of the area landfills that accept and/or recycle construction/demolition materials.

As discussed in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the existing buildings to be demolished may contain asbestos and lead-based paint. The Department of Toxic Substances Control requires the abatement of asbestos-containing materials and removal or stabilization of lead-based paint prior to demolition. Contaminated soils and hazardous building materials would be disposed of at a local landfill that is authorized to accept certain types of contaminated soils and asbestos-containing debris. These materials and wastes would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler.

There would be adequate capacity available in Los Angeles County to handle anticipated solid waste generation during the construction period and, thus, temporary solid waste generation associated with construction activities would not create a need for additional solid waste disposal facilities. In addition, the construction contractor would comply with AB 939, which requires a Solid Waste Diversion Program and diversion of at least 50 percent of the solid waste from landfills to recycling facilities; therefore, construction would not conflict with policies and objectives to reduce the amount of solid waste disposed in landfills.

Construction would not generate solid waste in excess of state or local standards outlined in **Section 3.16.2.2** and **Section 3.16.2.3**, respectively, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Furthermore, construction would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have a less than significant impact related to solid waste generation.

3.16.6.4.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not include a direct source of solid waste. Indirectly, solid waste would be generated by transit users. Stations would include waste bins and recycle bins. The disposal of solid waste from each station would have no notable potential to affect landfill capacity or impair attainment of solid waste reduction goals. Therefore, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact related to solid waste generation.

Construction Impacts

Base Alternative and Design Options

Construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would involve the generation and removal of solid waste, such as wood, concrete, soil, and asphalt, to accommodate the various demolition and construction activities. This would result in an incremental and temporary increase in solid waste disposal at landfills and other waste disposal facilities. While it is anticipated that some excavated soil would be reused on-site, the remaining materials would be hauled off-site for disposal at any of the area landfills that accept and/or recycle construction/demolition materials.

As discussed in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the existing buildings to be demolished may contain asbestos and lead-based paint. The Department of Toxic Substances Control require the abatement of asbestos-containing materials and removal or stabilization of lead-based paint prior to demolition. Contaminated soils and hazardous building materials would be disposed of at a local landfill that is authorized to accept certain types of contaminated soils and asbestos-containing debris. These materials and wastes would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler.

There would be adequate capacity available in Los Angeles County to handle anticipated solid waste generation during the construction period and, thus, temporary solid waste generation associated with construction of Alternative 3 would not create a need for additional solid waste disposal facilities. In addition, the construction contractor would comply with AB 939, which requires a Solid Waste Diversion Program and diversion of at least 50 percent of the solid waste from landfills to recycling facilities; therefore, construction would not conflict with policies and objectives to reduce the amount of solid waste disposed in landfills.

Construction would not generate solid waste in excess of state or local standards outlined in **Section 3.16.2.2** and **Section 3.16.2.3**, respectively, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Furthermore, construction would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have a less than significant impact related to solid waste generation.

3.16.6.4.4 Maintenance and Storage Facilities

Operational Impacts

MSF Options and Design Option

Operation of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would generate a range of recyclable and non-recyclable solid waste. As shown in **Table 3.16-1** the active and permitted solid waste disposal facilities serving Los Angeles County have sufficient daily and annual capacity to accommodate the solid waste generation associated with operation of the MSF site options. Therefore, operation of an MSF site option would not create a need for additional solid waste disposal facilities and would have a less than significant impact related to solid waste generation.

Construction Impacts

MSF Options and Design Option

The construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would involve the generation and removal of solid waste, such as wood, concrete, soil, and asphalt, to accommodate the various demolition and construction activities. This would result in an incremental and temporary increase in solid waste disposal at landfills and other waste disposal facilities. While it is anticipated that some excavated soil would be reused on-site, the remaining materials would be hauled off-site for disposal at any of the area landfills that accept and/or recycle construction/demolition materials.

As discussed in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the existing buildings to be acquired and demolished may contain asbestos and lead-based paint. The Department of Toxic Substances Control requires the abatement of asbestos-containing materials and removal or stabilization of lead-based paint prior to demolition. Contaminated soils and hazardous building materials would be disposed of at a local landfill that is authorized to accept certain types of contaminated soils and asbestos-containing debris. These materials and wastes would be handled, transported, and disposed of in accordance with applicable laws and regulations by a certified hazardous materials handler.

There would be adequate capacity available in Los Angeles County to handle anticipated solid waste generation during the construction period and, thus, temporary solid waste generation associated with construction of the Commerce MSF site option would not create a need for additional solid waste disposal facilities. In addition, the construction contractor would comply with AB 939, which requires a Solid Waste Diversion Program and diversion of at least 50 percent of the solid waste from landfills to recycling facilities; therefore, the construction of the MSF site options would not conflict with policies and objectives to reduce the amount of solid waste disposed in landfills.

Construction of the MSF site options would not generate solid waste in excess of state or local standards outlined in **Section 3.16.2.2** and **Section 3.16.2.3**, respectively, or in excess of the capacity of the local infrastructure, or otherwise impair the attainment of solid waste reduction goals. Furthermore, construction would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, construction of an MSF site option would have a less than significant impact related to solid waste.

3.16.6.5 Impact UTL-5: Regulations

Impact UTL-5: Would a Build Alternative comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

3.16.6.5.1 Alternative 1 Washington

Operational and Construction Impacts

Operation and construction of Alternative 1 would be required to comply with all applicable federal, state, and local statutes and regulations, outlined in **Section 3.16.2**, pertaining to solid waste disposal. As discussed under Impact UTL-4, small amounts of solid waste would be generated during operation and construction of Alternative 1; however, there is no element of operational or construction activities that would be outside of compliance. Therefore, operation and construction of Alternative 1 would result in a less than significant impact as it would comply with solid waste regulations.

Design Options

Atlantic/Pomona Station Option

Operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would be required to comply with all applicable federal, state, and local statutes and regulations, outlined in **Section 3.16.2**, pertaining to solid waste disposal. As discussed under Impact UTL-4, small amounts of solid waste would be generated during operation and construction of Alternative 1 with the Atlantic/Pomona Station Option; however, there is no element of operational or construction activities that would be outside of compliance. Therefore, operation and construction of Alternative 1 with the Atlantic/Pomona Station Option would result in a less than significant impact as it would comply with solid waste regulations.

Montebello At-Grade Option

Operation and construction of Alternative 1 with the Montebello At-Grade Option would be required to comply with all applicable federal, state, and local statutes and regulations, outlined in **Section 3.16.2**, pertaining to solid waste disposal. As discussed under Impact UTL-4, small amounts of solid waste would be generated during operation and construction of Alternative 1 with the Montebello At-Grade Option; however, there is no element of operational or construction activities that would be outside of compliance. Therefore, operation and construction of Alternative 1 with the Montebello At-Grade Option would result in a less than significant impact as it would comply with solid waste regulations.

3.16.6.5.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be required to comply with all applicable federal, state, and local statutes and regulations, outlined in **Section 3.16.2**, pertaining to solid waste disposal. As discussed under Impact UTL-4, small amounts of solid waste would be generated during operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option; however, there is no element of operational or construction activities that would be outside of compliance. Therefore, operation and construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would result in a less than significant impact as it would comply with solid waste regulations.

3.16.6.5.3 Alternative 3 Atlantic to Greenwood IOS

Operational and Construction Impacts

Base Alternative and Design Options

Operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be required to comply with all applicable federal, state, and local statutes and regulations, outlined in **Section 3.16.2**, pertaining to solid waste disposal. As discussed under Impact UTL-4, small amounts of solid waste would be generated during operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option; however, there is no element of operational or construction activities that would be outside of compliance. Therefore, operation and construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would result in a less than significant impact as it would comply with solid waste regulations.

3.16.6.5.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation and construction of the Commerce MSF site option, Montebello MSF site option, or the Montebello MSF At-Grade Option would be required to comply with all applicable federal, state, and local statutes and regulations, outlined in **Section 3.16.2**, pertaining to solid waste disposal. As discussed under Impact UTL-4, solid waste would be generated during operation and construction of the MSF site option; however, There is no element of operation or construction activities that would be outside of compliance. Therefore, operation and construction of the MSF site option would result in a less than significant impact as it would comply with solid waste regulations.

3.16.7 Project Measures and Mitigation Measures

As identified in **Section 3.16.6**, the Build Alternatives and Build Alternatives with the design option(s) would have less than significant impacts on utilities and service systems under Impact UTL-1 (Relocation or Construction), UTL-2 (Water Supplies), UTL-3 (Wastewater), UTL-4 (Solid Waste), and UTL-5 (Regulations). No project measures or mitigation measures would be required for operation or construction. **Table 3.16-2** identifies the combined impact of the base alternatives with the associated MSF site option(s), and the alternatives with one or both design options (as applicable) with the associated MSF site option(s). All impacts would be less than significant for all alternatives and design options under Impact UTL-1, Impact UTL-2, Impact UTL-3, and Impact UTL-4. All Alternatives and design options would have no impact under UTL-5.

3.16.8 Significance After Mitigation

As identified in **Table 3.16-2**, **no mitigation is required** for the Build Alternatives and Build Alternatives with the design option(s). Less than significant impacts would occur under Impact UTL-1, Impact UTL-2, Impact UTL-3, Impact UTL-4 and Impact UTL-5.

Table 3.16-2. Summary of Impact Determinations for Build Alternatives and MSF Options

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
UTL-1 Relocation or Construction	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
UTL-2 Water Supplies	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
UTL-3 Wastewater	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
UTL-4 Solid Waste	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
UTL-5 Regulations	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.17 Growth-Inducing Impacts

3.17.1 Introduction

This section discusses the Project setting in relation to growth-inducing impacts. It describes existing conditions, the current regulatory setting, and potential impacts from construction and operation of the Build Alternatives, including design options and MSF site options. The study area for growth inducement is primarily the detailed study area (DSA), with some references to the general study area (GSA). Information in this section is based on the Eastside Transit Corridor Phase 2 Growth-Inducing Impacts Report (Appendix R).

3.17.2 Regulatory Framework

3.17.2.1 Federal

There are no applicable federal regulations or policies pertaining to potential growth inducing impacts of the Project.

3.17.2.2 State

CEQA requires an assessment of the ways in which the project could promote economic or population growth in the vicinity of the project (Section 15126.2[e]). Growth inducement may be said to occur if "the project fosters economic or population growth or the construction of additional housing either directly or indirectly." Projects that remove "obstacles to population growth," or that have characteristics that may "encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively" are included. It is further stated that it must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

3.17.2.3 Local

Growth is regulated exclusively at the local government level by a combination of zoning and policy incentives set by the local jurisdictions located within the DSA, which include the unincorporated Los Angeles County communities of East Los Angeles and Whittier-Los Nietos and the cities of Commerce, Los Angeles, Montebello, Pico Rivera, Santa Fe Springs, and Whittier. As discussed in Section 3.10, Land Use and Planning, and the Eastside Transit Corridor Phase 2 Land Use and Planning Impacts Report (Appendix K), the various jurisdictions have established land use plans and general plans (some of which are being updated) that describe the desired use and intensity of use at full build-out. In addition, other plans and policies may also factor into the jurisdiction's land use planning, such as policies to promote transit-oriented development (TOD).

The Southern California Association of Governments (SCAG) is the designated Metropolitan Planning Organization (MPO) for the six-county region that includes the counties of Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial. SCAG's Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (2020 RTP/SCS) presents the transportation

and overall land use vision for the six-county region. The 2020 RTP/SCS provides a collective long-term vision for the region's future addressing regional issues including transportation, land use and housing, land conservation and habitat restoration, public health, air quality, resiliency and security and the economy. It provides local agencies in the region with information to guide them in preparing local plans and addressing local issues of regional significance.

Metro's Equity Platform provides a framework for advancing equity that was approved by the Metro Board of Directors in March 2018. The core objective is to increase access to opportunities including housing, jobs, healthcare, education, and other key determinants of health and thriving communities. The Platform is explicit in its focus on the vast disparities that exist in access to opportunity and is intended to help identify and implement projects or programs that reduce and ultimately eliminate those disparities. It is driven by access needs, not geographic equality, though some disparities have a geographic element. The Platform has been incorporated into Metro's Vision 2028 Strategic Plan and must be a critical factor in decision making. In August 2020, Metro published an Equity and Race Program Update outlining the activities taken under the leadership of Metro's new Executive Officer and plans to continue implementing the Metro Equity Platform Framework.

3.17.3 Methodology

While SCAG does not have the ultimate ability to determine where growth will occur because it does not have land use authority, it does work with each of the local jurisdictions to develop a growth forecast and accompanying land use allocation that reflects each of their individual planning efforts and community priorities based on the general plans from each jurisdiction. The growth inducement analysis incorporates the findings from Section 3.10, Land Use and Planning, and Appendix K, and compares the job and population changes associated with the Project to the SCAG projections for growth.

Generally, growth inducement may occur if a project fosters economic or population growth or the construction of additional housing either directly or indirectly beyond planned growth. If the job and population change comparison identifies areas with a greater than expected magnitude of job and/or population growth, the growth inducement analysis evaluates whether the divergence is significant by assessing whether the location or magnitude of the growth would (1) result in additional housing beyond planned growth; (2) strain community and public service providers' ability to serve these locations; or (3) otherwise degrade the environment in some manner. This latter evaluation utilizes the data and findings developed as part of the Eastside Transit Corridor Phase 2 Community and Neighborhood Impacts Report Appendix (Appendix M), the Eastside Transit Corridor Phase 2 Transportation and Traffic Impacts Report (Appendix N), and demographic characteristics as the type of impact warrants. As a transit infrastructure project, the Project is not anticipated to directly foster growth since no housing would be constructed as part of the Project. The analysis focuses on whether the Project would be consistent with SCAG and jurisdictional forecasted growth by providing improved transit service and reliability through the region. As an illustrative example, even if a particular jurisdiction were to experience greater than expected growth, the impact would only be significant from a public services perspective if local schools, police, and fire stations did not have the capacity to absorb the growth.

3.17.4 Thresholds of Significance

Growth inducement is not an environmental impact directly but may reasonably be anticipated to lead to environmental impacts. These impacts are considered significant if they directly or indirectly lead to actions which do have unanticipated demand for housing, community and public services or additional infrastructure. Such demands can arise if the induced growth occurs in locations for which it has not been planned or is of a magnitude that exceeds planned capacities, or otherwise leads to a degradation of environmental quality such as increased noise or air quality.

In accordance with Section 15126.2(e) of the State CEQA Guidelines, a Build Alternative would have a significant impact related to growth inducement if it would:

Impact GRW-1: Foster economic or population growth or the construction of additional housing either directly or indirectly; encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively.

3.17.5 Existing Setting

The DSA is located within the much larger Los Angeles-Long Beach-Santa Ana Metropolitan Statistical Area (as defined by the United States Office of Management and Budget), which is referred to as the "Los Angeles metro area." The Project is in Los Angeles County within the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, and Whittier and unincorporated Los Angeles County communities of East Los Angeles and Whittier-Los Nietos.

One of the nation's largest and most diverse urban economies, the Los Angeles metro area serves as an international gateway for people and commerce from emerging regions all over the world. Los Angeles also has significant concentrations of creative industries and headquarters' operations. Given the region's favorable climate, significant infrastructure assets such as the marine ports and airports, and its role as a gateway between the United States and global regions with growth prospects, the Los Angeles metro area is expected to gradually merge with the San Diego region, evolving into one of the nation's "megaregions" over the next thirty to forty years. Historic and future growth patterns described below are focused on jurisdictions within the DSA as described in Section 2.1.

The full details and results of the background research, records search and survey are documented in Appendix R.

3.17.5.1 Historic Growth

3.17.5.1.1 Population and Households

Table 3.17-1 summarizes the population trends for the cities that comprise the DSA, Los Angeles County (entire region), and the entire SCAG region. The DSA of Alternative 1 also covers the jurisdictions affected by Alternative 2 and Alternative 3. The COVID-19 pandemic has had a significant effect on labor market metrics such as employment. Due to the occurrence of the COVID-19 pandemic in 2020, this analysis reports 2019 data as the most recent demographic representation of the DSA, for all metrics presented in this section.

Table 3.17-1. Historic Population Growth, 2010-2019

Area	2010	2019	2010-2019 Change	Annual Average Change (%)
City of Commerce	12,823	12,964	141	0.12%
City of Montebello	62,500	63,558	1,058	0.19%
City of Pico Rivera	62,942	63,623	681	0.12%
City of Santa Fe Springs	16,223	18,331	2,108	1.44%
City of Whittier	85,331	86,849	1,518	0.20%
Los Angeles County	9,818,605	10,163,139	344,534	0.39%
SCAG 6-County Area	18,195,200	18,966,261	771,061	0.47%

Source: California Department of Finance, E-4: Population Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Benchmark.

The population of the SCAG region was approximately 19.0 million in 2019, of which 10.2 million live in Los Angeles County. Since 2010, the population of the region experienced an average annual growth rate of 0.5 percent, while the county and most of the cities within the DSA had average annual growth rates of less than 0.5 percent. The largest population centers in the DSA are the cities of Montebello, Pico Rivera, and Whittier. Santa Fe Springs and Commerce are small communities where small population changes generate higher growth rates. The population of East Los Angeles and Los Nietos are not reported individually and are, therefore, encompassed in the data presented for all of Los Angeles County.

As **Table 3.17-2** illustrates, Los Angeles County has the largest gains in the number of households between 2010 and 2019 in the SCAG region. Of the cities within the DSA, the city of Santa Fe Springs, which is a relatively small community in terms of population, saw the highest household growth during this period.

Table 3.17-2. Historic Household Growth, 2010-2019

Area	2010	2019	2010-2019 Change	Annual Average Change (%)
City of Commerce	3,470	3,473	3	0.01%
City of Montebello	19,768	20,048	280	0.16%
City of Pico Rivera	17,109	17,121	12	0.01%
City of Santa Fe Springs	4,976	5,512	536	1.20%
City of Whittier	29,591	29,718	127	0.05%
Los Angeles County	3,443,087	3,568,900	125,813	0.41%
SCAG 6-County Area	6,327,311	6,592,458	265,147	0.47%

Source: California Department of Finance, E-5: Population and Housing Estimates for Cities, Counties, and the State, 2011-2021 with 2010 Census Benchmark.

In terms of average annual growth rates for the period, the highest household growth was observed for the SCAG region with approximately 0.5 percent, while the cities within the DSA generally had average annual growth rates well below 0.2 percent. The city of Santa Fe Springs which has a smaller number of households compared to other cities in the DSA experienced a net change of approximately 500 households between 2010 and 2019. In such cases, small changes in households can generate larger

growth rates. Overall, the household data indicates that the cities within the DSA are not high growth areas for the region as they generally are older, more established communities.

3.17.5.1.2 Employment

Table 3.17-3 summarizes the employment trends for the cities that comprise the DSA, Los Angeles County, and the entire SCAG region. As seen in the table, between 2010 and 2019 the SCAG region experienced a growth in employment of around 1.7, with Los Angeles County experiencing employment growth at 1.5 percent. Besides the cities of Commerce and Santa Fe Springs, other cities within the DSA experienced an average annual growth of around 1.3 percent. The cities of Commerce and Santa Fe Springs, each with employment totaling less than 10,000, experienced an average annual growth rate higher than 2.0 percent. Overall, the Southern California region is growing and attracting jobs, with the DSA experiencing moderate growth.

Table 3.17-3. Historic Employment Growth, 2010-2019

Area	2010	2019	2010-2019 Change	Annual Average Change 2010-2019 (%)
City of Commerce	4,700	5,600	900	2.13%
City of Montebello	25,100	27,500	2,400	1.06%
City of Pico Rivera	26,400	28,800	2,400	1.01%
City of Santa Fe Springs	6,300	8,300	2,000	3.53%
City of Whittier	37,900	41,800	3,900	1.14%
Los Angeles County	4,318,700	4,888,600	569,900	1.47%
SCAG 6-County Area	7,747,800	8,906,100	1,158,300	1.66%

Source: State of California Employment Development Department, Labor Market Info, Custom Data Tables, May 2021.

3.17.5.1.3 Unemployment

Table 3.17-4 illustrates that between 2015 and 2019, the unemployment rate decreased across all communities in the DSA. Due to the occurrence of the COVID-19 pandemic in 2020, the analysis reports 2019 data as the most recent representation of unemployment in the DSA. The 2019 unemployment rate ranges from a low of 2.7 percent in the city of Santa Fe Springs to a high of 5.0 percent in the cities of Montebello and Pico Rivera, with a county average of 4.6 percent and a SCAG region average of 4.3 percent. In the case of the city of Commerce, the rate must be tempered by knowledge of the city's small size. With a total population of approximately 13,000 (see **Table 3.17-6**) and understanding that the labor force is typically around half of the population (i.e., labor force excludes children, retirees, and people not seeking work), the high jobless rate applies to a small base. The 2019 national unemployment rate of 3.7 percent falls below most of the rates seen in the DSA.

Table 3.17-4. Historic Unemployment Rates, 2015-2019

City	Unemployment (%)				
	2015	2016	2017	2018	2019
City of Commerce	9.8	6.9	6.9	5.6	4.6
City of Montebello	5.7	5.7	5.2	5.0	5.0
City of Pico Rivera	6.2	5.9	5.2	5.2	5.0
City of Santa Fe Springs	8.0	2.9	3.1	2.8	2.7
City of Whittier	5.3	5.3	4.7	4.5	4.6
Los Angeles County	6.7	5.3	4.8	4.7	4.6
SCAG 6-County Area	6.4	5.4	4.8	4.4	4.3
US Total	5.3	4.9	4.4	3.9	3.7

Source: State of California Employment Development Department, Labor Market Info, May 2021; Bureau of Labor Statistics.

3.17.5.1.4 Land Use

Existing land use types within 0.25 miles of the proposed stations for the Build Alternatives are summarized below. Within the DSA, various land use types exist consisting of residential, commercial, industrial and public facilities. For additional information on land use see Section 3.10, Land Use and Planning, and Appendix K. All stations listed below in **Table 3.17-5** would be constructed under Alternative 1. Alternative 2 would include the Atlantic (Relocated/Reconfigured), Atlantic/Whittier, and Commerce/Citadel stations. Alternative 3 would include the Atlantic (Relocated/Reconfigured), Atlantic/Whittier, Commerce/Citadel, and Greenwood stations.

Table 3.17-5. Land Use Types Within 0.25 mile of Proposed Stations

Proposed Stations	Residential	Commercial	Industrial	Facilities
Atlantic (Relocated/Reconfigured)	43%	16%	N/A	10%
Whittier	63%	23%	N/A	5%
Commerce/Citadel	1%	21%	61%	7%
Greenwood	52%	8%	30%	5%
Rosemead	34%	40%	19%	N/A
Norwalk	67%	21%	N/A	11%
Lambert	23%	12%	28%	22%

3.17.5.1.5 Summary

As summarized above, within the DSA and within 0.25 miles of the proposed stations there are various land use types consisting of residential, commercial, industrial, and public facilities. The cities and communities within the DSA are established communities that generally have experienced relative stability, posting slight gains in terms of population, households, and employment over the last eight years. As shown in the population, households, and employment data, the growth in the cities in the DSA and Los Angeles County have generally been slower than that of the larger SCAG region. This slower growth indicates that portion of the SCAG region that is growing most rapidly lies outside of the DSA, and largely outside of Los Angeles County apart from the city of Los Angeles.

3.17.5.2 Future Growth

The projections of growth for the cities within the DSA, Los Angeles County, and the SCAG region are provided through 2045 based on the 2020 RTP/SCS Forecast. **Table 3.17-6** through **Table 3.17-8** summarize the population, household, and employment forecasts for the cities that comprise the DSA, Los Angeles County, and the entire SCAG region. According to the SCAG forecast, population and employment in the region is expected to reach approximately 22.5 million and 10.0 million, respectively, by 2045. This represents a 15.3 percent increase in population between 2020 and 2045 and a 15.6 percent increase in employment for the same period. Similarly, the household forecast for the SCAG region is expected to reach 7.6 million by 2045, a 20.5 percent increase from 2020.

Table 3.17-6. Population Growth, 2020-2045

Area	2020	2045	2020-2045 Change (%)
City of Commerce	13,200	13,800	4.5%
City of Montebello	64,400	67,800	5.4%
City of Pico Rivera	63,900	67,400	5.4%
City of Santa Fe Springs	18,400	20,600	12.3%
City of Whittier	89,700	98,900	10.2%
Los Angeles County	10,407,300	11,673,900	12.2%
SCAG 6-County Area	19,517,700	22,503,900	15.3%

Source: SCAG, 2020.

In general, the SCAG forecasts for Los Angeles County and the cities that comprise the DSA show a slower rate of growth in population, households, and employment between 2020 and 2045 than the larger SCAG region. Of the cities in the DSA, only the city of Santa Fe Springs is expected to experience total population growth in excess of 15 percent during the forecast period (16.4 percent). However, it must be noted that the city of Santa Fe Springs is a smaller community where small changes generate a larger growth rate. A similar trend is anticipated in terms of households. These forecasts of population and households indicate that the primary areas of growth for the SCAG region would be anticipated to be outside of the DSA.

Table 3.17-7. Household Growth, 2020-2045

Area	2020	2045	2020-2045 Change (%)
City of Commerce	3,400	3,700	6.9%
City of Montebello	19,400	21,100	8.5%
City of Pico Rivera	16,800	18,500	10.1%
City of Santa Fe Springs	5,500	6,500	16.5%
City of Whittier	30,500	33,500	9.9%
Los Angeles County	3,471,800	4,119,300	18.7%
SCAG 6-County Area	6,333,500	7,633,500	20.5%

Source: SCAG, 2020.

In terms of employment, the projected growth rates for the cities within the DSA generally are less than half the forecasted growth for the SCAG region between 2020 and 2045. During this period, none of the cities in the DSA are anticipated to experience employment growth in excess of 15 percent. As a result, the forecast indicates that the primary areas of employment growth in the SCAG region would continue to occur outside of the DSA.

Table 3.17-8. Employment Growth, 2020-2045

Area	2020	2045	2020-2045 Change (%)
City of Commerce	53,900	56,000	4.0%
City of Montebello	29,700	31,300	5.4%
City of Pico Rivera	25,300	27,200	7.3%
City of Santa Fe Springs	57,800	61,000	5.4%
City of Whittier	36,400	38,900	6.9%
Los Angeles County	4,838,500	5,382,200	11.2%
SCAG 6-County Area	8,695,400	10,048,800	15.6%

Source: SCAG, 2020.

3.17.6 Impact Evaluation

3.17.6.1 Impact GRW-1: Growth Inducement

Impact GRW-1: Would a Build Alternative foster economic or population growth or the construction of additional housing either directly or indirectly; encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively?

3.17.6.1.1 Alternative 1 Washington

Operational Impacts

As a transit infrastructure project, Alternative 1 is not anticipated to directly foster growth since no housing would be constructed as part of the Project. Alternative 1 is designed to improve transit service to help accommodate the forecasted growth in the region's population and workforce. As a result, there would be mobility and/or travel time savings associated with the Alternative 1; however, these benefits would not be great enough to induce development beyond levels that are already planned in the DSA, as explained below.

While housing development would not be directly induced by the Project, there would be opportunities where Alternative 1 could serve as a "catalyst" for economic revitalization and growth in areas where development has already occurred. Section 3.10, Land Use and Planning, and Appendix K identify opportunities within the DSA for joint development at station locations and other public/private transit-oriented development opportunities along the proposed alignment at properties proposed to be acquired for the Project. These are summarized briefly here by station and are presented in greater detail in Section 3.10, Land Use and Planning, and Appendix K.

- **Atlantic (Relocated/Reconfigured)**: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses, consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station site are commercial uses including restaurants, retail stores, auto services, and a gas station. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby.

- **Whittier**: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses, consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station are commercial uses including restaurants, retail stores, a gas station, and miscellaneous services. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. Therefore, there exists potential opportunities for joint-use development in the commercial parcels around the station. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby.

- **Commerce/Citadel**: Opportunity to support higher density commercial and transit-oriented uses, given the proximity to the Citadel Outlets, consistent with the *Commerce 2020 General Plan* development goals. Properties anticipated to be acquired around the proposed station are industrial uses, including distribution and manufacturing. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. It is unlikely that development opportunities in this area would be residential due the industrial nature of the adjacent areas.

- **Greenwood**: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses to meet the needs of residents, consistent with the *Montebello 1973 General Plan*[1] goals and policies. Properties anticipated to be acquired around the proposed Greenwood station are industrial and commercial uses, including auto services and restaurants. Any anticipated development opportunities in this area would be consistent with existing land use characteristics, plans, policies, and regulations, with a potential for joint-use development.

- **Rosemead**: Much redevelopment has already occurred; as a result, limited opportunities remain. Properties anticipated to be acquired around the proposed Rosemead station are commercial uses, including restaurants and miscellaneous services. Any potential opportunity for development in this area would be consistent with the *Pico Rivera General Plan* and *Rancho de Bartolo Specific Plan Amendment* development goals and policies, as well as existing land use characteristics, plans, policies, and regulations.

- **Norwalk**: Potential opportunities for development would be limited to existing commercial and vacant parcels. Los Angeles County's and the city of Santa Fe Springs' existing land use controls associated with land use and zoning designations would limit the intensity of redevelopment. Properties anticipated to be acquired around the proposed Norwalk station are commercial uses. Any opportunities for development in this area would be consistent with the *Los Angeles County General Plan* and *Santa Fe Spring 2040 General Plan* development goals, as well as existing land use characteristics, plans, policies, and regulations.

- **Lambert**: Potential development would be limited to development of existing commercial and vacant parcels. The city of Whittier's land use controls associated with land use and zoning designations would limit the intensity of redevelopment. Properties anticipated to be acquired around the proposed Lambert station are commercial uses. Any opportunities for development in this area would be consistent with existing land use characteristics, plans, policies and regulations, including the *2021-2040 Envision Whittier General Plan*. With approximately 20 percent of the neighborhood surrounding the proposed station being currently residential, there is opportunity for joint-use development.

Any planned densification of land uses around station areas is considered in the forecasted SCAG demographic data. Given that the Project is anticipated in the local communities planning documents, transit-oriented development would not generate new unplanned growth, but instead would redistribute forecasted growth of a jurisdiction.

Growth associated with these development opportunities would be consistent with current development and land use plans. As determined in Section 3.10, Land Use and Planning, and Appendix K, development of Alternative 1 would be consistent with applicable land use plans, policies, and regulations of agencies with jurisdiction over the DSA and would not result in any adverse land use impacts. Potential indirect effects related to Alternative 1 would include the future planning and development of TODs surrounding the proposed station areas. As set forth in PM GRW-1 (**Section 3.17.7.1**), Metro would coordinate with local jurisdictions to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable and safe areas for development in the Project corridor. In addition, several jurisdictions in the corridor have completed or are in the process of developing their own

[1] The *Montebello General Plan* was adopted in 1973 and was intended to guide development for 20 years (City of Montebello 1973). As the city is built beyond the life of the current general plan, the city of Montebello is currently in the process of updating this document.

individual station area plans. Such future planned densification of land uses is also incorporated into the forecasted SCAG growth data and is not considered unplanned growth. TOD planning would not generate new unplanned growth, but instead would redistribute forecasted growth of a jurisdiction. TOD planning can also be supported by Metro's Equity Platform by enhancing areas surrounding the proposed stations to accommodate all levels of access and income.

Section 3.10, Land Use and Planning, and Appendix K also indicate that Alternative 1 would not result in a significant land use impact. While this alternative would not create any new land uses, cities may convert some land uses or create transit-oriented development districts, which would be consistent with current land use plans and compatible with the surrounding areas.

Overall, operation of Alternative 1 would have long-term benefits for the communities it traverses, furthering goals and policies for community investment within the DSA. In addition, Metro's Equity Platform can support TOD plans to better accommodate this community investment. Operation of the Project would have long-term mobility benefits for the communities in terms of travel time savings; however, these benefits are not great enough to induce development beyond the development opportunities associated with the land use plans, policies, and regulations of agencies with jurisdiction over the DSA. As a result, operation of Alternative 1 would not induce development beyond the development opportunities associated with the land use plans, policies, and regulations of agencies with jurisdiction over the DSA. Alternative 1 is not anticipated to foster unplanned growth either directly or indirectly, and less than significant growth-inducing impacts would occur.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, operation of Alternative 1 with the Atlantic/Pomona Station Option would not induce development beyond the development opportunities associated with the land use plans, policies, and regulations of agencies with jurisdiction over the DSA. The proposed Atlantic/Pomona Station Option would have additional property displacement relative to the baseline option. This displacement would occur in the triangle parcel bounded by Beverly Boulevard to the south, Atlantic Boulevard to the east and Pomona Street to the north, and would not be reverted back to its existing land use. Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses is consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station site are commercial uses including restaurants, retail stores, auto services, and a gas station. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby. Similar to Alternative 1, potential indirect effects related to the Atlantic/Pomona Station Option would include the future planning and development of TODs surrounding the proposed station areas. As set forth in PM GRW-1 (**Section 3.17.7.1**), Metro would coordinate with local jurisdictions and Los Angeles County to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable and safe areas for development in the Project corridor. As a result, operation of Alternative 1 with the Atlantic/Pomona Station Option would have less than significant growth-inducing impacts.

Montebello At-Grade Option

As with the base Alternative 1, operation of Alternative 1 with the Montebello At-Grade Option would not induce development beyond the development opportunities associated with the land use plans, policies, and regulations of agencies with jurisdiction over the DSA. Similar to Alternative 1, potential indirect effects related to the Montebello At-Grade Option would include the future planning and development of TODs surrounding the proposed station areas. As set forth in PM GRW-1 (**Section 3.17.7.1**), Metro would coordinate with local jurisdictions to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable and safe areas for development in the Project corridor. As a result, operation of Alternative 1 with the Montebello At-Grade Option would have less than significant growth-inducing impacts.

Construction Impacts

Construction of Alternative 1 would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. Therefore, construction of Alternative 1 would have no direct or indirect growth-inducing impacts.

Design Options

Atlantic/Pomona Station Option

As with the base Alternative 1, construction of Alternative 1 with the Atlantic/Pomona Station Option would not induce or result in substantial population growth, either directly or indirectly. As a result, construction of Alternative 1 with the Atlantic/Pomona Station Option would no direct or indirect growth-inducing impacts.

Montebello At-Grade Option

As with the base Alternative 1, construction of Alternative 1 with the Montebello At-Grade Option would not induce or result in substantial population growth, either directly or indirectly. As a result, construction of Alternative 1 with the Montebello At-Grade Option would have no direct or indirect growth-inducing impacts.

3.17.6.1.2 Alternative 2 Atlantic to Commerce/Citadel IOS

Operational Impacts

Base Alternative and Design Option

Operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not result in substantial changes to the existing population in the GSA or DSA. The Project would not include development of new housing or businesses that would directly induce population growth. The base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option are not designed to induce growth; rather, the intent is for the alternative to improve transit service to help accommodate the forecasted growth in the region's population and workforce. As a result, there would be mobility and/or travel time savings associated with the base Alternative 2 or Alternative 2 with the

Atlantic/Pomona Station Option relative to the No Project Alternative; however, these benefits would not be great enough to induce development beyond levels that are already planned in the GSA or DSA.

While housing development would not be directly induced by the project, there would be opportunities where the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option could serve as a "catalyst" for economic revitalization and growth in areas where development has already occurred. Section 3.10, Land Use and Planning, and Appendix K identify opportunities within the DSA for joint development at station locations and other public/private transit-oriented development opportunities along the proposed alignment. These are summarized briefly here by station and are presented in greater detail in Section 3.10, Land Use and Planning, and Appendix K.

- **Atlantic (Relocated/Reconfigured) -** applies to the base Alternative 2: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses, consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station site are commercial uses including restaurants, retail stores, auto services, and a gas station. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby.

- **Atlantic/Pomona Station Option** – applies to Alternative 2 with the Atlantic/Pomona Station Option: Alternative 2 with the Atlantic/Pomona Station Option would have additional property displacement relative to the base Alternative 2. This displacement would occur in the triangle parcel bounded by Beverly Boulevard to the south, Atlantic Boulevard to the east and Pomona Street to the north. However, opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses is consistent with the East Los Angeles County Community Plan land use goals. Growth associated with these development opportunities would be consistent with current development and land use plans.

- **Whittier** – applies to the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses, consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station are commercial uses including restaurants, retail stores, a gas station, and miscellaneous services. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. Therefore, there exists potential opportunities for joint-use development in the commercial parcels around the station. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby.

- **Commerce/Citadel** – applies to the base Alternative 2 and Alternative 2 with the Atlantic/Pomona Station Option: Opportunity to support higher density commercial and transit-oriented uses, given the proximity to the Citadel Outlets, consistent with the *Commerce 2020 General Plan* development goals. Properties anticipated to be acquired around the proposed station are industrial uses, including distribution and manufacturing. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. It is unlikely that development opportunities in this area would be residential due the industrial nature of the adjacent areas.

Any planned densification of land uses around station areas is considered in the forecasted SCAG demographic data. Given that the Project is anticipated in the local communities planning documents, transit-oriented development would not generate new unplanned growth, but instead would redistribute forecasted growth of a jurisdiction.

As stated in Section 3.10, Land Use and Planning, and Appendix K, development of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would be consistent with applicable land use plans, policies, and regulations of agencies with jurisdiction over the DSA and would not result in any adverse land use impacts. While these alternatives would not create any new land uses, cities may convert some land uses or create transit-oriented development districts, which would be consistent with current land use plans and compatible with the surrounding areas.

As set forth in PM GR-1 (**Section 3.17.7.1**), Metro would coordinate with local jurisdictions to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable and safe areas for development in the Project corridor. Such future planned densification of land uses is also incorporated into the forecasted SCAG growth data and is not considered unplanned growth. TOD planning would not generate new unplanned growth, but instead would redistribute forecasted growth of a jurisdiction. This would also support Metro's Equity Platform by enhancing areas surrounding the proposed stations to accommodate all levels of access and income. As a result, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not induce development beyond the development opportunities associated with the land use plans, policies, and regulations of agencies with jurisdiction over the DSA. Thus, operation of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option is not anticipated to foster unplanned growth either directly or indirectly, and growth-inducing impacts would be less than significant.

Construction Impacts

Base Alternative and Design Option

Construction activities under the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. Therefore, construction of the base Alternative 2 or Alternative 2 with the Atlantic/Pomona Station Option would have no direct or indirect growth-inducing impacts.

3.17.6.1.3 Alternative 3 Atlantic to Greenwood IOS

Operational Impacts

Base Alternative and Design Options

Operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not result in substantial changes to the existing population in the GSA or DSA. The Project would not include development of new housing or businesses that would directly induce population growth. The base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option are not designed to induce growth; rather, the intent is for the alternative to improve transit service to help accommodate the forecasted growth in the region's population and workforce. As a result, there would be mobility and/or travel time savings

associated with the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option relative to the No Project Alternative; however, these benefits would not be great enough to induce development beyond levels that are already planned in the GSA or DSA.

While development would not be induced, there are opportunities where the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option could serve as a "catalyst" for economic revitalization and growth in areas where development has already occurred. Section 3.10, Land Use and Planning, and Appendix K identify many opportunities within the DSA for joint development at station locations and other public/private transit-oriented development opportunities along the proposed alignment. These are summarized briefly here by station and are presented in greater detail in Section 3.10, Land Use and Planning, and Appendix K.

- **Atlantic (Relocated/Reconfigured)** – applies to the base Alternative 3: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses, consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station site are commercial uses including restaurants, retail stores, auto services, and a gas station. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby.

- **Atlantic/Pomona Station Option** – applies to Alternative 3 with the Atlantic/Pomona Station Option: Alternative 3 with the Atlantic/Pomona Station Option would have additional property displacement relative to the base Alternative 3. This displacement would occur in the triangle parcel bounded by Beverly Boulevard to the south, Atlantic Boulevard to the east and Pomona Street to the north. However, opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses is consistent with the East Los Angeles County Community Plan land use goals. Growth associated with these development opportunities would be consistent with current development and land use plans.

- **Whittier** – applies to the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses, consistent with the *East Los Angeles County Community Plan* land use goals. Properties anticipated to be acquired around the proposed station are commercial uses including restaurants, retail stores, a gas station, and miscellaneous services. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. Therefore, there exists potential opportunities for joint-use development in the commercial parcels around the station. There also exist potential opportunities for joint-use development (commercial/residential) in the commercial parcels around the station, as there are existing residential uses nearby.

- **Commerce/Citadel** – applies to the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option: Opportunity to support higher density commercial and transit-oriented uses, given the proximity to the Citadel Outlets, consistent with the *Commerce 2020 General Plan* development goals. Properties anticipated to be acquired around the proposed station are industrial uses, including distribution and manufacturing. Any anticipated re-development in this area would be consistent with existing land use characteristics, plans, policies, and regulations. It is unlikely that development opportunities in this area would be residential due the industrial nature of the adjacent areas.

- **Greenwood** – applies to the base Alternative 3 and Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option: Opportunity to redevelop lower density commercial uses to higher density commercial and transit-oriented uses to meet the needs of residents, consistent with the *Montebello 1973 General Plan*[2] goals and policies. Properties anticipated to be acquired around the proposed Greenwood station are industrial and commercial uses, including auto services and restaurants. Any anticipated development opportunities in this area would be consistent with existing land use characteristics, plans, policies, and regulations, with a potential for joint-use development.

Any planned densification of land uses around station areas is considered in the forecasted SCAG demographic data. Given that the Project is anticipated in the local communities planning documents, transit-oriented development would not generate new unplanned growth, but instead would redistribute forecasted growth of a jurisdiction.

Growth associated with these development opportunities would be consistent with current development and land use plans. As stated in Section 3.10, Land Use and Planning, and Appendix K, development of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would be consistent with applicable land use plans, policies, and regulations of agencies with jurisdiction over the DSA and would not result in any adverse land use impacts. While these alternatives would not create any new land uses, cities may convert some land uses or create transit-oriented development districts, which would be consistent with current land use plans and compatible with the surrounding areas.

As set forth in PM GR-1 (**Section 3.17.7.1**), Metro would coordinate with local jurisdictions to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable and safe areas for development in the Project corridor. Such future planned densification of land uses is also incorporated into the forecasted SCAG growth data and is not considered unplanned growth. TOD planning would not generate new unplanned growth, but instead would redistribute forecasted growth of a jurisdiction. This would also support Metro's Equity Platform by enhancing areas surrounding the proposed stations to accommodate all levels of access and income. As a result, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would not induce development beyond the development opportunities associated with the land use plans, policies, and regulations of agencies with jurisdiction over the DSA. Thus, operation of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade

[2] The *Montebello General Plan* was adopted in 1973 and was intended to guide development for 20 years (City of Montebello 1973). As the city is built beyond the life of the current general plan, the city of Montebello is currently in the process of updating this document.

Option are not anticipated to foster unplanned growth either directly or indirectly, and growth-inducing impacts would be less than significant.

Construction Impacts

Base Alternative and Design Options

Construction activities would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. Therefore, construction of the base Alternative 3 or Alternative 3 with the Atlantic/Pomona Station Option and/or the Montebello At-Grade Option would have no direct or indirect growth-inducing impacts.

3.17.6.1.4 Maintenance and Storage Facilities

Operational Impacts

MSF Site Options and Design Option

Operation of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would not result in any substantial changes to the existing population in the GSA or DSA. Properties anticipated to be acquired around the Commerce MSF site option are mostly industrial uses including furniture manufacturing, vehicle parts stores, and food suppliers. Properties anticipated to be acquired around the Montebello MSF are commercial and industrial uses including retailers and clothing and packaging businesses. Operation of the Commerce MSF site option, the Montebello MSF site option, or Montebello MSF At-Grade Option would be compatible with the surrounding industrial and commercial uses and would not induce development beyond levels that are already planned in the GSA or DSA. Given the large size of current workforce in the Los Angeles region as a whole, permanent employment opportunities associated with operations of the MSF facilities is not expected to cause population relocation. Therefore, operation of the Commerce MSF site option, the Montebello MSF site option, or Montebello MSF At-Grade Option would have less than significant direct or indirect growth-inducing impacts.

Construction Impacts

MSF Site Options and Design Option

Construction of the Commerce MSF site option, the Montebello MSF site option, or Montebello MSF At-Grade Option would not include the development of temporary or permanent housing or other infrastructure that could result in unplanned population growth. Therefore, construction of the Commerce MSF site option, the Montebello MSF site option, or the Montebello MSF At-Grade Option would have no direct or indirect growth-inducing impacts.

3.17.7 Project Measures and Mitigation Measures

3.17.7.1 Project Measures

The following project measures are design features, best management practices, or other measures required by law and/or permit approvals. These measures are components of the Project and are applicable to all Build Alternatives and design options. No project measures are required for the MSF site options.

PM GRW-1: Metro shall coordinate with local jurisdictions to develop new corridor-wide governance strategies and implement plans, policies, and economic development strategies to transform station areas into equitable, sustainable and safe areas for development in the Project corridor.

3.17.7.2 Mitigation Measures

As identified in **Section 3.17.6**, the Build Alternatives and Build Alternatives with the design option(s), and the MSF site options would not have significant growth-inducing impacts under Impact GRW-1 (Growth-Inducing). As identified in **Table 3.17-9**, impacts would be less than significant and no additional mitigation measures are required for all Build Alternatives, the Build Alternatives with the design option(s), and the MSF site options.

3.17.8 Significance After Mitigation

As identified in **Table 3.17-9**, no impacts related to growth-inducement (Impact GRW-1) would occur, thus, impacts would be less than significant for all Build Alternatives, the Build Alternatives with the design option(s), and the MSF site options.

Table 3.17-9. Summary of Mitigation Measures and Impacts After Mitigation

CEQA Impact Topic		Alternative 1: Washington Boulevard								Alternative 2: Commerce/Citadel IOS		Alternative 3: Washington/Greenwood IOS							
		Base Alternative 1[1]		Alternative 1 + Atlantic/Pomona Station Option		Alternative 1 + Montebello At-Grade Option		Alternative 1 + Atlantic/Pomona Station Option + Montebello At-Grade Option		Base Alternative 2[2]	Alternative 2 + Atlantic/ Pomona Station Option	Base Alternative 3[3]		Alternative 3 + Atlantic/Pomona Station Option		Alternative 3 + Montebello At-Grade Option		Alternative 3 + Atlantic/Pomona Station Option + Montebello At-Grade Option	
		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF		Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF	Commerce MSF	Montebello MSF At-Grade Option	Commerce MSF	Montebello MSF At-Grade Option
Impact GRW-1: Growth-Inducing	Applicable Mitigation	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None	None
	Impacts After Mitigation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Source: CDM Smith/AECOM JV, 2022.
Notes:
The Base Alternatives are shaded in light yellow. Design options are not shaded.
1 The Base Alternative 1 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
2 The Base Alternative 2 includes the Atlantic station (reconfigured/relocated).
3 The Base Alternative 3 includes the Atlantic station (reconfigured/relocated) and aerial Greenwood station.
Key:
NI = No Impact LTS = Less Than Significant SU = Significant and Unavoidable

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3.18 Cumulative Impacts

3.18.1 Introduction

This section analyzes the Project's cumulative impacts. It describes existing conditions, current regulatory setting, and evaluates potential cumulative impacts from construction and operation of the Project in connection with the effects of past, present, and probable future projects. Information in this section is based on the Eastside Transit Corridor Cumulative Impacts Report (Appendix Q).

3.18.2 Regulatory Framework

3.18.2.1 Federal

There are no federal regulations, guidelines, etc., that apply to assessment of cumulative impacts under CEQA.

3.18.2.2 State

State CEQA Guidelines mandate that an EIR discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable (Section 15130). "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects (Section 15064(h)(1)). In essence, the lead agency must consider whether a cumulative impact is significant and, if so, whether the project's incremental contribution to that impact is cumulatively considerable. When the project's incremental effect is not cumulatively considerable, the effect need not be considered significant, however the basis for concluding that the incremental effects is not cumulatively considerable must be briefly described.

CEQA Guidelines Sections 15130(b)(1)(A) and (B) identify the following two methodologies for assessing cumulative impacts: (1) a list of past, present, and probable future projects producing related or cumulative impacts; or (2) a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for reducing greenhouse gas emissions.

3.18.2.3 Local

There are no local regulations or guidelines that apply to assessment of cumulative impacts under CEQA.

