Los Angeles County
Metropolitan Transportation Authority

DRAFT - Environmental Impact Report

State Clearinghouse No. 2020109001

July 2021

ANTELOPE VALLEY LINE CAPACITY AND SERVICE IMPROVEMENTS PROGRAM

Metro®

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACM	Asbestos-Containing Materials
AVL	Antelope Valley Line
BLM	Bureau of Land Management
BMP	Best Management Practice
BP	Before Present
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CNEL	Community Noise Equivalent Level
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CUPA	Certified Unified Program Agency
DPR	Department of Parks and Recreation
DTSC	Department of Toxic Substance Control
EIR	Environmental Impact Report
ESA	Endangered Species Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
HHMD	Health Hazardous Materials Division
HWCL	Hazardous Waste Control Law
IPaC	Information for Planning and Consultation
ISA	International Society of Arboriculture

LACDPW	Los Angeles County Department of Public Works
LACM	Los Angeles County Museum
LADBS	Los Angeles Department of Building and Safety
LAFD	Los Angeles Fire Department
LAMC	Los Angeles Municipal Code
LARWQCB	Los Angeles Regional Water Quality Control Board
LAUS	Los Angeles Union Station
LBP	Lead-Based Paint
Ldn	Day-Night Average Sound Level
Leq	Equivalent Sound Level
LOS	Level of Service
LUST	Leaking Underground Storage Tank
Metro	Los Angeles County Metropolitan Transportation Authority
MLD	Most Likely Descendants
mph	Miles per Hour
MPO	Metropolitan Planning Organizations
NAHC	Native American Heritage Commission
NHMLA	Natural History Museum of Los Angeles County
NML	Nest Monitoring Log
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHP	Office of Historic Preservation
OPR	Office of Planning and Resources
PBDB	Paleobiology Database
PCB	polychlorinated biphenyls
PCR	Public Code Resources
PPV	Peak Particle Velocity
PRC	Public Resources Code
RCRA	Resource Conservation and Recovery Act

RMS	Root Mean Square
ROW	Right-of-Way
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCORE	Southern California Optimized Rail Expansion
SCRRA	Southern California Regional Rail Authority
SCS	Sustainable Communities Strategies
SEA	significant ecological area
SLF	Sacred Lands File
SR	State Route
SRP	State Rail Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TCR	Tribal Cultural Resource
UCMP	University of California Museum of Paleontology
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish & Wildlife Services
UST	Underground Storage Tank
VMT	Vehicle Mile Traveled
WEAP	Worker Environmental Awareness Protection
WOTUS	Waters of the State

ES. Executive Summary

This Executive Summary provides a concise summary of the Los Angeles County Metropolitan Transportation Authority (Metro) Antelope Valley Line (AVL) Capacity and Service Improvements Program (Proposed Project or Project) and its potential environmental effects. It contains 1) the purpose of the Draft Environmental Impact Report (EIR), 2) a summary of the environmental review process, 3) project objectives, 4) the project history, 5) a description of the Proposed Project (including construction, operations and cost), 6) a summary of environmental impacts and mitigation measures, 7) areas of controversy/issues to be resolved, and 8) a comparison of the Proposed Project to alternatives.

The Proposed Project involves the construction of three capital improvements which would provide the capacity required to allow commuter rail service to increase along the AVL to 30-minute bi-directional headways between Los Angeles Union Station (LAUS) and the Santa Clarita Valley and up to 60-minute bi-directional headways between the Santa Clarita Valley and the Lancaster Terminal by the year 2028. The three capital improvements include the Balboa Double Track Extension located in the City of Los Angeles, the Canyon Siding Extension located in the City of Santa Clarita, and the Lancaster Terminal Improvements located in the City of Lancaster. **Figure ES-1** shows the regional context of the Project corridor as well as the three capital improvement locations.

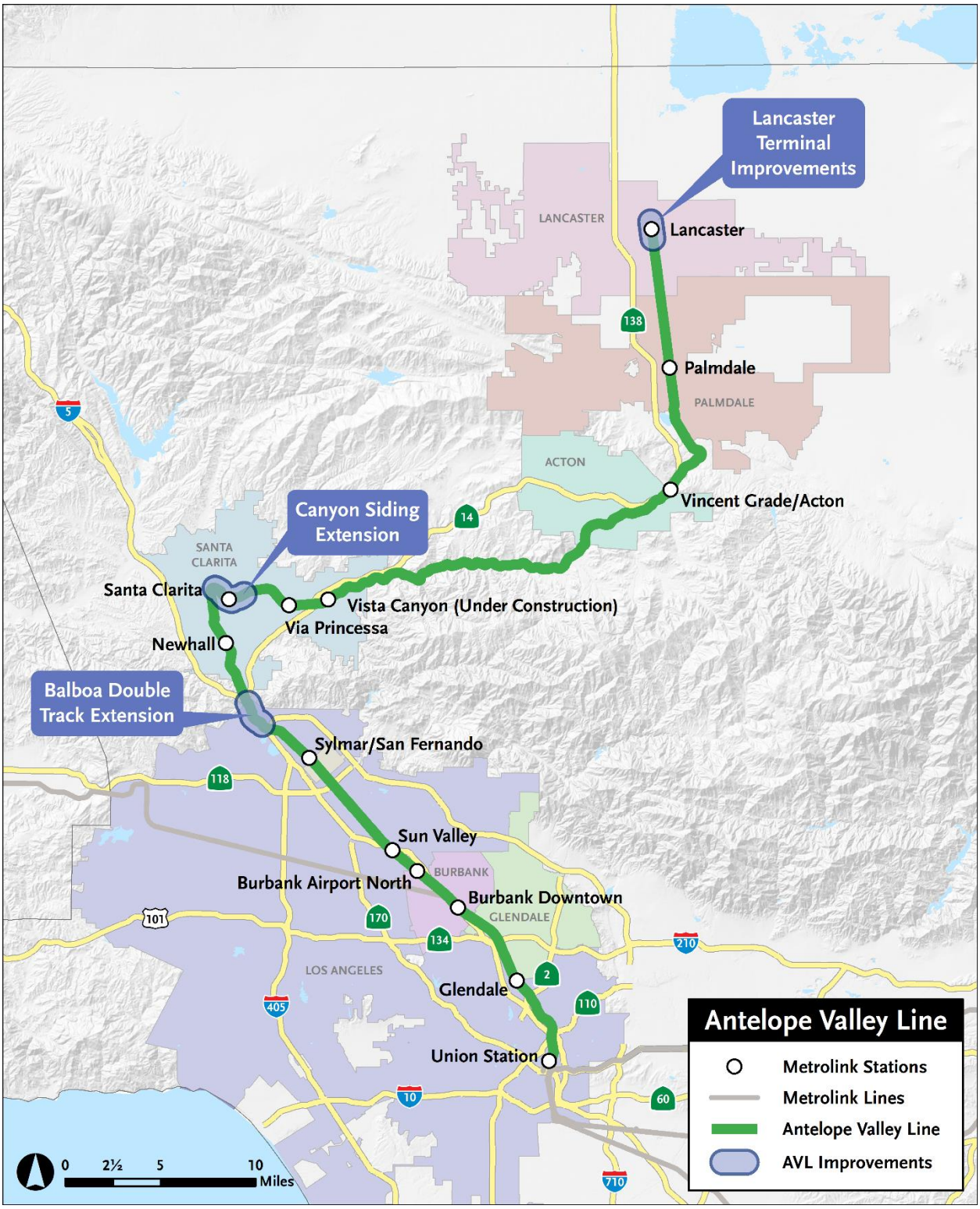
ES.1 PURPOSE OF THIS DRAFT ENVIRONMENTAL IMPACT REPORT

The Proposed Project qualifies for a statutory exemption from the California Environmental Quality Act (CEQA) granted by the State legislature. In particular, the Proposed Project is statutorily exempt from CEQA under Section 21080 (b)(10) of the California Public Resources Code (PRC) (also found in Section 15275(b) of State CEQA Guidelines [14 Cal. Code Regs., § 15000 et seq.])), Specified Mass Transit Projects), which provides that CEQA does not apply to:

> *A project for the institution or increase of passenger or commuter services on rail or highway rights-of-way already in use, including the modernization of existing stations and parking facilities.*

The Proposed Project is a project for the institution or increase of passenger and commuter services on rail already in use, including the modernization of existing stations and parking facilities. Therefore, the Proposed Project is exempt from CEQA under Public Resources Code Section 21080(b)(10) and CEQA Guidelines Section 15275(b). Metro has nevertheless elected to prepare this Draft EIR in the interest of comprehensively addressing community and stakeholder concerns and in an effort to provide a clear record of the potential environmental impacts of the Project. It also provides mitigation measures to address potential impacts.

Figure ES-1: Regional Context of the Study Corridor



SOURCE: Terry A. Hayes Associates Inc., 2021

The Draft EIR will inform public agency decision-makers and the public of the significant environmental effects of the Proposed Project, present possible ways to mitigate those significant effects, and evaluate reasonable alternatives to the Proposed Project that would avoid or minimize the Project's significant effects. The Draft EIR will also enable Metro to consider environmental consequences when deciding whether to approve the Proposed Project.

This Draft EIR is an informational document designed for the following purposes:

- Identify the potentially significant impacts of the Proposed Project on the environment.
- Indicate the manner in which those significant impacts can be minimized.
- Identify reasonable and potentially feasible alternatives to the Proposed Project that would avoid or reduce the significant impacts.
- Identify any significant unavoidable adverse impacts that cannot be mitigated.

ES.2 ENVIRONMENTAL REVIEW PROCESS

In 2017, Metro, in partnership with Metrolink and the North County Transportation Coalition, initiated a study to assess the AVL between Burbank and Lancaster and recommend a range of service frequencies and improvements to the AVL to enhance accessibility and reliability. The resultant study, the AVL Study, recommended a phased implementation of service increases and identified capital improvements to enable the recommended service improvements. In July 2019, the Metro Board of Directors approved a motion in support of the proposed service increases and directed staff to move forward with implementation, including obtaining environmental clearances. A Notice of Preparation (NOP) of the Draft EIR was prepared and distributed on October 1, 2020 to the State Clearinghouse and to various other public agencies and the general public for a 30-day scoping period. During the initial 30-day review period, Metro extended the scoping period for an additional 15 days – officially ending the scoping period on November 16, 2020. Three scoping meetings were held during the 45-day scoping period to facilitate public review and comment on the Proposed Project and the scope and contents of the Draft EIR. Metro received a total of 77 comments during the public scoping period. Generally, comments received were a mix of supportive and oppositional sentiments toward the Proposed Project.

After 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 compiled as part of the Final EIR. Responses to comments submitted by commenting agencies will be distributed to the agencies for review prior to consideration of the Final EIR by Metro's Board.

Following completion of the Final EIR, the Metro Board will consider whether to approve the Proposed Project. As discussed above, the Legislature has determined that projects for the institution or increase of passenger or commuter services in rail already in use, such as the Proposed Project, are exempt from CEQA. If the Metro Board decides to approve the Project, Metro may file a Notice of Exemption (NOE) pursuant to Public Resources Code Section 21152(b), finding that the Project is statutorily exempt from CEQA; Metro may also file a Notice of Determination.

Opportunities for the public to provide comments and participate in virtual public hearings are indicated below.

<table>
<tr><th colspan="2">Public Hearings</th></tr>
<tr><td colspan="2">Metro will conduct two virtual public hearings to take testimony on the Draft EIR during the public review and comment period. Public hearings will not be held in person to promote community safety during the 2019/2020 Coronavirus pandemic.

The presentation may be viewed during the public review period at:
https://www.metro.net/projects/avl/</td></tr>
<tr><td colspan="2"><u>Virtual public hearings will take place during the following dates and times:</u></td></tr>
<tr><td>Date: Wednesday, August 18, 2021
Time: 6:00 p.m. – 7:30 p.m.

Online link: bit.ly/35qFkcC
Webinar ID: 948 3461 0205

Call-In Number: (213) 338-8477

Armenian Phone Line: (646) 749-3335
Access Code: 509 148 549

Por teléfono en español: (646) 749-3335
Contraseña: 754 052 309</td><td>Date: Saturday, August 21, 2021
Time: 11:00 a.m. – 12:30 p.m.

Online link: bit.ly/3wD1Sms
Webinar ID: 998 8162 7606

Call-In Number: (213) 338-8477

Armenian Phone Line: (646) 749-3335
Access Code: 320 266 021

Por teléfono en español: (646) 749-3335
Contraseña: 248 035 021</td></tr>
<tr><th colspan="2">Public Comments</th></tr>
<tr><td colspan="2">The public review and comment period for this Draft EIR is from July 28, 2021 to September 10, 2021. During this period, public agencies, organizations, and individuals may submit written comments concerning the adequacy of the Draft EIR to:

Brian Balderrama, Senior Director
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza, Mail Stop: 99-17-2
Los Angeles, CA 90012
Email: AVL@metro.net

You may also call the Antelope Valley Line Capacity and Service Improvements Program hotline (213) 922-4844 and leave a message.</td></tr>
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ES.3 PROJECT OBJECTIVES

The AVL plays a critical role in connecting communities in North Los Angeles County to LAUS and the cities in between. It carries the third highest ridership in Metrolink's commuter rail system and is currently responsible for removing approximately one million weekday automobile trips from the region's roadways a year. Consistent with the State Rail Plan and Metrolink's Southern California Optimized Rail Expansion (SCORE) program, and in anticipation of substantial population and employment growth in the North Los Angeles County region over the next 20 years, Metro seeks to improve rail service on the AVL to realize its full potential as a regional

mobility enhancement and not just a peak-hour commuter service. Accordingly, the AVL Capacity and Service Improvements Program seeks to:

- Provide regular and more frequent Metrolink services to improve regional connectivity and accessibility through the enabling of 30-minute bi-directional passenger rail service to the Santa Clarita Valley and 60-minute bi-directional service to Lancaster along the AVL corridor.
- Improve passenger service reliability and efficiency on the AVL rail corridor.
- Provide necessary infrastructure improvements to enhance operational flexibility and reliability along the AVL corridor.
- Support the vision and goals for rail service in the region consistent with the California State Rail 2040 Plan and Metrolink's SCORE program.

ES.4 PROJECT HISTORY

In 2011, the Metro Board of Directors passed a resolution to formulate a strategic plan for infrastructure improvements for the AVL, with the directive to determine what improvements could be made to the existing line to significantly reduce the travel time between Lancaster/Palmdale and Los Angeles, as well as to enhance safety. In March 2012, the results of the Strategic Plan were presented to the Metro Board. Since the completion of this plan, at least 10 major capital improvements have been studied for the AVL rail corridor.

In 2017, Metro, in coordination with Metrolink and the North County Transportation Coalition, initiated a study to assess the AVL between Burbank and Lancaster. The resultant study, titled the AVL Study, examined opportunities to enhance rail service between the Burbank and Lancaster stations along the AVL using existing infrastructure and with potential infrastructure improvements that would mitigate existing operational constraints. A phased strategy was then developed for prioritizing investments and building capacity to realize incremental service improvements, based on benefits and costs. The AVL Study recommended three successive phases of service improvement: a near-term plan to adjust existing schedules to improve service frequency and provide late night service; a mid-term phase which consisted of the Proposed Project; and a long-term phase which included larger levels of investment as well as substantial service improvements intended to be implemented when and if funding were available.

In July 2019, the Metro Board approved a motion in support of implementing Service Scenarios 1 through 3 identified in the AVL Study which are summarized as follows:

1. Service Scenario 1 – Provide one additional late evening train between LAUS and Lancaster on Friday and Saturday evenings;
2. Service Scenario 2 – Provide two additional late evening trains on Friday and Saturday and two additional bi-directional mid-day services between LAUS and Lancaster; and
3. Service Scenario 3 – Provide bi-directional 30-minute service during the regular weekday between LAUS and Santa Clarita Valley and 60-minute bi-directional service to Lancaster.

To achieve these service scenarios the AVL Study identified four capital improvements which were recommended for their combination of operational benefits and cost effectiveness. These capital improvements are identified in the study as the Balboa Double Track Extension, Canyon Siding Extension, Lancaster Terminal Improvements, and the Brighton to McGinley Double Track. The Brighton to McGinley Double Track improvement was approved separately as part of the Brighton to Roxford Double Track Project. This EIR assesses the three remaining capital improvements required for implementation of Service Scenarios 1, 2 and 3, as presented in the AVL Study and supported by the Metro Board. Cumulative impacts are also assessed.

ES.5 PROPOSED PROJECT

The Proposed Project is intended to enable improved service along the AVL by constructing capital improvements at three locations strategically selected along the AVL corridor to provide the most operational flexibility possible for the level of investment available. These three capital improvements are the Balboa Double Track Extension in the City of Los Angeles, the Canyon Siding Extension in the City of Santa Clarita, and the Lancaster Terminal Improvement in the City of Lancaster.

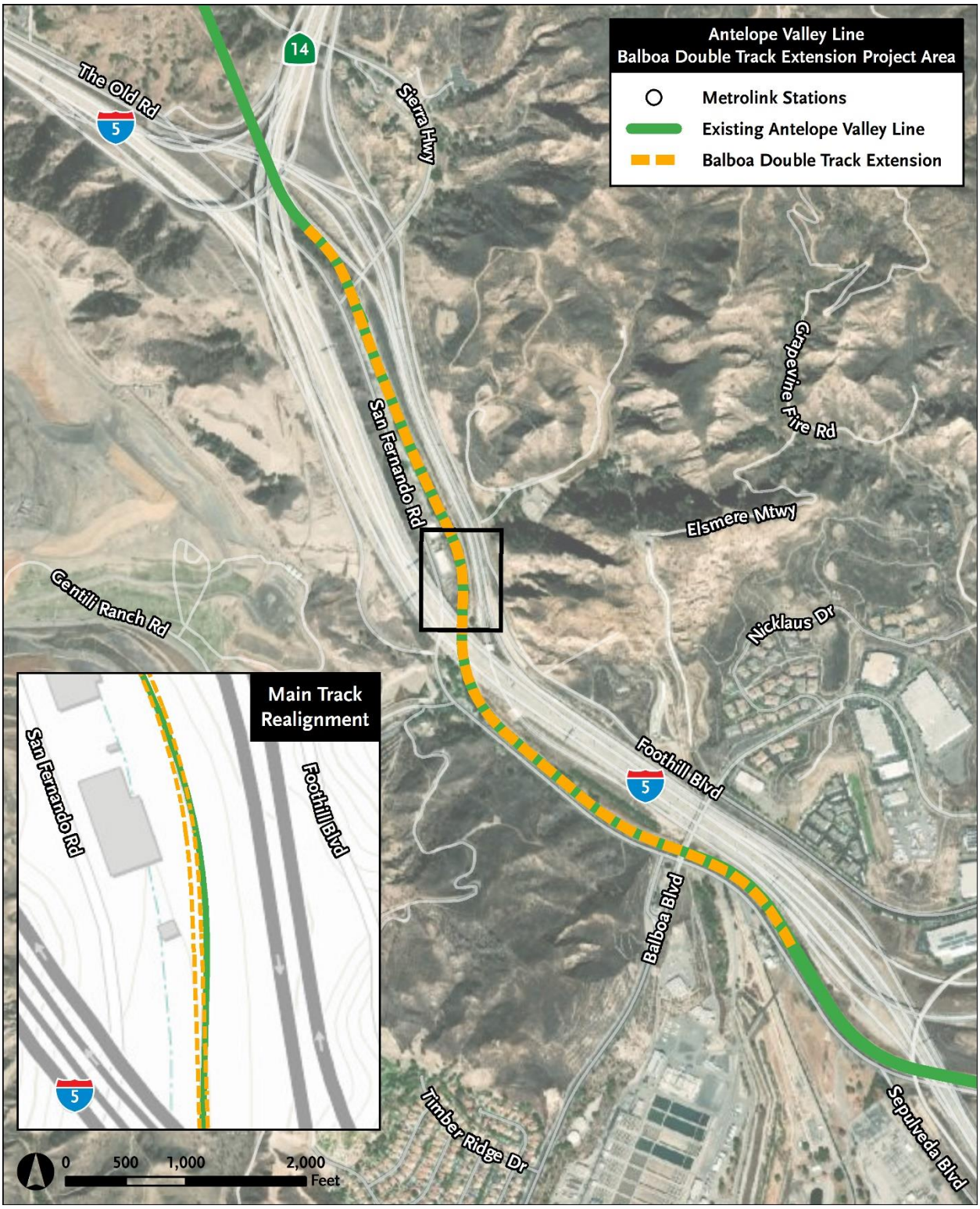
At the request of Metrolink, the Draft EIR analyzes platform design options at both the Santa Clarita Station and the Lancaster Terminal. These design options are outside the scope of the existing funding agreements for the Project, and thus, additional funding to implement these design options would be required. These design options are discussed below.

Figure ES-1 shows the regional context of the Project corridor and the location of the proposed capital improvements.

ES.5.1 Balboa Double Track Extension

The Balboa Double Track Extension would extend the existing Sylmar siding approximately 6,300 feet north from Balboa Boulevard to Sierra Highway. It is anticipated that the existing railroad right-of-way (ROW) would accommodate most of the Balboa Double Track Extension. In addition to installation of the proposed double track extension, the improvement would require realignment of the existing Main Track through portions of the site to accommodate the second track and the required clearance to existing structures. The proposed double track would be positioned to the east of the existing AVL Main Track and would tie-in at the existing Sylmar siding terminus on the south end of the site and reconnect with the existing Main Track at the north end just south of the Sierra Highway road bridge. **Figure ES-2** presents the location of the proposed improvement and its surroundings.

Figure ES-2: Balboa Double Track Extension Vicinity



ES.5.2 Canyon Siding Extension

The Canyon Siding Extension would improve the existing Saugus Siding by adding approximately 8,400 feet of new track between Bouquet Canyon Road and Golden Oak Road. The Canyon Siding Extension would not require realignment of the Main Track as there is adequate horizontal clearance for both tracks within the existing ROW. The proposed Canyon Siding Extension would include a second side-platform at the existing Santa Clarita Metrolink Station. An at-grade pedestrian crossing would be installed west and east of station platforms to allow passengers to access the proposed new station platform. A new crossover track south of the Santa Clarita Station would be provided to facilitate turnback of Metrolink trains at Santa Clarita Station and improve operational flexibility and reliability. **Figure ES-3** provides the location of the proposed Canyon Siding Extension and its surroundings.

Platform to Platform Pedestrian Undercrossing Design Option

This design option would use a grade separated pedestrian undercrossing at Santa Clarita Station to connect the existing platform to the new second platform, rather than the proposed at-grade pedestrian crossing.

Island Platform with Platform to Parking Lot Pedestrian Undercrossing Design Option

As an alternative to the proposed additional side platform and at-grade pedestrian crossing, this design option would provide a new island platform (with two platform faces) and would include a grade separated pedestrian undercrossing connecting the Santa Clarita Metrolink Station parking area to the new island platform.

Figure ES-3: Canyon Siding Extension Vicinity

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ES.5.3 Lancaster Terminal Improvements

The Lancaster Terminal Improvements would include the expansion of the existing train layover facilities by adding one new 1,000-foot-long and two 500-foot-long train storage tracks in the vicinity of the existing Lancaster Terminal Metrolink Station. The train storage track design may require an operating easement within the UPRR ROW subject to further design refinements. The proposed layover facility would accommodate up to four 5-car trains. **Figure ES-4** provides the location of the proposed improvement and its surroundings.

Island Platform with Pedestrian Undercrossing Design Option

This design option would provide an island platform with two platform faces at Lancaster Station. The island platform would be constructed within the footprint of the existing station platform and parking lot at Lancaster Station. A grade separated pedestrian undercrossing to the island platform would be constructed in the middle of the new island platform with ramps for access to the proposed island platform.