3.18.3 Methodology

Cumulative impacts refer to two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. As previously discussed, the cumulative impact of a project is the change in the environment that results from the incremental impact of the project when added to other, closely related past, present, or reasonably foreseeable probable future projects.

The tentative year of opening for the Project is 2035. Due to the long-term nature of Project implementation, the list of projects analyzed in assessing cumulative impacts is speculative. For the purposes of this analysis, a good faith attempt has been made to identify relevant probable public works and private projects. However, it was necessary to rely considerably on long-term plans and to make some assumptions about future development.

The existing conditions baseline year of 2019 generally constitutes the physical conditions by which potential cumulative impacts are evaluated. However, for several resource areas, a "projected future conditions baseline" is considered. In the 2013 *Neighbors for Smart Rail v. Exposition Metro Line Construction Authority* case (57 Cal.4th 439), the California Supreme Court upheld that a lead agency has the discretion to exclusively use a future conditions baseline for the purposes of determination of significance under CEQA in instances where showing an existing conditions analysis would be misleading or without informational value. Further, Section 15125(a)(1)(2) of the State CEQA Guidelines provides for the use of a projected future conditions (beyond the date of project operations) baseline. For the Project, this "projected future conditions baseline" is the 2042 without Project conditions. The horizon year (2042) of the regional travel demand Corridor Based Model 2018 (CMB18), which incorporates Metro Measure M projects identified in the Measure M Expenditure Plan, roadway improvements, and other transit improvements anticipated to occur throughout the transit corridor, was selected as the Project design year. Use of this 2042 design year represents a characterization of the holistic, long-term benefits of the Project as transit-oriented development expands within the GSA and throughout the region.

Specifically relative to air quality, greenhouse gas (GHG) emissions, and transportation and traffic impacts, use of an existing conditions baseline would not be appropriate for the Project because it would ignore the regional background growth in population, traffic, and transportation infrastructure that would occur between the existing conditions baseline year of 2019 and the future conditions (i.e., the 2019 existing conditions will be substantially altered by regional growth that will occur independent of the Project, which, in turn, would mask the impacts that are attributable to the Project and would not provide the reader with an accurate and meaningful delineation of Project-related impacts). Considering such growth is critical when determining future mitigation for transit projects designed to reduce traffic congestion and associated air quality and GHG impacts.

The approach to the cumulative impacts analysis varies by discipline. Subjects for which cumulative impacts would accrue on a regional basis, such as regional traffic and air quality, are based on applicable planning documents designed to evaluate regional and area-wide conditions and rely on regional projections prepared and adopted by Southern California Association of Governments (SCAG). For those disciplines where cumulative impacts are more localized (e.g., visual and aesthetic impacts), the analysis also considers specific development projects, which may also have localized impacts, at or adjacent to the Build Alternatives that may contribute to cumulative impacts either during construction or operations.

A cumulative impact assessment has been conducted for each environmental topic evaluated in the EIR. This section summarizes the cumulative impact assessment conducted for those topics. Refer to the separate EIR environmental sections (Section 3.1 through Section 3.17) and impacts reports (Appendix B through Appendix R) for additional Project information specific to a particular topic.

To accomplish the evaluation, a list of probable future projects with the potential to produce related or cumulative impacts has been identified and is presented in **Section 3.18.5** of this section to supplement the information already available regarding past and present projects. Future projects were identified through a review of existing plans including municipal (within the area of potential impact) and regional long-term plans for economic/land use and transportation development, the region's and the California Department of Transportation (Caltrans) Transportation Improvement Program (TIP), and specific development proposals along or near the alignment. This list is subject to the limitations described above due to the long-term build out of the proposed Build Alternatives.

This evaluation summarizes expected cumulative impacts produced by these projects and references any additional information that may be used to help determine the impacts. The methodology used for this analysis follows State CEQA Guidelines (Section 15130), which state that the cumulative impacts can be based on a "summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describes or evaluates conditions contributing to the cumulative effect."

If the Project's incremental contribution to a significant adverse cumulative impact is cumulatively considerable, then feasible options for mitigating or avoiding the Project's contribution are identified. In some cases, it may be determined that there would be a significant cumulative impact, but the Project's contribution is less than cumulatively considerable because the Project is required to implement or fund its fair share of a mitigation measure(s) that would alleviate the cumulative impact. In other cases, the only feasible mitigation may involve adoption of ordinances or regulations that are outside the jurisdiction of Metro. In cases where the Project will comply with the requirements in a previously approved plan, regulation, or mitigation program that apply within the Project's geographic area but are under another agency's jurisdiction, the impact discussion explains how implementing those particular requirements ensure that the project's incremental contribution to the cumulative impact would not be cumulatively considerable. Note that the State CEQA Guidelines indicate that the mere existence of significant cumulative impacts caused by other projects alone does not constitute substantial evidence that the Project's incremental effects are cumulatively considerable.

A lead agency may also determine that a project's incremental contribution to a cumulative impact is not cumulatively considerable if the project complies with requirements in a previously approved plan or mitigation program (including, but not limited to, water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plan, plans or regulations for the reduction of GHG emissions that provides specific requirements that would avoid or substantially lessen the cumulative problem. For these cases, the lead agency should explain how implementing the particular requirements in the plan, regulation, or program ensure that the project's incremental contribution to the cumulative impact is not cumulatively considerable.

For those environmental topics where the combined cumulative impact associated with the Build Alternatives and the other listed projects is not significant, the impact discussion briefly indicates why the cumulative impact is not significant and is not discussed in further detail.

3.18.4 Thresholds of Significance

As prescribed in the CEQA Guidelines, a cumulative impact may be considered significant if the project's incremental effect is cumulatively considerable as previously defined in **Section 3.18.2.2**. When considering whether the project's incremental impact is cumulatively considerable, mitigation measures that would be implemented by the project sponsor may be considered. If the mitigation measures alleviate the project's incremental contribution to the cumulatively significant impact, then the project does not result in a significant impact that is cumulatively considerable.

It should be noted that the limited details available about other projects may also limit the extent of the evaluation possible for some cumulative impacts/effects as compared to that for the evaluation of direct and indirect impacts/effects.

3.18.5 Plans and Projects

This section identifies transportation, land use, and land development plans within the general study area (GSA) and transportation, land use, and land development projects within the detailed study area (DSA). These plans and projects are used as the basis for the cumulative analysis. Literature reviews and website searches were conducted to identify the list of related plans and projects; sources include county and city noticing and planning websites and CEQA net. In addition, Metro obtained information directly from the local jurisdictions within the DSA.

3.18.5.1 Transportation Plans

3.18.5.1.1 Southern California Associations of Governments Regional Transportation Plan

In September 2020, SCAG adopted the *Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy* (2020 RTP/SCS). The plan is an update to the previous 2016 RTP/SCS plan and outlines more than $638 billion in transportation system investments through 2045. SCAG's vision for 2045 encompasses compact and connected communities located near public transit to encourage people to live closer to work, school, shopping and other destinations. The 2020 RTP/SCS plan supports implementing and expanding transit signal priority, regional and inter-county fare agreements and media, increased bicycle carrying capacity on transit and rail vehicles, real-time passenger information systems, and implementing first/last mile amenities within a half-mile of existing and future LRT stations.

3.18.5.1.2 Metro's Long-Range Transportation Plan

Metro's most recent update to its Long Range Transportation Plan (LRTP) was adopted in September 2020. The plan consists of over $400 billion in planned transportation improvements through 2050 and serves as a blueprint for transportation infrastructure and planning throughout the metropolitan region. The plan is funded by voter-approved sales tax measures including the most recent Measure M. Within the 40-year planning period of the LRTP, new technological innovations are expected to transform transportation in Los Angeles. The LRTP plan is a blueprint for how Metro will spend anticipated revenues in the coming decades, including operating and maintaining the current and

planned system, continuing to deliver on commitments outlined in the 2009 LRTP, and identifying new projects, programs, or initiatives.

3.18.5.1.3 Metro Vision 2028 Strategic Plan

The Metro Vision Strategic Plan is a 10-year plan to transform mobility throughout Los Angeles County. Metro has adopted performance outcomes and goals to deliver a mobility system that enables people to travel swiftly and easily throughout Los Angeles County. Metro's vision is operations-based and includes quantifiable metrics. Mobility standards aim to ensure that all Los Angeles County residents will have a 10-minute access shed to a high-quality transit stop, headways will be reduced to 15-minutes during any time of the day, and travel speeds will increase by 30 percent, and reliable options will be available to bypass congestion. Goals focus on the user experience and community building, including but not limited to enhancing communities and lives through mobility and access to opportunity, delivering outstanding trip experience for all users of the transportation system, and transforming Los Angeles County through regional collaboration and national leadership.

3.18.5.1.4 NextGen Bus Plan

In October 2020, the Metro Board approved and adopted the NextGen Bus Plan, an effort to identify and address the needs of current and future riders throughout the region. The study elicited feedback from over 20,000 residents of Los Angeles County as well as local governments and stakeholder groups. The plan would update the aging bus system to a competitive world-class bus system that meets the needs of Los Angeles County residents. The primary focus of the NextGen Bus Plan improvements will be to create a system that is fast, frequent, reliable and accessible. According to Metro's 2020 LRTP, over the next decade, Metro will continue to work to implement the recommendations in the NextGen Bus Plan.

3.18.5.1.5 Bus Rapid Transit Vision and Principles Study

In October 2018, the Metro Board approved initiation of the Bus Rapid Transit (BRT) Vision and Principles Study as a part of the Twenty-Eight by 2028 Plan. In November 2020, the Metro visioning BRT report summarized the study findings, which evaluated potential BRT corridors that would serve Los Angeles County. All 34 corridors initially evaluated in Metro's 2013 BRT and Street Design Improvement Study and 39 additional corridors identified through a Technical Advisory Committee consisting of Metro staff, local governments, and municipal transit operators were evaluated to determine the corridors with optimal characteristics for BRT integration. Three corridors from the 2013 study, which are currently in the planning implementation stages of BRT, were not studied in further depth. Five candidate corridors were identified as top candidates eligible for Measure M Countywide BRT program funds. An additional 30 high-performing corridors were identified to develop a "core" network of BRT, to which expansion would continue after investment in the top five corridors has completed. A further countrywide network was developed from those 30 core corridors in development of a long-term Strategic BRT network vision.

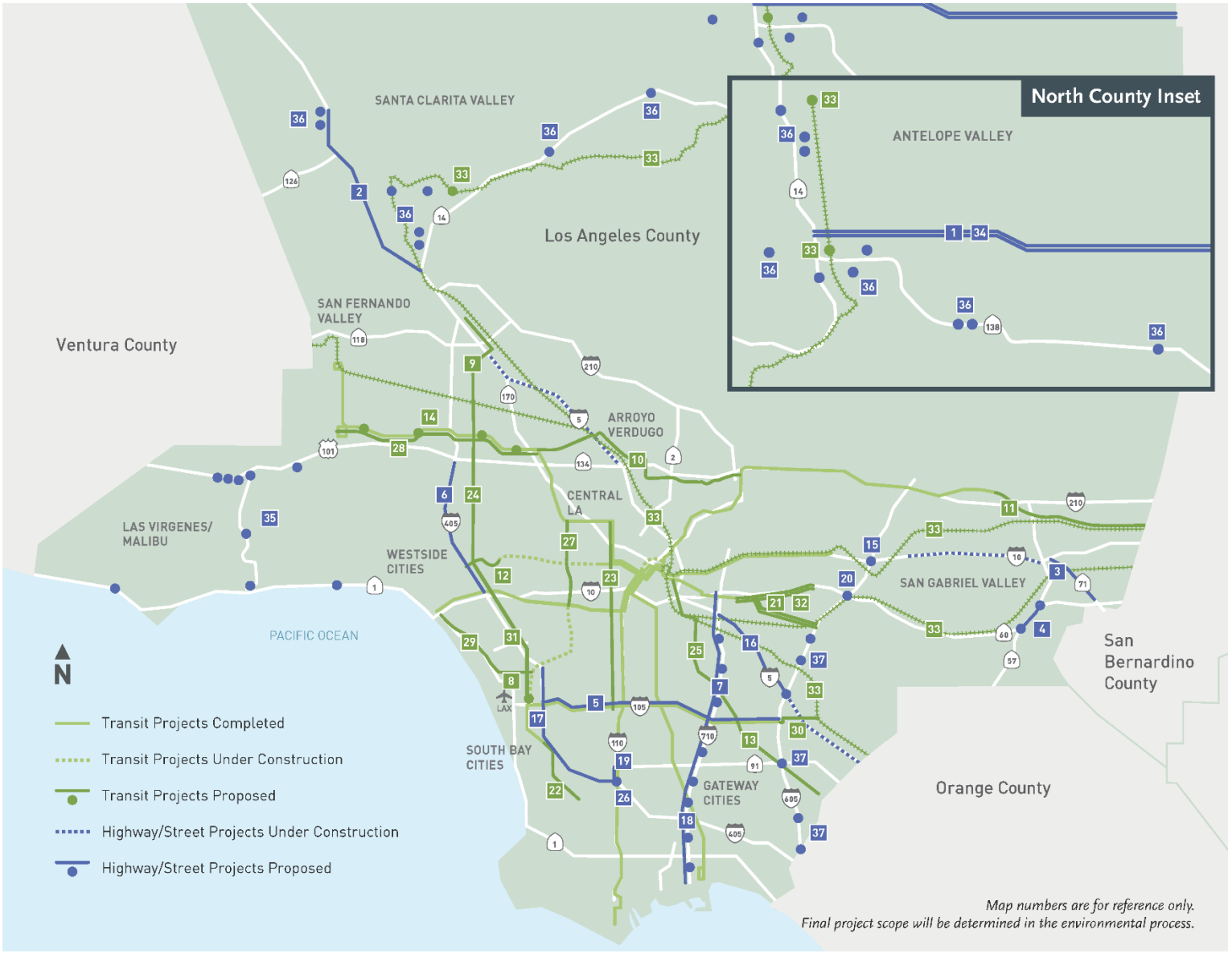
3.18.5.1.6 First/Last Mile Planning

A Metro Board motion filed on May 18, 2016, calls for all future transit projects to include first/last mile (FLM) components that improve access, safety, and user experience in the areas surrounding stations extending the reach of transit and increasing ridership in the long term. Prior to the Metro Board motion, Metro prepared a First/Last Mile Strategic Plan and Planning Guidelines in March 2014. In 2021, Metro updated the First/Last Mile Guidelines to facilitate further integration of FLM planning into future project delivery. The First/Last Mile Guidelines are used to provide local jurisdictions planning guidelines that outline specific infrastructure improvement strategies that are designed to facilitate easy, safe, and efficient access to the Metro transit network and to ensure comprehensive integration of FLM improvements into future capital projects.

3.18.5.2 Transportation Projects

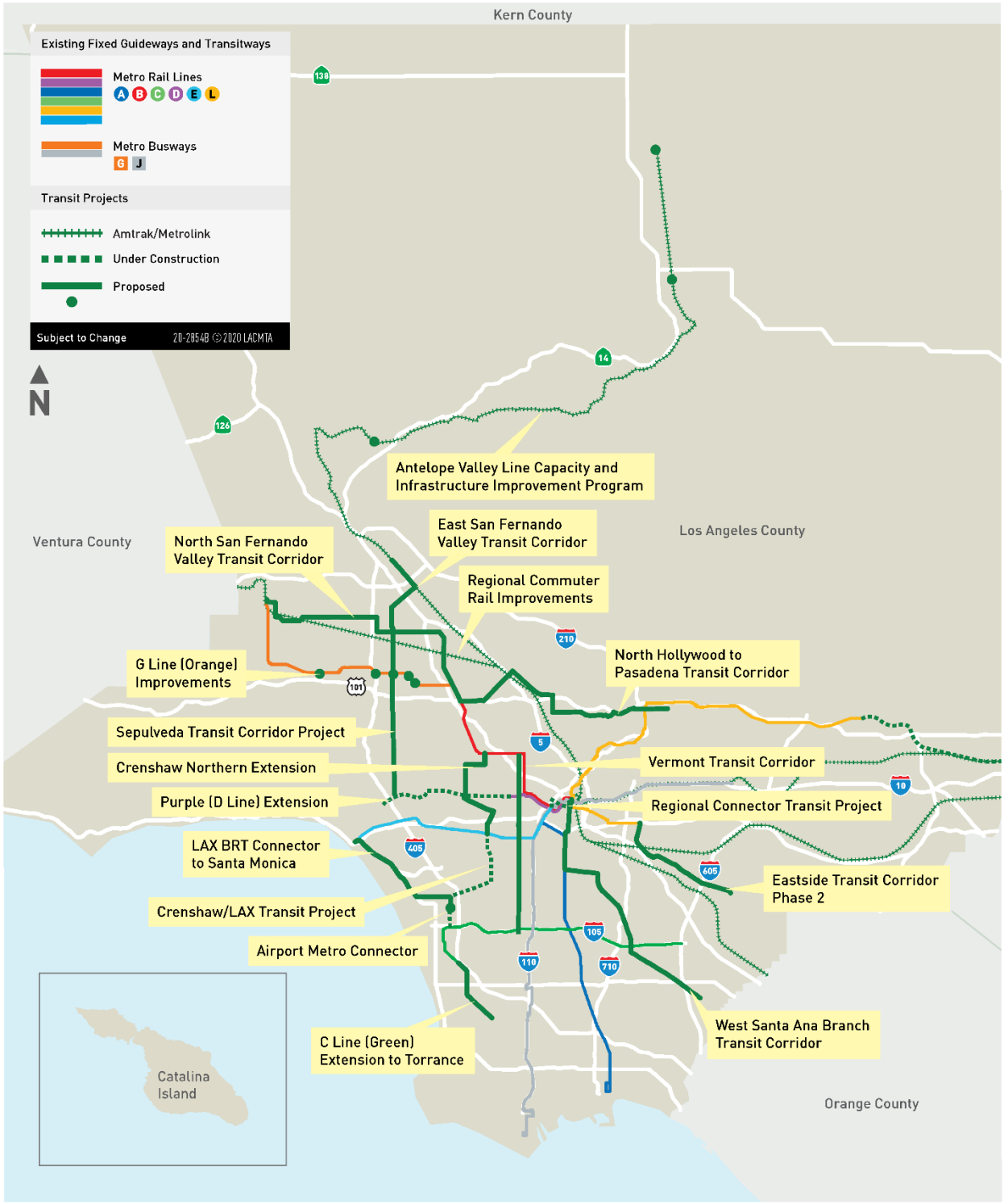
3.18.5.2.1 Measure M Expenditure Plan

In November 2016, Los Angeles County voters approved a sales tax measure, Measure M, which is expected to bring up to $120 Billion (2015) for use in transportation infrastructure capital, operations, and maintenance over a 40-year time frame. The Measure M Expenditure Plan includes delivering approximately 40 major infrastructure projects between 2018 and 2057. The regional transportation network shown on **Figure 3.18.1** represents the full build-out of Measure M in 2057, and **Figure 3.18.2** shows the rail and busway network with Measure M transit projects.



Source: Los Angeles County Metropolitan Transportation Authority, 2016.

Figure 3.18.1. Regional Transportation Network with Measure M Build-Out by 2057



Source: Los Angeles County Metropolitan Transportation Authority, 2017.

Figure 3.18.2. Metro Rail and Busway with Measure M Transit Projects

The No Project Alternative includes the planned regional projects in operation in the horizon year (2042). In addition to the Regional Connector, the planned regional projects from Measure M, including their estimated completion dates, are listed below:[1]

- Metro L (Gold) Line Foothill Extension to Claremont (Glendora to Pomona: 2025, Pomona to Montclair: 2028)
- West Santa Ana Branch Transit Corridor LRT from Artesia to Downtown Los Angeles (2041)
- Airport Metro Connector Aviation Boulevard/96th Street Station to Los Angeles International Airport (LAX) (2024)
- Metro C (Green) Line Extension to Crenshaw Boulevard in Torrance – Redondo Beach to Torrance Transit Center (2030-2033)
- Metro K Line(Crenshaw/LAX) (2022)
- Vermont Transit Corridor BRT – Hollywood Boulevard to 120th (2028-2030)
- Metro Westside D (Purple) Line Extension (Section 1: 2024, Section 2: 2025, Section 3: 2027)
- East San Fernando Valley Transit Corridor Project connecting Orange Line Van Nuys station to the Sylmar/San Fernando Metrolink Station (2028)
- Metro G (Orange) Line BRT Improvements (2026)
- North Hollywood (G Line/B Line) to Pasadena (L Line) BRT Connector (2024)
- Sepulveda Pass Transit Corridor from Expo Line to East San Fernando Valley Line (Phase 1 and 2) (2033-2035)

3.18.5.2.2 MicroTransit

In 2019 Metro initiated a MicroTransit Pilot (MTP) project, called Mobility on Demand (MOD) which included preschedule rideshare trips on 10-passenger vehicles within designated service areas. In 2021, MOD was superseded by the Metro Micro Program, which focused on improving the micro transit design with a new demand-responsive service to improve the user experience for transit users. The new service provides passengers with an on-call service, using a ride hailing application on smartphone devices. The service is used for short trips under approximately 20 minutes in duration in defined service zones and utilizes vehicles that are smaller than traditional transit vehicles. This three-year pilot program will help to evaluate the viability of micro transit in supporting larger transit capital programs in the region.

3.18.5.2.3 Local Transportation Plans and Projects

Table 3.18-1 lists the various local transportation plans and projects within the DSA, including roadway and signal improvements. Some local jurisdictions also have planned active transportation projects.

[1] Measure M also includes The Eastside Transit Corridor Phase 2 project (the Project); however, the Project would not be implemented under the No Project Alternative.

Table 3.18-1. Local Transportation Plans and Projects within the DSA

Name	Type	Jurisdiction	Description
California High-Speed Rail	Transit	State	The California High-Speed Rail Authority, a state agency, is responsible for planning, designing, building and operation of the first high-speed rail system in the nation. By 2029, the system will run from San Francisco to the Los Angeles basin and eventually extend to Sacramento and San Diego, totaling 800 miles with up to 24 stations (anticipated to be complete by 2029)
Caltrans - Pomona Freeway (SR-60) Pavement Rehabilitation	Roadway Improvements	State	Restore the roadway and improve the ride quality by rehabilitating the existing lanes with pavement that will extend the life of the roadway a minimum of 40 years
Vision Zero Enhancements for East Los Angeles	Active Transportation	Los Angeles County	Bicycle facility improvements (anticipated to be complete by 2032)
East Los Angeles Pedestrian Accessibility Improvements	Active Transportation	Los Angeles County	Whittier Boulevard from Indiana to Saybrook Avenue and 3rd Street from Indiana Street to Atlantic Boulevard
Olympic Multi-Modal Transportation Improvements	Traffic Signal Improvements	Los Angeles County	Olympic Boulevard between Indiana and Concourse
Whittier Multi-Modal Transportation Improvements	Traffic Signal Improvements	Los Angeles County	Signal phase and timing (SPaT) deployment on Whittier Boulevard from Indiana Street to Saybrook Avenue and 3rd Street from Indiana to Atlantic Boulevard
East Los Angeles Traffic Signal Enhancements	Traffic Signal Improvements	Los Angeles County	Intelligent Transportation System (ITS) and SPaT deployment between 3rd Street and Telegraph
Atlantic Multi-Modal Transportation Improvements	Traffic Signal Improvements	Los Angeles County	SPaT Improvements on Whittier Boulevard from Indiana to Saybrook Avenue and 3rd Street from Indiana to Atlantic Boulevard
Atlantic Safety, Beautification, and Pavement Rehabilitation Project	Roadway Improvements	Commerce	Roadway improvement for truck mobility and pedestrian enhancements
Washington/Garfield and Garfield/Yates Intersection Improvements	Roadway Improvements	Commerce	Roadway improvements
Garfield/Slauson Intersection Improvements	Roadway Improvements	Commerce	Roadway improvements
Garfield/Washington Boulevard Multi-Modal Project	Roadway Improvements	Commerce	Enhance roadway capacity and pedestrian crosswalks

Name	Type	Jurisdiction	Description
Los Angeles County-City Joint Road Project	Roadway Improvements	Commerce	Roadway Improvements
Mixmaster Traffic Study	Traffic Study	Commerce	Traffic study for Atlantic Boulevard, Telegraph Road, Ferguson Drive, and Goodrich Boulevard intersection
Washington Widening and Reconstruction Project	Roadway Improvements	Commerce	Roadway improvements and enhance roadway capacity
Citywide Pedestrian Bike Connectivity Commerce Active Transportation and Safe Routes to School	Active Transportation	Commerce	Safe Routes to School
Montebello Active Transportation Project	Active Transportation	Montebello	Bicycle and Pedestrian improvements between Lincoln Boulevard to Paramount Boulevard
Via Campo and Wilcox Concrete Pavement Intersection	Roadway Improvement	Montebello	Concrete Pavement Project
Beverly Boulevard Traffic Signal Enhancements	Traffic Signal Improvements	Montebello	Beverly signal synchronization from Pomona Street to Painter Avenue
Pico Rivera Regional Bikeway	Active Transportation	Pico Rivera	Construction of the Pico Rivera Regional Bikeway on Mines Avenue from Paramount Boulevard to the San Gabriel River, across the San Gabriel River, and along Dunlap Crossing Road from the San Gabriel River to Norwalk Boulevard (anticipated to be complete by 2024)
ACE - Durfee Avenue Grade Separation Project	Roadway Improvements	Pico Rivera	Roadway and the railroad tracks separation on Durfee Avenue between Beverly Road and Whittier Boulevard (anticipated to be complete by June 2022)
Mines Avenue Concept Plan	Roadway Improvements	Pico Rivera	Enhance pedestrian safety, traffic calming, and parking
Washington I-605 Arterial Concept Plan	Roadway Improvement	Santa Fe Springs	Enhance roadway capacity and signal improvements
Norwalk/Washington Intersection Improvements	Roadway Improvements	Santa Fe Springs	Enhance Roadway Capacity
West Whittier-Los Nietos Norwalk Boulevard/Reichling Lane Intersection Improvements	Traffic Signal Improvements	West Whittier-Los Nietos	Install left-turn phasing for northbound and southbound traffic, upgrade existing traffic signal poles, mast arms, crosswalks and curb ramps, upgrade existing and install additional vehicle and

Name	Type	Jurisdiction	Description
			pedestrian heads, upgrade existing pedestrian push buttons and recut advance loop detectors for northbound and southbound traffic for the intersection (anticipated to be complete by spring 2023)
West Whittier- Los Nietos Roadway Resurfacing	Active Transportation	West Whittier-Los Nietos	Resurfacing of 3.0 miles of major roadway with an included 2.46 miles of bike facilities. Routes include Broadway from Mines Boulevard to Norwalk Boulevard, Broadway from Whittier Boulevard to Mines Boulevard, Mines Boulevard from Broadway to Sorensen Avenue, and Mines Boulevard from Norwalk Boulevard to Broadway (anticipated to be complete by summer 2024)

Source: CDM Smith/AECOM JV, 2022.

3.18.5.3 Land Use Plans and Projects

3.18.5.3.1 Metro's Transit-Oriented Communities Policy

The Metro Board adopted the Transit Oriented Communities (TOC) Policy in June 2018. The purpose of the policy is to define the concept of TOCs for Metro and to establish a set of criteria to determine which TOC activities Metro will fund and implement directly as part of a separate process. Specific TOC goals and principles include:

- Increase transportation ridership and choice through the promotion of non-motorized modes of transportation. Land use and urban design elements shall enhance FLM elements and create safe, active transportation environments that are inclusive to all ages and protected statuses.
- Stabilize and enhance communities surrounding transit with affordable housing. TOCs shall protect residents from displacement and promote sustained economic vitality for small businesses.
- Engage organizations, jurisdictions, and the public by performing outreach to the community and fostering partnerships with business and labor.
- Distribute transit benefits to all by ensuring investments positively impact disadvantaged and underrepresented communities. Improve the outcomes related to communities' safety, health, social, and economic well-being.
- Capture value created by transit. TOCs shall increase the value of properties surrounding Metro's transit investments.

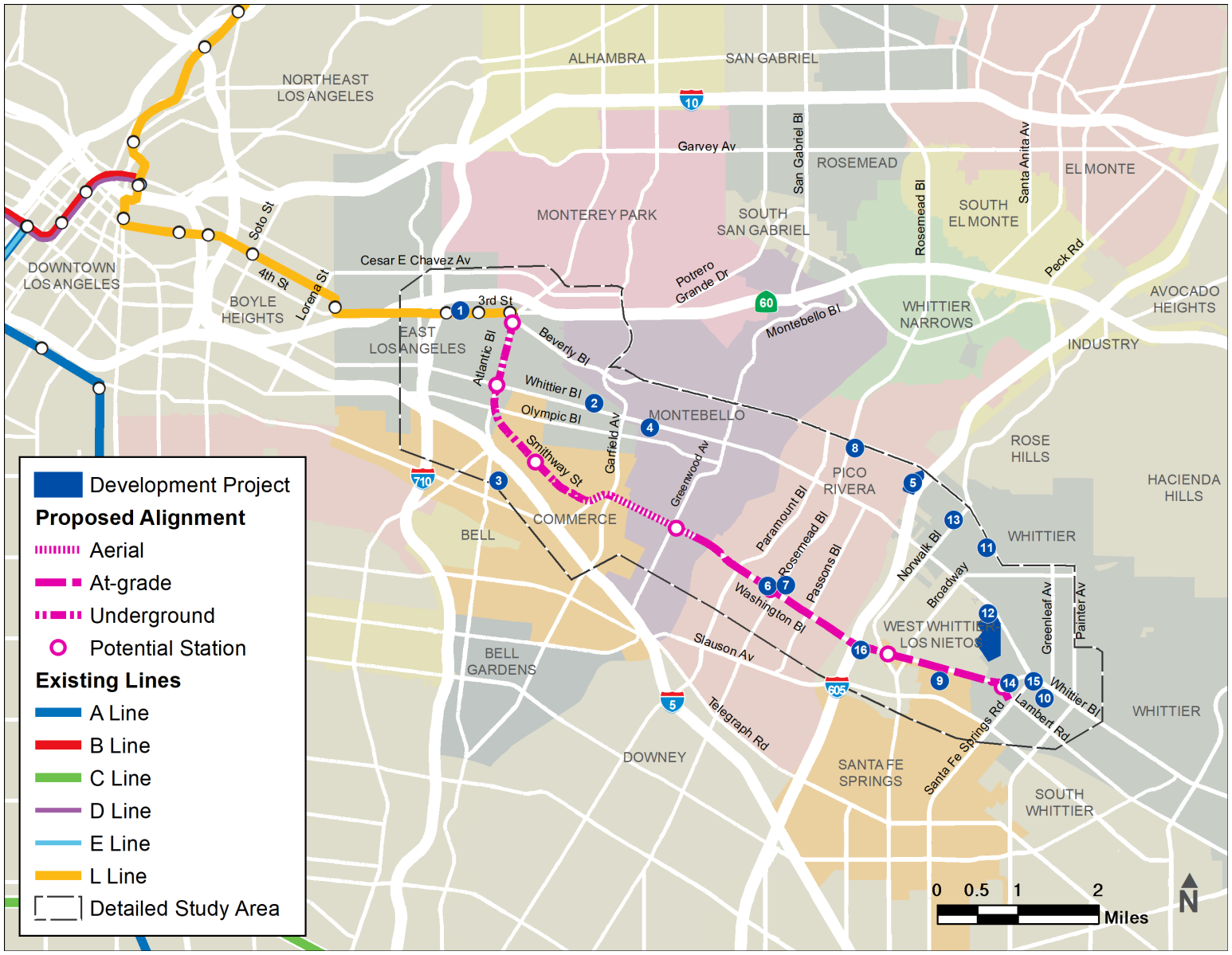
3.18.5.3.2 Related Projects

Table 3.18-2 contains the land use development projects that are considered in the cumulative impact analysis that may occur in the same vicinity and timeframe of the Project. Related projects include past, present, and reasonably foreseeable future projects located within the DSA. These are shown on **Figure 3.18.3**.

Table 3.18-2. Related Projects within the DSA by Jurisdiction

Fig. #	Name	Type	Jurisdiction	Description
1	Third and Dangler	Affordable Housing	East Los Angeles (Unincorporated Los Angeles County)	4-story, 78-unit affordable/permanent supportive housing project on a 0.59 acres lot, with a projected completion date in 2023.
2	Utility Corridor Park Development	Recreation/Open Space	East Los Angeles (Unincorporated Los Angeles County)	Proposed 8.4-acre public park on a utility corridor. Project pending approval for Proposition 68 grant funding and negotiations with SCE regarding use of the corridor. Located at 6254 Hubbard Street.
3	Rosewood Village	Residential	Commerce	133-unit townhome development on a 5.7-acre site at 5550 Harbor Street. The project would replace existing industrial facilities and construction is expected to conclude in late 2023.
4	2113 W. Whittier Boulevard	Residential	Montebello	Five story, 67-unit project approved in 2015 as a Planned Development District. Construction has not begun on the site.
5	605 Warehouse Project	Industrial	Pico Rivera	New industrial warehouse, distribution and office facility totaling 357,903 square feet and a 2,500 square-foot print shop facility; both facilities include surface parking, landscaping, and other ancillary improvements. Located at the southwest corner of Beverly Boulevard and Interstate 60. Project is not yet approved.
6	The Mercury 8825 Washington Boulevard	Mixed Use	Pico Rivera	Development of a 255 unit mixed-use development on a 2.85 acre site located at 8825 Washington Boulevard with 255 units and approximately 5,420 square feet of commercial space. Project is not yet approved.
7	6605 Rosemead Boulevard	Industrial	Pico Rivera	Development of a self-storage facility located at 6605 Rosemead Boulevard. The project consists of new construction of 63,066 square feet, four story (52 feet), self-storage facility on a 28,208 square foot site. Project is not yet approved.
8	Beverly Crossing Commercial Project- 9036 Beverly Boulevard	Commercial	Pico Rivera	Commercial retail space with that includes approximately 53,960 square feet of neighborhood retail and restaurants. Approved in 2020. Construction timeline is uncertain.
9	Sorensen XC, LLC	Industrial	Santa Fe Springs	Development of a 233,779 square foot concrete tilt-up industrial buildings, which is located at 8201 Sorensen Avenue.

Fig. #	Name	Type	Jurisdiction	Description
10	Florence Homes Residential Project	Residential	Whittier	A 1.23-acre single lot map for residential condominium purposes at 8315, 8319,and 8335 Greenleaf Avenue in the City of Whittier, CA
11	Trinity Lutheran Church Campus Modification and Brandywine Homes New 25-Unit Detached Single-Family Condominium Project	Residential	Whittier	Modifications to the existing church facility and subdividing of a 3.59-acre parcel of land located at 11716 Floral Drive for the church and residential development.
12	The Groves (former Fred C. Nelles Youth Correctional Facility)	Mixed Use	Whittier	75.6-acre residential, commercial and open space uses. 189 rental units, 561 for sale. Currently under construction/partially open.
13	10727 Orange Grove Avenue	Residential	Whittier	R-3 Medium Multiple Residential; R-4 Heavy Multiple Residential. 5-unit townhouse project approved in 2017. Construction timeline uncertain.
14	12428 Washington Boulevard	Residential	Whittier	13-unit townhouse development approved. Construction timeline uncertain.
15	8016 Santa Fe Springs Road	Residential	Whittier	2.79-acre site into two parcels; 60-unit apartment complex approved in 2018. Under construction.
16	Whittier Aquatic Center	Recreational	Whittier	Olympic-size swimming pool, practice pool, and 12,000 square foot building with offices, restrooms, and classrooms. Under construction. Expected opening fall 2022.



Source: Metro; CDM Smith/AECOM JV, 2022.

Figure 3.18.3. Land Use Development Projects within the DSA

3.18.6 Impact Evaluation

The following sections analyze the cumulative impacts identified for each resource area relative to the Build Alternatives and transportation plans identified in **Section 3.18.5.1** and the list of related projects within the DSA as identified in **Table 3.18-1** and **Table 3.18-2**. The cumulative impacts analysis considers all Build Alternatives and the design option(s) with the applicable MSF site option(s) or MSF design option. Unless otherwise discussed, the cumulative impacts of each Build Alternative (without or with the design option[s]) and MSF site option applicable to each Build Alternative would be the same.

3.18.6.1 Aesthetics

As discussed in Section 3.1, Aesthetics, and Appendix B, the Eastside Transit Corridor Phase 2 Visual Aesthetics Impacts Report, the DSA, which is the study area for this analysis, is a highly urbanized area. The Project and the related land development projects identified in **Table 3.18-2** are typical of the urbanized environment and, cumulatively, would not substantially change the existing visual character. Further, it is anticipated that the related land use development projects would comply with zoning and design requirements of the applicable jurisdiction, including undergoing mandated design review where applicable. Scenic vistas are not substantially present within the DSA. The Build Alternatives and related land development projects would not cumulatively affect scenic vistas. Several of the related land development projects identified in **Table 3.18-2** are sufficiently substantial in massing and visual presence that they could affect views; however, none of these projects are physically located such that, in combination with the Build Alternatives, a significant cumulative impact to a scenic vista would occur. There are no scenic highways within the DSA; the Build Alternatives would have no impact on a scenic highway, nor would it contribute to an incremental impact that could be compounded or increased when considered together with similar effects from other land development projects identified in **Table 3.18-2**. The existing urbanized environment within the DSA experiences a wide range of existing light and glare sources, including industrial and commercial uses, vehicular light, streetlights, and parking facilities. Related land development projects identified in **Table 3.18-2** are consistent with the light and glare profile within the DSA, and the Build Alternatives would not contribute light and glare such that there would result a significant impact. Although the Project and the projects identified in **Table 3.18-2** could create temporary visual changes and introduce new visual elements from construction staging, equipment, lighting, and spoils, these changes would be temporary and would occur in highly urbanized environments. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact.

3.18.6.2 Air Quality

As discussed in Section 3.2, Air Quality, and Appendix C, the Eastside Transit Corridor Phase 2 Air Quality Impacts Report, the air quality analysis for the Build Alternatives is inherently cumulative in nature, being based on a given project's net contributions or reductions to airborne pollutants and using thresholds established based on a regional characterization of air quality conditions. Thus, the potential air quality impacts of the related land development projects identified in Table 3.18-2 are already accounted for in the analysis. In the year 2042, the Build Alternatives would result in a less than significant net increase of emissions of volatile organic compounds (VOC), and a net reduction in operational regional emissions of carbon monoxide (CO), nitrogen oxides (NOX), sulfur dioxide (SO_2), inhalable particulate matter or particulate matter with an aerodynamic diameter less than or

equal to 10 micrometers (PM10), fine particulate matter or particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers (PM2.5). In addition, the Build Alternatives would not expose sensitive receptors to toxic air contaminants (TAC) that would be likely to cause a substantial increase in human health risks.

The Build Alternatives were considered regionally in the South Coast Air Quality Management District (SCAQMD) 2016 Air Quality Management Plan (AQMP) for the South Coast Air Basin, which was prepared in support of the state implementation plan and approved by California Air Resources Board and submitted to the U.S. Environmental Protection Agency for its final approval on April 27, 2017. Project consistency was determined based on a finding that the Project does not result in an increase to the frequency or severity of an existing air quality violation, the Project does not cause or contribute to new air quality violations, the Project does not delay the timely attainment of the air quality standards or the interim emission reductions specified in the AQMP, the Project is consistent with the population and employment growth projections upon which the AQMP forecasted emission levels are based, Project development is consistent with AQMP land use policies, and the Project is consistent with the applicable mitigation measures assumed in preparation of the AQMP. Additionally, in 2003, SCAQMD published a white paper on cumulative impacts and potential control strategies which considers the cumulative implications of air quality impacts under CEQA and indicates that projects which would not exceed the project-specific thresholds established by SCAQMD would generally not be considered to have a cumulatively considerable contribution to the respective air quality impact (SCAQMD 2003). The Build Alternatives would reduce VMT and associated emissions of criteria air pollutants and TAC during operation, and would not exceed SCAQMD's established construction thresholds for regional or localized impacts. Therefore, considered cumulatively, the Build Alternatives' incremental effect would not be cumulatively considerable.

3.18.6.3 Biological Resources

Impacts on biological resources are discussed in Section 3.3, Biological Resources, and Appendix D, the Eastside Transit Corridor Phase 2 Biological Resources Impacts Report. The biological resources specialized study area, known as the biological resources study area (BRSA), for each of the Build Alternatives is the area within a 500-foot buffer of the LRT guideway and includes the station, TPSSs, and MSF site option footprints, which is the area analyzed in field surveys. Alternative 1 would have a significant Project-level impact on bats from construction of replacement bridges over the Rio Hondo and San Gabriel River. Alternatives 2 and 3 would not require replacement of the bridges across the Rio Hondo and San Gabriel River, and would therefore have less than significant impacts on bats. The impact on bats would result from bridge modification; the related land development projects identified in **Table 3.18-2** would not result in continued modification of bridges, and therefore the significant impact on bats resulting from bridge replacement would not be cumulatively affected by the related plans and projects. With incorporation of MM BIO-1 through MM BIO-3, as shown in **Table 3.18-3**, impacts on bats from Alternative 1 would be reduced to less than significant. Therefore, there would not be a significant cumulative impact relative to bats.

As discussed in Section 3.3, Biological Resources, and Appendix D, the Build Alternatives would have a significant Project-level impact on migratory birds from nesting habitat destruction during construction or tree trimming during operation. Related land development projects identified in **Table 3.18-2** could likewise impact migratory birds and therefore result in a cumulatively significant impact. Project-level MM BIO-4 would ensure that construction and tree-trimming would not occur in the vicinity of active nests. Considered cumulatively with the plans and projects identified in **Section 3.18.5**,

and with implementation of MM BIO-4, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be considerable relative to migratory birds.

Construction of related land development projects within the DSA, which encompasses the BRSA, and Build Alternatives would have the potential to spread invasive species. Considered cumulatively, the potential to spread invasive species from construction of the Build Alternatives and related projects would result in a cumulatively significant impact. However, with incorporation of mitigation measures, all Project-related impacts under Impact BIO-2 would be reduced to less than significant. The significant impact from the spread of invasive species would not be cumulatively affected by the related plans and projects because it would be reduced by mitigation measures to clean construction equipment and avoid the spread of soil and plant material (MM BIO-5 and MM BIO-6); therefore, the Project would not contribute any incremental impact. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of MM BIO-5 and MM BIO-6, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable relative to invasive species.

The BRSA is an urbanized area which does not support sensitive species, sensitive vegetation communities, wetlands, or terrestrial wildlife corridors. The Rio Hondo and spreading grounds and San Gabriel River provide a corridor for the movement of aquatic species. If Alternative 1 construction work occurs when water is present in the Rio Hondo and spreading grounds or the San Gabriel River, common aquatic species present in the water bodies would be able to readily move away from the in-water work. Therefore, there would be less than significant impacts on the movement of fish and wildlife species from construction of Alternative 1. The aquatic corridors would not be impacted by Alternatives 2 or 3 as they do not cross the rivers. The related land development projects and the Build Alternatives would be subject to local policies or ordinances protecting biological resources, and there would not be a cumulatively significant impact. There is no potential for the Project to contribute any incremental impact under Impact BIO-4 (conflicts with local policies or ordinances protecting biological resources) as the Project would be conducted in accordance with local tree protection policies. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to wetlands, wildlife corridors, sensitive vegetation communities, and consistency with local policies and ordinances.

3.18.6.4 Cultural Resources

Cultural Resource impacts from the Project are discussed in more detail in Section 3.4, Cultural Resources, and Appendix E, the Eastside Transit Corridor Phase 2 Transportation Cultural Resources Impacts Report. The specialized study area for Cultural Resources is referred to as the area of potential effect (APE). For archaeological resources, the area of direct impact (ADI) includes the right-of-way (ROW) and any areas of direct ground disturbance during project construction, including staging areas. For built environment/architectural resources, the APE includes all proposed ROW and acquisition and construction areas, and all parcels adjacent to permanent site improvements and facilities. For elevated alignments, the APE includes any additional parcels where the elevated structure may alter the character, use, or setting of a potential historical resource.

The DSA, which encompasses the APE and ADI is heavily urbanized and historic structures and districts exist throughout the area. Impacts to historic structures are evaluated in terms of direct impacts (modification or demolition) or indirect impacts (affecting the setting in a manner that impacts the historic significance of a structure). Development of the related land development projects identified in **Table 3.18-2** could cumulatively impact historic resources within the DSA. At a

Project-level, the Build Alternatives would result in a significant Project-level impact; construction of the Build Alternatives could result in temporary noise, vibration, and ground-settlement impacts, and construction of the Building Alternatives with the Commerce MSF site option would require acquisition and demolition of certain historic resources. Project-level mitigation measures would reduce Project-level impacts on historic resources; however, acquisition and demolition of historic resources associated with construction of the Build Alternatives if the Commerce MSF site option is selected would remain significant and unavoidable. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, if the Commerce MSF site option is selected, even with implementation of MM CUL-1 through MM CUL-6 for Alternative 1; MM CUL-1, MM CUL-5, and MM CUL-6 for Alternative 2; and MM CUL-1, MM CUL-2, MM CUL-3, MM CUL-5, and MM CUL-6 for Alternative 3, as shown in **Table 3.18-3**, there would be a significant cumulative impact. If the Commerce MSF site option is selected, the Build Alternatives' incremental effect would be cumulatively considerable.

If Alternative 1 or Alternative 3 with the Montebello MSF site option is selected, implementation of MM CUL-1 and MM CUL-4 for Alternative 1 and MM CUL-1 for Alternative 3, Project-level impacts on historic resources would be reduced as shown in **Table 3.18-3**. The incremental effects of Alternative 1 and Alternative 3 with the Montebello MSF site option would not be cumulatively considerable relative to historic resources.

Since significant buried archaeological resources may exist within the DSA, it is possible that materials could be unearthed during project excavation activities. Construction of the Build Alternatives has the potential to disturb or destroy a significant archaeological resource. This disturbance of significant archaeological resources in combination with other reasonably foreseeable development projects in the DSA could result in significant cumulative impacts to archaeological resources. However, Project mitigation measures would reduce the Project's cumulative contribution to archaeological resources impacts, if any such resources are found during construction, to less than significant levels. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of MM CUL-7 and MM CUL-8 for Alternative 1, and MM CUL-8 for Alternative 2 and Alternative 3, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable relative to archaeological resources.

Similarly, it is possible that human remains, including those interred outside of formal cemeteries, may exist within the DSA, and it is possible that remains could be unearthed during project excavation activities. Construction of the Build Alternatives has the potential to disturb human remains. This disturbance, in combination with other reasonably foreseeable development projects in the DSA, could result in significant cumulative impacts to human remains. However, Project mitigation measures would reduce the Project's cumulative contribution to impacts to human remains, if any are found during construction, to less than significant levels. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of MM CUL-9 for Alternative 1, Alternative 2, and Alternative 3, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable relative to human remains.

3.18.6.5 Energy

Energy impacts from the Project are discussed in more detail in Section 3.5, Energy, and Appendix F, the Eastside Transit Corridor Phase 2 Energy Conservation and Utilities/Service System Impacts Report. The study area for the energy analysis is the GSA to provide a regional context and DSA to for specific context. Projects within the DSA, including the Build Alternatives and the related land

development projects identified in **Table 3.18-2,** would be subject to compliance with applicable building codes and energy efficiency and management codes and regulations, including, but not limited to, the California Building Standards Code Energy Efficiency Standards (Title 24 Parts 6 and 11) and the Los Angeles County Green Building Standards Code, as well as other provisions of municipal jurisdictions. As discussed in Section 3.5, Energy, and Appendix F, the evaluation of existing energy resources and energy forecasting is inherently cumulative based on long-term regional utility and energy demand plans and projections from energy utility providers. Based on the published long term plans and projections, there is no anticipated cumulative shortfall in energy supplies or services. Thus, considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact.

3.18.6.6 Geology, Seismicity, Soils, and Paleontological Resources

Geology, seismicity, soils, and paleontological impacts from the Project are discussed in more detail in Section 3.6, Geology, Seismicity, Soils, and Paleontological Resources, and Appendix G, the Eastside Transit Corridor Phase 2 Geology and Soils Impacts Report. The study area for geology, soils, and paleontological resources is the GSA to provide a regional context of the geological conditions, and the DSA for specific context. The related land development projects identified in **Table 3.18-2** are all located within the DSA on similar geologic units and soil types and would all be subject to the same building codes and standard engineering practices; the Project would not affect the cumulative level of exposure to seismic shaking, liquefaction, or landslides, nor contribute incrementally to a cumulative impact. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to seismic shaking, liquefaction, or landslides.