Island Platform with Pedestrian Overcrossing Design Option

The Island Platform with Pedestrian Overcrossing Design Option would have generally the same track and station configuration as the Island Platform with Pedestrian Undercrossing Design Option, and would use a grade separated pedestrian overcrossing to access the island platform. The pedestrian overcrossing would be constructed on the north end of the island platform with stairs and an elevator to go up and over the railroad track. Pedestrians would access the ground level in the station parking lot near the existing Lancaster Metrolink Station building.

Island Platform with Pedestrian At-Grade Crossing Design Option

The Island Platform with Pedestrian At-Grade Design Option would have generally the same track and station configuration as the Island Platform with Pedestrian Undercrossing Design Option and Island Platform with Pedestrian Overcrossing Design Option, and would use an at-grade pedestrian crossing to access the island platform. The pedestrian at-grade crossings would be constructed on the north and south ends of the island platform. Pedestrians would access the crossing via existing or new sidewalks in the station parking lot.

Figure ES-4: Lancaster Terminal Improvements Vicinity Map

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ES.6 DESCRIPTION OF CONSTRUCTION

The Proposed Project would be constructed almost entirely within existing rail or street ROW. Minor acquisitions, easements, or temporary construction easements may be necessary at select locations, mainly to accommodate construction staging and laydown areas or the required grading activities associated with the proposed improvements. Generally, construction activities associated with each capital improvement would include site clearing, grading and retaining wall installation, utility relocation and installation, and track and systems installation and station platform construction.

Construction equipment anticipated to be used for the Proposed Project includes track installation equipment, front-end loaders, dump and haul trucks, excavators, medium to large rams for braking rock, small/medium scrapers, drills for tiebacks/rock bolts, construction forklifts, crane, concrete pump trucks, concrete haul trucks, rail-mounted drill rigs (for pier protection wall installation) and utility/service vehicles.

The construction duration of the Proposed Project is expected to last approximately 24 months per capital improvement. For safety reasons, and to limit disruptions to rail service, project specific work windows would be required for much of the construction work. Similarly, certain activities that could disrupt rail service may require nighttime and weekend construction to minimize disruption. The overall project schedule anticipates construction commencing in 2024 and being completed in 2028.

ES.7 OPERATIONAL CHARACTERISTICS

The Proposed Project is intended to enable the increase in Metrolink service to 30-minute bi-directional service from LAUS to the Santa Clarita Valley and 60-minute bi-directional services from the Santa Clarita Valley to Lancaster. As of 2019, Metrolink operates 30 weekday trains, 12 Saturday trains, and 12 Sunday trains with an end-to-end trip time of approximately two hours and 15 minutes. Peak service operates roughly every 30-60 minutes, with most of the trains making all stops and one train providing express service. Non-peak direction service operates from once every 45 minutes to once every two hours and does not serve the three northern-most stations (Vincent Grade/Acton, Palmdale, and Lancaster). Train speeds along the AVL range from approximately 30 to 70 miles per hour depending on topography, track geometry, and whether there is a single track or double track configuration.

ES.8 AREAS OF CONTROVERSY AND ISSUES TO BE RESOLVED

Areas of Controversy

Known areas of controversy associated with the Draft EIR include:

- **Noise**: During scoping for the Proposed Project, stakeholders and community members identified concerns related to existing rail noise along the AVL and potential noise that would be generated by increased Metrolink service.

- **At-grade crossing delays and safety**: Various stakeholders have expressed concerns with the effect the Proposed Project will have on vehicle delay at existing at-grade rail crossings along the AVL. Pursuant to Senate Bill (SB) 743, automobile delay (as measured solely by level of service or similar measures of vehicular capacity or traffic congestion), is no longer treated as an environmental impact under CEQA. (Public Resources Code Section 21099(b)(2); State CEQA Guidelines Section 15064.3(a).) Automobile delay is therefore not addressed in the Draft EIR. Additionally, related to delays at at-grade crossings, there are concerns regarding increased safety risk at crossings related to increased Metrolink activity along the AVL.
- **Access to public meetings**: Concerns, particularly in the Town of Acton, have been expressed regarding access to virtual public meetings, which have been conducted for the Proposed Project due to the COVID 19 pandemic. Notably, stakeholders requested that Metro make accommodations for the Town of Acton to address issues with low internet bandwidths and availability.

Issues to be Resolved

Issues to be resolved associated with the Draft EIR include:

- **Station design options**: The Proposed Project includes a base design concept for platform configuration and passenger access at the Santa Clarita Station. Metro has identified design options at both the Santa Clarita Station and the Lancaster Terminal at the request of Metrolink. However, these design options are outside the scope of the existing funding agreements for the Project, and thus, additional funding to implement these design options would be required. The Draft EIR analyzes potential impacts associated with each of the identified design options to provide flexibility in the ongoing design of the Project should additional funding become available.
- **Metrolink service increase and rollingstock**: Metro, as the owner of the AVL ROW, has developed this Draft EIR to address construction of the three capital improvements as well as impacts associated with the increase in service along the AVL. However, funding procured by Metro would only construct the proposed capital improvements, and Metrolink, as the operator of the AVL, would be responsible for the planning and funding of the proposed service increase on the AVL. These efforts include purchasing the additional rolling stock required to provide increased service.

ES.9 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the Project is implemented. Sections 3.1 through 3.12 of this EIR provide a detailed analysis of all significant environmental impacts related to the project. These sections identify feasible mitigation measures, where available, that could avoid or reduce significant impacts and determine whether the mitigation measures would reduce these impacts to a less than significant level. Chapter 5.0, Cumulative Impacts, of this EIR identifies the significant cumulative impacts resulting from the combined

impacts of the Project and related past, present, and reasonably probable future projects considered in the cumulative analysis.

If a specific impact in either the Project or cumulative analysis cannot be fully reduced to a less than significant level, it is considered a significant and unavoidable impact. Implementation of the Proposed Project would result in significant and unavoidable impacts related to construction noise and vibration. The following impacts would be significant and unavoidable even after the implementation of mitigation measures:

- Operation of the Project would conflict with the South Coast Air Quality Management District (SCAQMD) 2016 Air Quality Management Plan (AQMP) as the Project would generate emissions of nitrogen oxides (NO_X) that would exceed SCAQMD regional thresholds.
- Operation of the Project would generate emissions of nitrogen oxides (NO_X) that would exceed the SCAQMD regional thresholds resulting in a cumulatively considerable net increase of NO_X contributing to regional Nonattainment in the South Coast Air Basin (SCAB). While no mitigation is available to address NO_X emissions from Metrolink diesel locomotives, Metrolink is studying ways to reduce emissions throughout its fleet including transitioning to renewable diesel fuel and new propulsion technologies with the ultimate goal of zero emissions trains.
- Construction and operation of the Project would result in a net increase in greenhouse gas (GHG) emissions associated with diesel fuel consumption from rail propulsion and therefore would influence the regional GHG inventory through direct emissions of GHGs, While there is no mitigation available to address this direct increase in GHGs, Metrolink is studying ways to reduce emissions throughout its fleet with the ultimate GHG reduction target of reducing total fleetwide operational emissions by 50 percent by 2030.
- Construction activities associated with each of the three capital improvements would result in increases in noise levels that would exceed local significance thresholds. While mitigation measures would likely reduce noise impacts associated with the Canyon Siding Extension construction to less-than-significant in the City of Santa Clarita, higher noise level exceedances associated with the Balboa Double Track Extension in the City of Los Angeles and the Lancaster Terminal Improvements in the City of Lancaster may not be reduced below applicable significance thresholds by mitigation.
- Construction activities associated with each of the three capital improvements would result in vibration levels that would exceed Federal Transit Administration (FTA) annoyance thresholds. While mitigation would likely reduce vibration impacts associated with the Canyon Siding Extension construction to less-than-significant, mitigation may not reduce vibration impacts associated with the Balboa Double Track Extension or the Lancaster Terminal Improvements below impact FTA annoyance impact thresholds.

ES.10 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

This Draft EIR has been voluntarily prepared by Metro to analyze the potential significant environmental impacts of the Proposed Project and to identify mitigation measures capable of avoiding or substantially reducing significant impacts.

Potential impacts of the Proposed Project have been divided into three categories: significant unavoidable impacts, significant impacts that can be mitigated to less-than-significant levels, and impacts that are less than significant or non-existent.

The criteria for the determination of a significant impact in each environmental topic area are discussed in Chapter 3.0, Environmental Impact Analysis, and Chapter 4.0, Other Environmental Considerations. **Table ES-1** provides a summary of the potential environmental impacts, recommended mitigation measures, and the level of significance after mitigation.

Table ES-1: Summary of Impacts and Mitigation Measures

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
AESTHETICS		
Construction equipment and activities associated with the Canyon Siding Extension would be visible to sensitive viewer groups and would temporarily alter the views of the undeveloped hillsides from the residential area north of the Santa Clara River and along the Santa Clara River Trail, resulting in a potentially significant impact to a scenic vista.	**AES-1** During construction in the City Santa Clarita, the perimeter of construction areas, including but not limited to, staging and laydown areas, shall be screened to shield views of construction activities from the residential neighborhood north of Santa Clara River and the Santa Clara River Trail.	Less Than Significant
A soil/rock cut slopes would be installed along the hillside to the south of the Canyon Siding Site, resulting in a permanent change to the hillside and a potentially significant impact to a scenic vista available to residents north of the Santa Clara River and along the Santa Clara River Trail.	**AES-2** In areas where the slope ratio of the soil/rock cut slopes permits vegetation growth, plants shall be placed on the soil/rock cut slopes. The type of vegetation to be planted shall be consistent with the natural vegetation that is generally associated with the undeveloped hillsides adjacent to the rail right-of-way	Less Than Significant
Nighttime construction work could potentially increase nighttime light or glare, temporarily affecting visibility and possibly resulting in temporary adverse effects (and a potentially significant impact) related to spillover lighting and glare.	**AES-3** During construction, nighttime construction lighting shall be directed toward the interior of the construction area and shielded with temporary construction screening to limit light spillover into adjacent areas.	Less Than Significant
AIR QUALITY		
The Proposed Project would conflict with the SCAQMD 2016 AQMP because rail propulsion operations would generate emissions of NO_X that would exceed the SCAQMD regional thresholds.	No Mitigation Available.	Significant and Unavoidable

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
The Proposed Project rail propulsion operations would generate emissions of NO_X that would exceed the SCAQMD regional thresholds resulting in a cumulatively considerable net increase of NO_X for which the SCAQMD is non-attainment.	No Mitigation Available.	Significant and Unavoidable
BIOLOGICAL RESOURCES		
Construction of the Proposed Project would result in the removal of trees and vegetation used by migratory birds and bats for nesting, a potentially significant impact.	**BIO-1** Vegetation removal shall be conducted outside of the bird nesting season (nesting typically occurs between February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a Metro-approved qualified bird biologist shall conduct preconstruction surveys to locate active nests within seven days prior to vegetation removal in each area with a suitable nesting habitat. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be reduced based on species-specific and site-specific conditions as determined by the qualified biologist. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active. If work occurs on existing bridges with potential nest sites that will be removed or will have modifications to the substructure, these should be conducted between February 1 and September 30. All bird nests shall be removed prior to February 1. Immediately prior to nest removal, a qualified biologist shall inspect each nest for the presence of torpid bats, which are known to use old swallow nests.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	Nest removal shall be conducted under the guidance and observation of a qualified biologist. Removal of nests on bridges that are under construction shall be repeated as frequently as necessary to prevent nest completion unless a nest exclusion device has already been installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of birds until October or the completion of construction. A biological monitor shall be present during all ground-disturbing activities to ensure no impacts occur to nesting birds during nesting bird season (mid-March to mid-May), if applicable, as well as to ensure minimal impacts to other plant and animal species **BIO-2** To avoid impacts to nesting birds, Metro shall submit to the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) a Nesting Bird Management, Monitoring, and Reporting Plan for review and approval prior to commencement of Proposed Project construction activities during the breeding season (February 1 to August 31, and as early as January 1 for some raptors). The Nesting Bird Management, Monitoring, and Reporting Plan should include the following: • Nest survey protocols describing the nest survey methodologies, including the following: ○ A management plan describing the methods to be used to avoid nesting birds and their nests, eggs, and chicks; ○ A monitoring and reporting plan detailing the information to be collected for incorporation into a regular Nest Monitoring Log (NML) with sufficient details to enable USFWS and CDFW to monitor the Metro's compliance with California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513;	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	○ A schedule for the submittal (usually weekly) of the NML; ○ Standard buffer widths deemed adequate to avoid or minimize significant project-related edge effects (disturbance) on nesting birds and their nests, eggs, and chicks; ○ A detailed explanation of how the buffer widths were determined; and ○ All measures Metro will implement to preclude birds from utilizing project-related structures (i.e., construction equipment, facilities, or materials) for nesting. • Preconstruction nesting bird surveys shall be completed within 72 hours of construction-related activities and implement appropriate avoidance measures for identified nesting birds. To determine the presence of nesting birds that the project activities may affect, surveys should be conducted beyond the Project Area - 300 feet for passerine birds and 500 feet for raptors. The survey protocols should include a detailed description of methodologies utilized by CDFW-approved avian biologists to search for nests and describe avian behaviors that indicate active nests. The protocols should include but are not limited to the size of the Project Area being surveyed, method of search, and behavior that indicates active nests. Each nest identified in the Project Area should be included in the NML. The NMLs should be updated daily and submitted to the CDFW weekly. Since the purpose of the NMLs is to allow the CDFW to track compliance, the NMLs should include information necessary to allow comparison between nests protected by standard buffer widths recommended for the Proposed Project (300 feet for passerine birds,	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	500 feet for raptors) and nests whose standard buffer width was reduced by encroachment of project-related activities. The NMLs should provide a summary of each nest identified, including the species, status of the nest, buffer information, and fledge or failure data. The NMLs will allow for tracking the success and failure of the buffers and will provide data on the adequacy of the buffers for certain species. The applicant(s) will rely on its avian biologists to determine the appropriate standard buffer widths for nests within the Project Area to employ based on the sensitivity levels of specific species or guilds of avian species. The determination of the standard buffer widths should be site- and species-/guild-specific and data-driven and not based on generalized assumptions regarding all nesting birds. • The determination of the buffer widths should consider the following factors: o Nesting chronologies; o Geographic location; o Existing ambient conditions (human activity within line of sight—cars, bikes, pedestrians, dogs, noise); o Type and extent of disturbance (e.g., noise levels and quality—punctuated, continual, ground vibrations: blasting-related vibrations proximate to tern colonies are known to make the ground-nesting birds flush the nests); o Visibility of disturbance; o Duration and timing of disturbance; o Influence of other environmental factors; and o Species' site-specific level of habituation to the disturbance. Application of the standard buffer widths should avoid the potential for project-related nest abandonment and fledgling failure and minimize any disturbance to the nesting behavior. If project activities	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	cause or contribute to a bird being flushed from a nest, the buffer must be widened. **BIO-3** Prior to tree removal or demolition activities, Metro shall retain a qualified biologist to conduct a focused survey for bats and potential roosting sites within buildings to be demolished or trees to be removed. The surveys can be conducted by visual identification and can assume presence of hoary and/or pallid bats. Alternatively, the bats can be identified to a species level with the use of a bat echolocation detector such as an "Anabat" unit. If no roosting sites or bats are found, a letter report confirming absence shall be sent to the CDFW and no further mitigation is required. If roosting sites or hoary bats are found, then the following monitoring and exclusion, and habitat replacement measures shall be implemented. If bats are found roosting outside of nursery season (nursery season typically occurs between May 1 through October 1), then they shall be evicted as described below. First, the bats shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a maternal roost, then the bats shall be evicted as described below. Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season. A 250-foot (or as determined in consultation with CDFW) buffer zone shall be established around the roosting site within which no construction or tree removal shall occur. Eviction of bats shall be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with CDFW, that allow the bats to exit the roosting site but prevent re-entry to the site. This	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	would include, but not be limited to, the installation of one-way exclusion devices. The devices shall remain in place for seven days and then the exclusion points and any other potential entrances shall be sealed. This work shall be completed by a BCI-recommended exclusion professional. The exclusion of bats shall be timed and carried concurrently with any scheduled bird exclusion activities. Each roost lost (if any) will be replaced in consultation with the California Department of Fish and Game and may include construction and installation of BCI-approved bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the structures may be removed or sealed. **BIO-4** A revegetation plan will be developed by a qualified biologist to guide the restoration of native vegetation temporarily or permanently impacted by project implementation. **BIO-5** Limits of disturbance will be staked during construction activities to ensure that impacts to the Project Area are minimized, and staking will stay in place until final site stabilization. **BIO-6** If construction must occur during nighttime hours, lighting that produces a green colored beam with an automatic sensor shall be utilized. **BIO-7** All native vegetation in California Gnatcatcher habitat (coastal sage scrub) that needs to be cleared for project construction must be cleared outside of breeding season (breeding season typically occurs between February 15 to August 31). If construction activities must take place in gnatcatcher	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	breeding season, a pre-construction survey will be conducted for active nests within 500 feet of the construction footprint. Surveys will continue weekly throughout the breeding season. If a nest is found within 250 feet of ongoing project activities, Proposed Project work will cease within that 250 feet until the nest has failed or fledged.	
Construction of the Balboa Double Track Extension and the Canyon Siding Extension would have the potential to remove riparian vegetation.	**BIO-8** Riparian zones within the three capital improvement sites shall be protected through control of invasive plant and animal species following final site stabilization. **BIO-9** In areas where riparian features are below upland features, a qualified biologist shall determine if any disturbance would occur in upland areas such that runoff could affect wetlands. **BIO-10** Native biota shall be re-introduced to riparian areas impacted by Proposed Project construction as required.	Less Than Significant
Construction activities associated with the Balboa Double Track Extension have the potential to result in hydrological interruption through the inadvertent disturbance of water features associated with grading activities, which may affect riverine features that support wetlands.	**BIO-11** To prevent inadvertent disturbance to areas outside the limits of grading, all grading shall be monitored by a biologist. A Metro-approved Project Biologist shall be contracted to perform biological monitoring during all grading, clearing, grubbing, trenching, and construction activities. The following shall be completed: • The Project Biologist shall perform the monitoring duties before, occasionally during, and after construction. The Project Biologist shall perform the following duties: ○ Attend the preconstruction meeting with the contractor and other key construction personnel prior to clearing, grubbing, or grading to reduce conflict between the timing and location of construction activities and other mitigation requirements (e.g., seasonal surveys for nesting birds);	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	○ Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas prior to clearing, grubbing, or grading; ○ Discuss procedures for minimizing harm to or harassment of wildlife encountered during construction with the contractor and other key construction personnel prior to clearing, grubbing, or grading; ○ Review and/or designate the construction area in the field with the contractor in accordance with the final grading plan prior to clearing, grubbing, or grading; ○ Conduct a field review of the staking to be set by the surveyor, designating the limits of all construction activity prior to clearing, grubbing, or grading; ○ Be present during initial vegetation clearing, grubbing, and grading; ○ Flush special-status species (i.e., avian or other mobile species) from occupied habitat areas immediately prior to brush-clearing and earthmoving activities; and ○ To address hydrology impacts, the Project Biologist shall verify that grading plans include Stormwater Pollution Prevention Plan. **BIO-12** To comply with the state and federal regulations for impacts to "waters of the United States and state," the following agency permits are required, or verification that they are not required shall be obtained. • The following permit and agreement shall be obtained, or evidence from the respective resource agency that such an agreement or permit is not required shall be provided: ○ A Clean Water Act, Section 401/404 permit issued by the California Regional Water Quality Control Board (RWQCB) and the USACE for all project-related	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	disturbances of waters of the United States and/or associated wetlands. ○ A Section 1602 Streambed Alteration Agreement issued by the CDFW for all project-related disturbances of any streambed. • Documentation: Metro shall consult each agency to determine if a permit or agreement is required. Upon completion of the agency review of this project, the applicant shall provide a copy of the permit(s)/ agreement(s), or evidence from each agency that such an agreement or permit is not required for compliance. • Timing: Prior to approval of any grading and/or improvement plans and issuance of any Grading or Construction Permits. • Monitoring: Metro shall review the permits/agreement for compliance with this condition. Copies of these permits should be included in the grading plans.	
Construction activities at all three capital improvement sites have the potential to remove mature trees, including Coast Live Oak at the Canyon Siding Extension site, as part of site clearing activities and associated grading activities.	**BIO-13** Preconstruction surveys for protected trees (native trees four inches or more in cumulative diameter, as measured at 4.5 feet above the ground level) that are subject to protection under any relevant tree protection ordinance, shall be conducted by a registered consulting arborist with the American Society of Consulting Arborists at least 120 days prior to construction. The locations and sizes of all protected trees shall be identified prior to construction and overlaid on project footprint maps. The registered consulting arborist shall prepare a Protected Tree Report and shall submit three copies to the relevant local jurisdiction. Any protected trees that must be removed due to project construction shall be replaced at a 2:1 ratio (or up to a 4:1 ratio for protected trees on private property), except when the protected tree is relocated on the same property, the relevant local agency has approved the tree for removal, and the relocation is economically reasonable and favorable to the	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	survival of the tree. Each replacement tree shall be at least a 15-gallon specimen, measuring one inch or more in diameter, one foot above the base, and at least seven feet in height measured from the base. **BIO-14** Protect trees that will possibly receive impacts to the root system by restricting root cuts to the outer region of the roots using a distance formula recommended by the International Society of Arboriculture. Adjusting utility relocations to avoid as many tree trunks and root clusters as possible and eliminate direct impacts/removal of trees. Hand digging the root protection zones will reduce indirect impacts to the root systems. **BIO-15** Provide temporary supplemental irrigation to existing trees during construction, as necessary. **BIO-16** Replace all impacted trees that cannot be saved with native drought tolerant trees of comparable size to the impacted trees. **BIO-17** Determine proven methods of stabilizing the existing landscape to minimize disturbances beyond the area of cut and fill. **BIO-18** Consider "Geo-cell" type planted retaining wall stabilization structures, if they can be planted with native chaparral seed. **BIO-19** Provide compost to hold moisture in the soil. Utilize watering bags for the establishment period.	
CULTURAL RESOURCES		
Ground-disturbing activities during construction of the Proposed Project have the potential to encounter previously undiscovered and undocumented archaeological resources, a potentially significant impact.	**CUL-1** Prior to issuance of grading permits for each capital improvement site, a qualified archeologist, meeting the Secretary of the Interior's Standards shall be retained to serve as Project Archaeologist and to develop and supervise the archaeological monitoring program. In addition, Native American monitors from the Consulting Tribe(s) shall be	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	retained to monitor earth-moving activities in native (i.e., non-fill) sediments. Native American monitoring shall be conducted on a rotational basis between Consulting Tribes (should more than one be involved) during these construction activities, and attendance is ultimately at the discretion of the Tribe(s). The archaeological and Native American monitors shall be present for all ground-disturbing activities in native soil within the Project Area. All archaeological monitors, working under the supervision of the Project Archaeologist, shall have construction monitoring experience and be familiar with the types of historical and prehistoric resources that could be encountered. Ground-disturbing activities include, but are not limited to, excavation, trenching, grading, and drilling. A sufficient number of archaeological and Native American monitors shall be present each workday to ensure that simultaneously occurring ground-disturbing activities receive thorough levels of monitoring coverage. The Project Archaeologist shall have the ability to recommend, with written and photographic justification, the reduction or termination of monitoring efforts to the Lead Agency (i.e., Metro), and should the Lead Agency and the Native American participant(s) concur with this assessment, then monitoring shall be reduced or ceased. If an inadvertent discovery of archaeological materials is made during project-related construction activities, the archaeological and Native American monitors shall have the authority to halt ground-disturbing activities within 50 feet of the resource(s) and an Environmentally Sensitive Area physical demarcation shall be constructed. The Project Archaeologist and Lead Agency shall be notified regarding the discovery. If prehistoric or potential tribal cultural resources (TCRs) are identified, the Consulting Tribes shall be notified. In the event of an	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	inadvertent discovery, the procedures outlined in a Cultural Resources Monitoring Plan (CRMP; Mitigation Measure **CUL-2**) shall be followed. **CUL-2** Prior to commencement of any grading activities on site, the Project Archaeologist shall prepare a CRMP. The CRMP shall be reviewed by the Lead Agency. The Consulting Tribe(s) shall be provided an opportunity to review and comment on the CRMP. The CRMP should include at a minimum: (1) the roles and responsibilities of the Project Archaeologist, archaeological monitors, and Native American monitors; (2) a description of monitoring procedures; (3) a description of the frequency of monitoring (e.g., full-time, part-time, spot checking); (4) a description of what types of resources may be encountered; (5) a description of circumstances that would result in the halting of work at the project site (e.g., what is considered a "significant" archaeological site); (6) a description of procedures to follow when a resource is encountered; (7) communication/notification protocols; and (8) a description of monitoring reporting procedures. If any significant historical resources, archaeological resources, TCRs, or human remains are found during monitoring, work shall be stopped within 50 feet of the resource until such time as the resource can be evaluated by the Project Archaeologist in coordination with the Lead Agency and Consulting Tribe(s). At the commencement of construction, an archaeologist and Native American representative shall provide a Worker Environmental Awareness Program (WEAP) training for all earth-moving personnel and their supervisors. WEAP materials will be developed and distributed to construction personnel over the lifetime of the Project. The program will inform personnel of the types of artifacts and features that may be encountered, the procedures to be followed if archaeological	