As discussed in Section 3.6, Geology, Seismicity, Soils, and Paleontological Resources, and Appendix G, the DSA is a highly urbanized area. The related land development projects involve land disturbance to varying degrees; they would be subject to applicable building codes and requirements of local jurisdictions. There is no potential for the Project to contribute an incremental impact to soil erosion or stability. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to soil erosion or stability.

As discussed in Section 3.6, Geology, Seismicity, Soils, and Paleontological Resources, and Appendix G, due to the unique nature of sub-grade tunnel boring activity, there would be no feasible way to monitor or mitigate paleontological impacts from boring and impacts with respect to paleontological resources would be significant. Other construction activities, including cut-and-cover construction of underground stations and the installation of support footings along the Alternative 1 and Alternative 3 aerial guideway and the Alternative 2 aerial guideway that leads to the Commerce MSF site option would also have the potential to result in significant impacts to paleontological resources, although mitigation measures would be adopted to reduce the impact from cut-and-cover construction and aerial guideway footing construction. The significant impact from tunnel boring activities could not be reduced by mitigation measures and would remain significant and unavoidable. Several of the related land development projects identified in **Table 3.18-2** involve ground excavation and disturbance; however, none involve tunnel boring or excavation at the same depth as the Project. Project-level mitigation measures would be implemented to lessen the significant Project-level impact; however, the impact would remain significant and unavoidable for Alternative 1, Alternative 2, and Alternative 3. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and even with implementation of MM GEO-1 through MM GEO-5, as shown in **Table 3.18-3**, there would be a

significant cumulative impact. The incremental impact from Alternative 1, Alternative 2, and Alternative 3 would be cumulatively considerable.

3.18.6.7 Greenhouse Gas Emissions

Greenhouse gas emission impacts are inherently cumulative in nature. The Project's potential to result in greenhouse gas emission impacts are discussed in more detail in Section 3.7, Greenhouse Gas Emissions, and Appendix H, the Eastside Transit Corridor Phase 2 Climate Change and Greenhouse Gas Impacts Report. The study area for climate change and greenhouse gas emissions is the GSA. Several of the related land development projects identified in **Table 3.18-2** provide new housing or commercial opportunities which would result in increases in local population, employment, and VMT with accompanying increases in localized GHG emissions. As described in Section 3.7 and Appendix H, Project GHG emissions are evaluated using a 2042 projected future conditions baseline. In this case, the adjusted environmental baseline is the 2042 without Project Conditions; the projected future conditions baseline applies to the cumulative analysis. The Project would result in a reduction in VMT from regional traffic, as well as an increase in GHG emissions from electricity necessary to operate the system. Overall, a small net decrease or small net increase in regional operational GHG emissions would be expected as compared to the 2042 projected future conditions baseline, depending on the Build Alternative and MSF selected. Considered cumulatively, the change in GHG emissions from the Build Alternatives and related projects would result in a cumulatively significant impact. However, as discussed in Section 3.7, Greenhouse Gas Emissions, and Appendix H, the Project is a component in the 2020 RTP/SCS Connect SoCal Program EIR analysis, which found the Project to be a contributor to cumulative reductions in regional VMT and associated reductions in cumulative GHG emissions projected in that analysis. In addition, the Project contributes to California's goal to increase mass transit under the AB 32 Scoping Plan. Implementation of Alternative 1 would enhance regional transportation systems and contribute to planning efforts to reduce VMT and GHG emissions from transportation sources. Because the Build Alternatives support the statewide AB 32 scoping plan and were contemplated in the 2020 RTP/SCS Connect SoCal Program EIR analyses and found to be a contributor to cumulative reductions in regional VMT, the Build Alternatives' incremental effect would not be cumulatively considerable.

3.18.6.8 Hazards and Hazardous Materials

As discussed in Section 3.8, Hazards and Hazardous Materials, and Appendix I, the Eastside Transit Corridor Phase 2 Hazards and Hazardous Materials Impacts Report, the hazards and hazardous materials specialized study area, known as the resource study area (RSA), for each of the Build Alternatives is the area within a one-mile buffer of the LRT guideway and includes a half-mile buffer of the stations, TPSSs, and MSF site option footprints. There are 30 affected properties that have documented releases in the RSA. Additionally, the eastern portion of the Project (from approximately Sorensen Avenue to Lambert Road/Santa Fe Springs Road) is situated within Operable Unit 2 (OU2) of the Omega Superfund Site. Hazards and hazardous material impacts from the Project are discussed in more detail in Section 3.8, Hazards and Hazardous Materials, and Appendix I. The potential for hazardous materials to occur is specific to each project site and is dependent on the nature of prior activities both on- and off-site; therefore, hazardous materials concerns generally do not combine to form cumulative impacts. All potential development projects in the DSA, which encompasses the RSA, including the Build Alternatives, would be required to comply with local, state, and federal regulations for transport, use, storage, and disposal of hazardous materials. Application of these regulations is mandatory; therefore, the overall cumulative impact from the routine transport,

storage, use, and disposal of hazardous materials would be less than significant. Likewise, the overall cumulative impact from the handling of hazardous materials within one-quarter mile of a school would be less than significant.

With respect to the release of hazardous materials, the cumulative effects would be limited to the combined effect of the Build Alternatives and related land development projects in the DSA with the potential to result in hazardous emission exposures to the same populations that would potentially be exposed by hazardous material use for the Project. Due to the fact that health effects from hazardous substances can result from both acute or chronic exposures, the temporal context for cumulative effects relating to hazardous materials would include any past, present, or reasonably foreseeable development projects. Other projects in the DSA that may be contaminated with hazardous materials are required to be individually evaluated and remediated, with mitigation measures recommended as needed to reduce potential impacts. As discussed in Section 3.8, Hazards and Hazardous Materials, and Appendix I, Metro would implement MM HAZ-1 through MM HAZ-5, as shown in **Table 3.18-3**, which would reduce the risk for environmental and human health hazards during construction to a less than significant level. Additionally, best management practices (BMPs) would be implemented as project measures to minimize impacts related to hazards and hazardous materials Section 3.18). Furthermore, any necessary measures related to hazardous material exposure at other project sites in the DSA would be confined to those specific project sites and would not be additive in nature. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to hazardous material exposure.

As discussed above, the potential for hazardous materials to occur is specific to each project site and is dependent on the nature of prior activities both on- and off-site; therefore, hazardous materials concerns generally do not combine to form cumulative impacts. There are various sites with known soil and groundwater contamination in the vicinity of the Build Alternatives; the potential hazards from these sites do not combine with sites from the related land development projects to result in a cumulative impact. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to hazardous sites.

The geographic context for cumulative impacts from impairment of emergency response plans would be limited to those cumulative projects in the immediate vicinity of the Project with the potential to result in temporary or permanent disruption to the same roadway network that the Project would temporarily impact. The temporal context for cumulative effects relating to impairment of emergency response plans would be limited to those projects which have construction periods that could overlap with those of the given Build Alternatives construction schedule. Similar to the Project, each of the projects identified in **Section 3.18.5** would be required to follow Occupational Safety and Health Administration and other safety practices and would implement standard construction and safety plans, construction transportation plans, and traffic control plans, as necessary, to minimize interference with emergency response plans. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to emergency response plans.

3.18.6.9 Hydrology and Water Quality

As discussed in Section 3.9, Hydrology and Water Quality, and Appendix J, the Eastside Transit Corridor Phase 2 Hydrology and Water Quality Impacts Report, the DSA is a highly urbanized area. The study area for this analysis is the DSA. Projects within the DSA, including the related land development projects identified in **Table 3.18-2,** would result in modifications to local drainage

systems, may increase or decrease impervious surface area, or affect groundwater. However, projects within the DSA are subject to applicable state, regional, and local water quality regulations and, thus, would be designed and executed in compliance with these regulations. As applicable, these projects would be subject to National Pollutant Discharge Elimination System (NPDES) permits, incorporate BMPs to control pollutant discharges, incorporate erosion and siltation BMPs, and incorporate SWRCB's Construction General Permit and Los Angeles County Department of Public Works' Municipal Separate Storm Sewer System (MS4) Permit conditions. A portion of Alternative 1 intersects Federal Emergency Management Agency (FEMA) flood zones. As a project measure (Section 3.9), operation of the trains would not occur if a flood inundates the portion of tracks within the flood zone. Additionally, if a flood event occurs during construction, construction activities shall cease and equipment and materials would be moved to an area outside of floodwaters. Alternative 2 and Alternative 3 would not cross the floodplain and would thus not impact floodplains.

MM HWQ-1, MM HWQ-2, MM HAZ-2, and MM HAZ-3 for Alternative 1 and MM HAZ-2 and MM HAZ-3 for Alternative 2 and Alternative 3 would reduce Project-level impacts from contaminated groundwater and dewatering and erosion and siltation, and on stormwater drainage capacity and flood zones to a less than significant level.

Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of MM HWQ-1, MM HWQ-2, MM HAZ-2, and MM HAZ-3 for Alternative 1 and MM HAZ-2 and MM HAZ-3 for Alternative 2 and Alternative 3, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable.

3.18.6.10 Land Use and Planning

As discussed in Section 3.10, Land Use and Planning, and Appendix K, the Eastside Transit Corridor Phase 2 Land Use and Planning Impacts Report, the DSA is a highly urbanized area. The study area for this analysis is the DSA. The related land development projects identified in **Table 3.18-2** are site-specific projects and would not cumulatively result in a divided community. The Build Alternatives and related land development projects are also subject to land use regulation by the local jurisdictions in which the project is located that are updated as necessary to reflect current land use planning policies supported by State, regional, and local jurisdictions. Simultaneous construction of some related land development projects and the Build Alternatives could occur, potentially resulting in short-term and temporary construction disruptions to the existing physical environment and localized circulation through temporary street or sidewalk closures. However, the proposed street closures and turning restrictions associated with the Build Alternatives and related projects would not divide existing communities as access to streets and surrounding properties would generally be required to be maintained through the rerouting of traffic within adjacent local streets as specified in traffic management plans. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact.

3.18.6.11 Noise and Vibration

As discussed in Section 3.11, Noise and Vibration, and Appendix L, the Eastside Transit Corridor Phase 2 Noise and Vibration Impacts Report, the noise assessment criteria for the Build Alternatives are based on the Project's potential noise generation and the existing ambient conditions; the analysis is therefore cumulative in nature insofar as it accounts for the combined noise effects of past and present projects.

None of the future operational noise levels under the Build scenario were found to exceed the Federal Transit Administration (FTA) severe impact criterion; of the representative receptors, M07 (6735 Keltonview Drive) was the receptor with the predicted build noise closest to the severe impact criterion at 4 dBA below the severe impact threshold. The FTA screening distances of 350 feet (unobstructed noise screening distance) and 150 feet (unobstructed vibration screening distance) were used to develop the population of receptors included in the noise and vibration modeling analyses.

As described in Section 3.11, Noise and Vibration, and Appendix L, the Eastside Transit Corridor Phase 2 Noise and vibration Impacts Report, noise is logarithmic and it takes a doubling of sound energy (or a 100 percent increase) to produce a 3 dBA increase. Thus, a related land development project would need to produce operational noise greater than the Project itself for there to be a cumulative increase in operational noise that reached the FTA severe impact criterion for M07, the representative receptor closest to the severe impact criterion. However, there are no related land development projects located within the FTA screening distances of 350 feet unobstructed or 150 feet obstructed with which operational noise from the Project could combine. Further, the related land development projects identified in **Table 3.18-2** would be subject to land use regulation by the local jurisdictions and which would limit operational noise. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to operational noise.

Although the construction methods of the related land development projects vary based on the structure type, height, and configuration, if construction of the Build Alternatives, including construction of staging areas, were to occur concurrently with construction of related land development projects in the same vicinity, this could result in a significant cumulative noise impact. The Build Alternatives were found to have a significant Project-level noise impact as a result of construction noise. However, with the mitigation measures presented in Section 3.11, Noise and Vibration, and Appendix L, all Project-related noise impacts would be reduced to less than significant. In addition, there are no related land development projects identified in **Table 3.18-2** within the FTA screening distances of 350 feet unobstructed or 150 feet obstructed with which construction noise from the Project could cumulatively combine. Therefore, considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of MM NOI-1 through MM NOI-11, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable relative to construction noise.

The related land development projects identified in **Table 3.18-2** would be subject to land use regulation by the local jurisdictions and would not be expected to exceed operational or construction vibration limitations. However, the Build Alternatives were found to have a significant vibration impact if not mitigated, which would result in a significant cumulative vibration impact. MM NOI-2, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-12, MM NOI-13, NOI-14, and MM NOI-15 would mitigate the Project's potential vibration impacts to a less than significant level. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of mitigation as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable relative to vibration.

3.18.6.12 Population and Housing

Population and housing impacts from the Project are discussed in more detail in Section 3.12, Population and Housing, and Appendix M, the Eastside Transit Corridor Phase 2 Community and Neighborhood Impacts Report. The study area for this analysis is the GSA. Several of the related land development projects identified in **Table 3.18-2** provide new housing or commercial opportunities

which would result in increases in local population and employment. However, these projects are subject to local city zoning regulations and approvals and must meet the state Regional Housing Needs Allocation; therefore, the introduction of new housing or commercial opportunities would not constitute uncontrolled growth. These projects would not result in displacement that would require construction of replacement housing elsewhere. As discussed in Section 3.12, Population and Housing, and Appendix M, the Build Alternatives would not include new housing or businesses that would directly result in population growth. An increase in transit service in the region may allow for increased development around station areas; however, such development is anticipated in the local jurisdictions' general plans and would be contingent upon local city zoning regulations and approvals. Therefore, development around station areas would not occur in an uncontrolled manner. The Build Alternatives would not result in incremental effects relative to unplanned population growth that could be compounded or increased when considered together with similar effects from other related land development projects. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact relative to population and employment growth or displacement.

3.18.6.13 Public Services and Recreation

Public services and recreation impacts from the Project are discussed in more detail in Section 3.13, Public Services and Recreation, and Appendix M, the Eastside Transit Corridor Phase 2 Community and Neighborhood Impacts Report. The study area for this analysis is the GSA and DSA. Several of the related land development projects would introduce new housing and commercial uses. Considered cumulatively, the increases in population and employment could require construction or expansion of new community facilities, including police facilities, fire facilities, parks, or recreational facilities, or otherwise increase the use of such facilities. Construction or expansion of these facilities could result in a cumulatively significant impact on community facilities. However, the Build Alternatives would not introduce new housing or commercial uses, directly impact such facilities, generate new users of facilities, or otherwise increase use of such facilities. The Build Alternatives would not result in incremental increases that could be compounded or increased when considered together with similar effects from other land development projects identified in **Table 3.18-2**. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, the Build Alternatives' incremental effect would not be cumulatively considerable.

3.18.6.14 Transportation and Traffic

Impacts on transportation and traffic are discussed in detail in Section 3.14, Transportation and Traffic, and Appendix N, the Eastside Transit Corridor Phase 2 Transportation Impacts Report. The study area is the GSA for analyses related to transit ridership and regional transportation/VMT and the DSA for other potential transportation impacts (pedestrian and bicycle impacts, and emergency access). The transportation analysis was conducted using regional growth rates which include planned growth in population and employment in Los Angeles County. As a result, the traffic volumes for the Build Alternatives represent the cumulative future condition based on the effects of regional growth on the transportation system. As described in Section 3.14 and Appendix N, future conditions are evaluated using a 2042 future conditions baseline of 2042. In this case, the projected future conditions baseline is the 2042 without Project Conditions; the projected future conditions baseline applies to the cumulative analysis. Background growth in regional population and employment is expected to continue in the future; thus, VMT is also expected to continue to grow. Increased traffic congestion would result, particularly along the major east-west and north-south arterials, such as Atlantic

Boulevard and Washington Boulevard. According to the Governor's OPR technical guidance, transit and active transportation projects, including all passenger rail, bus and BRT, and bicycle and pedestrian infrastructure projects, generally reduce VMT and are therefore anticipated to cause less than significant impacts on transportation. Accordingly, the Build Alternatives were found to reduce VMT (Table 8-17 of Section 3.14). Thus, the Build Alternatives is expected to result in reduced VMT, and the Build Alternatives' incremental effect on VMT would not be cumulatively considerable.

Operation of the Build Alternatives would not conflict with adopted regional or local policies or plans related to roadway circulation or transit. Thus, the Build Alternatives would not have a cumulative impact. The DSA consists of a dense urban environment with existing vehicle traffic; this environment produces existing concerns related to design hazards, pedestrian and bicycle safety, and fire and police protection response times. Operation of Alternative 1 and Alternative 3 with the Montebello At-Grade Option would introduce new at-grade rail and grade crossings. However, as discussed in Section 3.14 and Appendix N and identified in PM TRA-1, Metro would coordinate with fire and police protection officials when designing grade crossings to ensure that access for police and fire protection services would be maintained under Alternative 1 and Alternative 3 with the Montebello At-Grade Option. In addition, all new LRT facilities and crossings would be designed in accordance with the MRDC, including the Fire/Life Safety Criteria, to ensure safety and minimize potential hazards at all locations. Vehicular and pedestrian crossings across the at-grade portion of the alignment would be limited to intersections controlled by traffic signals. Uncontrolled mid-block vehicular crossings of tracks and mid-block left turns would not be permitted and would be physically prohibited by a curb between the roadway and at-grade guideway with a fence between the two tracks in the center of the guideway whenever feasible Thus, Alternative 1's and Alternative 3 with the Montebello At-Grade Option's incremental effect on design hazards, pedestrian and bicycle safety, and fire and police response times would not be cumulatively considerable.

The simultaneous construction of the Build Alternatives and the related projects in the DSA, would result in a short-term significant cumulative impact to transit and traffic circulation, pedestrian and bicycle access, safety, and emergency response times during construction, related to activities in the ROW, including temporary roadway closures, lane closures, and sidewalk closures throughout the alignment. Planned roadway projects listed in **Table 3.18-2**, or other developments identified in **Section 3.18.5** directly adjacent to roadways, could require temporary lane and road closures, detours, reduction in lane widths, and reductions in speed limits, which could result in cumulative impacts on circulation patterns, pedestrian and bicycle access, safety, and limited or delayed access for emergency responders. However, similar to the Project, the related projects identified in **Section 3.18.5** would be required to undergo environmental review and implement construction management plans to reduce traffic impacts during construction. As discussed in Section 3.14, Transportation and Traffic, and Appendix N, MM TRA-1 would provide traffic control plans, designated haul routes, and a Traffic Management Plan to minimize disruption during construction of the Build Alternatives. Additionally, BMPs would be implemented as project measures to minimize impacts on transportation and traffic, safety, and emergency response times from construction (Section 3.14). Therefore, considered cumulatively with the plans and projects identified in **Section 3.18.5**, with implementation of MM TRA-1, the Build Alternatives' incremental effect on transportation and traffic circulation, pedestrian and bicycle access and safety, and emergency response times during construction would not be cumulatively considerable.

3.18.6.15 Tribal Cultural Resources

Tribal Cultural Resource impacts from the Project are discussed in more detail in Section 3.15, Tribal Cultural Resources, and Appendix O, the Eastside Transit Corridor Phase 2 Tribal Cultural Resources Impacts Report. For the purpose of analyzing potential impacts to TCRs, the specialized study area is the ADI, which consists of the three-dimensional limits of proposed ground disturbance, including temporary ground disturbance. Since significant buried tribal cultural resources may exist within the DSA, and it is possible that these materials could be unearthed during project excavation activities, construction of the Build Alternatives has the potential to disturb or destroy a significant tribal cultural resource. This disturbance of significant tribal cultural resources in combination with other regional development projects would result in a significant cumulative impact to tribal cultural resources. Project-level construction requires ground disturbance, including grading, excavation, and boring. Although the DSA is heavily disturbed and urbanized, some of these activities would extend into undisturbed Holocene sedimentary deposits, which have the potential to preserve buried cultural resources. However, Project mitigation measures would reduce the Project's cumulative contribution to tribal cultural resources impacts, if any such resources are found during construction, to less than significant levels. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, and with implementation of MM TCR-1 through MM TCR-3, as shown in **Table 3.18-3**, the Build Alternatives' incremental effect would not be cumulatively considerable.

3.18.6.16 Utilities and Service Systems

Utilities and service systems impacts from the Project are discussed in more detail in Section 3.16, Utilities and Service Systems, and Appendix F, the Eastside Transit Corridor Phase 2 Energy Conservation and Utilities/Service System Impacts Report. The study area for this analysis is the GSA and DSA. As discussed in the Section 3.16, Utilities and Service Systems, and Appendix F, the evaluation of existing utilities and service systems and future needs is inherently cumulative based on long-term regional utility demand plans and projections from utility providers. Based on the published long term plans and projections[2] there is no anticipated cumulative shortfall in utility service and service systems. Considered cumulatively with the plans and projects identified in **Section 3.18.5** there would not be a significant cumulative impact.

3.18.6.17 Growth Inducing Impacts

Growth inducing impacts from the Project are discussed in more detail in Appendix R, the Eastside Transit Corridor Phase 2 Transportation Growth Inducing Impacts Report. The study area for this analysis is the GSA and DSA. As discussed in Appendix R and also under Section 3.17, Growth Inducing Impacts, several of the related land development projects identified in **Table 3.18-2** provide new housing or commercial opportunities which would result in increases in local population and employment. However, land development projects in the DSA are subject to local city zoning regulations and approvals; therefore, the introduction of new housing or commercial opportunities would not constitute uncontrolled growth. Considered cumulatively, the Build Alternatives and the

2 Plans and projections include, but are not limited to, the Urban Water Management Plans (Metropolitan Water District, Central Basin Municipal Water District, California Water Service, Pico Water District, Suburban Water Systems, and San Gabriel Valley Water Company), the Los Angeles County Sanitation 2019 Districts Sewer System Management Plan (SSMP), the Los Angeles County Department of Public Works (LACDPW) 2018 SSMP, the LACDPW Countywide Integrated Waste Management Plan 2019 Annual Report, the California Energy Commission (CEC) 2019 Integrated Energy Policy Report, the Los Angeles Department of Water and Power (LADWP) 2016 Final Power Integrated Resource Plan, the Southern California Gas Company (SoCalGas) Aspire 2045, Sustainability and Climate Commitment to Net Zero, and the CEC 2018 California Energy Demand 2018-2030 Revised Forecast.

related land development projects would not increase development activity beyond that permitted by local jurisdictions' general plans and zoning regulations; growth inconsistent with these regulations would require discretionary approvals by local jurisdictions within the DSA. The Build Alternatives and related land development projects do not introduce new mechanisms to bypass municipal control over land development potential. Considered cumulatively with the plans and projects identified in **Section 3.18.5**, there would not be a significant cumulative impact.

3.18.7 Mitigation Measures

Section 3.18.6 presents the cumulative impacts of the Project for each evaluated environmental topic and the effects of any applicable mitigation measures. Applicable mitigation measures are identified in the environmental topic's respective Eastside Transit Corridor Phase 2 Impacts Report and are listed in **Table 3.18-3**.

Table 3.18-3. Summary of Mitigation Measure Applicability

Mitigation Measure	Alternative 1 With Commerce MSF or Montebello MSF Site Option	Alternative 2 With Commerce MSF	Alternative 3 With Commerce MSF or Montebello MSF Site Option
Aesthetics			
None required	N/A	N/A	N/A
Air Quality			
None required	N/A	N/A	N/A
Biological Resources			
MM BIO-1	Applicable	N/A	N/A
MM BIO-2	Applicable	N/A	N/A
MM BIO-3	Applicable	N/A	N/A
MM BIO-4	Applicable	Applicable	Applicable
MM BIO-5	Applicable	Applicable	Applicable
MM BIO-6	Applicable	Applicable	Applicable
Cultural Resources			
MM CUL-1	Applicable	Applicable	Applicable
MM CUL-2	Applicable (Commerce MSF only)	N/A	Applicable (Commerce MSF only)
MM CUL-3	Applicable (Commerce MSF only)	N/A	Applicable (Commerce MSF only)
MM CUL-4	Applicable	N/A	N/A
MM CUL-5	Applicable (Commerce MSF only)	Applicable	Applicable (Commerce MSF only)
MM CUL-6	Applicable (Commerce MSF only)	Applicable	Applicable (Commerce MSF only)
MM CUL-7	Applicable	N/A	N/A

Mitigation Measure	Alternative 1 With Commerce MSF or Montebello MSF Site Option	Alternative 2 With Commerce MSF	Alternative 3 With Commerce MSF or Montebello MSF Site Option
MM CUL-8	Applicable	Applicable	Applicable
MM CUL-9	Applicable	Applicable	Applicable
Energy			
None required	N/A	N/A	N/A
Geology, Soils, Seismicity and Paleontological Resources			
MM GEO-1	Applicable	Applicable	Applicable
MM GEO-2	Applicable	Applicable	Applicable
MM GEO-3	Applicable	Applicable	Applicable
MM GEO-4	Applicable	Applicable	Applicable
Greenhouse Gas Emissions			
None required	N/A	N/A	N/A
Hazards and Hazardous Materials			
MM HAZ-1	Applicable	Applicable	Applicable
MM HAZ-2	Applicable	Applicable	Applicable
MM HAZ-3	Applicable	Applicable	Applicable
MM HAZ-4	Applicable	Applicable	Applicable
MM HAZ-5	Applicable	Applicable	Applicable
Hydrology and Water Quality			
MM HWQ-1	Applicable	N/A	N/A
MM HWQ-2	Applicable	N/A	N/A
MM HAZ-2	Applicable	Applicable	Applicable
MM HAZ-3	Applicable	Applicable	Applicable
Land Use and Planning			
None required	N/A	N/A	N/A
Noise and Vibration			
MM NOI-1	Applicable	Applicable	Applicable
MM NOI-2	Applicable	Applicable	Applicable
MM NOI-3	Applicable	Applicable	Applicable
MM NOI-4	Applicable	Applicable	Applicable
MM NOI-5	Applicable	Applicable	Applicable
MM NOI-6	Applicable	Applicable	Applicable
MM NOI-7	Applicable	Applicable	Applicable
MM NOI-8	Applicable	Applicable	Applicable
MM NOI-9	Applicable	Applicable	Applicable
MM NOI-10	Applicable	Applicable	Applicable

Mitigation Measure	Alternative 1 With Commerce MSF or Montebello MSF Site Option	Alternative 2 With Commerce MSF	Alternative 3 With Commerce MSF or Montebello MSF Site Option
MM NOI-11	Applicable	Applicable	Applicable
MM NOI-12	Applicable	Applicable	Applicable
MM NOI-13	Applicable	Applicable	Applicable
MM NOI-14	Applicable	Applicable	Applicable
MM NOI-15	Applicable	Applicable	Applicable
Population and Housing			
None required	N/A	N/A	N/A
Public Services and Recreation			
None required	N/A	N/A	N/A
Transportation and Traffic			
MM TRA-1	Applicable	Applicable	Applicable
Tribal Cultural Resources			
MM TCR-1	Applicable	Applicable	Applicable
MM TCR-2	Applicable	Applicable	Applicable
MM TCR-3	Applicable	Applicable	Applicable
Utilities and Service and Systems			
None required	N/A	N/A	N/A
Growth Inducing Impacts			
None required	N/A	N/A	N/A

3.18.8 Significance After Mitigation

Section 3.18.6 presents the cumulative impacts of the Project for each evaluated environmental topic and the effects of any applicable mitigation measures. Applicable mitigation measures are detailed in the environmental topic's respective EIR sections and Eastside Transit Corridor Phase 2 Impacts Reports and are listed by environmental topic in **Table 3.18-3.** A summary of cumulative impacts for each Build Alternative after the implementation of applicable mitigation measures is presented in **Table 3.18-4**.

Table 3.18-4. Summary of Cumulative Impacts Determinations With Implementation of Mitigation

Environmental Topic	Alternative 1 With Commerce MSF or Montebello MSF Site Option	Alternative 2 With Commerce MSF	Alternative 3 With Commerce MSF or Montebello MSF Site Option
Aesthetics	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact
Air Quality	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation
Biological Resources	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation
Cultural Resources	**Project Contribution Cumulatively Considerable after Mitigation** (Commerce MSF site option only)	**Project Contribution Cumulatively Considerable after Mitigation**	**Project Contribution Cumulatively Considerable after Mitigation** (Commerce MSF site option only)
Energy	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact
Geology, Soils, Seismicity and Paleontological Resources	**Project Contribution Cumulatively Considerable after Mitigation**	**Project Contribution Cumulatively Considerable after Mitigation**	**Project Contribution Cumulatively Considerable after Mitigation**
Greenhouse Gas Emissions	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation
Hazardous Materials	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact
Hydrology and Water Quality	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation
Land Use and Planning	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact
Noise and Vibration	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation
Population and Housing	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation

Environmental Topic	Alternative 1 With Commerce MSF or Montebello MSF Site Option	Alternative 2 With Commerce MSF	Alternative 3 With Commerce MSF or Montebello MSF Site Option
Public Services and Recreation	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation	Project Contribution Not Cumulatively Considerable without Mitigation
Transportation and Traffic	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation
Tribal Cultural Resources	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation	Project Contribution Not Cumulatively Considerable after Mitigation
Utilities and Service Systems	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact
Growth Inducing	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact	NA - No Significant Cumulative Impact

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4. Other CEQA Required Topics

Section 15126 of the CEQA Guidelines identifies the subjects that shall be discussed in an EIR including: effects determined not to be significant, irreversible environmental changes, and growth-inducing effects. Effects determined not to be significant and significant irreversible environmental changes are discussed in the following sections. This chapter also summarizes significant and unavoidable impacts identified in Chapter 3 and potential secondary effects that could occur as result of implementation of the required mitigation measures. Growth inducing effects are addressed in Section 3.17 of this Recirculated Draft EIR.

4.1 Effects Determined Not to be Significant

Section 15128 of the CEQA Guidelines states "an EIR shall contain a brief statement indicating reasons that various possible effects of a project were determined not to be significant and not discussed in detail in the EIR." Metro has determined that the Project would not have the potential to cause significant impacts related to agricultural and forestry resources, mineral resources, and wildfire. Similarly, there is no potential for the Project to combine with past, present, and reasonably probable future projects to create a cumulative impact to these resources. These resource areas are briefly addressed in this section. Each resource area was assessed using Appendix G of the CEQA Guidelines.

4.1.1 Agricultural and Forestry Resources

4.1.1.1 Impact AFR-1: Conversion of Farmland to Non-Agricultural Use

Impact AFR-1: Would a Build Alternative convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

4.1.1.1.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

The detailed study area (DSA) is located in densely developed areas on what the California Department of Conservation's Important Farmland map designates as Urban and Built-Up Land (California Department of Conservation, 2022). Areas designated as Urban and Built-Up Land are not considered Important Farmland (i.e., Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) under CEQA (Public Resources Code Sections 21060.1 and 21095 and CEQA Guidelines Appendix G). The California Department of Conservation does not identify any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the DSA. The closest land designated as Unique Farmland is in the Whittier Narrows Recreation Area which is outside of the DSA. The Build Alternatives, design options, and MSF site options would neither directly affect nor result in the conversion of this land to non-agricultural uses; therefore, no impact would occur.

4.1.1.2 Impact AFR-2: Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract

Impact AFR-2: Would a Build Alternative conflict with existing zoning for agricultural use, or a Williamson Act contract?

4.1.1.2.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

There are no identified agricultural resources in the DSA, nor does the DSA contain areas zoned for agricultural use. Los Angeles County does not participate in the Williamson Act program; thus, no parcels within the DSA are under a Williamson Act contract. The Build Alternatives, design options, and MSF site options would not conflict with existing zoning for agricultural use or a Williamson Act contract; therefore, no impact would occur.

4.1.1.3 Impact AFR-3: Conflict with Existing Zoning for Forestland

Impact AFR-3: Would a Build Alternative conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

4.1.1.3.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

The DSA is located in a densely developed urban areas. There are no areas of forest land as defined in PRC Section 12220(g) or timberland as defined in PRC Section 4526 within the DSA.[1] The Build Alternatives, design options, and MSF site options would not conflict with existing zoning for, or cause rezoning of, forest land or timberland; therefore, no impact would occur.

4.1.1.4 Impact AFR-4: Loss or Conversion of Forest Land

Impact AFR-4: Would a Build Alternative result in the loss of forest land or conversion of forest land to non-forest use?

1 Section 12220(g) defines forest land as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.

4.1.1.4.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

As discussed in **Section 4.1.1.3**, no forest land is located in the DSA. The Project would not change the existing environment in a manner that would result in the conversion of forest land to other kinds of land uses. Therefore, no impact would occur during construction or operation of the Base Alternatives, design options, and MSF site options.

4.1.1.5 Impact AFR-5: Conversion of Farmland or Forest Land

Impact AFR-5: Would a Build Alternative involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

4.1.1.5.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

No forest land or farmland is located within the DSA. The Build Alternatives, design options, and MSF site options would not cause changes in the environment that could result in conversion of farmland or forest land to different uses; therefore, no impact would occur.

4.1.2 Mineral Resources

Mineral resources are naturally occurring chemical compounds that are formed from inorganic and organic substances. Mineral Resources include oil and natural gas, and commercially viable minerals and aggregate resources, including areas suitable for the drilling for and production of oil and natural gas, and surface mining activities.

4.1.2.1 Impact MNR-1: Loss of Availability of a Mineral Resource

Impact MNR-1: Would a Build Alternative result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?

4.1.2.1.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

The DSA overlies a small section of the Los Angeles East Oil Field and Bandini Oil Field wherein a limited number of active oil wells are located in the City of Commerce. As discussed in the Hazards and Hazardous Materials Section of this Recirculated Draft EIR (Section 3.8.5), the May 2021 Final Draft ISA Report did not identify idle, active, or abandoned/plugged wells within the Alternative 1 alignment, station sites, or within the Commerce MSF site option. Additionally, active oil/gas wells,

plugged dry oil/gas wells, and idle oil/gas wells are located in the vicinity of the alignment west of South Tubeway Avenue, and two plugged dry oil/gas wells are located under the Citadel Outlets parking lot southwest of Smithway Street. Plugged dry oil/gas wells and idle oil/gas wells are located south and west of the Commerce MSF site option boundaries. The May 2021 Final Draft ISA Report identified plugged dry holes within the Montebello MSF site option (Attachment A of Appendix I, Hazards and Hazardous Materials Impacts Report, Figure 4B). The City of Commerce 2020 General Plan (City of Commerce, 2008) notes that the presence of these wells does not necessarily limit development of the area since sophisticated drilling techniques have enabled well operators to centralize pumping operations at considerable distances from the petroleum deposits.

No other known mineral resources that are of value to region or state located within the DSA. The greater Los Angeles area is the nation's leading producer for sand and gravel. Although the DSA transverses the San Gabriel River and Rio Hondo, there are no commercially viable sand and gravel resources in the area (City of Pico Rivera, 2014a). The Build Alternatives, design options, and MSF site options would neither directly nor indirectly result in the loss of availability of a known mineral resource that would be of value to the region and residents of California; therefore, no impact would occur.

4.1.2.2 Impact MNR-2: Loss of Availability of a Mineral Resource Delineated on a Local Plan

Impact MNR-2: Would a Build Alternative result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

4.1.2.2.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

As discussed in **Section 4.1.2.1.1**, the DSA overlies the Los Angeles East Oil Field and Bandini Oil Field. While the City of Commerce General Plan (City of Commerce, 2008) discusses the existence of oil fields, it notes that the presence of these wells does not necessarily limit development of the area since sophisticated drilling techniques have enabled well operators to centralize pumping operations at considerable distances from the petroleum deposits. Additionally, the City of Commerce does not delineate these oil fields or any locally important mineral resource recovery site on its general plan, specific plans, or other land use plans. Furthermore, the DSA does not include any areas designated by local jurisdictions as containing a mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan [(City of Montebello, 2016) (City of Pico Rivera, 2014b) (City of Whittier, 1993b, 2021) (Los Angeles County Department of Public Works, 2014ab)]. The Build Alternatives, design options, and MSF site options would not result in the loss of availability of a locally important mineral resource recovery site delineated on land use plans; therefore, no impact would occur.

4.1.3 Wildfire

Appendix G of the CEQA Guidelines determines wildfire impacts based on whether a proposed project would occur within or near a State Responsibility Area (SRA) or on lands classified as very high fire hazard severity zones. The Board of Forestry and Fire Protection is a Governor-appointed body, whose mission is to lead California in developing policies and programs that serve the public interest in environmentally, economically and socially sustainable forest and rangeland management; and a fire protection system that protects and serves the people of the state. One of its statutory responsibilities is to provide direction and guidance to the Department of California of Forestry and Fire Protection (CAL FIRE).

CAL FIRE's mission emphasizes the management and protection of California's natural resources; a goal that is accomplished through ongoing assessment and study of the State's natural resources and an extensive CAL FIRE Resource Management Program. CAL FIRE maintains a database of areas designated as a Very High Fire Hazard Severity Zone (VHFHSZ). The CAL FIRE database also identifies areas designated as an SRA and a Local Responsibility Area (LRA).[2] Cities and counties are required by law to adopt a comprehensive general plan with a safety element. Land use planning incorporates safety element requirements for SRAs and VHFHSZs.

For the evaluation of the Build Alternatives, design options, and MSF site options, the wildfire specialized study area is defined as the area within a 0.25 mile distance of the Base Alternative 1 and MSF site options. The specialized study area does not include an SRA. The closest SRA is approximately 1.8 miles northeast of the specialized study area in Puente Hills, an undeveloped transverse range in an unincorporated area of Los Angeles County. The closest existing LRA is 1.3 miles from the specialized study area within the foothills of Puente Hills and in the city of Whittier.

4.1.3.1 Impact WFR-1: Impair an Adopted Emergency Plan

Impact WFR-1: If located in or near SRAs or lands classified as very high fire hazard severity zones, would a Build Alternative substantially impair an adopted emergency response plan or emergency evacuation plan?

4.1.3.1.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

As discussed in **Section 4.1.3**, the specialized study area is located within a highly urbanized area. The area does not include any areas designated as an SRA or land classified as VHFHSZ and is not located near any areas designated as an SRA or land classified as VHFHSZ. The Build Alternatives, design options, and MSF site options would not be located in or near SRAs or land classified as VHFHSZ. Additionally, the Build Alternatives, design options, and MSF site options would not substantially impair an adopted emergency response plan or emergency evacuation plan; therefore, no impact would occur.

[2] California Public Resources Code (PRC) Sections 4125–4127 define a State Responsibility Area as lands in which the financial responsibility for preventing and suppressing wildland fire resides with the State of California. A Local Responsibility Area are areas under the jurisdiction of local entities (e.g., cities and counties).

4.1.3.2 Impact WFR-2: Expose Occupants to Pollutant Concentrations From a Wildfire

Impact WFR-2: If located in or near SRAs or lands classified as very high fire hazard severity zones, would a Build Alternative due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

4.1.3.2.1 Operational and Construction Impacts

Base Alternatives and Design Options and MSF Site Options

As discussed in **Section 4.1.3**, the specialized study area is located within a highly urbanized area. The area does not include any areas designated as an SRA or land classified as VHFHSZ and is not located near any areas designated as an SRA or land classified as VHFHSZ. The Build Alternatives, design options, and MSF site options would not be located in or near SRAs or land classified as VHFHSZ. Additionally, the Build Alternatives, design options, and MSF site options would not create or exacerbate wildfire risks; therefore, no impact would occur.

4.1.3.3 Impact WFR-3: Infrastructure Exacerbate Fire Risk

Impact WFR-3: If located in or near SRAs or lands classified as very high fire hazard severity zones, would a Build Alternative require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

4.1.3.3.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

As discussed in **Section 4.1.3**, the specialized study area is located within a highly urbanized area. The area does not include any areas designated as an SRA or land classified as VHFHSZ and is not located near any areas designated as an SRA or land classified as VHFHSZ. The Build Alternatives, design options, and MSF site options would not be located in or near SRAs or land classified as VHFHSZ. Additionally, the Build Alternatives, design options, and MSF site options would not require installation or maintenance of wildfire suppression or protection infrastructure; therefore, no impact would occur.

4.1.3.4 Impact WFR-4: Expose People of Structures to Significant Risk

Impact WFR-4: If located in or near SRAs or lands classified as very high fire hazard severity zones, would a Build Alternative expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

4.1.3.4.1 Operational and Construction Impacts

Base Alternatives, Design Options, and MSF Site Options

As discussed in **Section 4.1.3**, the specialized study area is located within a highly urbanized area. The area does not include any areas designated as an SRA or land classified as VHFHSZ and is not located near any areas designated as an SRA or land classified as VHFHSZ. The Build Alternatives, design options, and MSF site options would not be located in or near SRAs or land classified as VHFHSZ. Additionally, the Build Alternatives, design options, and MSF site options would not expose people or structures to risks associated with post-fire landslides or flooding; therefore, no impact would occur.

4.2 Significant and Unavoidable Impacts

This section is prepared in accordance with Section 15126.2(b) of the CEQA Guidelines, which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated but cannot be reduced to a less than significant level. An analysis of environmental impacts caused by the Build Alternatives, design options, MSF site options, and the combinations thereof has been conducted and is contained in Chapter 3 of this Recirculated Draft EIR. According to the environmental impact analysis, there are no feasible mitigation measures to reduce significant impacts on historical resources (Impact CUL-1) or paleontological resources (Impact GEO-5) to less than significant. According to the environmental impact analysis, there are also no feasible measures to reduce the Project's cumulatively significant contribution to the cumulatively significant impacts on historical resources (Impact CUL-1) or paleontological resources (Impact GEO-5). As such, the construction of the Project would result in significant and unavoidable impacts related to Historical Resources (Impact CUL-1) and Paleontological Resources (Impact GEO-5) as summarized below and discussed in further detail in Section 3.6, Cultural Resources, and Section 3.16, Geology, Seismicity, Soils, and Paleontological Resources, of this Recirculated Draft EIR.

4.2.1 Construction

Cultural Resources CUL-1:

- Construction of Alternative 1 with the Commerce MSF site option would have a significant and unavoidable impact. It would cause a substantial adverse change in the significance of the Pacific Metals Company at 2187 Garfield Avenue and the Vail Field Industrial Addition historic district. This impact would remain significant and unavoidable with any of the design options. Alternative 1 with the Commerce MSF site option would also have a cumulatively considerable contribution to a cumulatively significant and unavoidable impact.

- Construction of Alternative 2 with the Commerce MSF site option would have a significant and unavoidable impact. It would cause a substantial adverse change in the significance of the Vail Field Industrial Addition historic district. This impact would also be cumulatively considerable. This impact would remain significant and unavoidable with any of the design options. Alternative 2 with the Commerce MSF site option would also have a cumulatively considerable contribution to a cumulatively significant and unavoidable impact.

- Construction of Alternative 3 with the Commerce MSF site option would have a significant and unavoidable impact. It would cause a substantial adverse change in the significance of the Pacific Metals Company at 2187 Garfield Avenue and the Vail Field Industrial Addition historic district. This impact would also be cumulatively considerable. This impact would remain significant and unavoidable with any of the design options. Alternative 3 with the Commerce MSF site option would also have a cumulatively considerable contribution to a cumulatively significant and unavoidable impact.

Geology, Soils, Seismicity, and Paleontological Resources GEO-5:

- Construction of Alternative 1 with the Commerce MSF site option or the Montebello MSF site option would have a significant and unavoidable impact. It would directly destroy subsurface paleontological resources by using the TBM to bore the tunnel. This impact would remain significant and unavoidable with any of the design options. Alternative 1 with the Commerce MSF site option or the Montebello MSF site option would also have a cumulatively considerable contribution to a cumulatively significant and unavoidable impact.

- Construction of Alternative 2 with the Commerce MSF site option would have a significant and unavoidable impact. It would directly destroy subsurface paleontological resources by using the TBM to bore the tunnel. This impact would remain significant and unavoidable with any of the design options. Alternative 2 with the Commerce MSF site option would also have a cumulatively considerable contribution to a cumulatively significant and unavoidable impact.

- Construction of Alternative 3 with the Commerce MSF site option or the Montebello MSF site option would have a significant and unavoidable impact. It would directly destroy subsurface paleontological resources by using the TBM to bore the tunnel. This impact would remain significant and unavoidable with any of the design options. Alternative 3 with the Commerce MSF site option or the Montebello MSF site option would also have a cumulatively considerable contribution to a cumulatively significant and unavoidable impact.

4.2.2 Operation

Operation of the Build Alternatives, design options, and MSF site options would not result in a significant and unavoidable impact.

4.3 Significant Irreversible Environmental Changes

Public Resources Code Section 21100(b)(2)(B) and Section 15126.2(c) of the CEQA Guidelines require that an EIR analyze the extent to which the proposed project's primary and secondary effects would impact the environment and commit nonrenewable resources to uses that future generations would not be able to reverse. Generally, a project would result in significant irreversible environmental changes if any of the following would occur:

- The primary and secondary impacts would generally commit future generations to similar uses;

- The Project would involve a large commitment of nonrenewable resources;
- The Project involves uses in which irreversible damage could result from any potential environmental accidents associated with the Project; or
- The proposed consumption of resources is not justified (e.g., the Project involves the wasteful use of energy).

Construction and operation of the Build Alternatives, design options, and MSF site options would result in the use of nonrenewable resources, including fossil fuels; natural gas; water; and building materials, such as concrete. Construction activities would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels. However, the use of energy for construction activities would be consistent with other construction projects and would not substantially affect the availability of such resources. Operation of the Build Alternatives would also consume natural resources. However, the consumption of resources for operation would be consistent with other Metro LRT, would provide a regional transportation benefit, and would not represent a wasteful or unnecessary use of energy.

The Build Alternatives would result in irreversible environmental changes to existing natural resources, such as the commitment of energy and water resources as a result of operation and maintenance. However, as discussed in Section 3.5, Energy, and Section 3.16, Utilities and Service Systems, the amount and rate of consumption of these resources would not result in significant environmental impacts or result in the unnecessary, inefficient, or wasteful use of resources. The Build Alternatives, design options, and MSF site options are not anticipated to consume substantial amounts of energy or use other resources in a wasteful manner; therefore, impacts related to significant and irreversible environmental changes would be less than significant.

4.4 Potential Secondary Effects

CEQA Guidelines Section 15126.4(a)(1)(D) states that states that, "[i]f a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measures shall be discussed but in less detail than the significant effects of the project as proposed." As identified in Chapter 3, Environmental Analysis, mitigation measures would be implemented to reduce construction and/or operational impacts of the Project in areas of biological resources, cultural resources, geology, soils seismicity and paleontological resources, hazards and hazardous materials, hydrology and water quality, noise and vibration, transportation and traffic, and tribal cultural resources. The following presents an evaluation of the potential secondary effects that could occur as a result of implementation of the required mitigation measures. For the reasons stated below, it is concluded that the required mitigation measures would not result in significant secondary impacts.

4.4.1 Biological Resources

MM BIO-1 requires surveys to be conducted to ensure that bat species are not roosting within 100 feet of demolition work at bridges. MM BIO-2 requires surveys of inactive swallow nests within 100 feet of affected bridges to determine whether they are occupied by roosting bats. MM BIO-3 requires bat exclusion plan and measures to be developed if bats are roosting on or within 100 feet of affected bridges. MM BIO-4 requires a bird nesting survey within the project area, and if an active nest is

located, requires the implementation of no-work buffers around the nest. Conducting surveys and implementing bat exclusion measures requires vehicle use to transport personnel to the Project site. This is anticipated to consist of one or two round trip vehicle trips per survey. The vehicles would use existing roadways and staging locations to access the Project site and perform work. Thus, there would be no impact to transportation and no other secondary impacts would occur.

MM BIO-5 and MM BIO-6 require the cleaning of construction vehicles and equipment, including when moving vehicles and equipment from one construction area to another. Implementation of these mitigation measures would have a beneficial impact by minimizing the potential spread of invasive species and would not result in physical changes in the environment that could cause significant secondary impacts.

4.4.2 Cultural Resources

MM CUL-1 and MM CUL-4 ensure that Metro conducts pre-construction baseline surveys, implements building protection measures, and conducts a post-construction survey to ensure noise and vibration impacts to the Golden Gate Theater and Dal Rae Restaurant Sign do not occur. MM CUL-4 is only applicable to Alternative 1. Conducting surveys requires vehicle use to transport personnel to the Project site. This would only result in a small number of trips and personnel. The vehicles would use existing roadways and staging locations to access the Project site and perform work. Thus, there would be no impact to transportation and no other secondary impacts would occur.

MM CUL-2 and MM CUL-5 ensure that documentation for the Pacific Metals Company Building and Vail Field Industrial Addition (if required) are undertaken, following the guidelines of the National Park Service's Historic American Building Survey/Historic American Engineering Record/Historic American Landscape Survey (HABS/HAER/HALS) program. MM CUL-3 and CUL-6 require an interpretive program for the Pacific Metals Company Building and the Vail Field Industrial Addition (if required) be undertaken. MM CUL-2 and 3 only apply to Alternative 1 and 3 with the Commerce MSF, and MM CUL-5 and 6 apply to Alternatives 1, 2 and 3 with the Commerce MSF. MM CUL-8 requires a project-wide Cultural Resources Monitoring and Mitigation Plan (CRMMP). MM CUL-7 includes monitoring ground disturbance at the Battle of Rio San Gabriel site, which is applicable to Alternative 1 only. The CRMMP would specify required processes should potentially significant archeological or cultural resources be identified during earth-moving activities. MM CUL-9 identifies procedures required should human remains be discovered. These mitigation measures are procedural actions that would not result in physical changes in the environment that could result in secondary impacts.

4.4.3 Geology, Soils, Seismicity, and Paleontological Resources

MM GEO-1 through MM GEO-4 require a qualified paleontologist to monitor ground disturbing activity. The paleontologist would be equipped to salvage fossils and samples of sediment as they are unearthed, ensure that recovered specimens be prepared to a point of identification and permanent preservation, and that specimens shall be curated into a professional accredited museum repository. These mitigation measures are procedural actions that would not result in physical changes in the environment that could result in secondary impacts.

4.4.4 Hazards and Hazardous Materials

MM HAZ-1 requires Metro to hire a qualified environmental professional to conduct a Phase II Environmental Site Investigation before any substantial ground disturbance occurs on or near the properties with documented releases. MM HAZ-2, MM HAZ-4, and MM HAZ-5 require Metro to obtain permits and/or comply with appropriate regulatory agency standards to avoid hazardous waste releases, develop a soil and groundwater management plan, protect workers, and conduct hazardous building surveys and abatement prior to demolition of structures. MM HAZ 3 requires the contractor to create specifications relating to hazardous materials during excavating soil and groundwater. MM HAZ-1 through MM HAZ-5 are procedural actions that would not result in physical changes in the environment that could result in secondary impacts.

4.4.5 Hydrology and Water Quality

MM HWQ-1 would isolate construction in areas that do not occur in water when water is present in the Rio Hondo and spreading grounds or the San Gabriel River. Work area isolation could include use of a coffer dam, a by-pass channel, management of the water in the system by Los Angeles County Flood Control District (LACFCD), or other means to isolate the localized work area around the bridge columns. Because the isolated area would be localized around the bridge columns, any aquatic species present would be expected to readily move into other adjacent habitats. Therefore, work isolation would not interfere substantially with the movement of fish and wildlife species and impacts would be less than significant. This mitigation is discussed in more detail in Section 3.9, Hydrology and Water Quality, and Appendix J, Hydrology and Water Quality Impacts Report. There are no terrestrial wildlife corridors within the BRSA of Alternative 1, so there would be no impacts on terrestrial wildlife corridors. Implementation of MM HWQ-1, which includes isolating the work area if water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or the San Gabriel River, has the potential to impact flood flows. However, the isolation method would be determined through an agreement between Metro and LACFCD and would only be used for a temporary amount of time. Thus, the use of an isolation method would have a less than significant impact on flood flows.

MM HWQ-2 requires Metro to construct compensatory mitigation for the potential loss of flood storage due to placement of LRT bridge piers or enhanced bridge supports in Los Angeles County Department of Public Works (LACDPW) flood control facilities within the impacted flood control facility based on the volume of the flood storage loss and hydraulic analysis. This mitigation measure, which would only apply to Alternative 1, would maintain the hydraulic profile of the existing floodplain and it would not result in significant secondary impacts on the environment.

4.4.6 Noise and Vibration

MM NOI-1 and NOI-15 would require Metro and/or Metro's contractor to create a construction noise control plan, construction noise monitoring plan, construction vibration control plan, and construction vibration monitoring plan. MM NOI-8 requires Metro to notify the public of construction operations and schedules and set up a Noise and Vibration Complaint Hotline. MM NOI-14 requires Metro to conduct a pre-construction survey of selected properties as a method of comparison for potential vibratory impacts on structures. These mitigation measures are procedural actions that would not result in physical changes in the environment that could result in secondary impacts.

MM NOI-3 requires Metro's contractor to erect temporary noise barriers between noisy activities and noise sensitive receptors. While the use of barriers could result in visual impacts, the barriers would only in be place while the noise generating activities could impact adjacent sensitive receptors and they would be removed when such activities are completed. Visual impacts of the barriers would be temporary in nature and are considered a less than significant secondary impact.

MM NOI-4, MM NOI-5, MM NOI-6, MM NOI-7, MM NOI-10, and MM NOI-11 involve specific construction-related measures to reduce noise levels at adjacent sensitive receptors. These measures are considered part of the construction phase of any transportation project and, thus, are included within the analysis contained in this Recirculated Draft EIR and would not result in additional significant secondary impacts.

MM NOI-12 and MM NOI-13 involve selection of track materials (track support systems which incorporate resilience and "gapless" spring frog or other low vibration switches). Selection of these materials would be installed on the guideway that is addressed in the analysis contained in this Recirculated Draft EIR and would have no significant secondary impacts

MM NOI-2 and MM NOI-9 establishes a preferred construction methodology for the removal of excavated spoils from the TBM (i.e., muck) and installation of piles at locations containing noise and vibration-sensitive receptors. MM NOI-9 requires Metro's contractor to use a muck removal conveyor in lieu of a rail-based muck wagon to reduce potential noise and vibration impacts. While conveyor systems require power to operate, use of this equipment would not be notably different than a rail-based muck wagon system and would not meaningfully change the evaluation of construction impacts addressed in this Recirculated Draft EIR and therefore MM NOI-9 would not have a significant secondary impact.

MM NOI-2 would require Metro's contractor to, where practicable, use cast-in-drilled-hole (CIDH) or drilled piles rather than impact pile drivers to reduce excessive noise around noise sensitive receptors. The use of CIDH piles in wet conditions may be infeasible in certain areas due to the presence of soft cohesive soils, loose sands, or boulders, or the presence of high groundwater pressure that would make it difficult to establish a differential water pressure head for slurry construction. In these cases, impact pile drivers may be necessary; in all other practicable cases, Metro would be required to use CIDH or drilled piles. Installation of CIDH and/or drilled piles is included the evaluation of construction impacts addressed in this Recirculated Draft EIR and therefore, MM NOI-2 would not have a significant secondary impact.

4.4.7 Transportation and Traffic

MM TRA-1 requires Metro to prepare a Traffic Management Plan as needed to facilitate the flow of traffic in and around construction zones. Implementation of this plan may result in temporary air quality and noise effects, as well as traffic impacts along the associated roadways during the construction phase of the Project. However, these impacts would be temporary and localized in nature. Thus, there would be less than significant secondary impacts.

4.4.8 Tribal Cultural Resources

MM TCR-1 requires all construction personnel involved in ground-disturbing activities to be provided with appropriate tribal cultural resources training. MM TCR-2 requires Metro to retain a Native American monitor for work at locations identified as sensitive during tribal consultation during ground disturbing activities during construction. MM TCR-3 requires a project-wide CRMMP that addresses areas where potentially significant prehistoric and historic archaeological deposits, and tribal cultural resources are likely to be located based on background research, a geoarchaeological analysis, and tribal consultation. These mitigation measures are procedural actions that would not result in physical changes in the environment that could result in secondary impacts.

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5. Comparison of Alternatives

5.1 Introduction

This chapter describes and synthesizes the environmental analysis of this Recirculated Draft EIR to provide a comparison of the three Build Alternatives and the No Project Alternative. The information presented in this chapter allows agency stakeholders, decision-makers, and the general public to understand the benefits and trade-offs of the Build Alternatives and the No Project Alternative. This chapter also includes a comparative discussion of the design options and MSF site options being considered.

CEQA requires identification of a proposed project[1] through the analysis of project alternatives. According to Section 15126.6(a) of the CEQA Guidelines, "An EIR shall describe the range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation." The comparison of alternatives informs decision-makers and the public by presenting the potential environmental impacts resulting from each of the Project alternatives.

This Chapter summarizes the analysis of the Project alternatives (three Build Alternatives, including the design options and MSF site options, and the No Project Alternative) to support the rationale for the selection and withdrawal of alternatives and design options. Analysis of the Build Alternatives is provided in this Recirculated Draft EIR Chapter 3, Section 3.1 through 3.17, with a more detailed evaluation provided in the Impacts Reports for each resource (Appendices B through R). Analysis of the No Project Alternative is summarized in **Section 5.5** and presented in greater detail in the Impacts Reports for each resource (Appendices B through R).

5.2 Project Objectives

Consistent with Section 15126.6(c) of the CEQA Guidelines, the range of Build Alternatives include those that could feasibly accomplish the basic objectives of the Project and could avoid or substantially lessen one or more of the significant effects. The objectives of the Project address the mobility challenges within East Los Angeles County due to high population, employment growth and the constrained transportation network. Faced with these mobility challenges, there is also a risk to future population and economic growth as well as other environmental considerations. This Project would provide improved mobility options for East Los Angeles County and support the regional goals documented in Metro's 2020 Long Range Transportation Plan (LRTP) and Metro's Vision 2028 Strategic Plan (Vision 2020 Plan). As such, the Project Objectives are:

- Enhance regional connectivity and air quality goals by extending the existing Metro L (Gold) Line further east from the East Los Angeles terminus.

[1] According to Section 15378 of the CEQA Guidelines, the term "Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. Within this Recirculated Draft EIR, the Project refers to the whole of the action and to the underlying physical activity being evaluated.

- Provide mobility options to increase accessibility and convenience to and from eastern Los Angeles County.
- Improve transit access to activity centers and employment within eastern Los Angeles County that would be served by the Project.
- Accommodate future transportation demand resulting from increased population and employment growth.
- Enable jurisdictions in eastern Los Angeles County to address their transit-oriented community goals and provide equitable development opportunities.
- Improve accessibility and connectivity to transit-dependent communities.

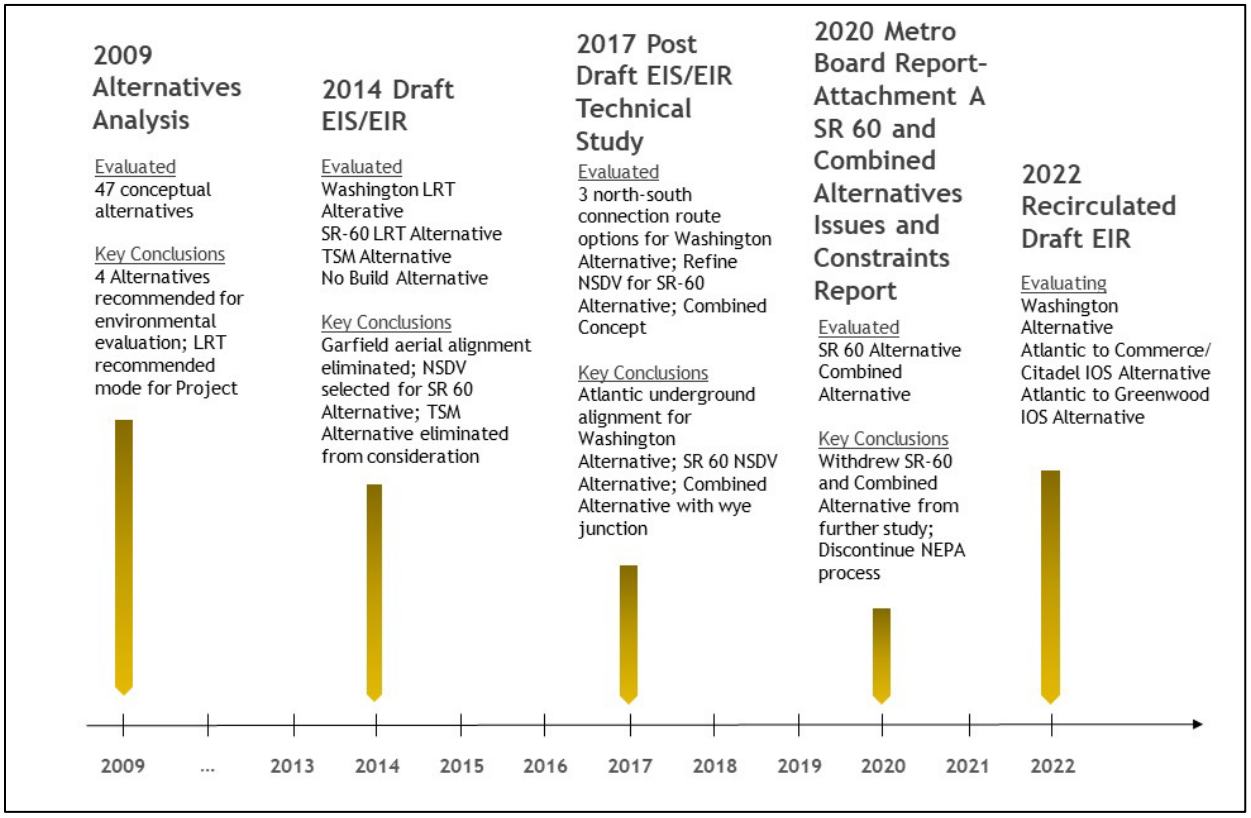
As described in Chapter 2, each Build Alternative has been defined to meet these Project Objectives and advance the goals of Metro's LRTP and Vision 2020 Plan. Other project alternatives have been considered and withdrawn over the history of project development. These alternatives were eliminated from consideration based on their inability to address the Project Objectives or increasing the Project's potential significant environmental effects, as well as other feasibility considerations such as site suitability, economic viability, availability of infrastructure, local and regional plan consistency or regulatory limitations and jurisdictional boundaries as summarized further below and in Appendix T, Alternatives Withdrawn from Further Evaluation.

5.3 Alternatives Withdrawn

The evaluation and screening of concepts, engineering and environmental refinements, and decisions to withdraw alternatives from consideration has had a long history in the development of the Project. As described in Section 2.1 of Chapter 2, Project Description, an Alternative Analysis (AA) process was completed in October 2009 which included preliminary, initial, final and conceptual engineering screening of concepts (Metro 2009). The AA screening analysis is Attachment A of Appendix T.

The AA screening analysis was followed by Project refinement through conceptual engineering and environmental analysis as part of the 2014 Draft Environmental Impact Statement (EIS)/ Environmental Impact Report (EIR) (Metro 2014a). Based on input and comments received from stakeholders and regulatory agencies, additional concepts were developed and evaluated as part of the May 2017 Post Draft EIS/EIR Technical Study (Metro 2017). In addition, in February 2020, the Metro Board approved the withdrawal of the State Route (SR) 60 Light Rail Transit (LRT) Alternative which faced significant environmental and engineering challenges (Metro 2020a).

This section provides a summary of the screening, refinement and alternatives withdrawn for the Project. Several screening reports and technical refinement studies were completed as part of the Project development process, which are illustrated in **Figure 5.1,** Alternatives and Screening Process.



Source: Metro; CDM Smith/AECOM JV, 2021.

Figure 5.1. Development of Alternatives and Screening Process

Table 5-1. presents an overview of the concepts and alternatives withdrawn, including information on when an alternative was introduced and withdrawn, key reasons why it was eliminated from consideration, and the alternative(s)/concept(s) that were advanced for future study as a result of the screening. The table is grouped into five categories: Initial Concepts, SR 60 LRT Alternative, Washington LRT Alternative, Other Concepts and Alternatives, and Design Options.

Appendix T provides more detailed discussion on the AA screening evaluation and withdrawal of alternatives.

Table 5-1. Concepts and Alternatives Withdrawn

Alternative and Concepts Considered	Key Reasons for Elimination	Alternative(s)/Concept(s) Carried Forward
Initial Concepts		
Initial Concepts	• Beverly Boulevard LRT and Beverly/Whittier Boulevard LRT not recommended due to potential conflicts with SCE, UPRR, and Whittier Greenway Sections 6(f) and 4(f) concerns.[1]	• SR 60 LRT Alternative • Washington Boulevard LRT Alternative • TSM Alternative • No Build Alternative

Alternative and Concepts Considered	Key Reasons for Elimination	Alternative(s)/Concept(s) Carried Forward
SR 60 Alternative		
SR 60 Bus Rapid Transit (BRT)	• BRT option has the lowest ridership of the alternatives and did not provide any cost savings when compared to the LRT alternatives.	• LRT chosen mode for the Eastside Transit Corridor Phase 2 Project
SR 60 LRT Baseline Alternative (alignment south of the SR-60 Freeway)	• The aerial structure on the south side of the SR-60 freeway traverses environmentally sensitive land uses and resources. • Conflicts with SCE utilities. • MSF site limitations. • Inconsistencies with Metro's TOC and FLM policies. • Public Scoping comments (concerns related to safety, access, construction, permitting, traffic, etc.)	• SR 60 LRT North Side Design Variation • Washington LRT Alternative • No Build Alternative
SR 60 LRT – Mission Junction Maintenance Yard	• This site was not large enough to accommodate the MSF option. • Complicated half-mile lead track to access this site.	• Commerce MSF site option • Montebello MSF site option
SR 60 LRT – (North Side Design Variation (alignment north of the SR-60 Freeway)	• Non-standard bridge design over SR 60 Freeway. • Impacts to future expansion plan of the SR 60 Freeway. • Potential conflicts with the Paramount Boulevard Bridge Restoration Project.	• Washington LRT Alternative • No Build Alternative
Washington Alternative		
Washington LRT – Garfield Avenue (aerial)	• Construction impact concerns (traffic/circulation, business disruption and/or relocation). • Stakeholder comments received on the Draft EIS/EIR.	• Washington LRT – Atlantic Boulevard (underground)
Washington LRT – Garfield Avenue (underground)	• Impacts to existing businesses, residents, and relocation of underground utilities. • Does not serve highest ridership catchment area near Commerce/Citadel. • Significant impacts during construction (property acquisition, business displacement, and traffic/circulation).	• Washington LRT – Atlantic Boulevard (underground)
Washington LRT – Atlantic Boulevard (at-grade)	• An at-grade LRT alignment would impact sensitive uses (e.g., schools and churches). • At-grade crossings could result in non-mitigatable significant traffic/circulation and access impacts.	• Washington LRT – Atlantic Boulevard (underground)
Washington LRT – Arizona Avenue (at-grade)	• An at-grade LRT alignment would require removal of on-street parking and reduction of existing travel lanes. • A junction at 3rd Street and Mednik Avenue would require additional property acquisitions and affect adjacent sensitive uses.	• Washington LRT – Atlantic Boulevard (underground)

Alternative and Concepts Considered	Key Reasons for Elimination	Alternative(s)/Concept(s) Carried Forward
Washington LRT – Arizona Avenue (underground)	• The LRT portal to underground and a rail junction would remove the existing access to East Los Angeles Civic Center and future access to stations along Atlantic Blvd. • Requires acquisition of residences to accommodate the TBM launch or extract.	• Washington LRT – Atlantic Boulevard (underground)
Washington LRT – Santa Fe Springs MSF Option	• Requires nine acres of property acquisition, of which is under construction for private industrial development.	• Commerce MSF site option • Montebello MSF site option
Washington LRT – Rosemead Boulevard Crossing Option	• Aerial configuration was withdrawn based on the findings of the Metro Grade Crossing Analysis.	• Washington LRT Alternative, Rosemead Boulevard at-grade
Washington LRT – San Gabriel River/ I-605 Crossing Option	• After further engineering design, it was determined that the guideway could be accommodated under I-605.	• Washington LRT Alternative, I-605 at-grade
Other Alternatives and Concepts Considered		
Beverly Boulevard LRT	• Would require an SCE easement. • Would require an UPRR easement. • Would require acquisition of recreational areas which would raise Section 4(f) issues.	• SR 60 LRT Alternative • Washington LRT Alternative • TSM Alternative • No Build Alternative
Whittier Boulevard LRT	• Potential significant community impacts, including noise and vibration, community cohesion, and street system capacity impacts.	• SR 60 LRT Alternative • Washington LRT Alternative • TSM Alternative • No Build Alternative
TSM Alternative	• FTA no longer requires a TSM Alternative for federal New Starts funding. • NextGen bus improvements are already part of the No Project Alternative (baseline).	• SR 60 LRT Alternative • Washington LRT Alternative • No Build Alternative
Combined Concept	• Would require additional property acquisitions and result in more construction impacts. • Could not support five-minute headways without interlining the Metro L (Gold) Line in the area.	• Washington LRT – Atlantic Boulevard (underground)

Source: CDM Smith/AECOM JV, 2021.
Note:
See Appendix T for detailed information on the initial concepts studied (Attachment A - 2009 AA Addendum) and project alternatives withdrawn.
Key:
AA = Alternatives Analysis; BRT = bus rapid transit; Caltrans = California Department of Transportation; EIS/EIR = environmental impact statement/environmental impact report; FLM = First/Last Mile; FTA = Federal Transit Administration; I = Interstate; LRT = light rail transit MSF = maintenance and storage facility; SCE = Southern California Edison; SR = State Route; TBM = tunnel boring machine; TOC = Transit Oriented Communities; TSM = Transportation Systems Management; UPRR = Union Pacific Railroad;

5.4 Summary of Project Alternatives

The Project would extend the Metro L (Gold) Line LRT from the current terminus at the Atlantic Station into eastern Los Angeles County. In addition to the No Project Alternative described in **Section 5.5**, there are three Build Alternatives and under consideration in this Recirculated Draft EIR: Alternative 1 Washington (Alternative 1), Alternative 2 Atlantic to Commerce/Citadel IOS (Alternative 2), and Alternative 3 Atlantic to Greenwood IOS (Alternative 3).

Two Initial Operating Segment (IOS) alternatives are being evaluated in this Recirculated Draft EIR (Alternative 2 and Alternative 3). An IOS is a segment of the project alignment that can function as a stand-alone project, independent on other segments or phases to be constructed. The purpose of developing and evaluating the IOS alternatives is to identify a segment of the Build Alternative that can provide a cost-effective solution due to timing of funding availability with the greatest benefit of the Project. Alternative 2 and Alternative 3 are IOSs and would run along the same alignment and have the same LRT design features and operating characteristics as the full-length Alternative 1. Each of the IOS alternatives would therefore possess a smaller project footprint than Alternative 1.

Alternative 1 has the longest alignment at approximately 9.0 miles with seven stations and two MSF site options, terminating at an at-grade Lambert station in the city of Whittier. The base Alternative 1 includes the relocation and reconfiguration of the existing Atlantic Station to an underground center platform station located beneath Atlantic Boulevard south of Beverly Boulevard in East Los Angeles and six new stations (two underground: Atlantic/Whittier, Commerce/Citadel; one aerial: Greenwood; and three at-grade: Rosemead, Norwalk, and Lambert). The base Alternative 1 consists of 3.0 miles of tunnel, 1.5 mile of aerial, and 4.5 miles of at-grade alignment. The base Alternative 1 also includes MSF site options in the city of Commerce or the city of Montebello which both have aerial lead tracks to the MSF. Alternative 1 has two design options with station and alignment variations: the Atlantic/Pomona Station Option and the Montebello At-Grade Option. The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to an underground station between Atlantic Boulevard, Pomona Boulevard and Beverly Boulevard. The Montebello At-Grade Option is an at-grade guideway design option along Washington Boulevard between Yates Avenue and Carob Way in the city of Montebello. This design option would include an at-grade Greenwood station and the Montebello MSF At-Grade Option, which consists of at-grade lead tracks to the Montebello MSF site option if the Montebello MSF site option is selected.

The base Alternative 2 is underground and has the shortest alignment at approximately 3.2 miles in length with three stations and one MSF site option (the Commerce MSF site option). It would terminate at the underground Commerce/Citadel station with non-revenue aerial lead tracks extending to the Commerce MSF site option. Alternative 2 has one design option with station and alignment variations: the Atlantic/Pomona Station Option. The Atlantic/Pomona Station Option would relocate the existing Atlantic Station to an underground station between Atlantic Boulevard, Pomona Boulevard and Beverly Boulevard.

The base Alternative 3 is approximately 4.6 miles in length with underground and aerial segments and four stations (three underground and one aerial) and two MSF site options in the city of Commerce or the city of Montebello. Alternative 3 would terminate at Greenwood station in the city of Montebello. Alternative 3 has the same two design options as Alternative 1: the Atlantic/Pomona Station Option (relocation of the existing Atlantic Station to an underground station between Atlantic Boulevard, Pomona Boulevard and Beverly Boulevard) and the Montebello At-Grade Option (an at-grade segment

between Yates Avenue and Carob Way with an at-grade Greenwood station and the Montebello MSF At-Grade Option if the Montebello MSF site option is selected).

There are two MSF site options for Alternative 1 and Alternative 3: Montebello MSF or Commerce MSF. The Commerce MSF site option is located in the city of Commerce, west of Washington Boulevard and north of Gayhart Street. The Montebello MSF site option is located in the city of Montebello, north of Washington Boulevard and south of Flotilla Street between Yates Avenue and S. Vail Avenue. Alternative 2 would only use the Commerce MSF site option. **Table 5-2** provides a description of the basic components of the Build Alternatives.

Table 5-2. Components of the Build Alternatives

Components	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Alignment length	9.0 miles	3.2 miles	4.6 miles
Length of underground, aerial, and at-grade[2]	**Base Alternative[1]**		
	3 miles underground; 1.5 miles aerial: 4.5 miles at-grade[3]	3 miles underground 0.1 miles aerial; 0.1 miles at-grade[3]	3 miles underground; 1.5 miles aerial; 0.1 miles at-grade[3]
	Atlantic/Pomona Station Design Option		
	Additional 50 feet of underground alignment	Additional 50 feet of underground alignment	Additional 50 feet of underground alignment
	Montebello At-Grade Design Option		
	3 miles underground; 0.5 miles aerial: 5.5 miles at-grade	N/A	3 miles underground; 0.5 miles aerial; 1.1 miles at-grade
Station configuration	**Base Alternative1**		
	7 stations: 3 underground (1 relocated/ reconfigured); 1 aerial; 3 at-grade	3 stations: 3 underground (1 relocated/reconfigured)	4 stations: 3 underground (1 relocated/reconfigured); 1 aerial
	Atlantic/Pomona Station Option		
	Additional 400 feet of underground alignment	Additional 400 feet of underground alignment	Additional 400 feet of underground alignment
	Montebello At-Grade Design Option		
	Adds 1 at-grade station; Removes 1 aerial station	Option Not Applicable	Adds 1 at-grade station; Removes 1 aerial station
MSF site options	Commerce MSF or Montebello MSF	Commerce MSF	Commerce MSF or Montebello MSF

Notes:
[1] The Base Alternative is the Build Alternative without the implementation of any design options (Atlantic/Pomona Station Design Option and/or Montebello At-Grade Design Option).
[2] Total lengths do not include MSF lead track
Key:
MSF = Maintenance and Storage Facility O&M = Operations and Maintenance

5.5 No Project Alternative

The No Project Alternative assumes that no new transportation infrastructure would be built within the General Study Area (GSA) aside from projects currently under construction or funded for construction and operation by 2042 via the 2008 Measure R or 2016 Measure M sales taxes. The No Project Alternative would include highway and transit projects identified for funding in Metro's 2020 LRTP (Metro 2020b) and the SCAG 2020-2045 RTP/SCS (SCAG 2020).

Required by Section 15126.6 (e)(2) within the CEQA Guidelines, the No Project Alternative provides a comparison of impacts that would occur without the Project, evaluated within the context of existing and foreseeable enhancements including capital and operational transportation improvements (transit and highway). As described in Chapter 2, Project Description, the No Project Alternative assesses the relative benefits and impacts of constructing a new transit project versus implementing only currently planned and funded projects. This section provides a synopsis of the environmental analysis of the No Project Alternative by resource topic. Appendices B through R includes the more detailed analysis of the No Project Alternative under each environmental resource topic.

Aesthetics – The No Project Alternative would not involve construction of a new LRT service in the GSA. Thus, there would be no Project-related physical changes to the environment that could affect aesthetics and views within the GSA. Without any changes in permanent alterations to the street, the No Project Alternative would not affect, obstruct, or damage scenic resources. The No Project Alternative would not include development that would impact scenic vistas and would not include a significant new source of substantial light or glare which would adversely affect daytime or nighttime views. As such, the No Project Alternative would not result in a significant impact related to aesthetics.

Air Quality – The No Project Alternative would result in a less than significant impact with respect to local pollutant concentrations. However, the Project was assumed to be implemented and was included in the regional growth and transportation projections of the 2016-2040 and 2020-2045 RTP/SCS. Under the No Project Alternative, the Project would not be implemented. Therefore, the No Project Alternative would have a significant and unavoidable impact with respect to consistency with applicable air quality plans.

Biological Resources – The No Project Alternative would not involve construction of a new LRT service in the GSA. Thus, there would be no Project-related construction activities or changes in operation within the GSA under the No Project Alternative. Therefore, no impacts would occur relative to biological resources under the No Project Alternative.

Cultural Resources – The No Project Alternative would not involve construction of a new LRT service in the GSA. Therefore, there would be no Project-related impacts from construction or operation on cultural resources, including historical resources, archaeological resources, and disturbance of human remains.

Energy – The No Project Alternative would not involve construction of a new LRT service in the GSA. Thus, there would be no Project-related operational or construction energy consumption. However, the No Project Alternative would not contribute to a regional shift in transportation energy demand away from fossil fuels toward grid power that the Project would provide. Therefore, the No Project Alternative would conflict with the regional VMT benefits assumed in 2020 RTP/SCS and impacts with respect to consistency with the applicable energy plans would be significant and unavoidable.

Geology, Seismicity, Soils, and Paleontological Resources – The No Project Alternative would not involve construction of a new LRT service in the GSA and there would be no Project-related major construction activities or changes in operation under the No Project Alternative. Therefore, no Project-related impacts would occur relative to geology/seismicity/soils and paleontological resources under the No Project Alternative.

Greenhouse Gas Emissions – As compared to existing conditions, the No Project Alternative would result in a decrease in operational GHG emissions. This reduction reflects emission reductions associated with improvements to passenger vehicle emission control technologies expected in the region irrespective of the Project offsetting emission increases associated with traffic growth.

Relative to the adjusted 2042 baseline, there would be no increase in GHG emissions under the No Project Alternative. However, the Project is a component of SCAG's RTP/SCS, and the No Project Alternative would not be consistent with the RTP/SCS or California's goal to increase mass transit under the AB 32 Scoping Plan. Thus, the No Project Alternative would be inconsistent with the State's long-term climate strategies and the No Project Alternative's incremental contribution to climate change would be significant and unavoidable with respect to GHG emission reduction plans.

Hazards and Hazardous Materials – Under the No Project Alternative, current operations within the GSA with respect to hazardous materials would not change, and there would be no impairment of adopted emergency response plans or emergency evacuation plans. Therefore, there would be no direct or indirect operations-related impacts associated with hazardous materials from the No Project Alternative. There would be no Project-related construction-related hazardous materials usage, storage, or transport, and no potential for impacts to human health or the environment from the accidental release of hazardous materials within the GSA. Therefore, there would be no Project-related construction impacts associated with hazardous materials from the No Project Alternative.

Hydrology and Water Quality – Under the No Project Alternative, the Project would not be constructed and operated within the GSA, and thus no Project-related impacts would occur.. The No Project Alternative would have less than significant impacts on groundwater resources or recharge areas, erosion or siltation, rate or volume of surface runoff, and buildup of typical runoff contaminants that collect on streets (e.g., oil, grease, and metals). The No Project Alternative would not risk release of pollutants due to project inundation and no Project-related impacts would occur.

Land Use and Planning – The No Project Alternative would result in a continuation of current development patterns and trends. Local jurisdictions would continue to approve new development projects according to existing land use plans and programs. The No Project Alternative would result in no impact related to incompatibility with surrounding land uses or physical division of an established community. However, the No Project Alternative would not provide the land use benefits typical of high-capacity transit projects, including encouragement of Transit Oriented Communities (TOCs) and mixed-use development which provide a more walkable, bikeable, and sustainable urban form. Since Metro's LRTP predicts that traffic will continually worsen in the absence of additional capacity, the No Project Alternative would likely contribute to deteriorating access and mobility within East Los Angeles County. Without improved connections to the regional transit network, the opportunities for transit-supportive and pedestrian oriented development within the GSA would be limited. Further, under the No Project Alternative, plans, policies, and regulations encouraging circulation improvements, community access and development, and air pollutant emissions and GHG reductions within the GSA would not be supported to the same extent as under the Build Alternatives. Therefore, the No Project Alternative would have a significant and unavoidable impact with respect to conflicts with land use plans, policies or regulations adopted for the purpose of avoiding a significant effect.

Noise and Vibration – The No Project Alternative would not involve construction of a new LRT service in the GSA and there would be no Project-related major construction activities or changes in operation. The No Project Alternative would have no operational impacts within the GSA as future noise and vibration levels are anticipated to be similar to those under existing conditions. Since no construction activities are proposed under the No Project Alternative, this alternative would result in no construction-related noise and vibration impacts.

Population and Housing – The No Project Alternative would not involve construction of a new LRT service in the GSA and there would be no Project-related major construction activities or changes in operation. The No Project Alternative would not substantially change or displace existing communities and neighborhoods beyond what is currently planned. As such, future growth projections for population, housing, and employment would remain unchanged. With no operational or construction activities within the GSA proposed under the No Project Alternative, no impacts are expected on population and housing under the No Project Alternative.

Public Services and Recreation – The No Project Alternative would not involve construction of a new LRT service in the GSA and there would be no Project-related major construction activities or changes in operation. The No Project Alternative would not result in the acquisition, displacement, or physical alteration of public services or recreational facilities associated with the Project. As such, the conditions of public resources and recreational facilities within the GSA are not expected to change in the future. Since the No Project Alternative would not result in changes to the social and physical character, no impacts would occur.

Transportation – Although no Project-related construction or operations would occur within the GSA under the No Project Alternative, the Project is included within Metro's LRTP (with funding programmed through Measure M) as well as the General Plans for cities in support of the Project. Therefore, the No Project Alternative would have a significant and unavoidable impact as it conflicts with adopted plans.

Tribal Cultural Resources – There would be no Project-related construction under the No Project Alternative and therefore, there would be no Project-related impacts on resources of tribal significance.

Utilities and Service Systems – Under the No Project Alternative, no construction of a new LRT service within the GSA would occur and there would be no Project-related change in demand for utility services. The No Project Alternative would also not result in utility disruptions or relocations or require new or expanded utility facilities or infrastructure within the GSA. Therefore, no Project-related impacts would occur under the No Project Alternative.

5.6 Comparison of Alternatives

Each of the Build Alternatives address the Project Objectives to varying degrees. A comparison of each alternative's ability to address the growing mobility challenges within East Los Angeles County provides a scale of anticipated environmental benefits to be generated. Note that since the No Project Alternative would not include a new LRT service in the Study Area, this alternative would be limited in terms of environmental benefits to the region. As such, the No Project Alternative would not address or achieve any of the Project Objectives. **Table 5-3** summarizes Project benefit information presented in Chapter 3.

Table 5-3. Project Objectives Comparison

Project Objectives	Build Alternatives		
	Alternative 1 Washington	Alternative 2 Atlantic to Commerce/Citadel IOS	Alternative 3 Atlantic to Greenwood IOS
Enhance regional connectivity and air quality goals by extending the existing Metro L (Gold) Line further east from the East Los Angeles terminus.	Reduce daily VMT by approximately 10,000 (2042)	Reduce daily VMT by approximately 5,000 (2042)	Reduce daily VMT by approximately 8,000 (2042)
Provide mobility options to increase accessibility and convenience to and from eastern Los Angeles County.[1]	Approximately 15,000 average weekday total station boardings (2042)	Approximately 7,800 average weekday total station boardings (2042)	Approximately 11,000 average weekday total station boardings (2042)
Improve transit access to activity centers and employment within eastern Los Angeles County that would be served by the Project.	7,716 new daily transit riders	3,854 new daily transit riders	5,857 new daily transit riders
Accommodate future transportation demand resulting from increased population and employment growth.[2]	2045 projected population of jurisdictions served: 412,596	2045 projected population of jurisdictions served: 134,263	2045 projected population of jurisdictions served: 202,071
Enable jurisdictions in eastern Los Angeles County to address their transit-oriented community goals and provide equitable development opportunities.	Stations located in Commerce, Montebello, Pico Rivera, Santa Fe Springs, Whittier, and unincorporated Los Angeles County	Stations located in Commerce, and unincorporated Los Angeles County	Stations located in Commerce, Montebello, and unincorporated Los Angeles County
Improve accessibility and connectivity to transit-dependent communities.[3]	2,853 transit-dependent households within ½ mile of stations	1,597 transit-dependent households within ½ mile of stations# of transit dependent within ½ mile of stations	1,859 transit-dependent households within ½ mile of stations # of transit dependent within ½ mile of stations

Notes:
[1] This number is the sum of the average weekday boardings for Project stations, including the Atlantic station (relocated/reconfigured).
[2] Population projections for municipalities from SCAG, 2020 Connect SoCal RTP/SCS. Populations for unincorporated Los Angeles County communities (East Los Angeles and West Whittier-Los Nietos) derived from United States 2020 Decennial Census.
[3] Transit-dependent households represented by households which do not own a vehicle per the United States 2020 Decennial Census. In addition to transit-dependent households, transit-dependent populations also include individuals under the age of 16 or over the age of 65.

As shown in **Table 5-3,** Alternatives 1 and 3 would provide the highest level of environmental benefits considering the length of the alignments and number of proposed stations that would also best support the Project objectives by providing regional connectivity and new transit access for local communities.

A comparison of environmental impacts resulting from the No Project Alternative, each Build Alternative (defined with the MSF option), as well as the Design Options, are described below.

5.6.1 No Project

The No Project Alternative assumes implementing only currently planned and funded projects and establishes impacts that would reasonably be expected to occur in the foreseeable future if the Project were not approved. The No Project Alternative would limit the amount of transit benefits in the future since it would not provide a new LRT system in the region, and would therefore result in **significant and unavoidable impacts** to air quality, greenhouse gas emissions (GHG), energy, land use, and transportation.

5.6.2 Alternative 1 with the Commerce MSF

Alternative 1 with the Commerce MSF site option would result in significant impacts under the following resource areas: biological resources, cultural resources, geology/soils/seismicity and paleontological resources, hazards and hazardous materials, hydrology and water quality, noise and vibration, transportation and traffic, and tribal cultural resources. Mitigation would reduce impacts where feasible.

Biological Resources – Suitable bat roosting habitat includes the bridges over the Rio Hondo and San Gabriel River. Construction of Alternative 1 would involve the installation of replacement bridges across the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. Replacing the bridges could result in significant impacts on bat species, including temporary loss of bat roosting sites. Implementation of MM BIO-1 through MM BIO-3, would reduce impacts on bats from construction of Alternative 1 to less than significant.

Some migratory birds could nest in street trees along Alternative 1 and within station footprints and the Commerce MSF site option. Cliff swallows were observed nesting under the Washington Boulevard bridge during surveys in May 2016. Operations may require tree trimming and construction may require disturbances to vegetation and structures along Alternative 1 that provide bird nesting habitat during the bird nesting season. Thus, operation and construction of Alternative 1 with the Commerce MSF site option would result in a potentially significant impact on migratory birds. Implementation of MM BIO-4 would reduce potential impacts on migratory birds to less than significant.

Equipment used for construction activities has the potential to transport invasive plant seeds if used in areas of exposed soil. Thus, construction of Alternative 1 with the Commerce MSF site option could spread invasive plants, resulting in significant impacts. Implementation of MM BIO-5 and MM BIO-6 would reduce the potential to spread invasive plant seeds and would thus reduce impacts to less than significant.

Cultural Resources – Operation of Alternative 1 with the Commerce MSF site option would not physically demolish, destroy, relocate, or alter any historical or archaeological resources and there are no known cemeteries or archaeological sites along the alignment. As such, there would be less than significant impacts on historical resources, no impacts to archaeological sites, and no impacts to known human remains during the operations of Alternative 1 with the Commerce MSF site option. There are historical resources located along Alternative 1 as described in Section 3.4, Cultural Resources; two of these, the Golden Gate Theater and the Dal Rae Restaurant, could be significantly impacted by vibration and a sliver property acquisition, respectively. Mitigation measures (MM CUL-1 and MM CUL-4, respectively) would reduce impacts to less than significant. Construction of

Alternative 1 with the Commerce MSF site option would result in a significant unavoidable impact to the Pacific Metals Company Building, a historic resource eligible under National Register of Historic Places (NRHP) Criterion A/California Register of Historic Places (CRHR) Criterion 1 (see Chapter 3, Section 3.4, Cultural Resources). The building is individually significant for its association with industry, architecture, and contribution to the Vail Field Industrial Addition. The Vail Field Industrial Addition itself is a potential historic district that has 16 contributing resources that would be demolished for the Commerce MSF site option. Although construction mitigation measures including requiring protection measures and the preparation of historical resource archival documentation and an interpretative program for education purposes (MM CUL-2, MM CUL-3, MM CUL-5, and MM CUL-6) would reduce impacts, these measures would not address impacts related to demolition of the Pacific Metals Company Building or the substantial adverse change to the Vail Field Industrial Addition to a less than significant level. Other construction related significant impacts to cultural resources would be the potential discovery and adverse change in the significance of previously unknown archaeological resources and/or human remains. Mitigation measures (MM CUL-7, MM CUL-8, and MM CUL-9) would reduce these impacts to less than significant.

Geology, Soils, Seismicity, and Paleontological Resources – Most of Alternative 1 is located in area where paleontological resources are likely to be present. The primary construction impact would result from boring the three mile underground section from South La Verne Avenue to Smithway Street. Given the boring technologies employed in recent Metro projects, there is no known way to monitor or mitigate boring impacts on paleontological resources because the TBM grinds the material as it moves forward, making it impossible to preserve fossils or bones. Thus, construction using TBM would result in significant direct impacts on paleontological resources that cannot be mitigated. Construction of underground stations, the aerial station, and at-grade stations would also result in direct impacts to paleontological resources. There would also be direct impacts on paleontological resources from ground disturbance associated with the construction of aerial guideways and installation of posts to support catenary systems for the at-grade alignment. Thus, construction of Alternative 1 would result in significant impacts on paleontological resources. MM GEO-1 through MM GEO-4 would be implemented, which would mitigate impacts associated with ground disturbance that can be monitored; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

The Commerce MSF site option is within sediments mapped as older alluvial fan deposits which have a high potential for paleontological resources, including undisturbed sediments near the surface. Thus, construction of the MSF site option would have a significant impact on paleontological resources. Implementation of MM GEO-1 through MM GEO-4, would reduce impacts to less than significant at the Commerce MSF site option because monitoring of ground disturbance would be feasible.

Hazards and Hazardous Materials – During construction of Alternative 1 with the Commerce MSF site option, construction workers and the public could come in contact with and be exposed to the hazardous materials, such as methane, hydrogen sulfide, lead, herbicides, and petroleum hydrocarbons. Therefore, construction would have a significant impact from the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Additionally, construction could impact areas located on hazardous materials sites included on the Cortese list. Construction at the Commerce/Citadel station site would occur on a former Omega site which is a Superfund site identified on the Cortese list where contaminated groundwater is known to be present. These activities could potentially encounter soil or groundwater contamination, which would result in a significant impact. Further, demolition of structures could potentially expose construction workers and the public

to hazardous conditions through the disturbance or improper handling and/or disposal of hazardous building materials such as asbestos-containing materials (ACM), lead-based paints (LBP), or polychlorinated biphenyls (PCBs), which would be a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would reduce impacts to less than significant.

In addition, there are two parcels within the Commerce MSF site option located on a hazardous materials site included on the Cortese List (a Closed LUST Cleanup site/former Johnson Property and former Advance Process Supply Company). Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. Therefore, construction of the Commerce MSF site option would potentially create a significant hazard to the public or the environment. If construction at the Commerce MSF site option disturbs existing soil with contamination from hazardous materials, this would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would mitigate and reduce these construction impacts to less than significant.

Hydrology and Water Quality – Construction activities associated with replacing bridge piers have the potential to impact water quality from ground disturbance, which could cause erosion and sedimentation into waterbodies and generate turbidity if work occurs in water. If construction occurs when water is present in the Rio Hondo, Rio Hondo Spreading Grounds, or San Gabriel River, the potential for construction activities to generate turbidity and release contaminants in water would be a significant impact. Implementation of MM HWQ-1 would reduce impacts to less than significant.

During construction, there is the potential for Alternative 1 to encounter, dewater, and dispose of groundwater during ground disturbing activities. If groundwater needs to be dewatered, a significant impact would occur if the groundwater is contaminated. MM HAZ-2 would help minimize the spread of contaminated groundwater and would reduce this potential impact from construction of Alternative 1 to less than significant.

While construction of Alternative 1 with the Commerce MSF site option would not occur directly within any of the known contaminated sites identified in the area, construction could encounter groundwater contaminated with hazardous materials from other sources such as underground storage tanks. Thus, construction of Alternative 1 may release contaminated groundwater into nearby surface water and groundwater, which would be a significant impact. Implementation of MM HAZ-3 would reduce this potential impact from construction of Alternative 1 to less than significant.

Groundwater recharge in the detailed study area (DSA) takes place primarily in the spreading grounds associated with the Rio Hondo and through the earthen bottom of the San Gabriel River. Construction of the replacement bridge piers in the Rio Hondo Spreading Grounds and San Gabriel River might slightly increase the amount of impervious surface if the piers are larger in area than the existing bridge piers. While the change is expected to be small, construction of Alternative 1 in the Rio Hondo Spreading Grounds and San Gabriel River would have potentially significant impacts on groundwater supplies and recharge. Implementation of MM HWQ-2 would reduce impacts to less than significant.

Further, the replacement of the bridge piers would affect flood control areas, including the channels of the Rio Hondo and San Gabriel River and the Rio Hondo Spreading Grounds. The replacement bridge piers would be larger than the existing bridge piers, which could reduce flood storage capacity in the flood control areas. The replacement of bridge piers would require CWA Section 404 and RHA Section 408 Permits from USACE, and would comply with local floodplain ordinances. However, construction of Alternative 1 without compensatory mitigation could still have a significant impact on flood flows

due to the loss of flood storage. Implementation of MM HWQ-2, as mentioned above, would reduce impacts on flood flows to less than significant.

Because construction of Alternative 1 with the Commerce MSF site option could result in significant impacts on water quality, it could also conflict with water quality control plans. With implementation of the mitigation discussed above, construction of Alternative 1 with the Commerce MSF site option would not conflict with or obstruct implementation of a water quality control plan.

Noise and Vibration – Construction of Alternative 1 with the Commerce MSF site option would have significant impacts related to ambient noise. Compliance with Metro's baseline specifications Section 015619 and local ordinances would reduce construction noise. However, construction activities are predicted to exceed the FTA daytime noise limits at 70 Noise Sensitive Receivers for Alternative 1; thus, impacts would be significant. Implementation of MM NOI-1 through MM NOI-11 would reduce impacts to less than significant.

Operation of Alternative 1 with the Commerce MSF site option would have significant ground-borne vibration impacts related to LRT vehicle passbys along continuous welded rail (CWR) track and near switches along the corridor and at the Commerce MSF site option. This includes ground-borne vibration impacts near residential and sensitive land uses (parks, schools, a hospital, and a library). Implementation of MM NOI-12 and MM NOI-13 would reduce these vibration impacts to less than significant.