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	materials are unearthed during project excavation, contact information for the archaeological personnel, and the regulatory requirements for the protection of archaeological resources including penalties for violations.	
GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES		
The Proposed Project and Station Design Options pose risks of loss, injury, or death related to seismic conditions including ground shaking, liquefaction, slope failure and landslide, a potentially significant impact.	**GEO-1** Prior to the construction of the Proposed Project, Metro shall develop a geotechnical design report to address geological, seismic, and soil-related constraints encountered by the Project. The Proposed Project shall be designed based on the latest versions of local and state building codes and regulations in order to construct seismically resistant structures that help counteract the adverse effects of ground shaking. During final design, site-specific geotechnical investigations shall be performed at the sites where structures are proposed within liquefaction-prone designated areas. The investigations shall include exploratory soil borings with groundwater measurements. The exploratory soil borings shall be advanced, at a minimum, to the depths required by local and state jurisdictions to conduct liquefaction analyses. Similarly, the investigations shall include earthquake-induced settlement analyses of the dry substrata (i.e., above the groundwater table). The investigations shall also include seismic risk solutions to be incorporated into the final design (e.g., deep foundations, ground improvement, remove and replace) for those areas where liquefaction potential may be experienced. The investigation shall include stability analyses of slopes located within earthquake-induced landslide areas and provide appropriate slope stabilization measures (e.g., retaining walls, slopes with shotcrete faces, slopes re-grading). The geotechnical investigations and design solutions shall follow the “Guidelines for Evaluating and Mitigating Seismic	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	Hazards in California" Special Publication 117A of the California Geologic Service, as well as Metro's Design Criteria and the latest federal and state seismic and environmental requirements.	
There is potential that construction of the Proposed Project would unearth or destroy unique paleontological or geologic features, a potentially significant impact.	**PAL-1** Full-time paleontological monitoring shall be implemented when Saugus Formation (QTs, Tsr), Pico Formation (Tps, Tp), Towsley Formation (Ttos), or older sedimentary deposits (Qog, Qoa) are impacted. Excavations into artificial fill (af) and younger sedimentary deposits (Qf, Qyfc, Qa, Qg) shall be initially spot-checked during excavations that exceed depths of 5 feet to check for underlying, paleontologically sensitive older sedimentary deposits. If it is determined that only artificial fill (af), modern alluvial fan deposits (Qf), younger alluvial fan deposits (Qyfc), alluvial gravel, and clay of valley areas (Qa), or stream channel deposits (Qg) are impacted, the monitoring program may be reduced or suspended. **PAL-2** Prior to construction, a Paleontological Resources Impact Mitigation Program (PRIMP) shall be prepared that provides detailed recommended monitoring locations; a description of a paleontological resources worker environmental awareness program to inform construction personnel of the potential for fossil discoveries and of the types of fossils that may be encountered; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. A curation agreement from the NHMLA, or another accredited repository, shall also be obtained prior to excavation in the event that paleontological resources are discovered during the construction phase of the Project.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
GREENHOUSE GAS EMISSIONS		
Construction and operation of the Proposed Project would result in a net increase in greenhouse gas emissions as a result of increased diesel locomotive activity along the AVL.	**GHG-1** The following control techniques shall be included in project specifications and shall be implemented by the construction contractor. • Prepare a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy • Ensure that all construction equipment is properly tuned and maintained • Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions • Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary diesel power generators. • Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain CARB Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable **GHG-2**: In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with USEPA Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not	Significant and Unavoidable

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.	
HAZARDS AND HAZARDOUS MATERIALS		
Construction of the Proposed Project would involve the temporary use of potentially hazardous materials, including vehicle fuels, oils, and transmission fluids for on-site construction equipment.	**HAZ-1** Prior to the start of construction, the contractor shall provide Metro with an industrial waste management plan and/or a waste and hazardous materials management plan, such as a plan defined in Title 19 California Code of Regulations or a Spill Prevention, Control, and Countermeasure Plan. These plans shall be completed to Metro contractor specifications and will identify the responsible parties and outline procedures for hazardous waste and hazardous materials worker training, certifications, handling, storage, and transport during construction of the Project. The plan shall specify how the contractor will handle and manage wastes onsite, including: • Prescribe BMPs to follow to prevent hazardous material releases and cleanup of any hazardous material releases that may occur • Comply with the SWRCB Construction CWA Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials during construction	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	During construction, the contractor shall comply with applicable federal and state regulations that consider hazardous material handling and storage practices, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act. **HAZ-2** Prior to the start of construction, the construction contractor shall retain a qualified environmental consultant to prepare a Soil Management Plan, Soil Reuse Management Plan, Groundwater Management Plan, and/or Soil, Soil Vapor, and Groundwater Management Plan. These plans shall be completed to Metro's contractor specifications and submitted to Metro prior to any ground-disturbing activities for the project. Alternatively, soil, soil vapor, and/or groundwater plans shall be prepared separately and then compiled together as a Soil, Soil Vapor, and Groundwater Management Plan.	
Construction of the Proposed Project has the potential to encounter contaminated soil and groundwater which may contain aerially deposited lead, lead-based paints, asbestos containing materials, methane vapor, explosives, and other hazardous materials related to historic uses that handled hazardous materials.	**HAZ-3** Consistent with Metro's standard practice, prior to the start of construction, the contractor shall provide Phase I Environmental Site Assessments (ESAs) in accordance with standard American Society for Testing and Materials (ASTM) methodologies, to assess the land use history of each parcel that would be acquired for the Project. The determination of parcels that require a Phase II ESA (i.e., soil, groundwater, soil vapor subsurface investigations) shall be evaluated after the Phase I ESAs have been completed and would be based on the results of the Phase I ESAs. Specifically, if the Phase I ESAs identify suspected contamination in the soil, soil vapor, or groundwater; a Phase II ESA shall be conducted to determine whether the suspect contamination had resulted in soil, groundwater, or soil vapor contamination exceeding regulatory action levels.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	If the Phase II ESA concludes that the site is impacted, remediation or corrective action (e.g., removal of contamination, in-situ treatment, capping) shall be conducted prior to or during construction under the oversight of federal, state, and/or local agencies (e.g., United States Environmental Protection Agency (USEPA), Department of Toxic Substances Control (DTSC), Regional Water Quality Control Board (RWQCB), Los Angeles County) and in full compliance with current and applicable federal and state laws and regulations. Additionally, Voluntary Cleanup Agreements shall be used for parcels where remediation or long-term monitoring is necessary. **HAZ-4** The Balboa Double Track Extension shall be designed in accordance with the City of Los Angeles Municipal Code, Chapter IX, Building Regulations, Article 1, Division 71, Methane Seepage Regulations, as amended by the City of Los Angeles Methane Ordinance (No. 175790). Specific requirements shall be determined according to actual methane levels and pressures measured along the Affected Area, and the specific requirements shall be incorporated into the design and construction.	
Portions of the Canyon Siding Extension site are located within the historic boundaries of the Whitaker-Bermite Facility which is included in the Cortese List of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and construction of the Canyon Siding Extension has the potential to pose a hazard to the public or the environment.	See Mitigation Measures **HAZ-1, HAZ-2, HAZ-3,** and **HAZ-4**.	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
HYDROLOGY AND WATER QUALITY		
Construction of the Proposed Project would require grading and excavation requiring temporary changes to existing drainage patterns. Increases in sediment load from the construction area, including potentially contaminated soils associated with the Canyon Siding Extension site, could lead to alterations in drainage patterns due to accumulations of sediment in downstream areas as well as reduced water quality of receiving waters, if not properly managed. Following construction, AVL rail operations would contribute pollutants in concentrations and amounts that are typical for transportation facilities consistent with existing conditions and minor alterations to the existing drainage pattern of each capital improvement site requiring compliance with MS4 permit requirements.	**WQ–1** During construction, Metro shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), as they relate to project construction activities within the Balboa Double Track Extension, Canyon Siding Extension, and/or Lancaster Terminal Improvements sites. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor for each capital improvement shall implement all required aspects of the SWPPP during project construction. **WQ-2** Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County (Order No. 2012-0175, NPDES No. CAS004001), effective December 28, 2012 (known as the Phase I Permit). and NPDES General Permit for Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (NPDES No. CAS000004), as applicable This post-construction requirement shall apply to each of the capital improvement sites. Metro shall prepare a final Low Impact Design (LID) report in accordance with the applicable local LID Manual. These include the City of Los Angeles Planning and Land Development Handbook for Low Impact Development, May 9, 2016 and the County of Los Angeles Department of Public Works Low Impact Development Standards Manual, February 2014. The LID	Less Than Significant

Potentially Significant Impact	Mitigation Measures		Impact After Mitigation
		report shall identify the required BMPs to be in place prior to project operation and maintenance.	
While it is not anticipated that groundwater will be encountered, during construction if groundwater is encountered there is potential for the groundwater to be contaminated resulting in potential for significant impacts to surface water if allowed to flow into local storm drains or other surface water conveyance facilities.	**WQ-3**	In the event that groundwater is encountered during excavation, the construction contractor for each capital improvement site where groundwater is present shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit), or NPDES General Permit for Limited Threat Discharges to Surface Waters (Order No. R6T-2014-009, NPDES Permit No. CAG996001) as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Los Angeles, respectively.	Less Than Significant
	WQ-4	In the event that groundwater is encountered during excavation associated with Canyon Siding Extension, the contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Santa Clarita, respectively.	