Construction of Alternative 1 with the Commerce MSF site option would also have significant ground-borne vibration impacts. Although the use of impact pile drivers would be avoided whenever possible to eliminate the potential of vibration impacts at nearby sensitive receptors, estimated construction vibrations are predicted to exceed the FTA impact criteria at the closest residences and commercial properties. Therefore, a significant impact would occur. Implementation of MM NOI-1, MM NOI-4, MM NOI-5, MM NOI-7, MM NOI-8, MM NOI-9, MM NOI-14, and MM NOI-15 as would reduce these vibration impacts to less than significant.

Transportation and Traffic – Alternative 1 with the Commerce MSF site option would result in a reduction in general-purpose travel lanes and the elimination of ingress/egress movements at driveways and selected cross-streets along Washington Boulevard, which may require some changes to truck ingress/egress for industrial properties in the cities of Commerce and Montebello. During operation, the Commerce MSF site option would also involve minor changes to traffic circulation, including new or modified driveways and the permanent closure of a portion of Corvette Street. However, the closure of Corvette Street would have a negligible effect on traffic circulation, as the roadway would be designed according to applicable standards and criteria and provide for adequate emergency access. Therefore, operation of Alternative 1 with the Commerce MSF site option would result in a less than significant impact related to transit, traffic, pedestrian, and bicycle circulation.

Construction of Alternative 1 with the Commerce MSF site option would result in significant impacts on transit, traffic circulation, and bicycle and pedestrian circulation due to the temporary effects on transit and traffic circulation. These impacts would be related to the temporary closures and detours that would cause a reduction in capacity along affected roads, as well as restricted access to proprieties during project construction (e.g., construction of Washington Boulevard, Smithway Street, and phased bridge reconstruction). Other transportation impacts would include transit and truck rerouting and the potential to shift traffic volumes onto adjacent streets that have bike lanes and planned routes (including Flotilla Street and Saybrook Avenue). The implementation of MM TRA-1

would minimize disruption during construction and would mitigate these construction impacts to less than significant.

Tribal Cultural Resources – Construction of Alternative 1 with the Commerce MSF site option would result in significant impacts on tribal cultural resources (TCRs) due to the potential to disturb preserved buried cultural resources including TCRs. The implementation of MM TCR-1 through MM TCR-3 would reduce these construction impacts to less than significant.

5.6.2.1 Summary

As described above, Alternative 1 with the Commerce MSF would result in less than significant impacts with implementation of mitigation measures for all resource areas except for cultural resources and geology/seismicity/soils and paleontological resources, which would have significant and unavoidable impacts.

5.6.3 Alternative 1 with the Montebello MSF

Alternative 1 with the Montebello MSF site option would result in similar significant impacts and applicable mitigation measures as Alternative 1 with the Commerce MSF site option. For comparison, below is a summary that focuses on the differences in impacts between the Montebello MSF site option and the Commerce MSF site option. Alternative 1 with the Montebello MSF site option would have significant impacts under the following resource areas: biological resources, cultural resources, geology/seismicity/soils and paleontological resources, hazards and hazardous materials, hydrology and water quality, noise and vibration, transportation and traffic, and tribal cultural resources. Mitigation would reduce impacts where feasible.

Biological Resources – Alternative 1 with the Montebello MSF site option would result in similar significant impacts on bats, migratory birds, and the spread of invasive plant species as Alternative 1 with the Commerce MSF site option. Operation of Alternative 1 with the Montebello MSF site option would have significant impacts on migratory birds from tree trimming during the bird nesting season. Construction of Alternative 1 with the Montebello MSF site option would have significant impacts on bats from bridge replacement, migratory birds from vegetation disturbance during the bird nesting season, and from the spread of invasive plant species. As with Alternative 1 with the Commerce MSF site option, the implementation of MM BIO-4 during operation and construction and MM BIO-1, MM BIO-2, MM BIO-3, MM BIO-5, and MM BIO-6 during construction of Alternative 1 with the Montebello MSF site option would reduce impacts to less than significant.

Cultural Resources – Similar to Alternative 1 with the Commerce MSF site option, operation of Alternative 1 with the Montebello MSF site option would result in less than significant impacts on historical resources, no impacts to archaeological sites, and no impacts to known human remains. However, unlike the Alternative 1 with the Commerce MSF site option, there are no historical resources within the footprint of the Montebello MSF site option. Also, the alignment would avoid the Pacific Metals Company Building and would not result in a substantial adverse change to the Vail Field Industrial Addition. Therefore, no historical buildings would be acquired and demolished for MSF construction and impacts would be less than significant. Like Alternative 1 with the Commerce MSF site option, for other construction related impacts to historic resources (e.g., the Golden Gate Theater and Dal Rae Restaurant) and previously unknown archaeological resources and/or human remains,

MM CUL-1, MM CUL-4, and MM CUL-7 through MM CLU-9 would reduce impacts to less than significant.

Geology, Soils, Seismicity, and Paleontological Resources – Alternative 1 with the Montebello MSF site option would result in similar significant impacts on paleontological resources as Alternative 1 with the Commerce MSF site option. Construction of Alternative 1 with the Montebello MSF site option would result in a significant unavoidable impact based on the potential to disturb paleontological resources during tunnel boring and significant but mitigable impacts from ground disturbance associated with other ground disturbance such as the construction of aerial guideways and installation of posts for the at-grade alignment. MM GEO-1 through MM GEO-4 would be implemented, which would mitigate impacts associated with ground disturbance that can be monitored; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable

The Montebello MSF site option is within sediments mapped as older alluvial fan deposits which have a high potential for paleontological resources. Thus, construction of the MSF site option would have a significant impact on paleontological resources. Implementation of MM GEO-1 through MM GEO-4 would reduce impacts associated with construction of the Montebello MSF to less than significant because monitoring of ground disturbance would be feasible.

Hazards and Hazardous Materials – Construction of Alternative 1 with the Montebello MSF site option would have impacts as construction of Alternative 1 with the Commerce MSF site option. During construction of Alternative 1 with the Montebello MSF site option, construction workers and the public could come in contact with and be exposed to the hazardous materials, such as methane, hydrogen sulfide, lead, herbicides, hazardous building materials (e.g., ACM, LBP, or PCBs), and petroleum hydrocarbons. Therefore, construction would have a significant impact from the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Additionally, construction could impact areas located on hazardous materials sites included on the Cortese list. Construction at the Commerce/ Citadel station site is located on a former Omega site which is a Superfund site identified on the Cortese list where contaminated groundwater is known to be present. These activities could potentially encounter soil or groundwater contamination, which would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would reduce impacts to less than significant.

In addition, the Montebello MSF site option is located on two parcels designated as a hazardous materials site on the Cortese List (a Closed LUST Cleanup site and listed as the former John M. Fulmer Company) and three parcels designated on the Cortese list as a closed Land Disposal site and listed as the Vail Avenue Land Reclamation Project for a non-municipal landfill. As such, there is the potential for encountering subsurface debris associated with past dumping activities, and the potential to disturb existing soil contamination from hazardous materials if not characterized, handled and disposed of properly. Implementation of MM HAZ-1 through MM HAZ-5 would mitigate and reduce these construction impacts to less than significant.

Hydrology and Water Quality – Construction of Alternative 1 with the Montebello MSF site option would result in similar significant impacts on hydrology and water quality as construction of Alternative 1 with the Commerce MSF site option. Construction of Alternative 1 with the Montebello MSF site option has a potential for significant impacts if water is present in the Rio Hondo or spreading grounds or the San Gabriel River during construction activities. Additionally, significant water quality impacts would occur if contaminated groundwater is encountered during construction activities or dewatering. Further, the replacement of bridge piers would have potentially significant

impacts on flood flows and groundwater recharge. With implementation of MM HWQ-1, MM HAZ-2, MM HAZ-3, and MM HWQ-2, all impacts would be reduced to less than significant.

The proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone. However, the location was historically a rock quarry that collected stormwater and flooded. The area has since been developed and no longer floods as stormwater is directed in the municipal stormwater management system. Furthermore, the proposed MSF site option does not contain any natural functions or values of a floodplain as it is developed. Thus, construction and operation of the Montebello MSF site option would not impact flood flows.

Noise and Vibration – Construction of Alternative 1 with the Montebello MSF site option would have similar noise and vibration impacts as construction of Alternative 1 with the Commerce MSF site option. Construction activities are predicted to exceed the FTA daytime noise limits at 70 Noise Sensitive Receivers for Alternative 1. The Montebello MSF site option is located in an industrial area with the nearest sensitive receptors more than 1,000 feet away with intervening buildings. However, anticipated noise levels would exceed the FTA criteria for commercial or industrial receivers (100 dBA though the day or 100 dBA at night) at one industrial building immediately adjacent to the site. Thus, the impact would be significant. Operation and construction of Alternative 1 with the Montebello MSF site option would have significant vibration impacts on the closest sensitive receptors. Implementation of MM NOI-1 through MM NOI-15 would reduce noise and vibration impacts to less than significant.

Transportation and Traffic – Construction of Alternative 1 with the Montebello MSF site option would have similar impacts on transportation and traffic as construction of Alternative 1 with the Commerce MSF site option. During operation, the Montebello MSF site option would involve minor changes to traffic circulation as the aerial structure would be located in the median of Washington Boulevard between Gayhart Street and Yates Avenue requiring roadway reconfiguration and restriping. These proposed changes to traffic circulation would be designed according to applicable standards and criteria, including providing adequate emergency access. Therefore, operation of Alternative 1 with the Montebello MSF site option would result in a less than significant impact related to transit, traffic, pedestrian and bicycle circulation.

Construction of Alternative 1 with the Montebello MSF site option would result in significant impacts due to the temporary effects on transit and traffic circulation. These impacts are related to the temporary closures and detours that would cause a reduction in capacity along affected road, as well as restricted access to proprieties during project construction (e.g., construction of Acco Street, Washington Boulevard and those leading from Washington Boulevard to the Montebello MSF site option, Smithway Street, and phased bridge reconstruction). Other transportation impacts would include transit and truck rerouting and the potential to shift traffic volumes onto adjacent streets that have bike lanes and planned routes (including Flotilla Street and Vail Avenue). The implementation of MM TRA-1 would minimize disruption during construction and would mitigate these construction impacts to less than significant.

Tribal Cultural Resources – Construction of Alternative 1 with the Montebello MSF site option would have similar impacts on TCRs as construction of Alternative 1 with the Commerce MSF site option. Construction of Alternative 1 with the Montebello MSF site option would result in significant impacts on TCRs due to the potential to disturb preserved buried cultural resources including TCRs. The implementation of MM TCR-1 through MM TCR-3 would reduce these construction impacts to less than significant.

5.6.3.1 Summary

As described above, Alternative 1 with the Montebello MSF would result in less than significant impacts with implementation of mitigation measures for all resource areas except for geology/seismicity/soils and paleontological resources, which would have significant and unavoidable impacts.

5.6.4 Alternative 2 with the Commerce MSF

Alternative 2 with the Commerce MSF site option is an IOS alternative that would result in similar significant impacts and have similar applicable mitigation measures as Alternative 1 with the Commerce MSF site option. For comparison, below is a summary that focuses on the differences between Alternative 2 with the Commerce MSF site option impacts and those of the longer Alternative 1. Alternative 2 with the Commerce MSF site option would have significant impacts under the following resource areas: biological resources, cultural resources, geology/seismicity/soils and paleontological resources, hazards and hazardous materials, hydrology and water quality, noise and vibration, transportation and traffic, and tribal cultural resources. Mitigation would reduce impacts where feasible.

Biological Resources – Unlike Alternative 1 with the Commerce MSF site option or the Montebello MSF site option, Alternative 2 with the Commerce MSF site option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations. Thus, no impact on bats would occur during construction.

Operation and construction of Alternative 2 with the Commerce MSF site option would have potentially significant impacts on migratory birds from tree trimming and vegetation disturbance during the bird nesting season. Additionally, construction of Alternative 2 with the Commerce MSF site option could spread invasive plants, resulting in significant impacts. Implementation of MM BIO-4 during operation and construction and MM BIO-5 and MM BIO-6 during construction of Alternative 2 with the Commerce MSF site option would reduce impacts to less than significant.

Cultural Resources – Alternative 2 with the Commerce MSF site option would have a less than significant impact on historical resources, no impact on archaeological sites, and no impact on known human remains during the operations. The Golden Gate Theater is a historical resources located along Alternative 2 that would be significantly impacted by vibration. MM CUL-1 would reduce the impact to less than significant. Unlike Alternative 1 with the Commerce MSF site option, construction of the Alternative 2 with the Commerce MSF site option would not remove the historic resource known as the Pacific Metals Company Building. However, the Commerce MSF site option would still require property acquisition and demolition of 16 contributing resources within the potential historic district known as the Vail Field Industrial Addition. These construction impacts to historical resources would impair the significance of the historic district and it would be ineligible for listing the CRHR. Although construction mitigation measures (MM CUL-5 and MM CUL-6) would reduce impacts, the Commerce MSF site option would still have a substantial adverse change to the Vail Field Industrial Addition resulting in a significant unavoidable impact. For other construction-related impacts to cultural resources including addressing known resources (e.g., Golden Gate Theater) and discovery of previously unknown archaeological resources and/or human remains, MM CUL-1, MM CUL-8, and MM CUL-9 would reduce impacts to less than significant.

Geology, Soils, Seismicity, and Paleontological Resources – Construction of Alternative 2 with the Commerce MSF site option would result in a significant impact based on the potential to disturb paleontological resources from boring the three-mile underground section from South La Verne Avenue to Smithway Street. There would also be significant impacts to paleontological resources from ground disturbance associated with the construction of aerial guideways connecting to the Commerce MSF site option. MM GEO-1 through MM GEO-4 would be implemented, which would mitigate impacts associated with ground disturbance that can be monitored; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

The Commerce MSF site option is within sediments mapped as older alluvial fan deposits which have a high potential for paleontological resources. Thus, construction of the MSF site option would have a significant impact on paleontological resources. Implementation of MM GEO-1 through MM GEO-4 would reduce impacts to less than significant at the Commerce MSF site option because monitoring of ground disturbance would be feasible.

Hazards and Hazardous Materials – During construction of Alternative 2 with the Commerce MSF site option, construction workers and the public could come in contact with and be exposed to the hazardous materials, such as methane, hydrogen sulfide, lead, herbicides, hazardous building materials (e.g., ACM, LBP, or PCBs), and petroleum hydrocarbons. Therefore, construction would have a significant impact from the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Additionally, construction could impact areas located on hazardous materials sites included on the Cortese list. Construction at the Commerce/Citadel station site would occur on a former Omega site which is a Superfund site identified on the Cortese list where contaminated groundwater is known to be present. These activities could potentially encounter soil or groundwater contamination, which would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would reduce impacts to less than significant.

In addition, there are two parcels within the Commerce MSF site option located on a hazardous materials site included on the Cortese List (a Closed LUST Cleanup site/former Johnson Property and former Advance Process Supply Company). Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. Therefore, construction of the Commerce MSF site option would potentially create a significant hazard to the public or the environment. If construction at the Commerce MSF site option disturbs existing soil with contamination from hazardous materials, this would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would mitigate and reduce these construction impacts to less than significant.

Hydrology and Water Quality – Unlike Alternative 1 with the Commerce MSF site option or the Montebello MSF site option, Alternative 2 with the Commerce MSF site option would not cross the Rio Hondo and San Gabriel River or the Rio Hondo Spreading Grounds and would not be within flood hazard zones. Thus, Alternative 2 with the Commerce MSF site option would not impact flood flows or groundwater recharge. However, significant water quality impacts would occur if contaminated groundwater is encountered during construction activities or dewatering. With implementation of MM HAZ-2 and MM HAZ-3, all impacts would be reduced to less than significant.

Noise and Vibration – Based on preliminary construction noise estimates, construction of Alternative 2 with the Commerce MSF site option is predicted to exceed the FTA daytime noise limits at 17 Noise Sensitive Receivers; thus, impacts would be significant. Operation and construction of 2 with the Commerce MSF site option would also have significant vibration impacts on the closest sensitive receptors. Implementation of MM NOI-1 through MM NOI-15 would reduce noise and vibration impacts to less than significant.

Transportation and Traffic – Unlike Alternative 1 with the Commerce MSF site option, Alternative 2 with the Commerce MSF site option would not require changes to general-purpose travel lanes or the elimination driveways and cross streets along Washington Boulevard since the alternative's terminus is at the Commerce/Citadel station. However, Alternative 2 with Commerce MSF site option would still involve minor changes to traffic circulation and the permanent closure of a portion of Corvette Street. This would be a negligible effect as the roadway would be designed according to applicable standards and criteria and provide for adequate emergency access. Therefore, operation of Alternative 2 with the Commerce MSF site option would result in a less than significant impact related to transit, traffic, pedestrian, and bicycle circulation.

Construction of Alternative 2 with the Commerce MSF site option would result in significant impacts on transit, traffic circulation, and bicycle and pedestrian circulation due to the temporary effects on transit and traffic circulation. These impacts would be related to the temporary closures and detours that would cause a reduction in capacity along affected roads, as well as restricted access to proprieties during project construction. Other transportation impacts would include transit and truck rerouting and the potential to shift traffic volumes onto adjacent streets that have bike lanes and planned routes. The implementation of MM TRA-1 would mitigate these construction impacts to less than significant.

Tribal Cultural Resources – Construction of Alternative 2 with the Commerce MSF site option would result in significant impacts on TCRs due to the potential to disturb preserved buried cultural resources including unknown TCRs. The implementation of MM TCR-1 through MM TCR-3 would reduce these construction impacts to less than significant.

5.6.4.1 Summary

As such, Alternative 2 with the Commerce MSF would result in less than significant impacts with mitigation measures for all resource areas with the exception of significant and unavoidable impacts under cultural resources and geology/seismicity/soils and paleontological resources.

5.6.5 Alternative 3 with Commerce MSF

Alternative 3 with the Commerce MSF site option is an IOS alternative that would result in similar significant impacts and applicable mitigation measures as Alternative 1 with the Commerce MSF site option for the IOS segment that terminates at an aerial Greenwood Station in the city of Montebello. For comparison, below is a summary that focuses on the differences between the Alternative 3 with the Commerce MSF site option impacts and those of the longer Alternative 1 with the Commerce MSF site option that terminates at an at-grade Lambert station in the city of Whittier. Alternative 3 with the Commerce MSF site option would have significant impacts under the resource areas of biological resources, cultural resources, geology/seismicity/soils and paleontological resources, hazardous

materials, hydrology and water quality, noise and vibration, transportation and traffic, and tribal cultural resources.

Biological Resources – Unlike Alternative 1 with the Commerce MSF site option or the Montebello MSF site option, Alternative 3 with the Commerce MSF site option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations. Thus, no impact on bats would occur during construction.

Operation of Alternative 3 with the Commerce MSF site option would have potentially significant impacts on migratory birds from tree trimming and vegetation disturbance during the bird nesting season. Additionally, construction of Alternative 3 with the Commerce MSF site option could spread invasive plants, resulting in significant impacts. Implementation of MM BIO-4 during operation and construction and MM BIO-5 and MM BIO-6 during construction of Alternative 3 with the Commerce MSF site option would reduce impacts to less than significant.

Cultural Resources – Operation of Alternative 3 with the Commerce MSF site option would have less than significant impacts on historical resources, no impacts to archaeological sites, and no impacts to known human remains. Similar to Alternative 1 with the Commerce MSF site option, construction of Alternative 3 with the Commerce MSF site option would require demolition of the historic resource known as the Pacific Metals Company Building as well as 16 contributing resources within the potential Vail Field Industrial Addition historic district. Although construction measures (MM CUL-2, MM CUL-3, MM CUL-5, and MM CUL-6) would reduce the severity of impacts, these measures would not mitigate impacts related to demolition of the Pacific Metals Company Building or the substantial adverse change to Vail Field Industrial Addition to a less than significant level. Therefore, construction of Alternative 3 with the Commerce MSF site option would have significant and unavoidable impacts on cultural resources. For other construction related impacts to historic resources (Golden Gate Theater) and previously unknown archaeological resources and/or human remains, mitigation measures (MM CUL-1, MM CUL-8, and MM CUL-9) would reduce impacts to less than significant.

Geology, Soils, Seismicity, and Paleontological Resources – Construction of Alternative 3 with the Commerce MSF site option would result in significant impacts with a potential to disturb paleontological resources from boring the three-mile underground section from South La Verne Avenue to Smithway Street. There would also be significant impacts to paleontological resources from ground disturbance associated with the construction of aerial guideways connecting to the Commerce MSF site option. MM GEO-1 through MM GEO-4 would be implemented, which would mitigate impacts associated with ground disturbance that can be monitored; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable.

The Commerce MSF site option is within sediments mapped as older alluvial fan deposits which have a high potential for paleontological resources. Thus, construction of the MSF site option would have a significant impact on paleontological resources. Implementation of MM GEO-1 through MM GEO-4 would reduce impacts associated with the Commerce MSF site option to less than significant because monitoring of ground disturbance would be feasible.

Hazards and Hazardous Materials – During construction of Alternative 3 with the Commerce MSF site option, construction workers and the public could come in contact with and be exposed to the hazardous materials, such as methane, hydrogen sulfide, lead, herbicides, hazardous building materials (e.g., ACM, LBP, or PCBs), and petroleum hydrocarbons. Therefore, construction would have a significant impact from the potential to create a significant hazard to the public or the environment

through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Additionally, construction could impact areas located on hazardous materials sites included on the Cortese list. Construction at the Commerce/Citadel station site would occur on a former Omega site which is a Superfund site identified on the Cortese list where contaminated groundwater is known to be present. These activities could potentially encounter soil or groundwater contamination, which would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would reduce impacts to less than significant.

In addition, there are two parcels within the Commerce MSF site option located on a hazardous materials site included on the Cortese List (a Closed LUST Cleanup site/former Johnson Property and former Advance Process Supply Company). Construction workers and the public could come in contact with and be exposed to the hazardous materials listed above. Therefore, construction of the Commerce MSF site option would potentially create a significant hazard to the public or the environment. If construction at the Commerce MSF site option disturbs existing soil with contamination from hazardous materials, this would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would mitigate and reduce these construction impacts to less than significant.

Hydrology and Water Quality – Unlike Alternative 1 with the Commerce MSF site option or the Montebello MSF site option, Alternative 3 with the Commerce MSF site option would not cross the Rio Hondo and San Gabriel River or the Rio Hondo Spreading Grounds and would not be within flood hazard zones. Thus, Alternative 3 with the Commerce MSF site option would not impact flood flows or groundwater recharge. However, significant water quality impacts would occur if contaminated groundwater is encountered during construction activities or dewatering. With implementation of MM HAZ-2 and MM HAZ-3, all impacts would be reduced to less than significant.

Noise and Vibration – Based on preliminary construction noise estimates, construction of Alternative 3 with the Commerce MSF site option is predicted to exceed the FTA daytime noise limits at 29 Noise Sensitive Receivers; thus, impacts would be significant. Operation and construction of 3 with the Commerce MSF site option would also have significant vibration impacts on the closest sensitive receptors. Implementation of MM NOI-1 through MM NOI-15 would reduce noise and vibration impacts to less than significant.

Transportation and Traffic – Unlike the Alternative 1 with the Commerce MSF site option, Alternative 3 with the Commerce MSF site option would not require changes to general-purpose travel lanes or the elimination driveways and cross-streets along Washington Boulevard since the alternative's terminus is at the Commerce/Citadel station. However, Alternative 3 with Commerce MSF site option would still involve minor changes to traffic circulation and the permanent closure of a portion of Corvette Street. This would be a negligible effect as the roadway would be designed according to applicable standards and criteria and provide for adequate emergency access. Therefore, operation of Alternative 3 with the Commerce MSF site option would result in a less than significant impact related to transit, traffic, pedestrian, and bicycle circulation.

Construction of Alternative 3 with the Commerce MSF site option would result in significant impacts on transit, traffic circulation, and bicycle and pedestrian circulation due to the temporary effects on transit and traffic circulation. These impacts would be related to the temporary closures and detours that would cause a reduction in capacity along affected roads, as well as restricted access to proprieties during project construction. Other transportation impacts would include transit and truck rerouting and the potential to shift traffic volumes onto adjacent streets that have bike lanes and

planned routes. The implementation MM TRA-1 would mitigate these construction impacts to less than significant.

Tribal Cultural Resources – Construction of Alternative 3 with the Commerce MSF site option would result in significant impacts on TCRs due to the potential to disturb preserved buried cultural resources including unknown TCRs. The implementation of MM TCR-1 through MM TCR-3 would reduce these construction impacts to less than significant.

5.6.5.1 Summary

As such, Alternative 3 with the Commerce MSF site option would result in less than significant impacts with mitigation measures for all resource areas with the exception of significant and unavoidable impacts under cultural resources and paleontological resources.

5.6.6 Alternative 3 with the Montebello MSF

Alternative 3 with the Montebello MSF site option is an IOS alternative that would result in similar significant impacts and applicable mitigation measures as Alternative 1 with the Montebello MSF site option for the IOS segment that terminates at an aerial Greenwood Station in the city of Montebello. For comparison, below is a summary that focuses on the differences between the Alternative 3 with the Montebello MSF site option impacts and those of the longer Alternative 1 with the Montebello MSF site option that terminates at an at-grade Lambert station in the city of Whittier. Alternative 3 with the Montebello MSF site option would have significant impacts under the resource areas of biological resources, cultural resources, paleontological resources, hazardous materials, hydrology, noise and vibration, transportation and traffic, and tribal cultural resources.

Biological Resources – Unlike Alternative 1 with the Commerce MSF site option or the Montebello MSF site option, Alternative 3 with the Montebello MSF site option would not cross the Rio Hondo and San Gabriel River or affect the bridges at these locations. Thus, no impact on bats would occur during construction.

Operation of Alternative 3 with the Montebello MSF site option would have potentially significant impacts on migratory birds from tree trimming and vegetation disturbance during the bird nesting season. Additionally, construction of Alternative 3 with the Commerce MSF site option could spread invasive plants, resulting in significant impacts. Implementation of MM BIO-4 during operation and construction and MM BIO-5 and MM BIO-6 during construction of Alternative 3 with the Montebello MSF site option would reduce impacts to less than significant.

Cultural Resources – Similar to Alternative 1 with the Montebello MSF site option, operation of Alternative 3 with the Montebello MSF site option would result in less than significant impacts on historical resources, no impacts to archaeological sites, and no impacts to known human remains. As with Alternative 1 with the Montebello MSF site option, there are no historical resources within the footprint of the Montebello MSF site option. Also, the alignment would avoid the Pacific Metals Company Building and would not result in a substantial adverse change to the Vail Field Industrial Addition. Like Alternative 1 with the Commerce MSF site option, for other construction related impacts to historic resources (e.g., the Golden Gate Theater) and previously unknown archaeological resources and/or human remains, mitigation measures (MM CUL-1, MM CUL-8, and MM CUL-9) would reduce impacts to less than significant.

Geology, Soils, Seismicity, and Paleontological Resources – Construction of Alternative 3 with the Montebello MSF site option would result in significant impacts based on the potential to disturb paleontological resources and ground disturbance associated with the construction of aerial guideways. MM GEO-1 through MM GEO-4 would be implemented, which would mitigate impacts associated with ground disturbance that can be monitored; however, because monitoring of tunnel boring is not feasible, unique paleontological resources may be destroyed and impacts would be significant and unavoidable

The Montebello MSF site option is within sediments mapped as older alluvial fan deposits which have a high potential for paleontological resources. Thus, construction of the MSF site option would have a significant impact on paleontological resources. Implementation of MM GEO-1 through MM GEO-4 would reduce impacts to less than significant at the Montebello MSF site option because monitoring of ground disturbance would be feasible.

Hazards and Hazardous Materials – During construction of Alternative 3 with the Montebello MSF site option, construction workers and the public could come in contact with and be exposed to the hazardous materials, such as methane, hydrogen sulfide, lead, herbicides, hazardous building materials (e.g., ACM, LBP, or PCBs), and petroleum hydrocarbons. Therefore, construction would have a significant impact from the potential to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Additionally, construction could impact areas located on hazardous materials sites included on the Cortese list. Construction at the Montebello/Citadel station site is located on a former Omega site which is a Superfund site identified on the Cortese list where contaminated groundwater is known to be present. These activities could potentially encounter soil or groundwater contamination, which would result in a significant impact. Implementation of MM HAZ-1 through MM HAZ-5 would reduce impacts to less than significant.

In addition, the Montebello MSF site option is located on two parcels designated as a hazardous materials site on the Cortese List (a Closed LUST Cleanup site and listed as the former John M. Fulmer Company) and three parcels designated on the Cortese list as a closed Land Disposal site and listed as the Vail Avenue Land Reclamation Project for a non-municipal landfill. As such, there is the potential for encountering subsurface debris associated with past dumping activities, and the potential to disturb existing soil contamination from hazardous materials if not characterized, handled and disposed of properly. Application of MM HAZ-1 through MM HAZ-5 would reduce these construction impacts to less than significant.

Hydrology and Water Quality – Unlike Alternative 1 with the Commerce MSF site option or the Montebello MSF site option, Alternative 3 with the Montebello MSF site option would not cross the Rio Hondo and San Gabriel River or the Rio Hondo Spreading Grounds. The proposed Montebello MSF site option is located in a FEMA-defined 100-year flood zone. However, the location was historically a rock quarry that collected stormwater and flooded. The area has since been developed and no longer floods as stormwater is directed in the municipal stormwater management system. Furthermore, the proposed MSF site option does not contain any natural functions or values of a floodplain as it is developed. Thus, Alternative 3 with the Montebello MSF site option would not impact flood flows or groundwater recharge.

However, significant water quality impacts would occur if contaminated groundwater is encountered and spread during construction activities or dewatering. With implementation of MM HAZ-2 and MM HAZ-3, all impacts would be reduced to less than significant.

Noise and Vibration – Based on preliminary construction noise estimates, construction of Alternative 3 with the Montebello MSF site option is predicted to exceed the FTA daytime noise limits at 29 Noise Sensitive Receivers; thus, impacts would be significant. Operation and construction of 3 with the Montebello MSF site option would also have significant vibration impacts on the closest sensitive receptors. Implementation of MM NOI-1 through MM NOI-15 would reduce noise and vibration impacts to less than significant.

Transportation and Traffic – During operation, the Montebello MSF site option would involve minor changes to traffic circulation as the aerial structure would be located in the median of Washington Boulevard between Gayhart Street and Yates Avenue requiring roadway reconfiguration and restriping. These proposed changes to traffic circulation would be designed according to applicable standards and criteria, including providing adequate emergency access. Therefore, operation of Alternative 3 with the Montebello MSF site option would result in a less than significant impact related to transit, traffic, pedestrian and bicycle circulation.

Construction of Alternative 3 with the Montebello MSF site option would result in significant impacts on transit, traffic circulation, and bicycle and pedestrian circulation due to the temporary effects on transit and traffic circulation. These impacts are related to the temporary closures and detours that would cause a reduction in capacity along affected road as well as restricted access to proprieties during project construction (e.g., construction of Acco Street, Washington Boulevard and those leading from Washington Boulevard to the Montebello MSF site option, Smithway Street). Other transportation impacts would include transit and truck rerouting and the potential to shift traffic volumes onto adjacent streets that have bike lanes and planned routes (including Flotilla Street and Vail Avenue). The implementation of MM TRA-1 would minimize disruption during construction and would mitigate these construction impacts to less than significant.

Tribal Cultural Resources – Construction of Alternative 3 with the Montebello MSF site option would result in significant impacts on TCRs due to the potential to disturb preserved buried cultural resources including unknown TCRs. The implementation of MM TCR-1 through MM TCR-3 would reduce these construction impacts to less than significant.

5.6.6.1 Summary

As such, Alternative 3 with the Montebello MSF would result in less than significant impacts with mitigation measures for all resource areas with the exception of significant and unavoidable impacts under geology/seismicity/soils and paleontological resources.

5.6.7 Design Options

There are two potential design options: the Atlantic/Pomona Station Option and the Montebello At-Grade Option. The Atlantic/Pomona Station Option may be selected under Alternative 1, Alternative 2, or Alternative 3. The Montebello At-Grade Option may be selected under Alternative 1 and Alternative 3. Either one or both design options could be selected for Alternative 1 and Alternative 3. For comparison with the base alternatives, the two design options are discussed below with a focus on the differences in impacts between the base alternatives and the design options. For Alternative 1 and Alternative 3, one or both design options could be selected with either of the MSF site options. If the Montebello At-Grade Option and the Montebello MSF site option is selected, there would be an at-grade configuration for the lead tracks to the MSF. This design option is referred to as the Montebello

MSF At-Grade Option and would only be implemented with the Montebello At-Grade Option. The impact findings for the base Alternatives 1 and 3 with the Montebello site option or Commerce MSF site option, or the base Alternative 2 with the Commerce MSF site option would still apply with one or both of these design option(s)unless otherwise noted below.

Atlantic/Pomona Station Option – Relocation of the existing Atlantic Station under the Atlantic/Pomona Station Option would be similar to the base Atlantic station (relocated/reconfigured) in terms of construction methods, length of track, station facilities, and operations. Compared to the base Alternatives 1, 2, and 3 where the underground Atlantic station (relocated/reconfigured) would be a center platform beneath Atlantic Boulevard (south of Beverly Boulevard), this design option would relocate the underground station to a triangular parcel between Atlantic Boulevard, Pomona Boulevard, and Beverly Boulevard. This configuration would require less cut-and-cover construction on Pomona Boulevard as the alignment would turn at a shallower angle through the Pomona/Beverly Boulevard intersection. Similarly, there would be less cut-and-cover construction on Atlantic Boulevard as the underground track work would be located under parcels east of Atlantic Boulevard instead of under the public right-of-way. As such, this design option would not disrupt Atlantic Boulevard directly. However, this design option would have a larger footprint of impacts because the guideway alignment and location of the TBM extraction pit would require full property acquisition along the east side of Atlantic Boulevard between Beverly Boulevard and 4th Street. The guideway alignment would connect with the base Alternative 2 alignment just north of the proposed Atlantic/Whittier station. While different properties would be impacted relative to noise and vibration, the number of impacted sensitive receptors would be the same as for the base alternatives and impacts would be mitigated to less than significant. While visual impacts associated with the Atlantic/Pomona Station Option and the base alternatives would be less than significant, under the Atlantic/Pomona Station Option, the station would be more visibly prominent than the base Atlantic station (relocated/reconfigured). Overall, there would be less cut-and-cover construction on active roadways (i.e. Pomona Boulevard and Atlantic Boulevard) than for construction of the base alternatives. Therefore, the Atlantic/Pomona Station Option would have less disruption of the circulation system during construction from temporary roadway closures, lane closures, and sidewalk closures as compared the base alternatives. With mitigation, disruption of the circulation system is less than significant under the base alternatives and the alternatives with the Atlantic/Pomona Station Option.

The findings of significant and unavoidable impacts after mitigation for the base alternatives (with the Commerce or Montebello MSF site options) would still apply with the Atlantic/Pomona Station Option. The number of significant impacts and applicable mitigation measures would be the same for the base alternatives and the alternatives with the Atlantic/Pomona Station Option. Further, impacts associated with all the environment resource areas would be similar as described above. Although, different properties would be impacted by noise, the Atlantic/Pomona Station Option would have higher visibility, and slightly less disruption of the circulation system would occur.

Montebello At-Grade Option – Under the base Alternatives 1 and 3, the guideway would be in an aerial configuration after crossing Saybrook Avenue for approximately 1.5 miles until transitioning to an at-grade configuration east of Carob Way along Washington Boulevard. Under the Montebello At-Grade Option, the guideway would be in an aerial configuration after crossing Saybrook Avenue for approximately 0.5 miles until merging into the center median east of Garfield Avenue and transitioning to an at-grade configuration at Yates Avenue along Washington Boulevard. The design option would also include an at-grade Greenwood station located just west of Greenwood Avenue and a roadway reconfiguration to accommodate the at-grade segment of the alignment (e.g., turn restrictions at Maple Street and potential sidewalk reductions to avoid property acquisitions). The Montebello At-Grade Option would include a longer at-grade alignment, which would slightly increase noise levels as

compared to an aerial guideway; however, the area is commercial and industrial and there are no sensitive receptors that are exposed, and there are no unmitigable noise impacts related to crossings at Garfield Avenue, Vail Avenue, Maple Avenue and Greenwood Avenue. As such, the Montebello At-Grade Option would not have any additional significant noise or vibration impacts when compared to the base Alternatives 1 and 3.

Compared to the base Alternatives 1 and 3, the construction work for the at-grade portions of the alignment would have lower potential to encounter intact archaeological, tribal, or paleontological resources because excavation would be shallower than would be required for installation of supports for the aerial structure and Greenwood station; however, excavation would still be required under the design option, and the potential to encounter intact resources would remain. As such, the Montebello At-Grade Option may reduce the severity of significant geology/seismicity/soils and paleontological impacts, cultural resource impacts, and tribal cultural resources when compared to the construction of aerial guideways and an aerial station at Greenwood Avenue. However, the Montebello At-Grade Option would not result in a different impact determination than the base Alternatives 1 or 3.

Compared to the base Alternatives 1 and 3, the Montebello At-Grade Option would introduce new visual features at ground level instead of as an aerial structure. The at-grade configuration would be less visually prominent than the aerial structure and the at-grade segment would be less visually obtrusive relative to scenic resources, visual character, and indirect visual impacts on adjacent historic resources. However, new visual elements associated with the Project would still be introduced under the design option. As such, the Montebello At-Grade Option would not result in a different impact determination than the base Alternatives 1 or 3.

For the Montebello At-Grade Option, temporary lane and sidewalk closures would be needed to construct the transition from aerial to at-grade between Garfield Avenue to Montebello Boulevard. These impacts to transit, traffic, bicycle, and pedestrian circulation would be mitigated to less than significant levels with application of similar construction mitigation measures for the base Alternatives 1 and 3. Further, while impacts would be less than significant associated with operational traffic and public services and recreation, the longer at-grade alignment would result in somewhat greater impacts associated with traffic circulation, including emergency response times. Although, the Montebello At-Grade Option would not result in a different impact determination than the base Alternatives 1 or 3.

The overall findings of significant and unavoidable impacts after mitigation under Alternatives 1 and 3 (with the Commerce or Montebello MSF site options) would still apply with the Montebello At-Grade Option. Overall the number of significant impacts and applicable mitigation would be the same for the base Alternatives 1 and 3 and Alternatives 1 and 3 with the Montebello At-Grade Option, although as described above, impacts associated with aesthetics, cultural resources, geology/seismicity/soils and paleontological resources, tribal cultural resources, would be slightly less. Impacts associated with transportation and traffic, public services and recreation, and noise and vibration would be slightly greater. Impacts associated with other environment resource areas would be similar.

5.7 Environmentally Superior Alternative

Under Section 15126.6(a) of the CEQA Guidelines, an “environmentally superior alternative” must be identified in order to determine which alternative possesses an overall environmental advantage when compared to all other alternatives evaluated in this Recirculated Draft EIR. Note that, if the environmentally superior alternative is the No Project Alternative, CEQA requires identification of an

environmentally superior alternative other than the No Project Alternative. Pursuant to CEQA Guidelines Section 15126.6(b), alternatives with the potential for avoiding or substantially lessening significant impacts may be considered even if they are more costly. The environmentally superior alternative can inform decision-makers as part of the Project approval process. However, Metro is not required by CEQA to select the environmentally superior alternative as the locally approved project.

The No Project Alternative would have the greatest number of significant and unavoidable impacts to environmental resources as this alternative would be inconsistent and conflict with regional and local programs, plans, ordinances, and policies related to air quality, GHG, Land Use, and transportation. The No Project Alternative would also not achieve or address any of the Project objectives since it would not include a new rail service in the GSA. Given the conflicts with adopted state, regional and local plans, the No Project Alternative would not be the environmentally superior alternative.

As described above, all Build Alternatives, design options, and MSF site options would have significant and unavoidable impacts during construction relative to geology/seismicity/soils and paleontological impacts. This is due to potential direct impacts on paleontological resources during tunnel boring of the underground tunneling segment which could not be mitigated to insignificant levels. While geology/seismicity/soils and paleontological impacts would be similar for all Build Alternatives and options, the severity of impacts and applicability of mitigation measures relative to other resources areas help distinguish environmental superiority among alternatives. The impact considerations to determine the environmental superior alternative are described below.

Alternatives 1, 2, and 3 with the Commerce MSF site option, with or without the design option(s), would result in significant and unavoidable impacts to cultural resources related to demolition of the historic Pacific Metals Company Building and removal of properties within the potential Vail Field Industrial Addition historic district at the Commerce MSF site. Although Alternative 2 with the Commerce MSF site option would avoid the Pacific Metals Company Building, this alternative would still require property acquisition and demolition of 16 contributing resources within the potential Vail Field Industrial Addition historic district. Therefore, Alternatives 1, 2, and 3 with the Commerce MSF site option would result in additional significant unavoidable impacts to cultural resources and would not be considered the environmentally superior alternative.

Alternatives 1 and 3 with the Montebello MSF site option, with or without the design options, would have similar findings of environmental impacts and mitigation measures. However, compared to the Alternative 3 with Montebello MSF site option, Alternative 1 with the Montebello MSF site option would require additional mitigation to address construction of at-grade alignment to its terminus at the Lambert station in the city of Whittier and three additional at-grade stations. This includes mitigation measures to address significant impacts in the areas of biological resources and hydrology and water quality related to crossing the San Gabriel River and the Rio Hondo river channel and spreading grounds and cultural resources to address significant impacts associated with a sliver take at the Dal Rae Restaurant. Further, because Alternatives 1 is a longer alignment, while many of the same mitigation measures apply to both Alternative 1 and 3 and reduce impacts to less than significant, there is a greater number of properties and public rights-of-way with impacts that must be mitigated under Alternative 1. For example, mitigation measures to address noise and vibration impacts apply to 70 sensitive receivers compared to 29 sensitive receivers under Alternative 3; construction impacts associated with rerouting transit, traffic, bicycle and pedestrian facilities apply to a greater number of routes and facilities under Alternative 1; and mitigation measures to address impacts to paleontological resources, tribal cultural resources, hazardous materials, migratory birds and spread of invasive plants apply to a greater amount of public rights-of way/properties under Alternative 1. Given the greater number of mitigation measures and area where mitigation measures

would apply to address the amount and severity of significant impacts due to the larger footprint of Alternative 1, Alternative 1 with the Montebello MSF site option would not be considered the environmentally superior alternative.

The Build Alternatives with the shortest alignments (Alternative 2, followed by Alternative 3) would have reduced construction impacts due to having a smaller footprint and not affecting rivers or bridges, as compared to Alternative 1. However, the shorter alignments would have lesser environmental benefits, including a smaller reduction of VMT and associated reduction of operational air quality emissions, GHG emissions, fuel consumption, and traffic congestion.

Based this comparison of environmental analysis, on balance, Alternative 3 with the Montebello MSF site option, with or without the design alternatives, would be the environmentally superior alternative as it would result in a lower number of significant and unavoidable impacts compared to Alternatives 1, 2, and 3 with the Commerce MSF site option, and smaller level of environmental effects when compared to the full build-out of the Alternative 1 with Montebello MSF site option. **Table 5-4** presents a findings comparison of no impact, less than significant, less than significant with mitigation measures, as well as environmental resource areas with significant and unavoidable impacts.

Table 5-4. Comparison of Impact Determinations by Alternative for Environmental Resources with Significant and Unavoidable Impacts

Alternative		Environment Resource with Significant and Unavoidable Impacts					
		Air Quality	Cultural Resources	Geology, Seismicity, Soils, and Paleontological Resources	Greenhouse Gas Emissions	Land Use	Transportation and Traffic
No Project Alternative		SU	NI	NI	SU	SU	SU
Alternative 1	Commerce MSF	LTS	SU	SU	LTS	LTS	LTSM
	Montebello MSF[1]	LTS	LTSM	SU	LTS	LTS	LTSM
Alternative 2	Commerce MSF	LTS	SU	SU	LTS	LTS	LTSM
Alternative 3	Commerce MSF	LTS	SU	SU	LTS	LTS	LTSM
	Montebello MSF[1]	LTS	LTSM	SU	LTS	LTS	LTSM

Source: CDM Smith/AECOM JV, 2022.
Note:
1 Alternative 1 with the Montebello MSF site option would have greater severity and number of impacts that would need to be mitigated compared Alternative 2 with the Montebello MSF site option, given its longer at-grade alignment and number of potential stations.
Key:
NI = No Impact LTS = Less Than Significant LTSM = Less Than Significant with Mitigation
SU = Significant and Unavoidable

6. Public Outreach

6.1 Introduction

Metro has implemented a comprehensive outreach program for the Project, starting in 2007 with outreach meetings for the Alternatives Analysis (AA) and continuing through 2022 for the efforts related to this Recirculated Draft EIR. As part of this extensive outreach, Metro has informed elected officials, agency staff, community stakeholders, and the general public of the status of the Project, including progress of the environmental review process.

This chapter provides an overview of the outreach efforts conducted from the public hearings associated with the publication of the 2014 Draft EIR/Environmental Impact Statement (EIS) through the 2022 public outreach efforts associated with this Recirculated Draft EIR. A brief summary is provided for the Project's historical outreach efforts between 2007 and 2014 associated with the AA and the Scoping for the 2014 Draft EIR /EIS.

Project stakeholders have been involved with each phase of the Project. Coordination efforts with government agencies and their processes are summarized in this chapter. Throughout the extent of the Project history, public meetings have been held in the corridor communities in the GSA — including the cities of Commerce, Montebello, Pico Rivera, Santa Fe Springs, Whittier, and unincorporated areas of Los Angeles County, which includes the communities of East Los Angeles and West Whittier-Los Nietos.

6.2 Background

The Project's history includes the publications of the following documents: the 2009 AA (Attachment A of Appendix T), the 2014 Draft EIS/ EIR, and the 2017 Post Draft EIS/EIR Technical Study. In 2007, Metro began outreach for the Project, with community engagement representing an integral component of the environmental process for the published documents mentioned above. A summary of these efforts is discussed in this section.

6.2.1 Public Outreach 2007 through 2014

In 2007, Metro initiated the AA phase of the Project. Public participation during this phase supported the refinement of alternatives. Ultimately during this phase, 47 Project Alternatives were narrowed down to five. The Project conducted early scoping at the initial stages of the AA. A 30-day public comment period was held from November 1 through November 30, 2007. A total of five early scoping meetings (four community meetings and one agency meeting) were held between November 8 and 15, 2007.

At the early scoping meetings held in 2007, there were a total of 224 attendees representing a cross-section of the communities surrounding the Project. Public input was substantial with a total of 159 comments received during the comment period. Participants commented on: Light Rail Technology as the preferred mode of transit, the Project's proximity to downtown Los Angeles as a reason for considering public transit, and the problem of increasing congestion. In addition to early scoping

meetings, 12 additional public meetings were held post-AA preparation and pre-Draft EIS/EIR scoping which involved over 550 stakeholders.

6.2.1.1 2010 Scoping

The scoping period during the preparation for the Draft EIS/EIR began with the publication of the Notice of Preparation/Notice of Intent on January 25, 2010 and continued through April 14, 2010. During the 80-day scoping period, Metro hosted a total of five scoping meetings, four public meetings and one agency meeting, between February 22 and 27, 2010. The meetings were attended by more than 300 people. In addition to the official scoping meetings, Metro also participated upon request in various city and stakeholder events to enhance the outreach effort and increase awareness during the scoping period. For a detailed list of the scoping meeting dates and times, please refer to Attachment A1 of Public Outreach (Appendix S).

During the 80-day scoping period, Metro accepted oral comments at meetings and via the Project helpline, written comments on meeting comment cards or via letters, e-mailed comments to the Metro Project Manager, and electronic comments via the Metro Project website. A total of 527 oral and/or written public comments were received from both agencies and the public, including from elected officials, residents, grassroots organizations, chambers of commerce, developers, hospitals, agencies, educational institutions, and businesses.

The comments received demonstrated substantial support for each of the two LRT alternatives: the SR-60 Alternative and the Washington Boulevard Alternative. Common themes included the importance of transit connectivity, service to colleges and universities, providing service to underserved areas, concerns regarding environmental and engineering challenges along the two Alternatives, and potential economic opportunities for the cities along the corridors.

6.2.1.2 2010 Public Outreach Post Scoping

Following the 2010 scoping period as discussed in **Section 6.2.1.1**, Metro hosted 11 additional community meetings during the preparation of the 2014 Draft EIS/EIR. These meetings included:

- Five urban design community workshops in July 2010 to discuss and explore the station area concepts for each of the proposed station locations.
- Two community open houses in September 2010 to provide stakeholders with a Project update, and share project refinements and the environmental review schedule.
- As part of the 2010 Rail-Volution Conference, Metro hosted two tours of the Portland, Oregon rail transportation network, featuring similarities to the Project. The tours highlighted the Metropolitan Area Express (MAX) Green Line along Interstate (I)-210 to Clackamas County and the MAX Blue Line to Hillsboro. Stakeholders experienced light rail on the I-210 freeway and its integration with the urban fabric of a suburban community in Hillsboro.
- A Project webinar held in May 2011 informed Project stakeholders of similar light rail projects operating in San Diego, California, Portland, Oregon, and Pasadena, California.
- Two open houses in September 2011 provided additional project updates and information about environmental findings on the 2014 Draft EIS/EIR.

6.2.2 2014 Draft EIR/EIS

6.2.2.1 2014 Notice of Availability

In compliance with CEQA and the National Environmental Policy Act (NEPA), a Notice of Availability (NOA) was released to notify the public regarding the availability the 2014 Draft EIS/EIR for its public review and comment. A 60-day public review period began on August 22, 2014 and ended on October 21, 2014.

6.2.2.2 2014 Public Hearings

During the 60-day public review period, Metro held four public hearings in communities surrounding the Project in September and October 2014. A total of 528 participants attended these four meetings which also included 120 speakers providing public input and 148 participants providing written comments. **Table 6-1** details the date, location, and public input resulting from these public hearings.

Table 6-1. 2014 Public Hearing Information for the 2014 Draft EIS/EIR

Meeting	Date and Location	Participants	Comments
Public Hearing Meeting #1 - Pico Rivera	September 27, 2014, 9 am to 11:30 am Pico Rivera Senior Center 9200 Mines Avenue, Pico Rivera, CA 90660	62	Speakers: 14 Written Comments:9
Public Hearing Meeting #2 - Montebello	September 29, 2014, 5:30 pm to 8 pm Quiet Cannon Banquet Center 901 Via San Clemente, Montebello, CA 90640	97	Speakers: 28 Written Comments: 10
Public Hearing Meeting #3- East Whittier	September 30, 2014, 5:30 pm to 8 pm Uptown Whittier Senior Center 13225 Walnut Street, Whittier, CA 90602	161	Speakers: 46 Written Comments: 116
Public Hearing Meeting #4 - South El Monte	October 1, 2014, 5:30 pm to 8 pm South El Monte Senior Center 1556 Central Avenue, South El Monte, CA 91733	208	Speakers: 32 Written Comments: 13
Total		528	Speakers: 120 Written Comments: 148

Source: Metro. Draft EIS/EIR Public Hearings. Attachment A1 of Appendix S. (2014).

The 2014 Draft EIR/EIS was subjected to an extensive volume and scope of comments during the 60-day public review period. As a result, the Board deferred the selection of a Locally Preferred Alternative (LPA) and determined that additional technical investigation would be needed to address major areas of concern raised by Cooperating Agencies, corridor cities and stakeholders. Public hearing comments substantiated the Metro Board's direction in 2014 to pursue the following evaluations:

- Continue studying the North Side Design Variation (NSDV) as part of the State Route (SR) 60 Alternative and address comments received from cooperating agencies.
- Eliminate the Garfield Avenue aerial segment between Via Campo and Whittier Boulevard and identify a new north-south connection from the existing Metro Gold Line Eastside Extension (MGLEE) to the proposed alignment on Washington Boulevard.
- Explore the feasibility of operating both LRT alternatives.
- Conduct subsurface investigation along the western portion of the NSDV guideway alignment to initiate characterization of soil conditions, per the request by the United States Environmental Protection Agency (USEPA).

6.2.3 2017 Post Draft EIS/EIR Technical Study

As discussed in **Section 6.2.2.2**, the Metro Board directed staff to proceed with further study and refinement of the Build Alternatives concepts related to the 2014 Draft EIS/EIR. These concepts were developed and evaluated as part of the May 2017 Post Draft EIS/EIR Technical Study. The technical scope of work included completing additional technical studies and supporting public outreach activities over an eighteen-month period to respond to the Metro Board motion. Work on the Technical Study began in August 2016 with a series of community meetings and public outreach activities completed over an eighteen-month period. The purpose of the community and public outreach activities provided the stakeholders project status updates, an opportunity to provide feedback on the route concept development process, and to continue engaging and seeking feedback on the overall community engagement efforts.

During the 2017 Post Draft EIS/EIR Technical Study phase, Metro hosted ten community meetings and held a total of 110 briefings throughout the communities surrounding the Project and hosted two tours of Metro facilities and construction sites. Engagement efforts focused not only on general Project awareness, but also toward engaging the Washington Boulevard Coalition and SR-60 Coalition stakeholders as well as East Los Angeles in the unincorporated area of Los Angeles County. **Table 6-2** summarizes the meeting attendance.

Table 6-2. 2017 Post Draft EIS/EIR Technical Study - 2016 Community Meetings

Date	Meeting Location	Participants	Comments
March 28, 2016 6 pm to 8 pm	Whittier Senior Center 13225 Walnut Street, Whittier, CA 90602	127	27
March 29, 2016 6 pm to 8 pm	East Los Angeles Library 4837 E 3rd Street, Los Angeles, CA 90022	66	7
March 30, 2016 6 pm to 8 pm	Quiet Cannon 901 Via San Clemente, Montebello, CA 90640	77	9
March 31, 2016 6 pm to 8 pm	South El Monte Senior Center 1556 Central Avenue, South El Monte, CA 91733	56	11
June 22, 2016 6 pm to 8 pm	Griffith Middle School 4765 E 4th Street, Los Angeles, CA 90022	91	17
Emailed Comments			4
Total:		417	75

Source: Metro. 2017 Outreach for 2017 Post Draft EIS/EIR Technical Study. Attachment A2 of Appendix S. (2017).

Community feedback gathered from the 2016 Community Meetings provided a collective response of:

- Overwhelming support for the Project, including Washington Boulevard Alternative via the Atlantic Boulevard underground configuration, SR-60 NSDV Alternative, and the Combined Alternative.
- Interest in connecting communities and improving access to employment centers and Metro's regional transit system.
- Concerns regarding impacts to businesses during construction.
- Interest in economic development opportunities along the corridor.
- Emphasis on station accessibility and safety.

For the 2017 public meetings, Metro hosted five public community meetings in February 2017 in the cities of Whittier, Montebello, South El Monte, Commerce, and the unincorporated community of East Los Angeles to update the community and receive input on the 2017 Post Draft EIS/EIR Technical Study. **Table 6-3** summarizes the meeting attendance.

Table 6-3. 2017 Post Draft EIS/EIR Technical Study - 2017 Community Meetings

Date	Meeting Location	Participants	Comment Cards
February 6, 2017 6 pm to 8 pm	Whittier Senior Center 13225 Walnut Street, Whittier, CA 90602	96	10
February 7, 2017 6 pm to 8 pm	Quiet Cannon 901 Via San Clemente, Montebello, CA 90640	65	8
February 8, 2017 6 pm to 8 pm	South El Monte Senior Center 1556 Central Avenue, South El Monte, CA 91733	48	2
February 15, 2017 6 pm to 8 pm	Commerce Senior Center 2555 Commerce Way, Commerce, CA 90040	39	4
February 16, 2017 6 pm to 8 pm	AltaMed PACE Center 5425 East Pomona Blvd, Los Angeles, CA 90022	70	7
Emailed comments			1
Total		318	32

Source: Metro. 2017 Outreach for 2017 Post Draft EIS/EIR Technical Study. Attachment A2 of Appendix S. (2017).

Comments and community feedback gathered from the 2017 Community Meetings included:

- Support for the Project and the initiation of the environmental document.
- Emphasis from community members and stakeholders that the community surrounding the Project is highly dependent on public transportation and would like to see implementation of the Project.
- High level of support for the Washington Alternative with an underground configuration beneath Atlantic Boulevard. There was also support for the SR-60 NSDV Alternative and a moderate level of support for the Combined Alternative that would combine the Washington Boulevard Alternative and the SR-60 NSDV Alternative.
- Concern expressed by participants regarding the potential impacts during the construction of the system, especially traffic and business disruption and/or relocation.
- Highlighting the importance of designing the stations with ease of access for pedestrians, and cyclists and to park-and-ride lots by the community. Also, the community values access to jobs, activity centers within the area surrounding the Project and connectivity to the transit system throughout the Los Angeles Region.
- Suggestions for outreach to youth and the younger generation during the next phase of work.

Of 235 respondents surveyed at the February 2017 community meetings, 63 percent of participants agreed that an underground configuration beneath Atlantic Boulevard had sufficient merit to be recommended as the new Washington Boulevard Alternative. Additionally, 50 percent of participants expressed interest in studying the Combined Alternative in the next phase of work. See the Attachment A1 of Appendix S for further details on the 2017 Post Draft EIS/EIR Technical Study community input.

6.3 2019 Scoping

6.3.1 Public Outreach Prior to 2019 Scoping

Following the 2017 Post Draft EIS/EIR Technical Study, Metro re-initiated the CEQA and NEPA processes to further evaluate potential impacts associated with the refined Build Alternatives. In advance of the Public Scoping Meetings in Summer 2019, Metro offered a Community Update Meeting in East Los Angeles. One meeting was held in East Los Angeles Library on May 13, 2019 from 5:30 pm to 7:30 pm. The Community Update Meeting was attended by approximately 120 community members, including staff from Los Angeles County Supervisor Hilda Solis' office, community-based organization staff and members of the public. Major comment themes captured at the meeting include:

- Stations/Station Parking
  - Community expressed desire for a station design similar to Mariachi Plaza for the Shops at Montebello station (SR-60 Alternative).
  - Community expressed support for parking to be taken into consideration when planning as there is a parking shortage in the community.
  - Community expressed support for Build the Atlantic and Whittier station at the site of the gas station or at the Sketchers store. Request for a community space in the station area.
  - Community expressed support for hosting a community meeting in Montebello to address the Greenwood Station.
  - Community expressed support for providing shuttle services to stations.
- Alignment
  - Community expressed opposition for the development of the SR-60 Alternative.
  - Community expressed support for the SR-60 Alternative.
  - Community expressed support for the Washington Boulevard Alternative.
  - Community expressed support for an underground alignment from Atlantic to Garfield for the Washington Boulevard Alternative.

- Community expressed preference for the Washington Boulevard Alternative to be built first.
- Community expressed support for the Combined Alternative with underground alignment.

- Safety
  - Community expressed concern about transients coming from the Telford and Woods area.
  - Community expressed concern about safety around the stations with a possible influx of people experiencing homelessness.
- Traffic/Circulation Impacts
  - Community identified Project could help reduce car usage.
- Property Impacts / Right-of-Way
  - Community expressed concern about property values along the SR-60 Alternative.
  - Community expressed concern that the Project would create a denser community.

6.3.2 Public Outreach Work Plans

The Project has developed public outreach work plans to highlight opportunities for public involvement during key milestones throughout the environmental process. The public outreach programs include community profiles, stakeholders, collateral material recommendations, notification strategies, communication protocols, proposed schedules for interfacing with the public and elected officials, and recommendations for meeting formats.

In order to adapt to the communities' needs and allow appropriate modifications and refinements to the Build Alternatives, the public outreach work plan strategies are flexible and adapt to meet the Project's demands and political climate. The public outreach plan for the Project is consistent with outreach requirements outlined in CEQA and NEPA.

The Project has utilized a variety of forums and platforms, including public meetings, community workshops, Technical Advisory Committee (TAC) meetings, information booths at community events, and social media (Facebook, Instagram, Twitter, NextDoor, and YouTube). As a response to the COVID-19 pandemic, Metro has held a series of virtual community meetings via Zoom. Virtual meetings were accompanied by an on-site outdoor "Tech Booth" where the general public could participate if they did not have access to technology through a computer, smart phone, or tablet. The Public Outreach Work plan for the Project can be found in Attachment B of Appendix S of this Recirculated Draft EIR.

6.3.3 Notice of Preparation/Notice of Intent

Pursuant to CEQA, Metro issued a Recirculated Notice of Preparation (NOP) on May 31, 2019, informing the public of its intent to prepare a Supplemental/Recirculated Draft EIS/EIR for the Project and notify interested agencies and parties of public scoping meetings. The Federal Transit Administration (FTA) published the Notice of Intent (NOI) pursuant to NEPA in the Federal Register on May 29, 2019, to initiate the Supplemental/Recirculated Draft EIS/EIR process for the Project.

As discussed in further detail in Section 5.2 Alternatives Withdrawn, in February 2020, the Metro Board withdrew from the NEPA process and pursuing a joint Supplemental/Recirculated Draft EIS/EIR. Metro reevaluated its funding sources and had identified that the Project could be funded through state and local sources and pursued a CEQA only document consisting of a Recirculated Draft EIR (Metro, 2020a). As a result, the FTA published a Notice to Rescind the NOI in May 2020. The NOP, NOI, and Rescinded NOI related to this Recirculated Draft EIR can be found in Appendix A.

6.3.4 Scoping Meetings

The scoping process is required by policies set forth in the CEQA and NEPA. CEQA (Title XIV, 15082) requires that a lead agency shall call at least one Scoping Meeting if the proposed project is of statewide, regional or areawide significance. The scoping process inherently emphasizes early consultation with resource agencies, other state and local agencies, tribal governments, cooperating and responsible agencies as well as any federal agency whose approval or funding the proposed project will be required for the completion of the project. Metro is the lead agency is under CEQA for this Project. Prior to February 2020 when the Metro Board acted upon a decision to pursue a Recirculated Draft EIR only, instead of a joint Supplemental Draft EIS/EIR, FTA was recognized as the lead agency under NEPA. The 2019 Scoping Summary Report can be found in Attachment C and D in Appendix A of this Recirculated Draft EIR.

Metro conducted six public Scoping Meetings in June 2019 to receive formal public comments on the Build Alternatives and their potential impacts to the environment and quality of life. Notification of the meetings was conducted in compliance with CEQA and NEPA guidance. Meetings were held in the communities of Whittier, Commerce, East Los Angeles, South El Monte, Montebello, and Pico Rivera. Meetings consisted of a presentation detailing an overview of the Project. A total of 573 participants attended the six scoping meetings as shown in **Table 6-4**.

Table 6-4. 2019 Scoping Meetings for the Recirculated Draft EIR

Meeting	Date and Location	Participants	Comments
Public Scoping Meeting #1 - Whittier	Thursday, June 13, 2019, 6 pm to 8 pm Whittier Community Center 7630 Washington Avenue, Whittier, CA 90602	86	Speakers: 34 Written Comments: 5 Oral Testimony Comments: 2
Public Scoping Meeting #2 - Commerce	Monday, June 17, 2019, 6 pm to 8 pm Commerce Senior Citizens Center 2555 Commerce Way, Commerce, CA 90040	41	Speakers: 12 Written Comments: 7 Oral Testimony Comments: 5
Public Scoping Meeting #3 - East Los Angeles	Wednesday, June 19, 2019, 6 pm to 8 pm 4th Street New Primary Center 469 Amalia Avenue, Los Angeles, CA 90022	120	Speakers: 43 Written Comments: 3 Oral Testimony Comments: 0
Public Scoping Meeting #4 - South El Monte	Saturday, June 22, 2019, 10 am to 12 pm South El Monte Community Center 1530 Central Avenue, South El Monte, CA 91733	41	Speakers: 12 Written Comments: 7 Oral Testimony Comments: 5
Public Scoping Meeting #5 - Montebello	Monday, June 24, 2019, 6 pm to 8 pm Quiet Cannon Banquet Center 901 Via San Clemente, Montebello, CA 90640	190	Speakers: 28 Written Comments: 20 Oral Testimony Comments: 6
Public Scoping Meeting #6 - Pico Rivera	Wednesday, June 26, 2019, 6 pm to 8 pm Pio Pico Woman's Club 9214 Mines Avenue, Pico Rivera, CA 90660	95	Speakers: 20 Written Comments: 7 Oral Testimony Comments: 12
Total		573	Speakers: 149 Written Comments: 54 Oral Testimony Comments: 33

Source: Metro. 2019 Scoping Summary Report. Attachment C of Appendix A. (2019).

During the Public Scoping Period, Metro received 294 comments. Major themes expressed by stakeholders included:

- Opposition to SR-60 Alternative at-grade alignment from South Atlantic Boulevard to Findlay Avenue.
- Support for the Washington Boulevard Alternative from the city of Whitter and business groups and employers.
- Concern expressed over environmental justice and equal consideration for the lack of providing an underground configuration in lower-income areas of Los Angeles County.

6.4 2020 Public Outreach

In anticipation of recommending the withdrawal of the SR-60 Alternative and Combined Alternative from further evaluation to the Metro Planning and Programing Committee and Metro Board, Metro staff prepared for and planned community meetings to provide a comprehensive Project update. The community meetings were focused on providing informational updates and answering questions related to updates related to the Alternatives withdrawn from further consideration. Meetings held during this period as shown in **Table 6-5**.

Table 6-5. 2020 Post-Scoping Meetings for the Recirculated Draft EIR

Meeting	Date and Location
Community Meeting #1	February 3, 2020, 6 pm to 8 pm Fourth Street Primary Center 469 Amalia Avenue, Los Angeles, CA 90022
Community Meeting #2	February 6, 2020, 6 pm to 8 pm Don Bosco Technical Institute 1151 San Gabriel Blvd, Rosemead, CA 91770
Community Meeting #3	February 8, 2020, 10 am to 12 pm The Ark Montebello 931 S Maple Avenue Montebello, CA 90640

Source: Community Meetings February 2020 Summary Report. Attachment D of Appendix S (2020).

The meetings were attended by 234 participants, and generated 76 questions/comments and five letters. A substantial amount of comments focused upon understanding transit service opportunities in the SR-60 corridor if the SR-60 Alternative was withdrawn from consideration for further evaluation. Streamlining construction and the delivery of the Project was a topic of focus for the community. Several participants inquired about operations of the Project, including hours, speeds, and location of the alignment configurations. Several questions were also related to how the Washington Alternative would impact traffic in East Los Angeles in the unincorporated area of Los Angeles County and the corridor cities along the alignment. Further details on this public outreach period can be found in the Community Meetings February 2020 Summary Report in Attachment D of Appendix S.

6.5 2021 Public Outreach

Metro hosted another round of update meetings in November 2021 to provide a Project update, share information on the ongoing station design efforts, and provide an opportunity to ask questions. Due to the COVID-19 pandemic, the meetings were held in a virtual setting with limited in-person engagement that followed local and county safety measures. The virtual video conferencing platform allowed individuals with internet access via a desktop, laptop, phone, or tablet to join on-screen. Toll-free numbers for accessing the meetings via telephone and simultaneous Spanish interpretation were also made available to participants.

Metro prepared and planned four community meetings that took place virtually, with three presentations tailored to specific communities. The first and second meetings focused on East Los

Angeles in the unincorporated area of Los Angeles County and provided updates on the Atlantic/Pomona station design options. The third meeting, focused on Montebello, featured updates on the Greenwood station and Montebello At-Grade design option. The fourth meeting presented general updates on the Project corridor.

To support communities with technical limitations during the COVID-19 pandemic, an outdoor set-up was implemented via Tech Booth for all community meetings. During the meetings, fact sheets and other relevant information were provided within the meeting chat. **Table 6-6** summarizes the meeting attendance for the individual meetings held in November 2021. The Community Meetings November 2021 Summary Report discusses the outreach efforts during this time period in further detail and can be found in Attachment F of Appendix S of this Recirculated Draft EIR.

Table 6-6. 2021 Community Outreach Meetings for the Recirculated Draft EIR

Meeting	Date	Tech Booth Location	Participants	Comments
Community Meeting #1 - East Los Angeles	November 15, 2021 12 pm to 1:30 pm	Atlantic Avenue Park 570 S. Atlantic Blvd, Los Angeles, CA 90022	44 (Including 3 at Tech Booth)	36
Community Meeting #2 - East Los Angeles	November 15, 2021 6 pm to 7:30 pm	Atlantic Avenue Park 570 S. Atlantic Blvd, Los Angeles, CA 90022	37 (Including 5 at Tech Booth)	32
Community Meeting #3 - Montebello	November 16, 2021 6 pm to 7:30 pm	Montebello Senior Center 115 S. Taylor Avenue, Montebello, CA 90640	78 (Including 5 at Tech Booth)	29
Community Meeting #4 - Corridor-wide	November 17, 2021 6 pm to 7:30 pm	Pico Rivera Senior Center 9200 Mines Avenue, Pico Rivera, CA 90660	117 (Including 5 at Tech Booth)	48
Total			276 (Including 18 at Tech Booths)	145

Source: Metro. Community Meetings November 2021. Attachment E of Appendix S (2021).

Prior to the meeting series in November 2021, Metro conducted outreach at six in-person community events and engaged with community members along the corridor to provide brief Project updates. **Table 6-7** lists each of these community events.

Table 6-7. 2021 Community Outreach Events Attended by Metro

Event Name	Date and Location of the Event	Engagements
East Los Angeles Certified Farmers' Market	August 28, 2021 Kern Avenue and Whittier Blvd, Los Angeles, CA 90022	60
East Los Angeles Certified Farmers' Market	September 18, 2021 Kern Avenue and Whittier Blvd, Los Angeles, CA 90022	75
Pico Rivera Halloween Spooktacular	October 23, 2021 Smith Park 6016 Rosemead Blvd, Pico Rivera, CA 90660	150
Commerce Movies in the Park	October 29, 2021 Rosewood Park 5600 Harbor Street, Commerce, CA 90040	15
Whittier Spooktacular 5K Marathon	October 30, 2021 Whittier Community Center 7630 Washington Avenue, Whittier, CA 90602	75
East Los Angeles Veterans Day Ceremony and Resource Fair	November 11, 2021 Los Cinco Puntos 3300 East Cesar E. Chavez Avenue, Los Angeles, CA 90063	60
St. Alphonsus School Holiday Pop - up	November 14, 2021 St. Alphonsus School 552 Amalia Avenue, Los Angeles, CA 90022	15
Mariachi Plaza Festival - Shared fact sheets via Metro booth	November 21, 2021 1831 E. Festival Street, Los Angeles, CA 90033	50
Total		440

Source: Metro. Community Meetings November 2021. Attachment E of Appendix S (2021).

6.6 2022 Public Outreach

During the November 2021 community meetings, Metro received a request to meet with businesses in East Los Angeles in the unincorporated area of Los Angeles County to provide a Project update and answer questions. Metro participated in a meeting that was hosted and coordinated by the East Los Angeles Chamber of Commerce, Whittier Merchants Association, and Via Care on January 27, 2022. Metro met with the businesses again on March 2, 2022, ahead of the community meetings. Both meetings aimed to inform business owners and tenants of Project updates, including preliminary station design options and discuss potential impacts to businesses and mitigation measures ahead of the community meetings. **Table 6-8** lists these meetings.

Table 6-8. 2022 East Los Angeles Business Meetings for the Recirculated Draft EIR

Meeting	Date and Time	Location
Business Meeting #1 Non-Metro hosted meeting	January 27, 2022 5:30 pm to 7 pm	Via Care 501 S. Atlantic Blvd, Los Angeles, CA 90022
Business Meeting #2 Hosted by Metro	March 3, 2022 5:30 pm to 7 pm	Virtual on Zoom In-person streaming location at Via Care 501 S. Atlantic Blvd, Los Angeles CA 90022

Source: Metro (2022). Eastside Transit Corridor Phase 2 Project- East Los Angeles Business Meetings Attachment F of Appendix S of this Recirculated Draft EIR.

As a follow-up to the community meeting series hosted in November 2021, Metro hosted another round of update meetings in March 2022 to provide Project updates focused on specific communities and cities to share information on the ongoing station design efforts and provide stakeholders the opportunity to ask questions. Metro hosted four virtual community meetings focused on providing informational updates on the status of the Project and answering questions related to those specific updates. **Table 6-9** summarizes participation at each meeting. Further details on Community Meetings held in March 2022 can be found in Attachment F of Appendix S.

Table 6-9. 2022 Public Outreach Meetings for the Recirculated Draft EIR

Meeting	Date	Tech Booth Location	Participants	Comments
Community Meeting #1 - East Los Angeles	March 9, 2022	Atlantic Avenue Park 570 S Atlantic Blvd, Los Angeles, CA 90022	84 (Including 7 at Tech Booth)	25
Community Meeting #2 - Commerce and Montebello	March 10, 2022	Commerce City Hall Parking Lot 2535 Commerce Way, Commerce, CA 90040	59 (Including 2 at Tech Booth)	21
Community Meeting #3 - Pico Rivera, Santa Fe Springs, Unincorporated Los Angeles County Los Nietos Community	March 16, 2022	Pico Rivera Senior Center 9200 Mines Avenue, Pico Rivera, CA 90660	89 (Including 8 at Tech Booth)	58
Community Meeting #4 - Whittier	March 17, 2022	Whittier Uptown Senior Center 13225 Walnut Street, Whittier, CA 90602	75 (Including 2 at Tech Booth)	29
Total			307 (Including 19 at Tech Booth)	133

Source: Metro (2022). Eastside Transit Corridor Phase 2 Project- East Los Angeles Business Meetings Attachment F of Appendix S of this Recirculated Draft EIR.

6.7 Government and Other Agency Consultation

A participating agency is defined in CEQA/NEPA as a federal, state, regional, county local or tribal governments with an interest in the Project. These agencies are also eligible to be participating agencies if their responsibility relate to areas within special expertise or jurisdiction. The Project included a total of 25 participating agencies. Cooperating Agencies are inclusive of the federal agencies with jurisdiction by law or special expertise, providing input in the areas that they oversee or by expertise. The Cooperating Agencies for this Project include USEPA, United States Army Corps of Engineers (USACE), and the California Department of Transportation (Caltrans). A complete list of Participating and Cooperating Agencies is included in Attachment C of Appendix A.

6.8 Tribal Coordination

During preparation of this Recirculated Draft EIR, Native American Heritage Commission (NAHC) was contacted by letter and provided with a brief Project description and a map of the general study area (GSA). The NAHC responded to Metro on November 22, 2019 with an Assembly Bill (AB) 52 consultation list of tribes and tribal contacts who are traditionally and culturally affiliated with the Project area. The NAHC also provided the results of the Sacred Lands File (SLF) search. The SLF search result was positive for sacred sites and the NAHC requested Metro contact the Gabrieleño Band of Mission Indians – Kizh Nation and the Gabrieleño/Tongva San Gabriel Band of Mission Indians for more information regarding these sites.

On December 3, 2019, a letter was sent to each of the tribes on the AB 52 consultation list. The letter was intended to initiate consultation with the tribes on both the state and federal levels, in order to comply with AB 52 and the terms of Section 106 of the National Historic Preservation Act. Letters describing the GSA and U.S. Geological Survey (USGS) topographic maps were sent on December 3, 2019 to the following Native American representatives, identified by the NAHC as potentially having knowledge of the GSA:

- Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation
- Anthony Morales, Chairperson, Gabrieleño/Tongva San Gabriel Band of Mission Indians
- Sandonne Goad, Chairperson, Gabrieleño/Tongva Nation
- Robert Dorame, Chairperson, Gabrieleño Tongva Indians of California Tribal Council
- Charles Alvarez, Gabrieleño-Tongva Tribe

On December 10, 2019, Andrew Salas, Chairperson, Gabrieleño Band of Mission Indians – Kizh Nation, responded and requested consultation. Accordingly, a consultation meeting was held between the Gabrieleño Band of Mission Indians – Kizh Nation and Metro on March 25, 2020. On April 27, 2020, the Gabrieleño Band of Mission Indians – Kizh Nation provided additional information regarding their tribal lineage and ties to the area of direct impacts (ADI) via email.

Correspondence received and meeting minutes may be found in Confidential Attachment B (this attachment is not part of the EIR pursuant to PRC § 21082.3(c)(1)) of the Tribal Cultural Resources Impacts Report (Appendix O).

6.9 Other Supporting Public Outreach

6.9.1 Stakeholder Organization Outreach

The Project's outreach program engaged with Community Based Organizations (CBOs) to establish communication and adapt to the communities' needs and participation preferences. In alignment with the Metro Equity Platform and the CBO Partnering Strategy, Metro has developed a CBO Roundtable Strategy for the Project. This Strategy provides an approach to collaborating with local organizations for effective outreach methods, engagement, and tools for meaningful community input. Metro

outreached to over 30 CBOs from around the communities surrounding the Project with the opportunity to give feedback and collaborate in the outreach efforts. The CBO partnership includes a total of eight CBOs that responded with interest and followed through with all steps of the onboarding process. Further information on CBOs can be found in Attachment H of Appendix S.

6.9.2 Ongoing Public Outreach

6.9.2.1 Stakeholder Database

An initial Project database was created at the inception of the environmental phase in 2009. Since that time, the database has been maintained and expanded to include elected offices, including local, regional, state, and federal representatives; department executives of city and regional agencies; academic institutions and schools; community-based organizations; chambers of commerce; major employers; utility companies; and other key stakeholder representatives and residents of the corridor communities. The information collected in the database includes name, organization, email address, phone number, and mailing address.

The database has continued to expand as additional contacts were collected through stakeholder engagements. Maintenance of the database is ongoing to keep agency and organization contacts up-to-date prior to the start of notification for each meeting series or major announcement. New contacts are added when members of the public opt-in to receive Project communications by providing their contact information at public meetings or pop-up events. Similarly, new agency contacts are added as they participate in Project meetings or as they become directly involved. Contacts are also added as inquiries are received through the helpline, Project email, and online submission form. This database will continue to be maintained and updated throughout the life of the Project.

In addition, mailing lists were also generated for each major Project announcement to reach occupants and owners of properties that are within one-quarter mile of a proposed station, as well as those who are within a 500-foot buffer from the Project corridor.

6.9.2.2 Online communication tools

To keep stakeholders up-to-date, a Project website was developed and updated at every major Project milestone, including prior to public meeting series and as major Project updates become available. The website features the latest Project information, including fact sheets, Project maps, other collateral materials, presentations, display materials, and video recordings of past meetings.

6.9.2.3 Notification and Project Awareness Efforts

A variety of notification and informational tools were used for outreach to target audiences. Outreach methods included the following:

- Traditional methods
    - In-person meetings with cities, counties, chambers of commerce, councils of governments, educational institutions, community stakeholder groups, agency staff, and elected officials

- Direct mail notification
- Newspaper display ads (print and digital)
- Placement of meeting notices in Metro light rail trains (Metro L [Gold] Line) as well as connecting Metro buses
- Project awareness banners at highly visible locations along the Project corridor
- Pop-up or information tables

- Public involvement opportunities
  - Public community meetings
  - The display of Project materials at other Metro project community meetings (NextGen Bus Plan, I-105 ExpressLanes, West Santa Ana Branch [WSAB] Transit Corridor)
  - Metro L (Gold) and E (Expo) Line rail tours
  - Information booths and pop-ups at various community events and at Metro L (Gold) Line stations

- Project communication tools
  - Project website
  - Project helpline
  - Project overview survey
  - Email notification
  - Social media (i.e., Facebook and Twitter)
  - Project videos (video simulation, Project overview, meeting webcasts, and recordings)

- Other targeted outreach
  - Electronic signs
  - Text messages
  - The Source, Metro's online publication
  - Earned media (social media, blogs, newspapers, other media)

These notification tools and outreach efforts were customized based on the type of community meetings with a focus on maximizing cost-effectiveness and participation. A variety of informational

documents were made available to the public, including Project fact sheets, Metro systemwide fact sheets (i.e., Property Acquisition, Public-Private Partnership, Rail Transit Modes, frequently asked questions), meeting notices, electronic newsletters (eblasts), and other materials.

6.9.3 Public and Agency Comment Process

Throughout the Project development process, public and agency comments have been collected through a variety of methods, including orally at in-person meetings, via the Project helpline, through the mail, via online comment forms, and via Project email. During the official scoping comment period, comments were accepted via comment cards submitted at meetings or mailed in, email, online comment form, or orally via a court reporter.

Comments regarding the Project were also made through social media or other online platforms and, when possible, the outreach team provided stakeholders with the list of approved comment methods in case they wanted their comment on the official record. Relevant comments submitted during official comment periods were incorporated into the Recirculated Draft EIR and comments were addressed by the technical team.

6.10 Commenting on this Recirculated Draft EIR

The Recirculated Draft EIR is being made available for public review for a 60-day comment period, starting on Thursday, June 30, 2022, and concluding on Monday, August 29, 2022. The Recirculated Draft EIR, along with other Project information, is available for review and download online at the Los Angeles County Metropolitan Transportation Authority website at https://www.metro.net/projects/eastside_phase2/. Electronic copies of the document can be made available upon written request to Metro and mailed to recipients for the cost of materials and shipping.

Hard copies of the Recirculated Draft EIR (and electronic copies of the supporting technical reports) will also be available for public review at the following locations:

- Metro Headquarters, One Gateway Plaza, Los Angeles
- East Los Angeles Library, 4837 E 3rd Street, East Los Angeles
- Commerce Public Library, 5655 Jillson Street, Commerce
- Chet Holifield County Library, 1060 S Greenwood Avenue, Montebello
- Los Nietos County Library, 8511 Duchess Drive, Whittier
- Whittier Public Library, 7344 Washington Avenue, Whittier

Metro is conducting four public hearings to present key findings on the Draft EIR and offer opportunities for the public to submit oral comments. Three hearings will be in-person and one meeting will be virtual. **Table 6-10** lists the time and location of each hearing. A court reporter will be

present at each hearing. Note that comments and questions will not receive a response during the hearings but will be addressed within the Final EIR, which is anticipated to be released in 2023. All hearings will feature the same information. Notifications of this public review period has been released in the Los Angeles Times, La Opinion, and Whittier Daily News.

Table 6-10. 2022 Public Hearings for the Recirculated Draft EIR

Meeting	Date and Location
Public Hearing #1 East Los Angeles (In Person)	July 21, 2022, 6 pm to 8 pm Kaiser Permanente Medical Offices (Northeast Parking Lot) 5119 Pomona Blvd, Los Angeles, CA 90022
Public Hearing #2 Montebello (In Person)	July 30, 2022, 10 am to 12 pm Applied Technology Center High School 1200 W Mines Avenue, Montebello, CA 90640
Public Hearing #3 Virtual (Online)	Thursday, August 11, 2022, 6 pm to 8 pm Zoom Link: tinyurl.com/3k8pms7f Call-In Number: 213.338.8477 Meeting ID: 814 9183 9547
Public Hearing #3 Whittier (In Person)	Wednesday, August 17, 2022, 6 pm to 8 pm Whittier Community Center (Gymnasium) 7630 Washington Avenue, Whittier, CA 90602

Source: Metro (2022).

Comments on this Recirculated Draft EIR can be sent via web form or mailing address shown in **Table 6-11**. All submitted comments concerning the Recirculated Draft EIR must be received no later than 5:00 p.m. Monday, August 29, 2022.

Table 6-11. Public Review Contact Information for the Recirculated Draft EIR

Media Type	Mailing Address/ Contact Information
By Mail	Ms. Jenny Cristales-Cevallos Project Manager Los Angeles County Metropolitan Transportation Authority One Gateway Plaza, Mail Stop 99-22-7 Los Angeles, CA 90012
By Web Form	metro.net/eastsidecomments
By Phone	213.922.3012

Source: Metro (2022).

All comments received during the Recirculated Draft EIR public review period will be compiled and responded to as part of the Recirculated Final EIR. If there are any questions regarding this notice, or how to review available documents, please contact Jenny Cristales-Cevallos.

7. Acronyms and Abbreviations

°F	Fahrenheit
µips	micro-inch per second
2016 RTP/SCS	2016-2040 Regional Transportation Plan/Sustainable Communities Strategy
2020 RTP/SCS	Connect SoCal 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy
AADTs	annual average daily traffic volumes
AASHTO	American Association of State Highway and Transportation Officials
AB	Assembly Bill
ACC	Advanced Clean Cars
ACC II	Advanced Clean Cars II
ACE	Advanced Conceptual Engineering
ACM	asbestos-containing material
ACS	American Community Survey
Act	Water Quality Control Act of 1969
ADA	American Disabilities Act
ADI	area of direct impacts
ADL	aerially-deposited lead
ANSI	American National Standards Institute
APE	area of potential effects
API	area of potential impact
APN	assessor's parcel number
APTA	American Public Transportation Association
AQMP	Air Quality Management Plan
AR4	Intergovernmental Panel on Climate Change Fourth Assessment Report

AREMA	American Railway Engineering and Maintenance-of-Way Association
ARP	average return period
ASI	application screening index
AT&SF	Atchison, Topeka and Santa Fe Railway
AV	autonomous vehicles
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
Basin Plans	Water Quality Control Plans
BCE	Before the Common Era
bgs	below ground surface
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
BP	before present
BRSA	Biological Resources Study Area
BRT	Bus Rapid Transit
C_2F_6	perfluoroethane
CAA	Clean Air Act
CAAP	Climate Action and Adaptation Plan
CAAQS	California Ambient Air Quality Standards
CAFE	Corporate Average Fuel Economy
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalGEM	California Geologic Energy Management Division
CalRecycle	California Department of Resources Recycling and Recovery

Caltrans	California Department of Transportation
CAP	climate action plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Building Code
CBM18	Corridor Based Model 2018
CBO	Community Based Organizations
CCAA	California Clean Air Act
CCAP	community climate action plan
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDMG	California department of Conservation, Division of Mines and Geology
CE	Common Era
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CF_4	perfluoromethane
CFCs	chlorofluorocarbons
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHL	California Historical Landmarks
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CIDH	cast-in-drilled-hole

CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COOP	Cooperative Observer Network
Cortese List	Hazardous Waste and Substances Sites
CPTED	crime prevention through environmental design
CPUC	California Public Utility Commission
CRHR	California Register of Historical Resources
CRMMP	Cultural Resources Monitoring and Mitigation Plan
CSMD	Consolidated Sewer Maintenance District
CUPA	Certified Unified Program Agency
CV	connected vehicles
CWA	Clean Water Act
CWR	continuous welded rail
dB	decibels
dBA	A-weighted decibel
dbh	diameter at breast height
DDT	dichlorodiphenyltrichloroethane
DHS	Department of Health Services
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation
DSA	detailed study area

DTSC	California Department of Toxic Substances Control
DWQ	Division of Water Quality
DWR	Department of Water Resources
DWSAP	Drinking Water Source Assessment and Protection
EC	Engineer Circular
ECMP	Metro's Energy Conservation and Management Plan
EEI	Edison Electric Institute
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EMFAC	Emission Factor Model for On-road Motor Vehicles
EO	Executive Order
EWMP	Enhanced Watershed Management Programs
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLM	first/last mile
FMV	fair market value
FR	Federal Register
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
g	gravity
g/mi	grams per mile
GBN	ground-borne noise
GBV	ground-borne vibration

GCCOG	Gateway Cities Council of Governments
GHG	greenhouse gas
GIS	geographic information system
GLAC	Greater Los Angeles County
GSA	general study area
GTTC	Gabrielino-Tongva Tribal Council
GVWR	gross vehicle weight rating
GWh	gigawatt-hours
GWP	global warming potential
GWR	Groundwater Recharge
HABS	Historic American Building Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscape Survey
Handbook	CEQA Air Quality Handbook
HASP	health and safety plan
HCFC	hydrochlorofluorocarbon
HDD	horizontal directional drilling
HFC	hydrofluorocarbon
HI	Hazard Index
HMBP	Hazardous Materials Business Plan
HRA	Health Risk Assessment
HRI	Historic Resources Inventory
HVAC	heating, ventilation, and air conditioning
I	Interstate
ICT	Innovative Clean Transit

ID	Identification
IOS	Initial Operating Segment
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
ips	inches per second
IRP	Integrated Resource Plan
ISA	Initial Site Assessment
ITS	Intelligent Transportation System
k-12	kindergarten through 12th grade
kWh	kilowatt-hours
LA Basin Plan	Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACFD	Los Angeles County Fire Department
LADWP	Los Angeles Department of Water and Power
LAPD	Los Angeles Police Department
LARWQCB	Los Angeles Regional Water Quality Control Board
LASD	Los Angeles County Sheriff's Department
LAX	Los Angeles International Airport
LBP	lead-based paints
LBPD	Long Beach Police Department
LCFS	low carbon fuel standard
Ldn	day-night noise level
Leq(h)	average hourly equivalent noise level
LEV III	Low-Emission Vehicle III

LEV III GHG	Low-Emission Vehicle III Regulation for greenhouse Gases
LID	low impact development
Lmax	maximum noise level
LOS	level of service
LPA	Locally Preferred Alternative
LRFD	Load and Resistance Factor Design
LRT	light rail transit
LRTP	Long Range Transportation Plan
LRV	light rail vehicle
LST	localized significance threshold
LUST	Leaking Underground Storage Tank
MAP-21	Moving Ahead for Progress in the 21st Century Act
MATES IV	Multiple Air Toxics Exposure Study IV
MBS	Moving Beyond Sustainability
MBTA	Massachusetts Bay Transportation Authority
MBTA	Migratory Bird Treaty Act
MDE	Maximum Design Earthquake
Metro	Los Angeles County Metropolitan Transportation Authority
MGLEE	Metro Gold Line Eastside Extension
MICR	Maximum Individual Cancer Risk
MLD	most likely descendant
MM	mitigation measure
MMBTU	metric million British thermal unit
MMT	million metric tons
MMTCO2e	Million metric tons carbon dioxide equivalent

MOD	Mobility on Demand
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organizations
MRDC	Metro Rail Design Criteria
MS4	municipal separate storm sewer systems
MSA	Metropolitan Statistical Area
MSE	mechanically stabilized earth
MSF	maintenance and storage facility
MTP	MicroTransit Pilot
MUN	Municipal and Domestic Supply
Muni	San Francisco Municipal Railway
MUTCD	Manual of Uniform Traffic Control Devices
MW	megawatts
MWD	Metropolitan Water District
N/A	not applicable
N2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NAVD	North American Vertical Datum
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NO2	nitrogen dioxide

NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NSDV	North Side Design Variation
NTD	National Transit Database
NWI	National Wetlands Inventory
O_3	ozone
OAL	Office of Administrative Law
OCP	organochlorine pesticide
OCR	overhead conductor rail
OCS	overhead catenary system
ODE	Operating Design Earthquake
OFFROAD	Emissions Model for Off-road Equipment
OHWM	ordinary high water mark
OII	Operating Industries, Inc.
OIIWDG	Operating Industries, Inc. Work Defendants Group
Omega	Omega Chemical Corporation
OPR	Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
OU2	Operable Unit 2
Pb	lead

PCB	polychlorinated biphenyls
PCE	perchloroethylene
PFAS	Per- and Polyfluoroalkyl Substances
PFC	perfluorocarbon
PGA	peak ground acceleration
PHI	Points of Historical Interest
PHMSA	Pipeline and Hazardous Materials Safety Administration
PIH	Presbyterian Intercommunity Hospital
PM_{10}	inhalable particulate matter or particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
$PM_{2.5}$	fine particulate matter or particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
ppmv	parts per million by volume
PRC	Public Resources Code
PROC	Process Supply
Project	Eastside Transit Corridor Phase 2 Project
PV	photovoltaic
Qls	landslide deposits
Qof	old alluvial fan deposits
Qw	wash deposits
Qya	young deposits of axial valley floors
Qyf	young alluvial fan deposits
RCRA	Resource Conservation and Recovery Act
REC-1	Water Contact Recreation
RHA	Rivers and Harbors Act
RMP	Risk Management Plan

RMS	Root Mean Square
ROG	reactive organic gases
ROP	Regional Occupational Program
ROW	right-of-way
RPS	Renewable Portfolio Standard
RSA	resource study area
RTAC	Regional Targets Advisory Committee
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAFE	Safer Affordable Fuel-Efficient
SAFE Vehicles Rules	Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks
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
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SDC	Supplemental Seismic Design Criteria
SDWA	Safe Drinking Water Act
SEA	Significant Ecological Areas
SEL	sound exposure level
SF6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer

SIP	state implementation plan
SLF	Sacred Lands File
SLIC	Spills, Leaks, Investigations, and Cleanups
SMD	Sewer Maintenance Division
SO_2	sulfur dioxide
SoCAB	South Coast Air Basin
SoCalGas	Southern California Gas Company
SOE	support of excavation
SOx	sulfur oxides
SPaT	signal phase and timing
SR	State Route
SRA	Source-Receptor Area
SSCIC	South Central Coastal Information Center
SSMP	Sewer System Management Plan
SUSMP	Standard Urban Stormwater Mitigation Plan
SVE	soil vapor extraction
SVP	Society of Vertebrate Paleontology
SWIS	Solid Waste Information System
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TBM	tunnel boring machine
TCE	trichloroethylene
TCP	Traditional Cultural Property
TCR	The Climate Registry

TCR	Tribal Cultural Resources
TDS	Total Dissolved Solids
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TOC	transit oriented communities
TOD	transit-oriented development
TOG	total organic gases
TPSS	traction power substation
TSCA	Toxic Substances Control Act
Tsh	Tertiary shale and siltstone
Tss	Tertiary sandstone
TWW	Treated Wood Waste
U.S.	United States
U.S.C.	United States Code
UBC	Uniform Building Code
UPRR	Union Pacific Railroad
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
USEIA	United States Energy Information Administration
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UWMP	Urban Water Management Plan

VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
WARM	Warm Freshwater Habitat
WDR	Waste Discharge Requirement
WILD	Wildlife Habitat
WMP	Watershed Management Programs
WPA	Water and Power Associates
WRCC	Western Regional Climate Center
WRD	Water Replenishment District of Southern California
WSDM	Water Surplus and Drought Management Plan
ZEB	zero-emission bus
ZEV	zero-emission vehicle

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9. References

Altschul, Jeffrey H., and Donn R. Grenda. 2002. Islanders and Mainlanders: Prehistoric Context for the Southern California Bight. Tucson, AZ: SRI Press.

American Association for State Highway and Transportation Officials. 2017. Load and Resistance Factor Design (LRFD) Bridge Design Specifications (BDS). 8th Edition.

American National Standards Institute. 2005. ANSI S1.13-2005. Measurement of Sound Pressure Levels in Air. Standards Secretariat, Acoustical Society of America, New York, NY.

American Public Transportation Association. 2012. Manual for the Development of Urban Rail Agency System Safety Program Plans. Available at: https://go.itdp.org/download/attachments/42598847/2%29%20APTA%20-%20Manual%20for%20the%20Development%20of%20Urban%20Rail%20Agency%20System%20Safety%20Program%20Plans%20%28U.S.%202012%29.docx?api=v2. Accessed June 2, 2021.

American Public Transportation Association. 2013. APTA SUDS-UD-RP-007-13 Best Practices for Integrating Art into Capital Projects. Available at: APTA SUDS-UD-RP-007-13 - American Public Transportation Association. Accessed February 9, 2022.

American Railway Engineering and Maintenance-of-Way Association. 2019. Manual for Railway Engineering. Available at: https://www.arema.org/AREMA_MBRR/AREMAStore/MRE.aspx. Accessed January 31, 2022.

Arnold, J.E., M.R. Walsh, and S.E. Hollimon. 2004. The Archaeology of California. Journal of Archaeological Research 12:1-73.

Assembly Bill No. 1560 California Environmental Quality Act. 2019. Act to amend Section 21064.3 and Section 21060.2 8 October 2019. Available at: https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB1560. Accessed June 2, 2021.

Association for Environmental Professionals. 2021. California Environmental Quality Act (CEQA) Statutes and Guidelines. Available at: https://www.califaep.org/docs/CEQA_Handbook_2021.pdf. Accessed May 12, 2022.

Bancroft, H.H. 1902. West American History. New York: The Bancroft Company.

Bauer, K. Jack. 1974. The Mexican War: 1846–1848, pp. 191–192. Lincoln: University of Nebraska Press.

Bean, Lowell John, and Charles R. Smith. 1978. Gabrielino. In California, edited by Robert F. Heizer, pp. 538–562. Handbook of North American Indians, Vol. 9, William C. Sturtevant, general editor, Smithsonian Institution, Washington, DC.

Bedrosian, T. L., and P. D. Roffers. 2012. Compilation of Quaternary Surficial Deposits in Southern California: Los Angeles 30' x 60' Quadrangle. CGS Special Report 217, plate 9. Scale 1:100,000.