Potentially Significant Impact	Mitigation Measures		Impact After Mitigation
Operation of the proposed layover facility associated with the Lancaster Terminal Improvements would discharge wastewater into the local sewer system resulting in a potentially significant impact if not managed properly.	**WQ-5**	Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the project. This shall include preparation of industrial SWPPP(s), as applicable.	Less Than Significant
NOISE AND VIBRATION			
Construction of the Proposed Project has the potential to generate noise that could increase ambient noise levels at sensitive receptors by up to 13 dBA at the Balboa Double Track Extension site in the City of Los Angeles, up to 6 dBA at the Canyon Siding Extension site in the City of Santa Clarita and up to 17 dBA at the Lancaster Terminal Improvements site in the City of Lancaster. These increases in noise levels would exceed local significance thresholds, a potentially significant impact.	**NV-1**	Metro's contractor shall develop a Noise Control Plan demonstrating how noise criteria would be achieved during construction. The Noise Control Plan shall be designed to follow Metro requirements, include construction noise control measures, measurements of existing noise, a list of the major pieces of construction equipment that would be used, and predictions of the noise levels at the closest noise-sensitive receivers (residences, hotels, schools, churches, temples, and similar facilities). The Noise Control Plan shall be approved by Metro prior to initiating construction. Where the construction cannot be performed in accordance with the local noise ordinances construction noise standards, the contractor would investigate alternative construction measures that would result in lower sound levels. The noise limits for each jurisdiction are shown in the following table, NV-1 Noise Limits.	Significant and Unavoidable

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation

NV-1 Noise Limits

Land Use	Noise Limit – Daytime [1] L_{eq} (dBA)	Noise Limit – Nighttime L_{eq} (dBA)
Any Residential – City of Los Angeles	Ambient +5 dBA	Ambient +5 dBA [2]
Single-Family Residential – Santa Clarita and Lancaster	75 [2]	60 [2, 3]
Multi-Family Residential – Santa Clarita and Lancaster	80 [2]	64 [2, 3]
Commercial	85 [2]	n/a [4]

[1] Daytime is defined as follows:
Los Angeles: 7 am – 9 pm (Mon-Fri), 8 am – 6 pm (Sat)
Santa Clarita: 7 am – 7 pm (Mon – Fri), 8 am – 6 pm (Sat)
Lancaster: 7 am – 8 pm (Mon – Sat)
[2] L.A County Code Limit
[3] Recommended limit if written permission is allowed for work outside of the "Daytime" defined hours
[4] Commercial properties are not typically sensitive at night.

The contractor would conduct noise monitoring to demonstrate compliance with contract noise limits. Noise-reducing methods that may be implemented by Metro include:

- If nighttime construction is planned, a noise variance may be prepared by the contractor, if required by the jurisdiction, that demonstrates the implementation of control measures to achieve noise levels as close to the nighttime limits of the applicable City of Los Angeles, City of Santa Clarita or City of Lancaster standards as possible.
- Use specialty equipment with enclosed engines, acoustically attenuating shields, and/or high-performance mufflers.
- Locate equipment and staging areas away from noise-sensitive receivers.
- Limit unnecessary idling of equipment.
- Install temporary noise barriers, noise control curtains, and/or noise enclosures. This approach can be particularly effective for stationary noise sources such as compressors and generators. These methods may not

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	be effective for elevated receivers; blocking line-of-sight is necessary. • Reroute construction-related truck traffic away from local residential streets and/or sensitive receivers. • Avoid impact pile driving where possible. Where geological conditions permit, the use of drilled piles or a vibratory pile driver is generally quieter. • Use electric instead of diesel-powered equipment and hydraulic instead of pneumatic tools. • Where possible, minimize the use of impact devices such as jackhammers and hoe rams, using concrete crushers and pavement saws instead. • If all conventional noise control measures cannot achieve the noise levels of the applicable City of Los Angeles, City of Santa Clarita or City of Lancaster standards and unavoidable excessive exceedances of the noise limits are predicted, Metro shall offer to temporarily relocate residents to a hotel. The Noise Control Plan shall define excessive exceedance of the noise limits and shall be approved by Metro.	
Construction of the Proposed Project includes use of heavy equipment that could produce vibration at nearby receivers that would exceed the FTA's annoyance threshold (72 VdB residential/75 VdB institutional), a potentially significant impact.	**NV-2** Specific measures to be employed to reduce or mitigate construction vibration impacts shall be developed by the contractor and presented in the form of a Vibration Monitoring Plan as part of the Noise Control Plan. Measurements shall be taken during peak vibration generating construction activities, and the results must be submitted to Metro on a weekly basis. The following precautionary vibration mitigation strategies should be implemented to minimize the potential for damage	Significant and Unavoidable

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	to any structures and annoyance to occupants in the Project area: • **Alternative Construction Procedures**: If high-vibration construction activities must be performed close to structures, it may be necessary for the contractor to use an alternative procedure that produces lower vibration levels. Examples of high-vibration construction activities include the use of vibratory compaction or hoe rams next to sensitive buildings. Alternative procedures include use of non-vibratory compaction in limited areas and a concrete saw in place of a hoe ram to break up pavement. • **Occupant Temporary Relocation.** When construction or demolition must occur very close to the receiver, other less conventional vibration reduction techniques shall be employed. A vibration disturbance coordinator shall be established for affected sensitive occupants regarding vibration annoyance. Vibration levels shall be monitored at the affected uses to determine if vibration levels exceed the vibration annoyance criteria of 0.016 inches per second at residential uses and 0.022 inches per second at commercial uses during construction activity. If construction vibration results in exceedances of the vibration annoyance criteria, occupants shall be temporarily relocated to a hotel during construction times when vibration will be the greatest and most intrusive. Construction activities in non-residential areas shall be scheduled during non-operational hours of commercial uses.	
TRANSPORTATION		
Construction of the Proposed Project may result in temporary traffic delays and	**TR-1** During the final engineering phase and at least 30 days prior to construction of each capital improvement, a construction	Less Than Significant

Potentially Significant Impact	Mitigation Measures		Impact After Mitigation
inconveniences as well as diminished access to station platforms at the Santa Clarita and Lancaster Terminal Metrolink Stations.		Traffic Management Plan (TMP) shall be prepared by the contractor for each capital improvement including the Balboa Double Track Extension in the City of Los Angeles, the Canyon Siding Extension in the City of Santa Clarita, and the Lancaster Terminal Improvements in the City of Lancaster. Each TMP shall be and reviewed and approved by Metro, City of Los Angeles, City of Santa Clarita, City of Lancaster, and Caltrans, where applicable. The TMP shall identify proposed detour routes and construction traffic routes, including haul truck routes and preferred delivery/haul-out locations and hours. Lane and/or road closures shall be scheduled in consultation with the local public works departments associated with each capital improvement site to minimize disruptions to community traffic. The nearest local fire responders shall be notified, as appropriate, of traffic control plans, and lane and/or road closures as well as detour routes and construction vehicle routes shall be coordinated with fire responders to minimize disruptions to emergency response routes. The TMP shall identify pedestrian and bicycle circulation and access detours in and around the affected stations, as well as temporary bus stop locations and signage, as applicable.	
Construction of the Proposed Project would result in construction worker and vehicle movements across active tracks, which has potential to result in Metrolink schedule delays, increased dwell times, and overall decreased performance of the AVL. In addition, construction activities at the Santa Clarita Station and the Lancaster Terminal Station may affect passengers due to temporary access impediments.	**TR–2**	During final engineering design and prior to construction, Metro shall establish rail operating agreements and/or memoranda with Metrolink to outline mutually agreed upon work windows and contractor operating restrictions. Such agreements shall identify performance objectives such as maximum allowed dwell times and/or on-time performance requirements to be achieved throughout construction, and how construction sequencing and railroad operational protocols would be incorporated into applicable construction documents (plans and specifications) and implemented to	Less Than Significant

Potentially Significant Impact	Mitigation Measures	Impact After Mitigation
	maintain the mutually agreed upon performance objectives during construction. Prior to construction, Metro and the construction contractor shall prepare detailed construction phasing plans for each phase of construction that identify appropriate means and methods to maintain mutually agreed upon on-time performance objectives while minimizing impacts on pedestrians and passengers at Santa Clarita Station and/or Lancaster Terminal. Prior to construction, Metro and the construction contractor shall also coordinate with current rail operators to establish temporary construction detours for passengers at the Santa Clarita Station and Lancaster Terminal that correspond to detailed construction phasing plans to minimize impacts on passenger transfer times. Detailed construction phasing plans shall be deemed acceptable by Metrolink prior to commencement of construction activities that could affect regular Metrolink operations. Throughout the duration of construction, Metro shall solicit Metrolink's participation, as-needed, in construction coordination meetings to evaluate the efficiency of the measures in place and Metro and the construction contractor shall implement changes to means and methods during construction to ensure the performance objectives are maintained at an acceptable level throughout construction.	
TRIBAL CULTURAL RESOURCES		
Ground-disturbing activities during construction of the Proposed Project have the potential to impact previously undiscovered buried tribal cultural resources of historical significance, a potentially significant impact.	See Mitigation Measures **CUL-1** and **CUL-2**.	Less Than Significant

SOURCE: Terry A. Hayes Associates Inc., 2021.

ES.11 COMPARISON OF ALTERNATIVES

CEQA requires an analysis of alternatives to the Proposed Project to reduce or eliminate significant impacts associated with project development. In addition to the route options, two alternatives have been identified to the Proposed Project. Alternative 1 is the No Project Alternative. The No Project Alternative is required by CEQA Guidelines Section 15126.6 (e)(2) and assumes that the Proposed Project would not be implemented by Metro. The No Project Alternative allows decision-makers to compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. The No Project Alternative is evaluated in the context of the existing transportation facilities in the Project Area and other capital transportation improvements and/or transit and highway operational enhancements that are reasonably foreseeable.

Alternative 2 would implement only implement the Balboa Double Track Extension capital improvement enabling hourly service along the AVL between Los Angeles Union Station and the Antelope Valley. Expanded late-night service, including late-night trains seven days a week, would also be enabled under Alternative 2. Neither the Canyon Siding Extension nor the Lancaster Terminal Improvements would be implemented under Alternative 2, which would limit Metrolink's ability to expand service above an hourly frequency due to the limitations on expanded rolling stock presented by existing storage track capacity and operational conflicts associated with the single-track configuration through the Canyon Siding Extension site. Alternative 2 would be consistent with Phase 2 of the Metro Board-approved Motion (File #2019-0571), supporting funding and planning for the Proposed Project.

The No Project Alternative is considered the environmentally superior alternative because there would be no physical changes to the existing environment and a minor increase in Metrolink service. Other transit projects would be constructed to enhance the regional network, including the Brighton to Roxford Double Track Project and the Link US Project, which would improve AVL service reliability and safety. Not constructing and operating the Proposed Project would eliminate the potentially significant impacts related to transportation (construction), aesthetics (construction and operations), air quality (operations), biological resources (construction), cultural resources (construction), geology and soils (construction and operations), greenhouse gas emissions (construction and operations), noise (construction), and tribal cultural resources (construction). However, the regional transit network within the Project corridor would not be substantially enhanced by the other transit projects.

If the No Project Alternative is identified as the environmentally superior, CEQA requires selection of the environmentally superior alternative other than the No Project Alternative from among the Proposed Project and the other alternatives evaluated in the Draft EIR. Alternative 2 is the environmentally superior alternative because, as compared to the Proposed Project and design options, it avoids or reduces multiple construction impacts in the City of Santa Clarita and the City of Lancaster related to transportation, aesthetics, air quality, biological resources, cultural resources, energy resources, geology and soils, hazardous materials, noise, and tribal cultural resources. It also avoids or reduces operational impacts related to transportation, aesthetics, air quality, and greenhouse gases emissions.

1. Introduction

This chapter provides an overview of the purpose of this Draft Environmental Impact Report (EIR) for the Antelope Valley Line (AVL) Capacity and Service Improvements Program (Proposed Project or Project), a discussion of the environmental review process, and a description of the organization of this Draft EIR.

The AVL is a 76.6-mile-long commuter rail line that serves Northern Los Angeles County as part of the Metrolink system. The AVL extends from Los Angeles Union Station in the City of Los Angeles to Lancaster Terminal in the City of Lancaster with stations in the cities and communities of Los Angeles, Glendale, Burbank, Sun Valley, Sylmar, San Fernando, Newhall, Santa Clarita, Acton, Palmdale, and Lancaster. The Proposed Project proposes expansion of commuter rail service along the entire AVL corridor as well as three capital improvements required to facilitate the proposed service increase. The three capital improvements are the Balboa Double Track Extension, the Canyon Siding Extension, and the Lancaster Terminal Improvements. The Balboa Double Track Extension and the Canyon Siding Extension would be located within the City of Los Angeles and the City of Santa Clarita, respectively, while the Lancaster Terminal Improvements would be located in the City of Lancaster at the Lancaster Terminal. These capital improvements are a part of a package of four capital improvements on the AVL corridor to increase rail capacity. The fourth capital improvement, the Brighton to McGinley Double Track Extension was separately approved as part of the Brighton to Roxford Double Track Project.

1.1 PURPOSE OF THIS DRAFT ENVIRONMENTAL IMPACT REPORT

The Proposed Project qualifies for a statutory exemption from CEQA granted by the State legislature. In particular, the Proposed Project is statutorily exempt from CEQA under Section 21080 (b)(10) of the California Public Resources Code (PRC) (also found in State CEQA Guidelines [Title 14 California Code Regulations, § 15000 et seq], Section 15275(b), Specified Mass Transit Projects), which provides that CEQA does not apply to:

> *A project for the institution or increase of passenger or commuter services on rail or highway rights-of-way already in use, including the modernization of existing stations and parking facilities.*

The Proposed Project is a project for the institution or increase of passenger and commuter services on rail already in use, including the modernization of existing stations and parking facilities. Therefore, the Proposed Project is exempt from CEQA under PRC Section 21080(b)(10) and CEQA Guidelines Section 15275(b). The Los Angeles County Metropolitan Transportation Authority (Metro) has nevertheless elected to prepare this Draft EIR in the interest of comprehensively addressing community and stakeholder concerns and in an effort to provide a clear record of the potential environmental impacts of the Project. It also provides mitigation

measures to address potential impacts to decision-makers and the public. This Draft EIR achieves the following purposes:

- To inform public agency decision-makers and the public of the significant environmental effects of the Proposed Project, possible ways to minimize those significant effects, and reasonable alternatives to the Proposed Project that would avoid or minimize those effects.

- To enable Metro to consider environmental consequences when deciding whether to approve the Proposed Project, including which, if any, route to approve.

Metro serves as the Lead Agency for the Proposed 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.

Known areas of controversy associated with the Proposed Project include concerns with potential noise increases and traffic delay due to the enabled increase in service along the AVL corridor, particularly within the Town of Acton.

This 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 REVIEW PROCESS

A Notice of Preparation (NOP) of the Draft EIR was prepared and distributed on October 1, 2020, to the State Clearinghouse and to various other public agencies and the general public for a 30-day review and comment period. During the initial 30-day review period, Metro extended the public scoping period for an additional 15 days – officially ending the scoping period on November 16, 2020. Three scoping meetings were held during the public review period, two in October and one in November, to facilitate public review and comment on the Proposed Project and the scope of the Draft EIR.

Metro received a total of 77 written comments during the public scoping period as well as oral comments provided during the three scoping meetings. Generally, comments received were a mix of supportive and oppositional sentiments toward the Proposed Project. The scoping process and comments received to date are detailed in Chapter 7, Public Outreach. The NOP

and Scoping Report, including the NOP comment letters received by Metro, are contained in Appendix A of this Draft EIR. The baseline condition and existing setting for the Draft EIR are those at the NOP date with the exception of baseline conditions associated with existing rail operations along the AVL, which was based on conditions that existed prior to the COVID-19 pandemic.

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

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology / Soils
- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology / Water Quality
- Land Use / Planning
- Mineral Resources
- Noise
- Population / Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities / Service Systems
- Wildfire

This 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:

Brian Balderrama, Senior Director
Los Angeles County Metropolitan Transportation Authority
One Gateway Plaza, Mail Stop: 99-17-2
Los Angeles, CA 90012
Email: AVL@metro.net

Metro will conduct a public hearing to take testimony on the Draft EIR during the public review and comment period. After 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 Final EIR. Responses to comments submitted by commenting agencies will be distributed to those agencies for review prior to consideration of the Final EIR by Metro's Board of Directors. Upon the completion of the Final EIR and other required documentation, the Board of Directors will consider whether to approve the Proposed Project. As discussed above, the Legislature has determined that projects for the institution or increase of passenger or commuter services in rail already in use, such as the Proposed Project, are exempt from CEQA. If the Metro Board decides to approve the Project, Metro may file a Notice of Exemption (NOE) pursuant to PRC Section 21152(b), finding that the Project is statutorily exempt from CEQA; Metro may also file a Notice of Determination (NOD).

1.3 EIR ORGANIZATION

This Draft EIR is comprised of the following chapters:

Executive Summary. This chapter provides a summary of the Project, the public outreach information, project background, environmental impacts, and mitigation measures.

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

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

3. **Environmental Impacts Analysis**. This chapter presents the environmental setting, project analyses, and if applicable, mitigation measures, and conclusions regarding the level of significance after mitigation for each environmental resource.

4. **Other Environmental Considerations**. This chapter summarizes possible effects of the Proposed Project that were determined not to be significant; discusses significant unavoidable impacts that would result from the Proposed Project; analyzes significant irreversible changes in the environment; assesses potential growth-inducing impacts, related to economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding area; and anticipated permits and approvals.

5. **Cumulative Impacts**. This chapter presents CEQA requirements for cumulative impact analysis and analyzes the potential for the Proposed Project to have significant cumulative effects when combined with other past, present, and "reasonably foreseeable" probable future projects.

6. **Alternatives**. This chapter provides an analysis of a range of reasonable alternatives to the Proposed Project, including the No Project Alternative required by CEQA.

7. **Public Participation and Outreach**. This chapter presents public engagement and community outreach that occurred throughout the environmental process.

8. **Organizations and Persons Consulted**. This chapter lists the organizations and persons with whom Metro consulted during the Draft EIR process.

9. **List of Preparers**. This chapter lists the persons who contributed to the preparation of this Draft EIR.

10. **References**. This chapter lists all the references and sources used in the preparation of this Draft EIR.

2. Project Description

This chapter describes the Proposed Project location, Project history, Project description, and the estimated construction schedule and phasing. The Proposed Project would construct three capital improvements along the existing Antelope Valley Line (AVL) rail corridor to provide operational flexibility and facilitate increased and more reliable commuter rail service along the corridor.

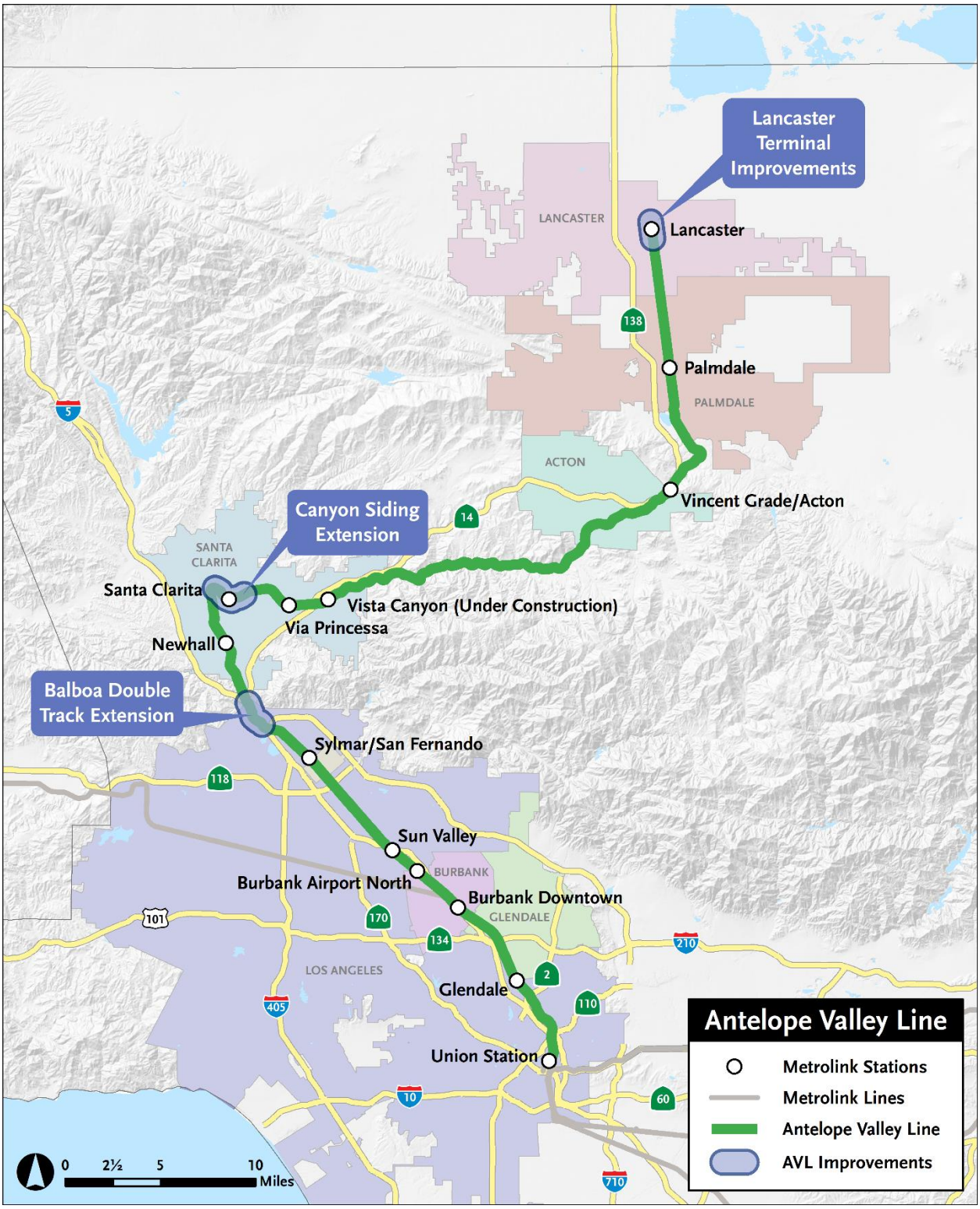
The AVL right of way (ROW) is owned by Metro and used by the Southern California Regional Rail Authority (SCRRA), which operates Metrolink commuter rail service between Los Angeles Union Station (LAUS) and Lancaster. The Union Pacific Railroad (UPRR) operates Class 1 freight service along the corridor as well. The route is Federal Railroad Administration Track Class 4, with a maximum speed of 79 miles per hour (mph). There are up to 30 Metrolink commuter trains and on average five UPRR freight trains per day on the AVL. The AVL faces a variety of physical and operational challenges, with aging infrastructure, significant grades and curves through mountainous topography. The line is 60 percent single track, which is the principal factor limiting future service expansion. Operating a single-track railroad is comparable to having bi-directional traffic on a single lane roadway.

2.1 PROJECT LOCATION

The AVL is an existing 76.6-mile rail corridor that runs from LAUS in the City of Los Angeles to the Lancaster Terminal in the City of Lancaster within the County of Los Angeles. The corridor consists of the former Southern Pacific Valley Line and parallels the Interstate 5 (I-5) freeway from Los Angeles to Santa Clarita, turns east, then north, to parallel State Route 14 (SR 14) to the City of Lancaster. **Figure 2-1** shows the regional context of the Project corridor and the proposed capital improvements. Locally, the AVL corridor traverses many densely populated residential areas along the southern portion of the corridor and less populated suburban and rural areas along the northern portion of the corridor. From south to north, the Cities and jurisdictions along the AVL include the City of Los Angeles, City of Glendale, City of Burbank, City of San Fernando, City of Santa Clarita, Unincorporated Los Angeles County, the Town of Acton, City of Palmdale, and the City of Lancaster. Existing Metrolink stations served by the AVL include the following:

- Los Angeles Union Station
- Glendale Station
- Burbank Station
- Burbank Airport North Station
- Sun Valley Station
- Sylmar/San Fernando Station
- Newhall Station
- Santa Clarita Station
- Via Princessa Station
- Vista Canyon (under construction)
- Vincent Grade/Acton Station
- Palmdale Station
- Lancaster Station

Figure 2-1: Regional Context of the Study Corridor



The railroad ROW and assets along the ROW (e.g., track and signals) are owned by Metro. The track alignment is characterized by significant grades, curves, and topography, with approximately two thirds single-track and 57 structures, 72 public highway-rail at-grade crossings, and three single track tunnels.