Brooks, Sheilagh, Richard H. Brooks, G. E. Kennedy, J. Austin, James R. Firby, Louis A. Payen, Peter J. Slota, Jr., Christine A. Prior, and R. E. Taylor. 1990. The Haverty Human Skeletons: Morphological, Depositional, and Geochronological Characteristics. Journal of California and Great Basin Archaeology 12(1): 60-83.

Byrd, Brian, Adrian Whitaker, Patricia Mikkelsen, Todd Jaffke, Philip Kaijankoski, Jack Meyer, Randall Milliken, Jeffrey Rosenthal, and Eric Wohlgemuth. 2016. Draft Caltrans District 4 Research Design and Treatment Plan for Native American Archaeological Resources in the San Francisco Bay-Delta Region. Far Western Anthropological Research Group Inc., Davis, CA. Prepared for Caltrans District 4, Oakland, California.

California Air Resources Board. 2007. California Greenhouse Gas Inventory 1990-2004. Available at: https://ww2.arb.ca.gov/ghg-1990-to-2004. Accessed November 10, 2021.

California Air Resources Board. 2008. Climate Change Scoping Plan: A Framework for Change. December. Available at: https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed November 10, 2021.

California Air Resources Board. 2010. Draft Regional Greenhouse Gas Emission Reduction Targets for Automobiles and Light Trucks Pursuant to Senate Bill 375.

California Air Resources Board. 2014. Assembly Bill 32 Overview. Available at: https://www.arb.ca.gov/cc/ab32/ab32.htm. Accessed November 10, 2021.

California Air Resources Board. 2014. First Update to the Climate Change Scoping Plan: Building on the Framework. Available at: https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed November 10, 2021.

California Air Resources Board. 2016. Ambient Air Quality Standards Chart. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed February 7, 2019.

California Air Resources Board. 2016. Low Carbon Fuel Standard Program Background. Available at: https://ww2.arb.ca.gov/our-work/programs/low-carbon-fuel-standard. Accessed February 28, 2020.

California Air Resources Board. 2017. California's 2017 Climate Change Scoping Plan. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf. Accessed November 10, 2021.

California Air Resources Board. 2018. California Greenhouse Gas Inventory for 2000-2016 – by Category as Defined in the 2008 Scoping Plan. Available at: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf. Accessed November 10, 2021.

California Air Resources Board. 2018. California transitioning to all-electric public bus fleet by 2040. Available at: https://ww2.arb.ca.gov/news/california-transitioning-all-electric-public-bus-fleet-2040. Accessed November 30, 2021.

California Air Resources Board. 2018. Cap-and-Trade Program. Available at: https://ww2.arb.ca.gov/our-work/programs/cap-and-trade-program. Accessed November 10, 2021.

California Air Resources Board. 2018. Statement by CARB Chair on action to preserve California vehicle standards. Available at: https://ww2.arb.ca.gov/news/statement-carb-chair-action-preserve-california-vehicle-standards. Accessed November 10, 2021.

California Air Resources Board. 2019. Advanced Clean Cars Program Homepage. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/about. Accessed November 10, 2021.

California Air Resources Board. 2019. California Greenhouse Gas Inventory for 2000-2017 – by Sector and Activity. Available at: https://ww3.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_sector_sum_2000-17.pdf. Accessed February 26, 2020.

California Air Resources Board. 2019. iADAM Air Quality Data Statistics. Available at: http://www.arb.ca.gov/adam/. Accessed February 20, 2019.

California Air Resources Board. 2020. State Area Designation Maps. Available at: https://ww2.arb.ca.gov/resources/documents/maps-state-and-federal-area-designations. Accessed November 29, 2021.

California Air Resources Board. 2021. 2021 South Coast PM10 Maintenance Plan. Available at: https://ww2.arb.ca.gov/resources/documents/2021-south-coast-pm10-maintenance-plan. Accessed November 29, 2021.

California Air Resources Board. 2021. 2021 South Coast PM2.5 Redesignation Request and Maintenance Plan. Available at: https://ww2.arb.ca.gov/resources/documents/2021-south-coast-pm25-redesignation-request-and-maintenance-plan. Accessed November 29, 2021.

California Air Resources Board. 2021. California Greenhouse Gas Emissions for 2000 to 2019- Trends of Emissions and Other Indicators. Available at: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf. Accessed November 30, 2021.

California Air Resources Board. 2021. Home Page: Speciation Profiles Used in ARB Modeling. Available at: https://ww2.arb.ca.gov/speciation-profiles-used-carb-modeling. Accessed November 24, 2021.

California Air Resources Board. 2021. Inhalable Particulate Matter and Health (PM2.5 and PM10). Available at: https://ww2.arb.ca.gov/resources/inhalable-particulate-matter-and-health. Accessed November 24, 2021.

California Air Resources Board. 2021. Notice of Public Meeting to Consider the Proposed South Coast PM2.5 Redesignation Request and Maintenance Plan. Available at: https://ww3.arb.ca.gov/board/nonreg/2021/scpm2.5redesignationnotice.pdf. Accessed November 24, 2021.

California Air Resources Board. 2021. Potential Amendments to the Diesel Engine Off-Road Emission Standards: Tier 5 Criteria Pollutants and CO2 Standards. Available at: https://ww2.arb.ca.gov/our-work/programs/tier5/about. Accessed November 30, 2021.

California Air Resources Board. 2021. Scoping Plan Meetings & Workshops. Available at: https://ww2.arb.ca.gov/our-work/programs/ab-32-climate-change-scoping-plan/scoping-plan-meetings-workshops. Accessed November 30, 2021.

California Air Resources Board. 2021. Sulfur Dioxide & Health. Available at: https://ww2.arb.ca.gov/resources/sulfur-dioxide-and-health. Accessed November 24, 2021.

California Air Resources Board. 2021. Welcome to EMFAC Home Page. Available at: https://arb.ca.gov/emfac/. Accessed November 29, 2021.

California Building Standards Commission. 2019. 2019 California Green Building Standards Code. Title 24, Chapter 11. Available at: https://files.ceqanet.opr.ca.gov/221458-6/attachment/COZx-dz9xUhVxsNMElHrqUA7IFPM_BzUoX7FW6FRavt8vix70kYviuZmSxPGxa6ksuKJctdy3AzKnFdeo Accessed May 18, 2022.

California Building Standards Commission. 2021. 2019 California Building Code, Title 24. Available at: https://codes.iccsafe.org/content/CABCV12019JUL21S/cover. Accessed January 31, 2022.

California Department of Conservation, California Geological Survey. 2002. California Geomorphic Provinces Note 36.

California Department of Conservation, Division of Mines and Geology. 1998. Seismic Hazard Zone Report for the El Monte 7.5 Minute Quadrangle, Los Angeles County, California. Seismic Hazard Zone Report 024.

California Department of Conservation, Division of Mines and Geology. 1998. Seismic Hazard Zone Report for the Los Angeles 7.5 Minute Quadrangle, Los Angeles County, California. Seismic Hazard Zone Report 029.

California Department of Conservation, Division of Mines and Geology. 1998. Seismic Hazard Zone Report for the South Gate 7.5 Minute Quadrangle, Los Angeles County, California. Seismic Hazard Zone Report 034.

California Department of Conservation, Division of Mines and Geology. 1998. Seismic Hazard Zone Report for the Whittier 7.5 Minute Quadrangle, Los Angeles County, California. Seismic Hazard Zone Report 037.

California Department of Conservation. 2019. Alquist-Priolo Earthquake Fault Zones. Available at: https://www.conservation.ca.gov/cgs/alquist-priolo. Accessed June 11, 2021.

California Department of Conservation. 2022. CalGem GIS Well Finder, Available at: https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-118.14521/34.00205/16. Accessed April 4, 2022.

California Department of Conservation. 2022. California Important Farmland Finder. Available at: https://maps.conservation.ca.gov/dlrp/ciff/.

California Department of Conservation. 2022. Oil and Gas Wells GIS, Southern District, Available at: https://gis.conservation.ca.gov/portal/home/group.html?id=4529504e52484fe8be2d95d84783f1ce&view=list&start=1&num=20&searchTerm=southern&showFilters=false#content. Accessed April 4, 2022.

California Department of Finance, Tables E-4 and E-5. Available at: https://www.dof.ca.gov/forecasting/demographics/estimates/. Accessed July 2021.

California Department of Finance. 2020. P-1: State Population Projections (2010-2060). Available at: http://www.dof.ca.gov/Forecasting/Demographics/Projections/. Accessed November 10, 2021.

California Department of Fish and Wildlife. 2020. Notification of Lake or Streambed Alternation. Notification Instructions and Process. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=3773&inline. Accessed June 11, 2021.

California Department of Fish and Wildlife. 2021. California Natural Diversity Database. Available at: https://www.wildlife.ca.gov/Data/CNDDB. Accessed June 28, 2021.

California Department of Fish and Wildlife. 2021. List of Natural Communities. Available at: https://www.wildlife.ca.gov/data/vegcamp/natural-communities. Accessed June 28, 2021.

California Department of Forestry and Fire Protection. 2007. Los Angeles County- Very High Fire Hazard Severity Zones- State Responsibility Area, Available at: https://osfm.fire.ca.gov/divisions/community-wildfire-preparedness-and-mitigation/wildland-hazards-building-codes/fire-hazard-severity-zones-maps/. Accessed March 14, 2022.

California Department of Forestry and Fire Protection. 2015. Wildland Urban Interface. Available at: https://frap.fire.ca.gov/media/10300/wui_19_ada.pdf. Accessed June 7, 2022

California Department of Forestry and Fire Protection. 2021. Online Fire Hazard Severity Zone viewer. Available at: http://egis.fire.ca.gov/FHSZ/. Accessed July 22, 2021.

California Department of Resources Recycling and Recovery. 2002. Solid Waste Facilities, Sites, and Operations. Available at: https://www.calrecycle.ca.gov/SWFacilities. Accessed June 1, 2022.

California Department of Toxic Substances Control. 2004. Draft Lead Report. Hazardous Waste Management Program, Regulatory and Program Development Division.

California Department of Toxic Substances Control. 2008. DTSC Requirement for Generators of Treated Wood Waste (TWW) Fact Sheet. Available at: https://dtsc.ca.gov/requirements-for-generators-of-treated-wood-waste-tww-fact-sheet/. Accessed September 7, 2021.

California Department of Toxic Substances Control. 2016. Community Update: Statewide Agreement for Caltrans for Reuse of Aerially Deposited Lead-Contaminated Soils. DTSC Fact Sheet. Available at: https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/f0004055-caltrans-fs-a11y.pdf. Accessed July 24, 2021.

California Department of Toxic Substances Control. 2021. EnviroStor. Available at: https://www.envirostor.dtsc.ca.gov/public/. Accessed July 25 and August 11, 2021.

California Department of Transportation. 2018. Bridge Design Specifications.

California Department of Transportation. 2019. California Amendments to the AASHTO LRFD Bridge Design Specifications (2017 Eighth Edition).

California Department of Transportation. 2019. Construction Manual Chapter 7 – Environmental Stewardship. Available at: https://dot.ca.gov/-/media/dot-media/programs/construction/documents/policies-procedures-publications/construction-manual/sec7-1.pdf. Accessed July 22, 2021.

California Department of Transportation. Caltrans 2019. Seismic Design Criteria. Version 2.0.

California Department of Transportation. 2021. 2014 California Manual on Uniform Traffic Control Devices (MUTCD), Revision 6. Available at: https://dot.ca.gov/-/media/dot-media/programs/safety-programs/documents/ca-mutcd/rev6/camutcd2014-rev6.pdf. Accessed January 31, 2022.

California Department of Transportation. 2021. Senate Bill (SB) 743 Implementation. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743. Accessed May 10, 2021

California Department of Transportation. 2022. Scenic Highways. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed May 23, 2022.

California Department of Transportation. Highway Design Manual, 7th Edition. Available at: https://dot.ca.gov/programs/design/manual-highway-design-manual-hdm. Accessed May 27, 2021.

California Department of Water Resources DWR. 2004. California's Groundwater Bulletin 118, South Coast Hydrologic Region. Coastal Plain of Los Angeles Groundwater Basin, Central Sub-basin and San Gabriel Valley Groundwater Basin. Updated February 27, 2004.

California Department of Water Resources DWR. 2010. Comment Letter on the Eastside Transit Corridor Phase 2 Project.

California Department of Water Resources DWR. 2021. SGMA Basin Priority Dashboard. Available at: https://gis.water.ca.gov/app/bp-dashboard/p2/. Accessed May 5, 2021.

California Employment Development Department, Labor Market Info. Available at: https://www.labormarketinfo.edd.ca.gov/. Accessed August 2021.

California Energy Commission. 2018. 2017 Integrated Energy Policy Report. Available at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2017-integrated-energy-policy-report. Accessed December 6, 2021.

California Energy Commission. 2018. California Energy Demand 2018-2030 Revised Forecast. Available at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2017-integrated-energy-policy-report/2017-iepr. Accessed December 6, 2021.

California Energy Commission. 2018. Clean Energy and Pollution Reduction Act SB 350 Overview. Available at: https://www.energy.ca.gov/rules-and-regulations/energy-suppliers-reporting/clean-energy-and-pollution-reduction-act-sb-350. Accessed November 10, 2021.

California Energy Commission. 2020. Final 2019 Integrated Energy Policy Report. Available at: https://www.energy.ca.gov/data-reports/reports/integrated-energy-policy-report/2019-integrated-energy-policy-report. Accessed February 24, 2020.

California Energy Commission. 2020. The Energy Almanac. Available at: https://www.energy.ca.gov/data-reports/energy-almanac. Accessed February 28, 2020.

California Energy Commission. 2021. California Electric Transmission Lines GIS Open Data. Available at: https://cecgis-caenergy.opendata.arcgis.com/. Accessed June 1, 2022.

California Energy Commission. N.D. Electricity Consumption by Planning Area – 2018 Los Angeles Department of Water. Available at: https://ecdms.energy.ca.gov/elecbyplan.aspx. Accessed February 28, 2020.

California Energy Commission. N.D. Electricity Consumption by Planning Area – 2018 Southern California Edison. Available at: https://ecdms.energy.ca.gov/elecbyplan.aspx. Accessed February 28, 2020.

California Environmental Protection Agency. 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Available at: https://efiling.energy.ca.gov/GetDocument.aspx?tn=204014. Accessed November 10, 2021.

California Environmental Quality Act. 2015. Statue and Guidelines, Section 15126.2(d). Available at: http://califaep.org/docs/CEQA_Handbook_2015_012315-2.pdf. Accessed May 20, 2022.

California Environmental Quality Act. 2021. CEQA Appendix G—Environmental Checklist Form. Available at: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/ab52/final-approved-appendix-G.pdf. Accessed May 31, 2022.

California General Assembly. 2008. Assembly Bill 1358 – The Complete Streets Act. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=200720080AB1358. Accessed May 6, 2022.

California Government Code. 1975. Section 66477, The Quimby Act. Available at: https://california.public.law/codes/ca_gov't_code_section_66477. Accessed May 23, 2022.

California Government Code. 1987. Section 66000 et seq., The Mitigation Fee Act. Available at: https://california.public.law/codes/ca_gov't_code_section_66000. Accessed May 23, 2022.

California Natural Resources Agency. 2009. Amendments to the CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97. https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/Final_Statement_of_Reasons.pdf. Accessed November 10, 2021.

California Natural Resources Agency. 2019. California Environmental Quality Act. Appendix G. Available at: https://resources.ca.gov/CNRALegacyFiles/ceqa/docs/ab52/final-approved-appendix-G.pdf. Accessed June 3, 2021.

California Office of Governor. 2017. CA Governor Brown, NY Governor Cuomo and WA Governor Inslee Announce Formation of U.S. Climate Alliance. Available at: https://www.ca.gov/archive/gov39/2017/06/01/news19818/index.html. Accessed November 10, 2021.

California Public Resources Code. 1971. Division 5 Parks and Monuments, Chapter 2.5 Preservation of Public Parks. Available at: https://california.public.law/codes/ca_pub_res_code_div_5_chap_2.5. Accessed May 23, 2022.

California Public Utilities (Publishing Date Varies by General Order). California Public Utilities. Available at: https://www.cpuc.ca.gov/proceedings-and-rulemaking/cpuc-general-orders. Accessed January 31, 2022.

California State Legislature. 2017. California Legislative Information Website. SB-49 California Environmental, Public Health, and Workers Defense Act of 2017. Available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180SB49. Accessed November 10, 2021.

California State Senate. 2013. Senate Bill 743 – Transportation Impacts. Available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743. Accessed May 6, 2022.

California State Water Resources Control Board. 1968. Resolution No. 68-16. Available at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf. Accessed June 14, 2021.

California State Water Resources Control Board. 2000. Drinking Water Source Assessment and Protection (DWSAP) Program. Available at: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/dwsapguidance/DWSAP_document.pdf. Accessed June 1, 2022.

California State Water Resources Control Board. 2012. Order No. 2009-0009-DWQ. NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities. Available at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html. Accessed May 31, 2022.

California State Water Resources Control Board. 2014. Order No. CAS000001. General Permit for Stormwater Discharges Associated with Industrial Activities. Available at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/industrial.html. Accessed June 14, 2021.

California State Water Resources Control Board. 2019. The California Water Boards' Annual Performance Report – Fiscal Year 2018-19. Available at: https://www.waterboards.ca.gov/about_us/performance_report_1819/regulate/213_ww_reports.html. Accessed February 11, 2020.

California State Water Resources Control Board. 2021. GeoTracker. Available at: https://geotracker.waterboards.ca.gov/. Accessed July 28 and August 11, 2021.

California State Water Resources Control Board. 2022. Porter-Cologne Water Quality Control Act. Available at: https://www.waterboards.ca.gov/laws_regulations/docs/portercologne.pdf. Accessed June 1, 2022.

California Water Service. 2021. 2020 Urban Water Management Plan. Available at: https://www.calwater.com/docs/uwmp2020/ELA_2020_UWMP_FINAL.pdf. Accessed January 12, 2022.

CDM Smith/AECOM Joint Venture. 2019. Metro Eastside Alternatives Analysis: Highway Vehicle Miles, Vehicle Hours and Average Speed.

Center for Transit-Oriented Development. 2008. Capturing the Value of Transit. Available at: http://ctod.org/portal/node/2177. Accessed May 20, 2022.

Central Basin Municipal Water District. 2021. 2020 Urban Water Management Plan. Available at: https://www.centralbasin.org/water-supplies/managing-water-supplies. Accessed January 12, 2022.

Chester, M. & Horvath, A. 2008. Environmental Life-Cycle Assessment of Passenger Transportation: A Detailed Methodology for Energy, Greenhouse Gas and Criteria Pollutant Inventories of Automobiles, Buses, Light Rail, Heavy Rail, and Air v.2. UC Berkeley Center for Future Urban Transport. Available at: https://escholarship.org/uc/item/56709219. Accessed June 1, 2022.

Chicago Commerce. 1923. "Chicago Men are active in Los Angeles: Central Manufacturing District being duplicated in rapidly growing city of Southern California." June 28, 1923.

City of Alhambra. 2005. Urban Water Management Plan. October 2005.

City of Commerce. 2000. Municipal Code Chapter 19.23 – Landscaping Standards. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances. Accessed April 14, 2021.

City of Commerce. 2008. 2020 General Plan. Available at: https://www.ci.commerce.ca.us /Home/ShowDocument?id=76. Accessed May 31, 2022.

City of Commerce. 2008. Commerce General Plan – Housing Element. Available at: https://www.ci.commerce.ca.us/Home/SmontebellohowDocument?id=76. Accessed May 16, 2022.

City of Commerce. 2008. Commerce General Plan – Transportation Element. Available at: https://www.ci.commerce.ca.us/Home/SmontebellohowDocument?id=76. Accessed May 27, 2021.

City of Commerce. 2013. Municipal Code. Chapter 19.33 – Low Impact Development. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances?nodeId=TIT19ZO_CH19.33LOIMDE. Accessed July 12, 2021.

City of Commerce. 2016. Municipal Code. Chapter 6.17 – Stormwater Runoff and Pollution Control. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances?nodeId=TIT6HESA_CH6.17STRUPOCO. Accessed July 12, 2021.

City of Commerce. 2019. Code of Ordinances. Title 19 Zoning. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances?nodeId=TIT19ZO. Accessed May 10, 2021.

City of Commerce. 2020. Commerce Bicycle and Pedestrian Plan. Available at: https://www.ci.commerce.ca.us/Home/ShowDocument?id=1950. Accessed June 7, 2021.

City of Commerce. 2020. Municipal Code Chapter 12.06 – City Trees. Available at: https://library.municode.com/ca/commerce/codes/code_of_ordinances. Accessed April 14, 2021.

City of Commerce. 2021. Transit Bus Schedule. Available at: https://www.ci.commerce.ca.us /Home/ShowDocument?id=170. Accessed May 30, 2021.

City of Industry. 2014. General Plan. Available at: https://www.cityofindustry.org/home /showdocument?id=1693. Accessed June 1, 2022.

City of Los Angeles. 2022. Los Angeles Municipal Code, Section 12.22 A.31. Available at: https://codelibrary.amlegal.com/codes/los_angeles/latest/lamc/0-0-0-114455. Accessed May 23, 2022.

City of Montebello. 1973. General Plan Open Space Element. Available at: https://www.cityofmontebello.com/general-plan.html. Accessed April 14, 2021.

City of Montebello. 1973. General Plan. Available at: https://www.cityofmontebello.com/general-plan.html. Accessed May 10, 2021.

City of Montebello. 1975. General Plan Conservation Element. Available at: https://www.cityofmontebello.com/general-plan.html. Accessed April 14, 2021.

City of Montebello. 1975. General Plan Safety and Seismic Safety Elements. Available at: https://www.cityofmontebello.com/general-plan.html. Accessed May 31, 2022.

City of Montebello. 1998. Municipal Code. Title 15, Buildings and Construction, Chapter 15.40, Flood Damage Prevention. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances. Accessed June 11, 2021.

City of Montebello. 2002. Municipal Code. Title 8, Health and Safety, Chapter 8.36, Stormwater and Urban Runoff Pollution Prevention. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances. Accessed May 31, 2022.

City of Montebello. 2009. Municipal Code. Montebello Hills Specific Plan. Available at: https://www.cityofmontebello.com/images/planning-community-development/2009-draft-specific-plan/MontebelloHillsSP%203.27.09.pdf. Accessed June 3, 2021.

City of Montebello. 2012. Municipal Code Chapter 12.08 – Trees and Shrubs. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances. Accessed April 14, 2021.

City of Montebello. 2016. Economic Development – Major Projects Update Presentation. Available at: https://cityofmontebello.com/headline-news/item/537-economic-development-major-projects-update-presentation.html. Accessed May 10, 2022.

City of Montebello. 2016. Zoning Map. Available at: https://www.cityofmontebello.com/images/Planning%20%20and%20Community%20Development/Zoning%20Map/FinalOfficialZoningMapOct2016.36x48.pdf. Accessed June 14, 2022.

City of Montebello. 2017. City of Montebello General Plan Safety Element. Available at: https://www.cityofmontebello.com/safety-element.html. Accessed November 3, 2021.

City of Montebello. 2017. Hazard Mitigation Plan, Available at: https://www.cityofmontebello.com/images/Planning%20%20and%20Community%20Development/Mitigation%20Plan/Hazard%20Mitigation%20Plan%20(01-19-2017).pdf. Accessed March 16, 2022.

City of Montebello. 2018. City Bicycle Master Plan. Available at: https://www.cityofmontebello.com/headline-news/item/715-city-bicycle-master-plan.html. Accessed June 7, 2021.

City of Montebello. 2019. Municipal Code. Title 17 Zoning. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances?nodeId=TIT17ZO. Accessed June 3, 2021.

City of Montebello. 2020. City of Montebello 2016-2021 Housing Element. Available at: https://cityofmontebello.com/images/Planning%20%20and%20Community%20Development/General%20Plan/Montebello%20-%20Adopted%202016-2021%20Housing%20Element%20Update.pdf. Accessed May 10, 2022.

City of Montebello. 2020. Planning for a Better Tomorrow. Available at: https://planmontebello.com/planning-for-a-better-tomorrow/. Accessed June 3, 2021.

City of Montebello. 2021. 2021 Demographic Overview. Available at: http://www.animateddemographics.com/montebello. Accessed December 13, 2021.

City of Montebello. 2022. Montebello Bus Lines Maps & Schedules. Available at: http://www.ridembl.com/Maps-Schedules#accordion1-item6. Accessed May 17, 2022.

City of Montebello. N.D. Fire Department. Available at: https://www.cityofmontebello.com/department/fire.html. Accessed May 19, 2021.

City of Montebello. N.D. Municipal Code Chapter 17 – Zoning. Available at: https://library.municode.com/ca/montebello/codes/code_of_ordinances. Accessed April 14, 2021.

City of Montebello. N.D. Streets Division. Available at: https://www.cityofmontebello.com/department/public-works/streets.html. Accessed June 1, 2022.

City of Norwalk. 2019. Norwalk Transit System Fares & Schedules. Available at: https://www.norwalk.org/city-hall/departments/norwalk-transit-system-nts/fares-schedules. Accessed May 30, 2021.

City of Pico Rivera, Pico Rivera Water Authority. 2016. 2015 Urban Water Management Plan. Available at: https://www.pico-rivera.org/civicax/filebank/blobdload.aspx?blobid=52378. Accessed January 12, 2022.

City of Pico Rivera. 1993. General Plan. Available at: https://www.pico-rivera.org/documents/generalplan.pdf. Accessed May 19, 2022.

City of Pico Rivera. 2003. Municipal Code. Table C City of Pico Rivera Rancho de Bartolo Specific Plan Amendment. Available at: http://qcode.us/codes/picorivera/. Accessed July 30, 2021.

City of Pico Rivera. 2013. 2014-2021 Housing Element. Available at: https://www.pico-rivera.org/civicax/filebank/blobdload.aspx?blobid=16043. Accessed July 19, 2021.

City of Pico Rivera. 2014. General Plan - Circulation Element. Available at: https://www.pico-rivera.org/documents/CEDD/General%20Plan/Chapter%205.pdf. Accessed May 28, 2021.

City of Pico Rivera. 2014. General Plan - Environmental Resource Element. Available at: https://www.pico-rivera.org/documents/CEDD/General%20Plan/Chapter%208.pdf. Accessed April 4, 2022.

City of Pico Rivera. 2014. General Plan - Safety Element. Available at: https://www.pico-rivera.org/documents/CEDD/General%20Plan/Chapter%209.pdf. Accessed March 16, 2022.

City of Pico Rivera. 2014. General Plan. Available at: https://www.pico-rivera.org/depts/ced/planning/plan.asp. Accessed May 19, 2021.

City of Pico Rivera. 2014. Municipal Code. Title 16, Environment, Chapter 16.04, Stormwater and Urban Runoff Pollution Prevention. Available at: http://qcode.us/codes/picorivera/. Accessed May 31, 2022.

City of Pico Rivera. 2016. Municipal Code. Title 15, Buildings and Construction, Chapter 15.50, Floodplain Management. Available at: http://qcode.us/codes/picorivera/. Accessed June 14, 2021.

City of Pico Rivera. 2018. Urban Greening Plan. Available at: https://www.pico-rivera.org/civicax/filebank/blobdload.aspx?blobid=55382. Accessed June 7, 2021.

City of Pico Rivera. 2019. Municipal Code. Title 18 Zoning. Available at: http://qcode.us/codes/picorivera/. Accessed May 23, 2022.

City of Pico Rivera. 2019. Zoning Map. Available at: https://www.pico-rivera.org/civicax/filebank/blobdload.aspx?blobid=2692. Accessed June 14, 2022.

City of Pico Rivera. 2021. "Our history." Available at: https://www.pico-rivera.org/about/history.asp. Accessed December 13, 2021.

City of Pico Rivera. 2021. Pico Rivera General Plan – Housing Element 2021-2029. Available at: https://www.pico-rivera.org/civicax/filebank/blobdload.aspx?t=41026.2&BlobID=56543. Accessed May 12, 2022.

City of Pico Rivera. N.D. Fire Department. Available at: https://www.pico-rivera.org/residents/fire.asp. Accessed May 19, 2021.

City of Pico Rivera. N.D. Municipal Code Chapter 12.40 – Trees. Available at: http://qcode.us/codes/picorivera/. Accessed April 14, 2021.

City of Santa Fe Springs Historical Committee. 1979. The History of Santa Fe Springs, pp. 7–8. Santa Fe Springs: Santa Fe Springs Historical Committee.

City of Santa Fe Springs. 1971. Municipal Code Section 96.130 to 96.140 - Street Trees. Available at: https://codelibrary.amlegal.com/codes/santafesprings/latest/overview. Accessed April 13, 2021.

City of Santa Fe Springs. 1986. Municipal Code Section 155.545 to 155.559 - Landscaping. Available at: https://codelibrary.amlegal.com/codes/santafesprings/latest/overview. Accessed April 13, 2021.

City of Santa Fe Springs. 1987. Code of Ordinances. Chapter 151 Flood Damage Prevention. Available at: http://santafesprings-ca.elaws.us/bookview. Accessed May 25, 2021.

City of Santa Fe Springs. 2014. Code of Ordinances. Chapter 52 Stormwater Management and Discharge Control. Available at: http://santafesprings-ca.elaws.us/bookview. Accessed May 31, 2022.

City of Santa Fe Springs. 2014. Santa Fe Springs General Plan – Housing Element. Available at: https://www.santafesprings.org/civicax/filebank/blobdload.aspx?t=63125.74&BlobID=13334. Accessed May 28, 2021.

City of Santa Fe Springs. 2015. Code of Ordinances. Chapter 54 Water Conservation. Available at: http://santafesprings-ca.elaws.us/bookview. Accessed May 25, 2021.

City of Santa Fe Springs. 2019. Code of Ordinances. Chapter 155: Zoning. Available at: https://codelibrary.amlegal.com/codes/santafesprings/latest/santafesprings_ca/0-0-0--1073654633. Accessed May 19, 2022.

City of Santa Fe Springs. 2020. Re-Imagine Santa Fe Springs 2040 General Plan Vision. Available at: https://www.reimaginesantafesprings.org/files/managed/Document/111/VisionGuildingPrinciples.pdf. Accessed February 10, 2022.

City of Santa Fe Springs. 2020. Santa Fe Springs Active Transportation Plan. Available at: https://www.santafesprings.org/civicax/filebank/blobdload.aspx?t=35380.74&BlobID=16007. Accessed June 7, 2021.

City of Santa Fe Springs. 2021. Re-Imagine Santa Fe Springs 2040 General Plan - Safety Element. Available at: https://www.reimaginesantafesprings.org/files/managed/Document/149/08_PRD_SafetyElement.pdf. Accessed March 16, 2022.

City of Santa Fe Springs. 2021. Re-Imagine Santa Fe Springs 2040 General Plan. Available at: https://www.reimaginesantafesprings.org/documents#GP. Accessed March 24, 2022.

City of Santa Fe Springs. N.D. Department of Fire - Rescue. Available at: https://www.santafesprings.org/cityhall/fire_rescue/default.asp. Accessed May 19, 2021.

City of Santa Fe Springs. N.D. General Plan Update. Available at: https://www.santafesprings.org/cityhall/planning/general_plan_update/default.asp. Accessed May 19, 2021.

City of Whittier, Redevelopment Agency. 2005. Whittier Commercial Corridor Redevelopment Project, First Amendment to the Redevelopment Plan. Available at: https://www.cityofwhittier.org/government/community-development/economic-development-housing-program/whittier-redevelopment-agency. Accessed May 19, 2022.

City of Whittier. 1988. Code of Ordinances. Title 15, Buildings and Construction, Chapter 15.40, Flood Damage Prevention. Available at: https://library.municode.com/ca/whittier/codes/code_of_ordinances?nodeId=TIT15BUCO. Accessed May 25, 2021.

City of Whittier. 1999. Code of Ordinances. Title 8, Health and Safety, Chapter 8.36, Stormwater and Runoff Pollution Control. Available at: https://library.municode.com/ca/whittier/codes/code_of_ordinances?nodeId=TIT8HESA. Accessed May 25, 2021.

City of Whittier. 2013. City of Whittier Bicycle Transportation Plan. Available at: https://www.whittierprcs.org/home/showpublisheddocument/1894/636650189975170000. Accessed June 7, 2021.

City of Whitter. 2014. Sewer System Management Plan. Available at: https://www.cityofwhittier.org/home/showpublisheddocument/944/636639086039130000. Accessed June 1, 2022.City of Whittier. 2014. Uptown Whittier Specific Plan. Available at: https://www.cityofwhittier.org/government/community-development/economic-development/planning-documents/uptown-specific-plan. Accessed May 19, 2022.

City of Whittier. 2014. Whittier General Plan – Housing Element. Available at: https://www.cityofwhittier.org/home/showpublisheddocument/646/636633145850400000. Accessed June 1, 2021.

City of Whittier. 2015. Lincoln Specific Plan. Available at: https://www.cityofwhittier.org/government/community-development/lincoln-nelles-information. Accessed July 19, 2021.

City of Whittier. 2015. Whittier Boulevard Specific Plan. Available at: https://www.cityofwhittier.org/government/community-development/economic-development/planning-documents/whittier-blvd-specific-plan. Accessed May 19, 2022.

City of Whittier. 2016. Municipal Code Chapter 12.40 – Trees and Shrubs. Available at: https://library.municode.com/CA/Whittier/codes/Code_of_Ordinances. Accessed April 13, 2021.

City of Whittier. 2016. Parkway Tree Manual. Available at: https://www.whittierprcs.org/home/showdocument?id=1814. Accessed June 28, 2021.

City of Whittier. 2016. Whittier Economic Development Strategy. Available at: https://www.cityofwhittier.org/home/showpublisheddocument/3565/636712255021870000. Accessed June 1, 2021.

City of Whittier. 2019. City of Whittier Zoning and Land Use Mapping Program. Available at: https://www.arcgis.com/apps/webappviewer/index.html?id=54411bb0f4a54da2985985b75cc199fd. Accessed June 14, 2022.

City of Whittier. 2021. Code of Ordinances. Title 18 Zoning. Available at: https://library.municode.com/ca/whittier/codes/code_of_ordinances. Accessed May 19, 2022.

City of Whittier. 2021. 2021-2040 Envision Whittier General Plan. Available at: https://www.cityofwhittier.org/government/community-development/planning-services/general-plan. Accessed February 10, 2022.

City of Whittier. 2021. HCD Draft 2021-2029 Housing Element. Available at: https://www.cityofwhittier.org/home/showpublisheddocument/8956/637614210059700000. Accessed July 19, 2021.

City of Whittier. N.D. City website. Available at: http://www.cityofwhittier.org. Accessed December 13, 2021.

City of Whittier. N.D. Sewer Maintenance Division. Available at: https://www.cityofwhittier.org/government/public-works/sewer-maintenance. Accessed June 1, 2022.

Clary, William W. 1966. History of the Law Firm of O'Melveny & Myers, 1885–1965, Volume 1, pp. 222–223. Los Angeles: privately printed.

Cowardin, L. M., U.S. Fish and Wildlife Service., & Biological Services Program (U.S.). 1979. Classification of Wetlands and Deepwater Habitats of the United States. Washington, D.C: Fish and Wildlife Service, U.S. Dept. of the Interior.

Davis, Mike. 2001. Sunshine and the Open Shop: Ford and Darwin in 1920s Los Angeles. In Metropolis in the Making: Los Angeles in the 1920s, p. 113. Tom Sitton and William Deverell (eds.). Berkeley: University of California Press.

Diaz-Yourman & Associates. 2021. Gold Line Eastside Transit Corridor Phase 2, Task 3.3.2.2, Final Geotechnical Design Report - Revised. Prepared for Metro. Dated July 9.

Dibblee, T.W., and Ehrenspeck, H.E. 1999. Geologic map of the El Monte and Baldwin Park quadrangles, Los Angeles County, California. Dibblee Foundation Map DF-69. Dibblee Geological Foundation, Santa Barbara Museum of Natural History, Santa Barbara, California.

Dibblee, T.W., and Ehrenspeck, H.E. 2001. Geologic map of the Whittier and La Habra quadrangles (western Puente Hills) Los Angeles and Orange Counties, California. Dibblee Foundation Map DF-74. Dibblee Geological Foundation, Santa Barbara Museum of Natural History, Santa Barbara, California.

Dolan, J., F., Sieh, K. 1992. Tectonic geomorphology of the northern Los Angeles Basin; seismic hazards and kinematics of young fault movement: Assoc. Eng. Geol., South. Calif. Sect., Los Angeles, California.

Edison International. N.D. 2020 Sustainability Report. Available at: https://www.edison.com/content/dam/eix/documents/sustainability/eix-2020-sustainability-report.pdf. Accessed June 1, 2022.

English, John, and Ravi GuneWardena. 1997. City of Commerce. In Cruising Industrial Los Angeles, pp. 37–38. Los Angeles: Los Angeles Conservancy.

Erlandson, Jon M. 1994. Early Hunter-Gatherers of the California Coast. Plenum Press, NY.

Fang, K., and Volker, J. 2017. Cutting Greenhouse Gas Emissions is Only the Beginning: A Literature Review of the Co-Benefits of Reducing Vehicle Miles Traveled. A White Paper from the National Center for Sustainable Transportation.

Federal Emergency Management Agency. 2021. Available at: https://www.fema.gov/flood-maps/national-flood-hazard-layer. National Flood Hazard Layer. Accessed June 1, 2021.

Federal Highway Administration. 2015. Guidelines for the Visual Impact Assessment of Highway Projects. Publication No. FHWA-HEP-15-029. Office of Environmental Policy. Available at: https://blmwyomingvisual.anl.gov/docs/VIA_Guidelines_for_Highway_Projects.pdf. Accessed May 23, 2022.

Federal Transit Administration. 1995. Circular 9400.1A, Design and Art in Transit Projects. Available at: https://1library.net/article/appendix-fta-circular-art-transit-programs-lessons-learned.q7le35ny. Accessed May 23, 2022.

Federal Transit Administration. 2018. FTA Report Number 0123. Transit Noise and Vibration Impact Assessment Manual. Office of Planning and Environment. Washington, DC.

Federal Transit Administration. 2019. The National Transit Database. Available at: https://www.transit.dot.gov/ntd. Accessed October 29, 2019.

Fenenga, Franklin. 1953. The Weights of Chipped Stone Points: A Clue to Their Functions. Southwestern Journal of Anthropology 9(3): 309-323.

Foothill Gold Line Construction Authority. 2021. Glendora to Montclair Segment. Available at: https://foothillgoldline.org/default/faq/. Accessed May 28, 2021.

Foothill Transit. 2019. Lines + Schedule. Available at: http://foothilltransit.org/lines-and-schedules/. Accessed May 30, 2021.

Gateway Cities, Los Angeles County Metropolitan Transportation Authority. 2016. Gateway Cities Strategic Transportation Plan. Available at: http://www.gatewaycog.org/media/userfiles/subsite_9/files/rl/StrategicTransportationPlan/STP_Summary_Report_04_07_2016.pdf. Accessed June 9, 2021.

Governor's Office of Planning and Research. 1994. Thresholds of Significance: Criteria for Defining Environmental Significance. CEQA Technical Advice Series. Governor's Office of Planning and Research, Sacramento, California. September.

Governor's Office of Planning and Research. 2018. Technical Advisory on Evaluating Transportation Impacts in CEQA. Available at: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. Accessed November 10, 2021.

Governor's Office of Planning and Research. 2019. CEQA and Climate Change. Available at: https://opr.ca.gov/docs/20181228-Discussion_Draft_Climate_Change_Adivsory.pdf. Accessed November 10, 2021.

Governor's Office of Planning and Research. 2021. Technical Advisory on CEQA Review of Sustainable Transportation Projects. Available at: https://opr.ca.gov/ceqa/docs/20210709-Sustainable_Transportation_TA.pdf. Accessed November 10, 2021.

Greater Los Angeles County. 2014. Integrated Regional Water Management Plan. Available at: https://dpw.lacounty.gov/wmd/irwmp/FileList.aspx?path=docs\2014%20Public%20IRWMP%20Update. Accessed November 25, 2019.

Grenda, Donn Robert. 1997. Site Structure, Settlement Systems, and Social Organization at Lake Elsinore, California. Unpublished Ph.D. dissertation, University of Arizona.

Hashash, Y.M.A, Hook, J.J, Schmidt, B, and Yao, J.I. 2001. Seismic design and analysis of underground structures. Tunnelling and Underground Space Technology, 16 (2001), 247-293.

Hess, Alan. 1985. Googie: Fifties Coffee Shop Architecture, p. 70. San Francisco: Chronicle Books.

Hise, Greg. 1993. Homebuilding and Industrial Decentralization in Los Angeles: The Roots of the Post–World War II Urban Region. In, Journal of Urban History 19, pp. 95–125.

Hise, Greg. 1997. Magnetic Los Angeles: Planning the Twentieth Century Metropolis, pp. 208–215. Baltimore: The Johns Hopkins University Press.

Ibata, David. 1985. "Chicago claims credit for 1st Industrial Park." Chicago Tribune. February 17, 1985.

Intergovernmental Panel on Climate Change. 2007. AR4 Climate Change 2007: The Physical Science Basis. Available at: https://www.ipcc.ch/report/ar4/wg1/. Accessed November 10, 2021.

Jackson, Robert H. 1999. Agriculture, Drought & Chumash Congregation in the California Missions (1782–1834). California Mission Studies Association Articles. May Newsletter.

Jurmain, Claudia, and William McCawley. 2009. O, My Ancestor: Recognition and Renewal for the Gabrielino-Tongva People of the Los Angeles Area. Berkeley, CA: Heyday Books.

Kleinfelder. 2021. Draft Final Initial Site Assessment (ISA) Report.

Kroeber, A.L. 1925. Handbook of Indians of California. Bureau of American Ethnology Bulletin 78, Smithsonian Institution, Washington, DC.

Liebs, Chester H. 1995. Main Street to Miracle Mile: American Roadside Architecture, pp. 64–67, 194. Baltimore: The Johns Hopkins University Press.

Los Angeles County Department of Public Health. 2019. West Whittier Los-Nietos Community Pedestrian Plan. Available at: http://www.publichealth.lacounty.gov/place/stepbystep/docs/Ch10_Step%20by%20Step_Public%20Review%20Draft_March2019.pdf. Accessed June 2, 2021.

Los Angeles County Department of Public Works. 2006. A Common Thread Rediscovered – San Gabriel River Corridor Master Plan. June. Available at: https://dpw.lacounty.gov/wmd/watershed/sg/mp/mp.cfm. Accessed May 21, 2021.

Los Angeles County Department of Public Works. 2006. Final Program Environmental Impact Report (PEIR) for San Gabriel River Corridor Master Plan. Prepared by MWH for the Los Angeles County Department of Public Works.

Los Angeles County Department of Public Works. 2008. Disaster Route Maps- City of Commerce, Available at: http://dpw.lacounty.gov/dsg/disasterroutes/map/Commerce.pdf. Accessed March 16, 2022.

Los Angeles County Department of Public Works. 2008. Disaster Route Maps- City of Montebello, Available at: http://dpw.lacounty.gov/dsg/disasterroutes/map/Montebello.pdf. Accessed March 16, 2022.

Los Angeles County Department of Public Works. 2008. Disaster Route Maps- City of Pico Rivera, Available at: http://dpw.lacounty.gov/dsg/disasterroutes/map/Pico%20Rivera.pdf. Accessed March 16, 2022.

Los Angeles County Department of Public Works. 2008. Disaster Route Maps- City of Santa Fe Springs, Available at: http://dpw.lacounty.gov/dsg/disasterroutes/map/Santa%20Fe%20Springs.pdf. Accessed March 16, 2022.

Los Angeles County Department of Public Works. 2008. Disaster Route Maps- City of Whittier, Available at: https://dpw.lacounty.gov/dsg/DisasterRoutes/map/Whittier.pdf. Accessed March 15, 2022.

Los Angeles County Department of Public Works. 2010. Construction Site Best Management Practices Manual. Available at: https://dpw.lacounty.gov/cons/specs/BMPManual.pdf. Accessed June 4, 2021.

Los Angeles County Department of Public Works. 2012. Bicycle Master Plan Available at: https://pw.lacounty.gov/tpp/bike/masterplan.cfm. Accessed June 7, 2021.

Los Angeles County Department of Public Works. 2012. Open Data, Los Angeles County Bikeways. Available at: https://data.lacounty.gov/Shape-Files/LA-County-Bikeways/brdh-e23g. Accessed June 7, 2021.

Los Angeles County Department of Public Works. 2014. Los Angeles General Plan Conservation and Natural Resources Element Resources, Available at: https://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-appendices.pdf. Accessed April 4, 2022.

Los Angeles County Department of Public Works. 2014. Low Impact Development Standards Manual. February. Available at: https://dpw.lacounty.gov/ldd/lddservices/docs/Low_Impact_Development_Standards_Manual.pdf. Accessed May 31, 2022.

Los Angeles County Department of Public Works. 2014. East Los Angeles Community Plan, Available at: https://planning.lacounty.gov/assets/upl/project/gp_2035_LUP_2014_East_Los_Angeles.pdf. Accessed April 5, 2022.

Los Angeles County Department of Public Works. 2016. Los Angeles County Comprehensive Floodplain Management Plan. Available at: https://dpw.lacounty.gov/wmd/nfip/fmp/documents/Los%20Angeles%20county%20FMP%20Final%20-%20No%20appendices.pdf. Accessed June 4, 2021.

Los Angeles County Department of Public Works. 2018. Sewer System Management Plan (SSMP). Available At: https://dpw.lacounty.gov/smd/smd/ssmp.pdf. Accessed June 1, 2022.

Los Angeles County Department of Public Works. 2019. Groundwater Wells Map. Available at: https://dpw.lacounty.gov/general/wells/#. Accessed May 18, 2021.

Los Angeles County Department of Public Works. 2019. Route & Schedule – El Sol Shuttle Service. Available at: https://pw.lacounty.gov/transit/ElSolShuttle.aspx. Accessed May 30, 2021.

Los Angeles County Department of Public Works. 2020. Countywide Integrated Waste Management Plan. Available at: https://dpw.lacounty.gov/epd/swims/ShowDoc.aspx?id=14372&hp=yes&type=PDF. Accessed June 1, 2022.

Los Angeles County Department of Public Works. 2020. Gas Hazard Mitigation Policy and Standards, Available at: https://dpw.lacounty.gov/epd/swims/docs/pdf/methane/Methane%20Packet.pdf. Accessed April 5, 2022.

Los Angeles County Department of Public Works. 2021. Collaborative Clean Water Efforts Move Ahead. Available at: https://dpw.lacounty.gov/swq/. Accessed July 20, 2021.

Los Angeles County Department of Public Works. 2021. Storm Drain System Dataset. Available at: https://data.lacity.org/City-Infrastructure-Service-Requests/Storm-Drain-System/pjh9-xwfn. Accessed June 7, 2021.

Los Angeles County Department of Public Works. N.D. LA County Sanitary Sewer Network – Consolidated Sewer Maintenance District. Available at: https://pw.lacounty.gov/smd/sewernetwork/. Accessed June 1, 2022.

Los Angeles County Department of Public Works. N.D. Los Angeles County Flood Control District. Available at: https://dpw.lacounty.gov/LACFCD/web/. Accessed July 12, 2021.

Los Angeles County Department of Public Works. N.D. Rio Hondo Coastal Spreading Grounds Facility Information. Available at: https://dpw.lacounty.gov/wrd/spreadingground/information/facdept.cfm?facinit=27. Accessed May 4, 2021.

Los Angeles County Department of Public Works. N.D. San Gabriel Coastal Spreading Grounds Facility Information. Available at: http://dpw.lacounty.gov/wrd/spreadingground/information/facdept.cfm?facinit=32. Accessed May 4, 2021.

Los Angeles County Department of Public Works; Los Angeles County Department of Parks and Recreation; Los Angeles County Department of Regional Planning (LACDPW, LACDPR, and LACDRP). 1996. Los Angeles River Master Plan. June. Available at: https://ladpw.org/wmd/watershed/LA/LARMP/. Accessed May 18, 2021.

Los Angeles County Department of Public Works; Los Angeles County Department of Parks and Recreation; Los Angeles County Department of Regional Planning. Draft Los Angeles River Master Plan. January. Available at: https://pw.lacounty.gov/wmd/watershed/lar/docs/LARMP-MainVolumeEnglish-PUBLICDRAFT.pdf. Accessed May 18, 2021.

Los Angeles County Department of Regional Planning. N.D. Climate Action webpage: About Los Angeles County CAP. Available at: https://planning.lacounty.gov/site/climate/about-lac-cap/. Accessed December 22, 2021.

Los Angeles County Fire Department. 2021. Department Overview Booklet. Available at: https://fire.lacounty.gov/wp-content/uploads/2021/05/Department-Overview-Booklet_single-pages_May-13-2021-PDF.pdf. Accessed May 19, 2021.

Los Angeles County Metropolitan Transportation Authority and Federal Transit Administration. 2004. Gold Line Phase II – Pasadena to Montclair Draft Environmental Impact Statement/Draft Environmental Impact Report. Los Angeles, CA. April.

Los Angeles County Metropolitan Transportation Authority and Federal Transit Administration. 2011. Crenshaw/LAX Transit Corridor, Final Environmental Impact Statement/Final Environmental Impact Report. Los Angeles, CA. August.

Los Angeles County Metropolitan Transportation Authority. 2002. Los Angeles Eastside Corridor Final SEIS/SEIR. January 2002. Available at: http://libraryarchives.metro.net/DPGTL/eirs/GoldLine_Eastside/2002-los-angeles-eastside-corridor-final-supplemental-eis-eir-volume-2.pdf. Accessed June 14. 2022.

Los Angeles County Metropolitan Transportation Authority. 2003. Grade Crossing for Light Rail Transit. Available at: http://media.metro.net/about_us/library/images/Grade%20Crossing%20for%20Light%20Rail%20Transit.pdf. Accessed June 2, 2021.

Los Angeles County Metropolitan Transportation Authority. 2007. Construction and Demolition Debris Recycling and Reuse Policy. Available at: http://media.metro.net/about_us/sustainability/images/Construction-Demolition-Debris-Recycling-Reuse-Policy-GEN-51.pdf. Accessed June 1, 2022.

Los Angeles County Metropolitan Transportation Authority. 2007. Energy and Sustainability Policy. Available at: http://media.metro.net/about_us/sustainability/images/Energy-and-Sustainability-Policy.pdf. Accessed June 1, 2022.

Los Angeles County Metropolitan Transportation Authority. 2009. Eastside Transit Corridor Phase 2 Alternatives Analysis (AA) Report. Available at: https://www.dropbox.com/sh/bzop61b20gl4f4l/AABZsUXlk5m6tg8iGOMvvnpaa/Reports%20%26%20Info/Alternatives%20Analysis%20(AA)%20Study%20(2009)/Alternative%20Analysis%20(AA)%20(January%202009)?dl=0&preview=Eastside2-AA-Addendum-Oct2009-Final.pdf&subfolder_nav_tracking=1. Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2009. Environmental Policy. Available at: http://media.metro.net/about_us/sustainability/images/Environmental.pdf. Accessed May 27, 2021.

Los Angeles County Metropolitan Transportation Authority. 2009. General Management Water Use and Conservation Policy Statement. Effective July 27, 2009. Available at: https://partners.skanska.com/usa/clients/lametro/WSE/PreBid/OwnDoc/RFP/InHouse%20Conformed%20RFP/Conformed%20Am.%202/Vol_IV_Manuals/Water%20Use%20and%20Conservation.pdf. Accessed May 18, 2021.

Los Angeles County Metropolitan Transportation Authority. 2009. Long Range Transportation Plan, Final. Available at: http://media.metro.net/projects_studies/images/final-2009-LRTP.pdf. Accessed September 2021.

Los Angeles County Metropolitan Transportation Authority. 2009. Water Use and Conservation Policy. Available at: http://media.metro.net/about_us/sustainability/images/Water-Use-and-Conservation-GEN-52-Policy.pdf. Accessed June 1, 2022.

Los Angeles County Metropolitan Transportation Authority. 2010. Metro Board Report Grade Crossing Policy for Light Rail Transit. Available at: http://boardarchives.metro.net/Minutes/2010/10_October/minutes_20101028rbm.pdf. Accessed May 28, 2021.

Los Angeles County Metropolitan Transportation Authority. 2010. Metro Rail Design Criteria. Section 10 Operations.

Los Angeles County Metropolitan Transportation Authority. 2010. Water Action Plan. Available at: http://media.metro.net/projects_studies/sustainability/images/Water_Plan2010_0825.pdf. Accessed June 1, 2022.

Los Angeles County Metropolitan Transportation Authority. 2011. Energy Conservation and Management Plan. Available at: http://media.metro.net/projects_studies/sustainability/images/Sustainability_Report_Energy_Conservation_Plan.pdf. Accessed May 27, 2021.

Los Angeles County Metropolitan Transportation Authority. 2011. Green Construction Policy. Available at: http://media.metro.net/projects_studies/sustainability/images/Green_Construction_Policy.pdf. Accessed May 27, 2021.

Los Angeles County Metropolitan Transportation Authority. 2011. Renewable Energy Policy. Available at: http://media.metro.net/about_us/sustainability/images/renewable_energy_policy.pdf. Accessed May 27, 2021.

Los Angeles County Metropolitan Transportation Authority. 2012. Countywide Sustainable Planning Policy & Implementation Plan. Available at: https://media.metro.net/projects_studies/sustainability/images/countywide_sustainability_planning_policy.pdf. Accessed May 28, 2021.

Los Angeles County Metropolitan Transportation Authority. 2012. Metro Signage Standards. Available at: https://partners.skanska.com/usa/clients/lametro/WSE/PreBid/OwnDoc/RFP/InHouse%20Conformed%20RFP/Conformed%20Am.%202/Vol_II/02._Metro_Rail_Design_Criteria/15_-_Metro_Signage_Standards_scr.pdf. Accessed February 9, 2022.

Los Angeles County Metropolitan Transportation Authority. 2013. Sustainable Rail Plan. Available at: http://media.metro.net/about_us/sustainability/images/sustainable_rail_plan_final_clean_submitted.pdf. Accessed May 27, 2021.

Los Angeles County Metropolitan Transportation Authority. 2014. Eastside Transit Corridor Phase 2 Draft Environmental Impact Report Appendix R, Air Quality and Health Risk Assessment. Available at: https://www.metro.net/projects/eastside_phase2/#documents. Accessed November 24, 2021.

Los Angeles County Metropolitan Transportation Authority. 2014. Eastside Transit Corridor Phase 2 Draft Environmental Impact Statement / Environmental Impact Report. Available at: https://archive.epa.gov/region9/nepa/web/pdf/ceq20140239-eastside-trans-corr-phase2-deis-2014-10-02.pdf. Accessed June 14, 2022.

Los Angeles County Metropolitan Transportation Authority. 2014. First Last Mile Strategic Plan. Available at: https://www.dropbox.com/sh/55dbbcvb9eifv9s/AACpVGtpRgzZ70irWqqDCVNIa?dl=0&preview=FLM-Strategic-Plan.pdf. Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2014. Metro Complete Streets Policy. Available at: https://media.metro.net/projects_studies/sustainability/images/policy_completestreets_2014-10.pdf. Accessed May 13, 2022.

Los Angeles County Metropolitan Transportation Authority. 2014. Metro First/Last-Mile Plan. Available at: http://libraryarchives.metro.net/DPGTL/scag/2014-first-last-mile-strategic-plan-final-march.pdf. Accessed May 28, 2021.

Los Angeles County Metropolitan Transportation Authority. 2014. Metro Rail Design Criteria. Section 11 Yards and Shops.

Los Angeles County Metropolitan Transportation Authority. 2014. Short Range Transportation Plan. Available at: http://media.metro.net/projects_studies/srtp/report_srtp_2014.pdf. Accessed May 28, 2021.

Los Angeles County Metropolitan Transportation Authority. 2015. Metro Rail Design Criteria Architectural. Available at: http://libraryarchives.metro.net/DPGTL/architecture/2015-metro-rail-design-criteria-section6-architectural.pdf. Accessed March 20, 2022.

Los Angeles County Metropolitan Transportation Authority. 2016. Active Transportation Strategic Plan. Available at: https://www.metro.net/projects/active-transportation-strategic-plan/ Accessed June 7, 2021.

Los Angeles County Metropolitan Transportation Authority. 2016. Board Approves Taking Measure M to Voters. Accessed April 4, 2022. Available at: https://thesource.metro.net/2016/06/23/live-blog-todays-metro-board-meeting-and-the-potential-ballot-measure/

Los Angeles County Metropolitan Transportation Authority. 2016. FLM Local Funding (Board Motion 14.2). Available at: http://metro.legistar1.com/metro/attachments/3d3490bd-8aec-471d-bbab-fced8b15141f.pdf. Accessed May 19, 2022.

Los Angeles County Metropolitan Transportation Authority. 2016. FLM Planning and Implementation Policy (Board Motion 14.1). Available at: http://metro.legistar1.com/metro/attachments/530ed98d-323a-49de-a509-1bb581aeb1db.pdf. Accessed May 19, 2022.

Los Angeles County Metropolitan Transportation Authority. 2016. Los Angeles County Traffic Improvement Plan (Measure M). Available at: https://theplan.metro.net/wp-content/uploads/2016/09/measurem_ordinance_16-01.pdf. Accessed May 28, 2021.

Los Angeles County Metropolitan Transportation Authority. 2016. Metro Rail Design Criteria. Fire and Life Safety.

Los Angeles County Metropolitan Transportation Authority. 2016. Metro Rail Design Criteria. Section 8 Mechanical.

Los Angeles County Metropolitan Transportation Authority. 2017. Eastside Transit Corridor Phase 2 Post Draft EIS/EIR Technical Study Report. Available at: https://media.metro.net/projects_studies/eastside_phase2/images/report_eastsidephase2_technical_study_2017-0620.pdf. Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2017. L.A. Olympics and Paralympics: What Our Transit System will Look Like in 2028. Accessed April 4, 2022. Available at: https://thesource.metro.net/2017/09/13/l-a-olympics-and-paralympics-what-our-transit-system-will-look-like-in-2028/.

Los Angeles County Metropolitan Transportation Authority. 2017. Metro Rail Design Criteria, Section 5 Structural/Geotechnical (includes the appended Supplemental Seismic Design Criteria).

Los Angeles County Metropolitan Transportation Authority. 2017. Metro Rail Design Criteria. Section 3 Civil.

Los Angeles County Metropolitan Transportation Authority. 2018. 2018 Energy and Resource Report. Available at: http://media.metro.net/projects_studies/sustainability/images/report_sustainability_energyandresource_2018.pdf. Accessed November 10, 2021.

Los Angeles County Metropolitan Transportation Authority. 2018. Metro Equity Platform Framework. Available at: http://metro.legistar1.com/metro/attachments/dabba808-fdf7-4f71-8869-66f2f60d40c7.pdf. Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2018. Metro Rail Design Criteria and Standards Adjacent Construction Design Manual. Available at: http://media.metro.net/projects_studies/joint_development/images/adj_constr_manual_rev_2018-05.pdf. Accessed June 7, 2021.

Los Angeles County Metropolitan Transportation Authority. 2018. Metro Rail Design Criteria. Section 2. Los Angeles, CA. February.

Los Angeles County Metropolitan Transportation Authority. 2018. Metro TOC Policy Fact Sheet. Available at: https://cdn.beta.metro.net/wp-content/uploads/2021/12/28152747/factsheets-resources-toc.pdf. Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2018. Metro Transit Oriented Communities Policy. Available at: https://media.metro.net/projects_studies/joint_development/images/toc_policy_final.pdf. Accessed May 28, 2021.

Los Angeles County Metropolitan Transportation Authority. 2018. Systemwide Station Design Standards Policy. Available at: https://www.dropbox.com /s/6fabp9dkuzm2yun/approved_boardreport_systemwide_station_design_standards_policy.pdf?dl=0. Accessed February 25, 2022.

Los Angeles County Metropolitan Transportation Authority. 2019. 2019 Energy and Resource Report. Available at: http://media.metro.net/projects_studies/sustainability/images/report_sustainability_energyandresource_2019.pdf. Accessed May 27, 2021.

Los Angeles County Metropolitan Transportation Authority. 2019. Metro Board of Directors – Construction Committee File # 2019-0434. Available at: https://metro.legistar.com/LegislationDetail.aspx?ID=4062521&GUID=EC1CF700-4264-4249-85E1-50C5122CA5F9&Options=&Search=&FullText=1. Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2019. Metro Board of Directors – Regular Board Meeting Motion 32.4 #2019-0108. Available at: https://metro.legistar.com/LegislationDetail.aspx?ID=3869934&GUID=F006C08A-4C2E-4B8B-BBFC-20D761E07DD2. Accessed June 14, 2022.

Los Angeles County Metropolitan Transportation Authority. 2019. Metro Climate Action and Adaptation Plan. Available at: https://media.metro.net/projects_studies/sustainability/images/Climate_Action_Plan.pdf. Accessed March 24, 2022.

Los Angeles County Metropolitan Transportation Authority. 2020. Metro 2020 Long Range Transportation Plan. Available at: https://media.metro.net/2020/LRTP-2020-Final.pdf. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2020. Metro Board of Directors – Regular Board Meeting Board Report File # 2020-0027. Available at: https://files.constantcontact.com/95c7c82d001/afd72fc9-315c-4d58-96cc-6c6d017fc09c.pdf. Accessed June 14, 2022.

Los Angeles County Metropolitan Transportation Authority. 2020. Metro Board Report Operations, Safety, and Customer Experience Committee; Subject December Service Changes. November 19, 2020. Available at: https://boardagendas.metro.net/board-report/2020-0717/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2020. Metro Board Resolution Establishing Parking Rates and Permit Fees for All Metro Parking Facilities and Resources. Available at: https://media.metro.net/2020/Metro+Parking+Rates+and+Permit+Fee+Resolution+April+2020.pdf. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2020. Metro Transit Oriented Communities Implementation Plan. Available at: https://www.dropbox.com/s/t5i74yzhkb6qugt/2929-Transit-Oriented-Communities-Implementation-Plan.pdf?dl=0. Accessed May 5, 2022.

Los Angeles County Metropolitan Transportation Authority. 2020. Metro's BRT Vision and Principles Study. Available at: https://www.dropbox.com/sh/wax1hmpl3sdx31z/AADhCEGBhvBjFYSCsiozgZCAa?dl=0. Accessed September 20, 2021.

Los Angeles County Metropolitan Transportation Authority. 2020. NextGen Bus Plan. Available at: https://www.metro.net/projects/nextgen/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2020. SR 60 and Combined Alternatives Issues and Constraints Report. Available at: http://libraryarchives.metro.net/DB_Attachments/200127%20Attachment%20A%20ESP2%20Final%20SR%2060%20and%20Combined%20Alternatives%20Issues%20and%20Constraints%20Report.pdf Accessed June 8, 2022.

Los Angeles County Metropolitan Transportation Authority. 2020. We Are Moving Beyond Sustainability. Sustainability Strategic Plan 2020. Available at: http://media.metro.net/2020/Moving-Beyond-Sustainability-Strategic-Plan-2020.pdf. Accessed June 1, 2022.

Los Angeles County Metropolitan Transportation Authority. 2021. Available at: https://micro.metro.net/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2021. First/Last Mile Guidelines. Available at: https://www.dropbox.com/s/395zn5ghsi1uqvy/Metro-FLM-Guidelines.pdf?dl=0. Accessed October 14, 2021.

Los Angeles County Metropolitan Transportation Authority. 2021. Integrated Station Design Solutions Landscaping White Paper. Available at: https://cdn.beta.metro.net/wp-content/uploads/2022/01/05110715/2111_MetroISDS_Landscaping_WhitePaper.pdf. Accessed March 20, 2022.

Los Angeles County Metropolitan Transportation Authority. 2021. Los Angeles County Metropolitan Transportation Authority Metro Art Program Policy. Available at: http://media.metro.net/art/docs/Metro+Art+Policy+4.2021+formatted+for+web.pdf. Accessed February 9, 2022.

Los Angeles County Metropolitan Transportation Authority. 2021. Metro Board Report Budget Public Hearing, Finance, Budget and Audit Committee; Subject: Fiscal Year 2022 Budget. May 19, 2021. Available at: https://boardagendas.metro.net/board-report/2021-0208/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2021. Metro Projects – Under Construction, Crenshaw/LAX Transit Project. Available at: https://www.metro.net/projects/crenshaw_corridor/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2021. Metro Projects – Under Construction, Purple Line Extension. Available at: https://www.metro.net/projects/westside/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2021. Metro Projects – Under Construction, Regional Connector Transit Project. Available at: https://www.metro.net/projects/connector/. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2021. Metro's Interactive Estimated Ridership Statistics, 2021. Available at: https://isotp.metro.net/MetroRidership/IndexAllBus.aspx. Accessed May 30, 2021.

Los Angeles County Metropolitan Transportation Authority. 2022. Public Safety Advisory Committee. Transit Ambassador Program. Available at: https://www.metro.net/about/public-safety-advisory-committee. Accessed June 3, 2022.

Los Angeles County Metropolitan Transportation Authority. 2022. Rail Modes Webpage. Available at: https://www.metro.net/about/rail-modes. Accessed June 2, 2022.

Los Angeles County Sanitation Districts. 2019. Sewer System Management Plan (SSMP). Available at: https://www.lacsd.org/documents/wastewater-publications-reports/sewer-system-management-plan-ssmp. Accessed June 1, 2022.

Los Angeles County Sanitation Districts. 2021. 2020 Annual Report. Available at: https://www.lacsd.org/home/showpublisheddocument/4302/637647952399730000. Accessed June 1, 2022.

Los Angeles County. 1983. Municipal Code Section 16.76 – Tree Trimming. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed April 15, 2021.

Los Angeles County. 1988. East Los Angeles Community Plan. Available at: https://planning.lacounty.gov/assets/upl/data/pd_east-la.pdf. Accessed April 21, 2021.

Los Angeles County. 1998. Municipal Code. Title 12, Environmental Protection, Chapter 12.80, Stormwater and Runoff Pollution Control. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 10, 2021.

Los Angeles County. 2008. Municipal Code. Title 12, Environmental Protection, Chapter 12.84, Low Impact Development Standards. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed May 31, 2022.

Los Angeles County. 2012. Los Angeles County Operational Area Emergency Response Plan. Available at: https://ceo.lacounty.gov/emergencydisaster-plans-and-annexes/. Accessed July 19, 2021.

Los Angeles County. 2013. Municipal Code Section 22.46.2100 – Oak Tree Regulations. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed April 15, 2021.

Los Angeles County. 2015. Los Angeles County 2035 General Plan - Air Quality Element. Available at: https://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch8.pdf. Accessed December 7, 2021.

Los Angeles County. 2015. Los Angeles County 2035 General Plan - Land Use Element. Available at: https://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch6.pdf. Accessed June 13, 2022.

Los Angeles County. 2015. Los Angeles County 2035 General Plan - Mobility Element. Available at: https://planning.lacounty.gov/assets/upl/project/gp_final-general-plan-ch7.pdf. Accessed May 25, 2021.

Los Angeles County. 2018. Municipal Code. Title 11, Health and Safety, Chapter 11.60, Floodways, Water Surface Elevations, and Areas of Special Flood Hazard. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 3, 2021.

Los Angeles County. 2019. Code of Ordinances, Title 31, Green Building Standards Code. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT31GRBUSTCO. Accessed June 1, 2022.

Los Angeles County. 2019. Map of Significant Ecological Areas. Available at: https://planning.lacounty.gov/assets/upl/project/gp_2035_2014-FIG_9-3_significant_ecological_areas.pdf. Accessed April 21, 2021.

Los Angeles County. 2019. Municipal Code Section 22.44.1240 – Vegetation Management and Landscaping Requirements. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed April 15, 2021.

Los Angeles County. 2019. Municipal Code. Title 22, Planning and Zoning, Chapter 22.118, Flood Control. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 3, 2021.

Los Angeles County. 2019. Municipal Code. Title 26, Building Code, Chapter 110.1, Flood Hazard. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances. Accessed June 3, 2021.

Los Angeles County. 2019. Significant Ecological Areas Ordinance. 2019. Available at: http://file.lacounty.gov/SDSInter/bos/supdocs/142407.pdf. Accessed May 23, 2022.

Los Angeles County. 2019. Step by Step Los Angeles County: Pedestrian Plans for Unincorporated Communities. Available at: http://www.publichealth.lacounty.gov/place/stepbystep/lacounty.htm. Accessed May 16, 2022.

Los Angeles County. 2020. Code of Ordinances. Title 22 Planning and Zoning. Available at: https://library.municode.com/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT22PLZO. Accessed May 19, 2022.

Los Angeles County. 2020. Enterprise GIS. Sub Watershed Feature Layer, Ground Water Basins Feature Layer. Accessed September 2020.

Los Angeles County. N.D. History of Los Angeles County. Available at: https://lacounty.gov/government/about-la-county/history/. Accessed December 13, 2021.

Los Angeles Department of Water and Power. 2016. 2016 Final Power Integrated Resource Plan. Available at: https://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-integratedresourceplanning/a-p-irp-documents?_adf.ctrl-state=3zpzb2x7e_4&_afrLoop=8277078092718 03. Accessed May 27, 2021.

Los Angeles Public Library. 2020. Image, Sylvania Electric Products, Inc., Gayhart Street and Davie Avenue, looking north. Kelly-Holiday Mid-Century Aerial Collection. Available at: https://tessa.lapl.org/cdm/ref/collection/photos/id/6666. Accessed December 13, 2021.

Los Angeles Regional Water Quality Control Board. 1991. Order No. 91-93: General Waste Discharge Requirements for Discharge of Non-Hazardous Contaminated Soils and other Wastes in Los Angeles River and Santa Clara River Basins. Available at: https://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/general_orders/wdr-order91-93.pdf. Accessed May 18, 2021.

Los Angeles Regional Water Quality Control Board. 1993. Order No. 93-010. General Waste Discharge Requirements for Specified Discharges to Groundwater in Santa Clara River and Los Angeles River Basins. Available at: https://www.waterboards.ca.gov/losangeles/board_decisions/adopted_orders/general_orders/wdr-order93-010.pdf. Accessed May 18, 2021.

Los Angeles Regional Water Quality Control Board. 2000. Final Regional Board Adopted Standard Urban Storm Water Mitigation Plan (SUSMP). Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/susmp/susmp_details.shtml. Accessed January 31, 2022.

Los Angeles Regional Water Quality Control Board. 2000. State of the Watershed – Report on Surface Water Quality for the San Gabriel River Watershed. June. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/regional_program/Water_Quality_and_Watersheds/water_report/SanGabrielRiverState.shtml. Accessed April 21, 2021.

Los Angeles Regional Water Quality Control Board. 2005. UST - Depth to groundwater database. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/ust/groundwater_database.html. Accessed February 21, 2022.

Los Angeles Regional Water Quality Control Board. 2014. Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/basin_plan_documentation.html. Accessed May 10, 2021.

Los Angeles Regional Water Quality Control Board. 2016. Waste Discharge Requirements for Municipal Separate Storm Sewer System (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4. Available at:

https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/los_angeles_ms4/2016/R4-2012-0175-A01.pdf. Accessed May 31, 2022.

Los Angeles Regional Water Quality Control Board. 2017. 2014 and 2016 California 303(d) List of Water Quality Limited Segments. Available at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/2014_16state_ir_reports/category5_report.shtml. Accessed May 10, 2021.

Los Angeles Regional Water Quality Control Board. 2019. Total Maximum Daily Loads (TMDLs). Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/. Accessed May 24, 2021.

Los Angeles Regional Water Quality Control Board. 2019. Watershed Management Programs. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/index.html. Accessed May 24, 2021.

Los Angeles Regional Water Quality Control Board. 2021. Final 2018 California Integrated Report Appendix A: 2018 303(d) List of Impaired Waters. Available at: https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html. Accessed March 15, 2022.

Los Angeles Times. 1903. Montebello display advertisement, April 26, p. D11. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1913. Flower Garden of Los Angeles, June 1, p. IV12. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1921. Rancho Laguna Is Subdivided for Settlement, August 21, p. VI. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1921. Ready to Open New Belvedere Gardens Tract, April 10, 1921, p. V3. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1922. To Open Factory Sites, May 7, p. V11. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1925. Display ad, no title. April 26, p. F16. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1937. Belvedere Drops Name. September 11, p. 6. ProQuest HistoricalNewspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1953. Industrial Boost. July 19, 1953. ProQuest HistoricalNewspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1953. Paper Company to Double Its Plant Facilities here. August 23, 1953. ProQuest HistoricalNewspapers: Los Angeles Times (1881–1987).

Los Angeles Times. 1960. Industrial Center Keeps Pace with City's Growth, October 30, p. L1. ProQuest Historical Newspapers: Los Angeles Times (1881–1987).

Lower San Gabriel River Watershed Group. 2015. Lower San Gabriel River Watershed Management Program. Available at: https://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/watershed_management/san_gabriel/lower_sangabriel/LowerSGRiver_FinalWMP.pdf. Accessed April 12, 2021.

McCawley, William. 1996. The First Angelinos: The Gabrielino Indians of Los Angeles. Malki Museum Press, Banning.

McLeod, Samuel A. 2019. Paleontological resources for the proposed Eastside Metro Project, AECOM Project # 60178065 task 4.6.13-Cultural, from Los Angeles to Montebello and Whittier, Los Angeles County, project area. Letter to AECOM from Natural History Museum of Los Angeles County, California.

Merriam, C. Hart. 1955 The Ko-too-mut Ke-hi-ah or Festival for the Dead: A Mortuary Ceremony of the Tong-va of Tejon. Pp. 77–86 & Plate 24 in Studies of California Indians by C. Hart Merriam, edited by the Staff of the Department of Anthropology of the University of California. Berkeley and Los Angeles: University of California Press.

Metrolink. 2019. 3rd Quarter 2018-2019 Fact Sheet. Available at: https://metrolinktrains.com/globalassets/about/agency/facts-and-numbers/quarterly-fact-sheet-q3-fact-sheet-2018-2019.pdf. Accessed May 30, 2021.

Metropolitan Water District of Southern California. 2007. Groundwater Assessment Study. September. Available at: https://cawaterlibrary.net/document/final-groundwater-assessment-study-a-status-report-on-the-use-of-groundwater-in-the-service-area-of-the-metropolitan-water-district-of-southern-california/. Accessed May 10, 2021.

Metropolitan Water District of Southern California. 2021. 2020 Urban Water Management Plan. Available at: https://www.mwdh2o.com/media/21641/2020-urban-water-management-plan-june-2021.pdf. Accessed January 12, 2022.

Metropolitan Water District of Southern California. N.D. How We Plan. Available at: https://www.mwdh2o.com/planning-for-tomorrow/how-we-plan/. Accessed June 1, 2022.

Miller, Bruce W. 1991. The Gabrielino. Los Osos, CA: Sand River Press.

Monroy, Douglas. 1990. Thrown Among Strangers: The Making of Mexican Culture in Frontier California, p. 163. Berkeley: University of California Press.

Moratto, Michael J. 1984. California Archaeology. Orlando: Academic Press.

Mozingo, Joe. 1999. In Search of the Lost Gabrielinos. Los Angeles Times, 16 July: 1. Los Angeles, California.

National Audubon Society. 2010. Important Bird Areas in the U.S. Site Report: Los Angeles Flood Control Basins. Available at: https://www.audubon.org/important-bird-areas/los-angeles-flood-control-basins. Accessed April 14, 2021.

National Fire Protection Association. 2019. NFPA 70, National Electrical Code with California Amendments. Available at: https://catalog.nfpa.org/NFPA-70-National-Electrical-Code-with-California-Amendments-P17223.aspx. Accessed January 31, 2022.

National Fire Protection Association. 2020. NFPA 130, Standard for Fixed Guideway Transit and Passenger Rail Systems. Available at: https://www.nfpa.org/codes-and-standards/all-codes-and-standards/list-of-codes-and-standards/detail?code=130. Accessed January 31, 2022.

National Highway Traffic Safety Administration. N.D. Corporate Average Fuel Economy. Available at: https://www.nhtsa.gov/laws-regulations/corporate-average-fuel-economy. Accessed June 1, 2022.

New York Times. 1982. Northrop to Buy Vacant Ford Plant. February 5.

Nicolaides, Becky M. 1999. Where the Working Man is Welcomed: Working-Class Suburbs in Los Angeles, 1900–1940. In Pacific Historical Review 68, 4:538. November.

Nixon, H., and Saphores, J-D. M. 2007. Impacts of motor vehicle operation on water quality – clean-up costs and policies. Transportation Research Pard D, 12(8). DOI :10.1016/j.trd.2007.08.002. Available at: https://escholarship.org/content/qt8tn1w17s/qt8tn1w17s.pdf?t=lnq4xr. Accessed July 13, 2021.

Norris, R.M. and Webb, R.W. 1990. Geology of California, Second Edition: John Wiley & Sons, Inc., New York, 379 p.

Office of Governor Edmund G. Brown Jr. 2013. ZEV Action Plan. Available at: http://opr.ca.gov/docs/Governors_Office_ZEV_Action_Plan_(02-13).pdf. Accessed May 27, 2021.

Phillips, George Harwood. 2010. Vineyards and Vaqueros: Indian Labor and the Economic Expansion of Southern California, 1771–1877. Norman, OK: Arthur H. Clark Co.

Phoenix, Charles. 2001. Southern California in the '50s: Sun, Fun, and Fantasy, p. 2. Santa Monica, California: Angel City Press.

Pico Water District. 2021. 2020 Urban Water Management Plan. Available at: https://www.picowaterdistrict.net/wp-content/uploads/2021/11/Final-Pico-Water-District-2020-UWMP.pdf. Accessed January 12, 2022.

Poland and Piper. 1956.

Preservation Chicago. 2020. "Central Manufacturing District, Pershing Road Pershing Road between Ashland and Western Avenues." Available online, https://preservationchicago.org/wp-content/uploads/2020/05/Central-Manufacturing-District-2020-Chicago-7-Write-Up-Final.pdf. Accessed December 13, 2021.

Public Works Standards, Inc., American Public Works Association, Associated General Contractors of California, Engineering Contractors Association, and Southern California Contractors Association. 2021. Greenbook: Standard Specifications for Public Works Construction. Accessed January 31, 2022.

Reid, Hugo. 1939 [1852]. Letters on the Los Angeles County Indians. In, A Scotch Paisano in Old Los Angeles, by Susanna Bryant Dakin, pp. 215–286. University of California Press.

Rivers and Mountains Conservancy. 2004. Rio Hondo Watershed Management Plan.

Robinson, W. W. 1948. Land in California, pp. 48–49, 109, 134. Berkeley: University of California Press.

Romo, Richard. 1983. East Los Angeles: History of a Barrio, p. 79. Austin: University of Texas Press.

Rosenthal, Jeffrey S., and Jack Meyer. 2009. Archaeological Survey and Geoarchaeological Investigation of the Marsh Creek Dam Rehabilitation Project Area, Eastern Contra Costa County, California. Far Western Anthropological Research Group, Inc., Davis, California.

San Gabriel Valley Council of Governments. 2004. Rio Hondo Watershed Management Plan.

San Gabriel Valley Water Company. 2021. 2020 Urban Water Management Plan and Water Shortage Contingency. Available at: https://www.sgvwater.com/wp-content/uploads/2021/07/FINAL-San-Gabriel-Valley-Water-Company-2020-UWMP.pdf. Accessed June 1, 2022.

San Gabriel Valley. 2014. Regional Bicycle Master Plan. Available at: https://www.montereypark.ca.gov/DocumentCenter/View/3591/Final-Draft_SGV-Bike-Plan_2014-11-12?bidId=. Accessed May 12, 2022.

San Gabriel Valley. 2019. Regional Active Transportation Plan and Greenway Network Study. Available at: https://drive.google.com/file/d/1mNA6NM27kLd754Edc3G81zyXXO9SOEGh/view. Accessed June 7, 2021.

Sawyer, J. O., T. Keeler- Wolf, and J. M. Evens. 2009. A Manual of California Vegetation, 2nd edition. California Native Plant Society, Sacramento, CA.

Shipley, William F. 1978. Native Languages of California. Pp. 80-90 in Handbook of North American Indians, Volume 8 (California). Edited by William C. Sturtevant and Robert F. Heizer. Washington, D.C.: Smithsonian Institution.

Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf. Accessed May 31, 2022.

South Coast Air Quality Management District. 1993. CEQA Air Quality Handbook. April (with Errata May 1993).

South Coast Air Quality Management District. 2003. White Paper on Potential Control Strategies to Address Cumulative Impacts From Air Pollution. Available at: https://www.aqmd.gov/docs/default-source/Agendas/Environmental-Justice/cumulative-impacts-working-group/cumulative-impacts-white-paper.pdf?sfvrsn=2. Accessed June 15, 2022.

South Coast Air Quality Management District. 2005. SCAQMD Rule 403. Available at: https://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-403.pdf?sfvrsn=4. Accessed January 31, 2022.

South Coast Air Quality Management District. 2006. Final Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds. October 2006.

South Coast Air Quality Management District. 2008. Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/ghgattachmente.pdf. Accessed November 10, 2021.

South Coast Air Quality Management District. 2008. Final Localized Significance Threshold Methodology. July 2008.

South Coast Air Quality Management District. 2017. Permit Application Package "N": For Use in Conjunction with the Risk Assessment Procedures for Rules 1401, 1401.1 and 212 - Version 8.1. October 1, 2017.

South Coast Air Quality Management District. 2017. Risk Assessment Procedures for Rules 1401, 1401.1 and 212 - Version 8.1. September 1, 2017.

South Coast Air Quality Management District. 2019. Air Quality Analysis Guidance Handbook website. Available at: http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook. Accessed February 20, 2019.

South Coast Air Quality Management District. 2019. SCAQMD Air Quality Significance Thresholds. March. Available at: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf?sfvrsn=2. Accessed February 10, 2020.

South Coast Air Quality Management District. 2019. SCAQMD Clean Air Act Rule 1403. Available at: http://www.aqmd.gov/docs/default-source/compliance/Asbestos-Demolition-/rule-1403-compliance-advisory.pdf?sfvrsn=8#:~:text=SCAQMD%20Rule%201403%20governs%20work,%2DContaining%20Materials%20(ACM). Accessed January 31, 2022.

South Coast Air Quality Management District. 2021. Air Quality Management Plan (AQMP) Home Page. Available at: http://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan. Accessed November 29, 2021.

Southern California Association of Governments. 2008. Final 2008 Regional Comprehensive Plan. Available at: https://scag.ca.gov/sites/main/files/file-attachments/f2008rcp_complete.pdf?1604263359. Accessed June 2, 2021.

Southern California Association of Governments. 2016. 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy. Available at: https://scag.ca.gov/sites/main/files/file-attachments/f2016rtpscs.pdf?1606005557. Accessed May 25, 2021.

Southern California Association of Governments. 2016. Final 2017 Federal Transportation Improvement Program. Available at: http://ftip.scag.ca.gov/Documents/F2017-FTIP-TransitLA.pdf.

Southern California Association of Governments. 2018. Final 2019 Federal Transportation Improvement Program. Available at: http://ftip.scag.ca.gov/Documents/F2019-FTIP-TransitLA.pdf.

Southern California Association of Governments. 2020. Connect SoCal 2020-2045 Regional Transportation Plan / Sustainable Communities Strategy. Available at: https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-plan_0.pdf?1606001176. Accessed June 714, 2022.

Southern California Association of Governments. 2020. Sustainable Communities Program (SCP). Available at: https://scag.ca.gov/sustainable-communities-program. Accessed May 25, 2021.

Southern California Edison. 2019. Electric Company ESG/Sustainability Quantitative Information. Available at: https://www.edison.com/content/dam/eix/documents/sustainability/eix-esg-pilot-quantitative-section-sce.pdf. Accessed March 30, 2022.

Southern California Edison. 2019. Southern California Edison's Service Area. Available at: https://newsroom.edison.com/internal_redirect/cms.ipressroom.com.s3.amazonaws.com/166/files/20193/SCE%20Service%20Area%20Fact%20Sheet_Ver2_04252019.pdf. Accessed May 27, 2021.

Southern California Edison. 2020. Integrated Resource Plan of Southern California Edison Company. Available at: https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M346/K291/346291781.PDF. Accessed March 30, 2022.

Southern California Gas Company. 2021. Aspire 2045, Sustainability and Climate Commitment to Net Zero. Available at: https://www.socalgas.com/sites/default/files/2021-03/SoCalGas_Climate_Commitment.pdf. Accessed June 1, 2022.

SouthWest Water Company (d.b.a. Suburban Water Systems). 2016. Whittier/La Mirada Service Area. Available at: https://www.swwc.com/suburban/service-area/. Accessed June 1, 2022.

Suburban Water Systems. 2021. 2020 Urban Water Management Plan. Available at: https://www.swwc.com/wp-content/uploads/files/ca/conservation/uwmp/Suburban%20Final%202020%20UWMP_2021-06-30.pdf. Accessed January 12, 2022.

Sutton, Mark Q. 2009. People and Language: Defining the Takic Expansion into Southern California. Pacific Coast Archaeological Society Quarterly 41(2&3): 31-93.

Takahashi, Keith. 1979. Montebello: U.N. of the Southeast. Los Angeles Times, September 23, p. SE1.

The Climate Registry. 2010. Local Government Operations Protocol. Version 1.1.

The Climate Registry. 2019. General Reporting Protocol for the Voluntary Reporting Program. Version 3. Available at: https://www.theclimateregistry.org/protocols/General-Reporting-ProtocolV3.pdf. Accessed June 25, 2022.

The Climate Registry. 2021. Default Emission Factors Document. Available at: https://www.theclimateregistry.org/wp-content/uploads/2021/05/2021-Default-Emission-Factor-Document.pdf. Accessed November 10, 2021.

Trumbull, N., and Bae, C. 2000. Transportation and Water Pollution. University of Washington. Available at: https://courses.washington.edu/gmforum/topics/trans_water/trans_water.htm. Accessed July 13, 2021.

U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual, Wetlands Research Program Technical Report Y-87-1, January 1987-Final Report.

U.S. Army Corps of Engineers. 2005. Regulatory Guidance Letter. No. 05-05. December 2005.

U.S. Army Corps of Engineers. 2008. Clarification Guidance on the Policy and Procedural Guidance for the Approval of Modifications and Alterations of Corps of Engineer Projects. Memorandum for SEE Distribution. November 17. Available at: https://semspub.epa.gov/work/01/70005575.pdf. Accessed May 10, 2021.

U.S. Army Corps of Engineers. 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Technical Report ERDC/EL TR-08-28. U.S. Army Engineer Research and Development Center. Vicksburg, MS.

U.S. Army Corps of Engineers. 2009. Draft Environmental Assessment for the San Gabriel River Discovery Center at Whittier Narrows. Prepared by EDAW for the U.S. Army Corps of Engineers, Los Angeles District.

U.S. Army Corps of Engineers. 2011. Whittier Narrows Dam Basin Master Plan and Draft Environmental Assessment.

U.S. Army Corps of Engineers. 2016. National Wetland Plant List. Available at: https://cwbi-app.sec.usace.army.mil/nwpl_static/data/DOC/lists_2016/Regions/pdf/reg_AW_2016v1.pdf. Accessed May 23, 2022.

U.S. Army Corps of Engineers. 2018. Policy and Procedural Guidance for Processing Requests to Alter US Army Corps of Engineers Civil Works Projects Pursuant to 33 USC 408.

U.S. Army Corps of Engineers. 2021. Whittier Narrows Dam Safety Modification, CA Construction. Available at: https://www.spl.usace.army.mil/Portals/17/docs/congressional/Fact_Sheets/PPMD/WhittierNarrowsDamSafetyFactSheet.pdf. Accessed January 25, 2022.

U.S. Bureau of Labor Statistics. Available at: https://data.bls.gov/pdq/SurveyOutputServlet. Accessed July 2021.

U.S. Census Bureau. 2019. Quick Facts database. Available at: https://www.census.gov/quickfacts/fact/table/US/PST045219. Accessed December 13, 2021.

U.S. Census Bureau. 2020. How the Census Bureau Measures Poverty. Available at: https://www.census.gov/topics/income-poverty/poverty/guidance/poverty-measures.html. Accessed April 28, 2021.

U.S. Census Bureau. N.D. 2015-2019 American Community Survey 5-year Estimates. Available at: https://www.census.gov. Accessed March 11, 2021.

U.S. Department of Housing and Urban Development, United States Department of Transportation, United States Environmental Protection Agency. 2009. HUD-DOT-EPA Partnership for Sustainable Communities. Available at: https://19january2017snapshot.epa.gov/smartgrowth/hud-dot-epa-partnership-sustainable-communities_.html. Accessed May 19, 2022.

U.S. Department of Housing and Urban Development. 2022. Real Estate Acquisition and Relocation. Available at: https://www.hud.gov/relocation. Accessed May 20, 2022.

U.S. Department of Transportation. 2006. "Celebrating 50 Years: The Eisenhower Interstate Highway System." Electronic document, https://www.transportation.gov/testimony/celebrating-50-years-eisenhower-interstate-highway-system. Accessed June 2, 2022.

U.S. Energy Information Administration. 2020, California Total Energy Consumption by End-Use Sector. Available at: https://www.eia.gov/beta/states/states/ca/data/dashboard/consumption. Accessed February 21, 2020.

U.S. Energy Information Administration. 2021. Energy-Related CO2 Emission Data Tables: Table 2, State energy-related carbon dioxide emissions by year, adjusted. Available at: https://www.eia.gov/environment/emissions/state/. Accessed December 8, 2021.

U.S. Energy Information Administration. 2022. California – State Profile and Energy Estimates. Available at: https://www.eia.gov/state/analysis.php?sid=CA. Accessed June 2, 2022.

U.S. Energy Information Administration. 2022. Carbon Dioxide Emissions Coefficients. Available at: https://www.eia.gov/environment/emissions/co2_vol_mass.php. Accessed June 2, 2022.

U.S. Environmental Protection Agency & National Highway Traffic Safety Administration. 2020. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks. Available at: https://www.govinfo.gov/content/pkg/FR-2020-04-30/pdf/2020-06967.pdf. Accessed June 2, 2022.

U.S. Environmental Protection Agency. 2004. Understanding the Safe Drinking Water Act. Available at: https://www.epa.gov/sites/production/files/2015-04/documents/epa816f04030.pdf. Accessed June 2, 2022.

U.S. Environmental Protection Agency. 2008. Evaluating the Effectiveness of Municipal Stormwater Programs. Available at: https://www3.epa.gov/npdes/pubs/region3_factsheet_swmp.pdf. Accessed July 13, 2021.

U.S. Environmental Protection Agency. 2011. USEPA Superfund Interim Action Record of Decision. Omega Chemical Corporation Superfund Site Operable Unit 2. Available at: https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/4032881021/@ROD_OmegaOU2_09.20.11%20FINAL.pdf. Accessed July 28, 2021.

U.S. Environmental Protection Agency. 2013. Polychlorinated Biphenyls (PCBs): Health Effects of PCBs. Available at: https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs#healtheffects. Accessed August 12, 2021.

U.S. Environmental Protection Agency. 2019. Air Data: Air Quality Data Collected at Outdoor Monitors Across the US. Available at: https://www.epa.gov/outdoor-air-quality-data. Accessed February 22, 2019.

U.S. Environmental Protection Agency. 2019. Nonattainment Areas for Criteria Pollutants (Green Book). Available at: https://www.epa.gov/green-book. Accessed February 7, 2019.

U.S. Environmental Protection Agency. 2021. Developing a Stormwater Pollution Prevention Plan (SWPPP). Available at: https://www.epa.gov/npdes/developing-stormwater-pollution-prevention-plan-swppp. Accessed March 3, 2022.

U.S. Environmental Protection Agency. 2021. Greenhouse Gas Equivalencies Calculator. Available at: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator. Accessed November 10, 2021.

U.S. Environmental Protection Agency. 2021. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2019. Report EPA 430-R-21-005. Available at: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2017. Accessed December 8, 2021.

U.S. Environmental Protection Agency. 2021. PART 125 – Criteria and Standards for the National Pollutant Discharge Elimination System (NPDES). Available at: https://www.govinfo.gov/content/pkg/CFR-2021-title40-vol24/pdf/CFR-2021-title40-vol24-part125.pdf. Accessed January 31, 2022.

U.S. Environmental Protection Agency. 2021. Search Superfund Sites. Available at: https://www.epa.gov/superfund/search-superfund-sites-where-you-live. Accessed July 28, 2021.

U.S. Environmental Protection Agency. N.D. National Pollutant Discharge Elimination System (NPDES) Regulations. Available at: https://www.epa.gov/npdes/npdes-regulatory-history. Accessed June 2, 2022.

U.S. Fish and Wildlife Service. 2021. Critical Habitat for Threatened and Endangered Species Online Mapper. Available at: https://ecos.fws.gov/ecp/report/table/critical-habitat.html. Accessed April 27, 2021.

U.S. Fish and Wildlife Service. 2021. Information for Planning and Consultation. Available at: https://ecos.fws.gov/ipac/. Accessed April 27, 2021.

U.S. Fish and Wildlife Service. 2021. National Wetlands Inventory (NWI) online Mapper. Available at: https://www.fws.gov/wetlands/data/Data-Download.html. Accessed April 27, 2021.

U.S. Geological Survey, 2019. National Hydrography Dataset Plus High Resolution for 4-digit Hydrologic Unit - 1807. April 1.

U.S. Geological Survey. 2021. Earthquake Hazards Program – Unified Hazard Tool Website. Available at: https://earthquake.usgs.gov/hazards/interactive/.

U.S. Geological Survey. 2022. Areas of Land Subsidence in California. Available at: https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html. Accessed May 31, 2022.

United States Court of Appeals for the District of Columbia Circuit. 2021. USCA Case #19-1230 Union of Concerned Scientists, et al., v. National Highway Traffic Safety Administration. Available at: http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2021/20210208_docket-19-1230_order.pdf. Accessed June 2, 2022.

United States Executive Office of the President. 2021. Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis. Available at: https://www.federalregister.gov/executive-order/13990. Accessed June 2, 2022.

United States General Accounting Office. 2002. Report to Congressional Committees, Mass Transit: FTA's New Starts Commitments for Fiscal Year 2003. Available at: https://www.gao.gov/assets/gao-02-603.pdf. Accessed June 8, 2022.

University of California Davis. 1997. Transportation Project-Level Carbon Monoxide Protocol. Prepared for California Department of Transportation. UCD-ITS-RR-97-21. December 1997.

University of California Los Angeles California Center for Sustainable Communities. 2017. Los Angeles Water Hub. Available at: https://waterhub.ucla.edu/. Accessed June 2, 2022.

University of Southern California. 1930. "Los Angeles to Santa Ana - U.S. 101, 1930." Automobile Club of Southern California collection, 1892-1963. Available at: http://digitallibrary.usc.edu/digital/collection/p15799coll59/id/5/rec/3. Accessed December 13, 2021.

Wallace, William J. 1955. A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11(3):214–230.

Warner, J.J., Benjamin Hayes, and J.P. Widney. 1876. An Historical Sketch of Los Angeles County, California. Los Angeles: Louis Lewin, & Co.

Warren, Claude N. 1968. Cultural Traditions and Ecological Adaptation on the Southern California Coast. In, Archaic Prehistory in the Western United States, edited by Cynthia Irwin-Williams. Eastern New Mexico University Contributions in Anthropology 1(3):1– 14.

Water and Power Associates. 2020. "Aviation in Early Los Angeles." Available at: https://waterandpower.org/museum/Aviation_in_Early_LA_(Page_2).html. Accessed December 13, 2021.

Water Replenishment District of Southern California. 2021. Regional Groundwater Monitoring Report, Water Year 2019-2020, Central and West Coast Basins, Los Angeles County, CA. April. Available at: https://www.wrd.org/reports/regional-groundwater-monitoring-report. Accessed May 24, 2021.

Weaver, John D. 1973. L.A. El Pueblo Grande, pp. 12–17. Pasadena: Ward Ritchie Press.

Western Bat Working Group. 2019. Western Bat Species. Available at: http://wbwg.org/western-bat-species/. Accessed April 15, 2021.

Western Regional Climate Center, Montebello California 1979 - 2011 Monthly Climate Summary, Available at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca5790. Accessed: July 23, 2021,

Yerkes and Campbell. 2005. Preliminary Geologic Map of the Los Angeles 30x60 Minute Quadrangle, USGS.

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