2.2 PROJECT HISTORY AND BACKGROUND

In 2011, the Metro Board of Directors passed a resolution to formulate a strategic plan for infrastructure improvements for the AVL, with the directive to determine what improvements could be made to the existing line to significantly reduce the travel time between Lancaster/Palmdale and Los Angeles, as well as to enhance safety. In March 2012, the results of the Strategic Plan were presented to the Metro Board. Since the completion of this plan, at least 10 major capital improvements have been studied for the AVL corridor.

In 2017, Metro, in coordination with Metrolink and the North County Transportation Coalition, initiated a study to assess the AVL between Burbank and Lancaster with the following purposes:

- Determine a range of frequency of service to maximize regional accessibility throughout the day;
- Assess the condition of the existing rail infrastructure that limits operational flexibility and service reliability; and
- Recommend needed infrastructure and capital improvement costs (in level of priority) along with cost benefit analysis to support the range of frequency of service, service reliability, safety, and on-time performance including latest technologies in rail propulsion, controls and rail stock.

The resultant study, titled the AVL Study, examined opportunities to enhance rail service between the Burbank and Lancaster stations along the AVL using existing infrastructure and with potential infrastructure improvements that would mitigate existing operational constraints. The Study also examined the feasibility and relative merits of alternative service enhancements, specifying the additional capacity improvements necessary to support improved service. A phased strategy was then developed for prioritizing investments and building capacity to realize incremental service improvements, based on benefits and costs. The phased implementation assessment identified six service scenarios of varying levels of improvement to service frequency and reliability and identified corresponding infrastructure improvements required to achieve the proposed service improvement. The evaluation process then assigned prioritization to the six service scenarios based upon the level of investment required which was identified through an analysis of a wide-ranging list of potential capital improvements each of which achieved varying levels of service improvement.

The AVL Study recommended three successive phases of service improvement which consisted of a near-term plan to adjust existing schedules to improve service frequency and provide late night service, a mid-term phase which consists of the Proposed Project improvements and enabled service improvement, and a long-term phase which included larger

levels of investment as well as substantial service improvements intended to be implemented when and if funding were available.

In July 2019, the Metro Board approved a motion in support of implementing Service Scenarios 1 through 3 identified in the AVL Study which are summarized as follows:

1. Service Scenario 1 – Provide one additional late evening train between LAUS and Lancaster on Friday and Saturday evenings;
2. Service Scenario 2 – Provide two additional late evening trains on Friday and Saturday and two additional bi-directional mid-day services between LAUS and Lancaster; and
3. Service Scenario 3 – Provide bi-directional 30-minute service during the regular weekday between LAUS and Santa Clarita Valley and 60-minute bi-directional service to Lancaster.

To achieve these service scenarios the AVL Study identified four capital improvements which were recommended for their combination of operational benefits and cost effectiveness. These capital improvements are identified in the study as the Balboa Double Track Extension, Canyon Siding Extension, Lancaster Terminal Improvements, and the Brighton to McGinley Double Track. The Brighton to McGinley Double Track improvement was separately approved as part of the Brighton to Roxford Double Track Project. This EIR assesses those three remaining capital improvements required to enable implementation of Service Scenarios 1, 2 and 3 as presented in the AVL Feasibility Study and supported by the Metro Board.

2.3 PROJECT DESCRIPTION

2.3.1 Project Objectives

The AVL plays a critical role in connecting communities in North Los Angeles County to LAUS and the cities in between. It carries the third highest ridership in Metrolink's commuter rail system and is currently responsible for removing approximately one million weekday automobile trips from the region's roadways a year. Consistent with the State Rail Plan and Metrolink's Southern California Optimized Rail Expansion (SCORE) program, and in anticipation of substantial population and employment growth in the North Los Angeles County region over the next 20 years, Metro seeks to improve rail service on the AVL to realize its full potential as a regional mobility enhancement and not just a peak-hour commuter rail service. Accordingly, the AVL Capacity and Service Improvement Project seeks to:

- Provide regular and more frequent commuter rail services to improve regional connectivity, and accessibility through the enabling of 30-minute bi-directional passenger rail service to the Santa Clarita Valley, and 60-minute bi-directional service to Lancaster along the AVL corridor.
- Improve passenger service reliability and efficiency on the AVL rail corridor.
- Provide necessary infrastructure improvements to enhance operational flexibility and reliability along the AVL corridor.

- Support the vision and goals for rail service in the region consistent with the California State Rail 2040 Plan and Metrolink's SCORE program.

2.3.2 Proposed Project

The Proposed Project is intended to enable improved service along the AVL by constructing three capital improvements at three locations strategically selected along the AVL corridor to provide the most operational flexibility possible for the level of investment available. These three capital improvements are the Balboa Double Track Extension in the City of Los Angeles, the Canyon Siding Extension in the City of Santa Clarita, and the Lancaster Terminal Improvements in the City of Lancaster. **Figure 2-1** provides the locations of each capital improvement relative to the AVL corridor.

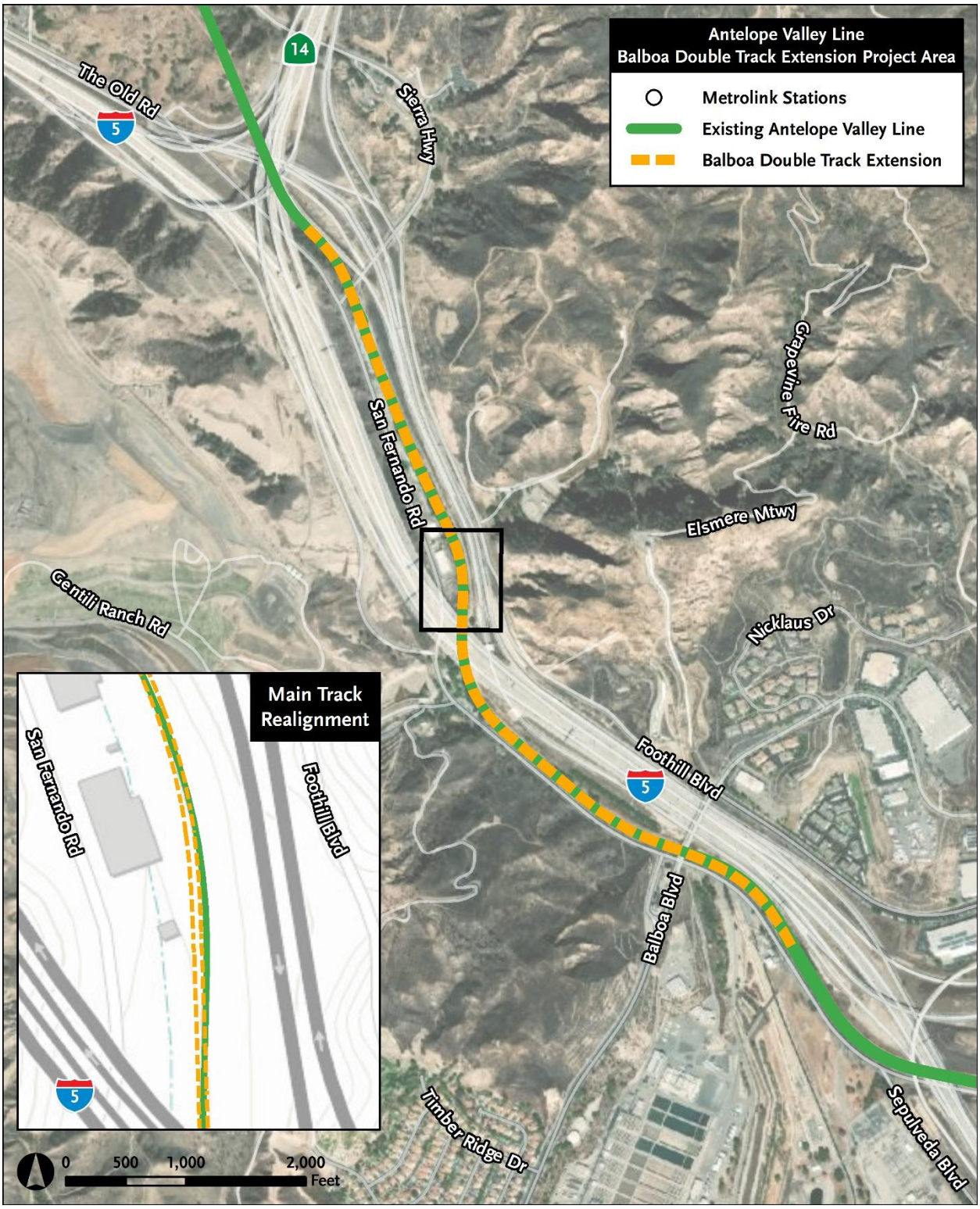
Generally, the capital improvements provide additional rail capacity for Metrolink operations by constructing secondary track in areas where the existing single-track results in substantially slower train speeds and limited operational flexibility. The following discussion provides detailed description of each capital improvement.

Balboa Double Track Extension

The Balboa Double Track Extension would begin just south of Balboa Boulevard and would extend the existing Sylmar Siding approximately 6,300 feet north to Sierra Highway. It is anticipated that the existing railroad ROW would accommodate most of the Balboa Double Track Extension. Additional ROW would be required just north of the I-5 crossing, to the west of the Sylmar Siding extension. A California Department of Transportation (Caltrans) encroachment may also be required just south of Sierra Highway to re-align an existing spur track. The improvements would also realign the existing Main Track through portions of the corridor. This re-alignment would accommodate the Sylmar Siding extension while maintaining sufficient side clearance to existing structures. **Figure 2-2** presents the location of the proposed capital improvement and its surroundings.

The Proposed Balboa Double Track Extension would begin at the existing Sylmar Siding terminus at Balboa Boulevard in the City of Sylmar. The existing turnout would be removed, and the Main Track would be realigned slightly east at the Balboa Boulevard crossing. The Sylmar Siding extension is proposed 15 feet north of the re-aligned Main Track with a minimum horizontal clearance of 25 feet to the existing Balboa Boulevard bridge columns.

Figure 2-2: Balboa Double Track Extension Vicinity



From Balboa Boulevard, the proposed double track would extend approximately 2,300 feet north under the I-5 freeway. The existing track bed narrows as it passes under the I-5 freeway bridge and it is not possible to provide the necessary 25-foot minimum horizontal clearance to the existing structure columns. As a result, the existing Main Track would be re-aligned under the I-5 to balance side clearances to both tracks. Pier protection would be installed along the west side of the corridor where the 25-foot clearance cannot be provided. Just north of the I-5 bridge, an approximately 475-foot long retaining wall would be constructed along the west side of the corridor to support the realigned Main Track and proposed Sylmar Siding extension, see **Figure 2-2**. This will help minimize the ROW requirements at this location.

From the I-5 bridge structure, the proposed double track would extend north approximately 2,800 feet where it would tie into the existing Main Track, just south of the Sierra Highway road bridge. The existing spur track and access road at this location would be re-aligned south of the new double track, resulting in an encroachment into Caltrans ROW along the I-5 Truck Route. Retaining walls are proposed along the embankment to minimize this encroachment.

Canyon Siding Extension

The Canyon Siding Extension would improve the existing Saugus Siding by adding approximately 8,400 feet of new track between Bouquet Canyon Road and Golden Oak Road. The Canyon Siding Extension would not require realignment of the Main Track as there is adequate horizontal clearance for both tracks within the existing ROW. The proposed improvement would provide a second side-platform at the existing Santa Clarita Metrolink station which would enable 30-minute bi-directional service between LAUS and the Santa Clarita Valley. A new crossover track south of the Santa Clarita Station would be provided to facilitate turnback of Metrolink trains at Santa Clarita Station and improve operational flexibility and reliability. **Figure 2-3** provides the location of the proposed Canyon Siding Extension and its surroundings.

The proposed Canyon Siding Extension would begin at the existing Saugus Siding terminus, located approximately 3,900 feet northwest of the existing Santa Clarita Metrolink Station. The existing turnout at the siding terminus would be converted to a crossover track and would connect the existing track to the proposed siding extension. The siding extension would run parallel to the existing track along on the south/east of the existing Main Track through the length of Canyon Siding Extension site.

Figure 2-3: Canyon Siding Extension Vicinity

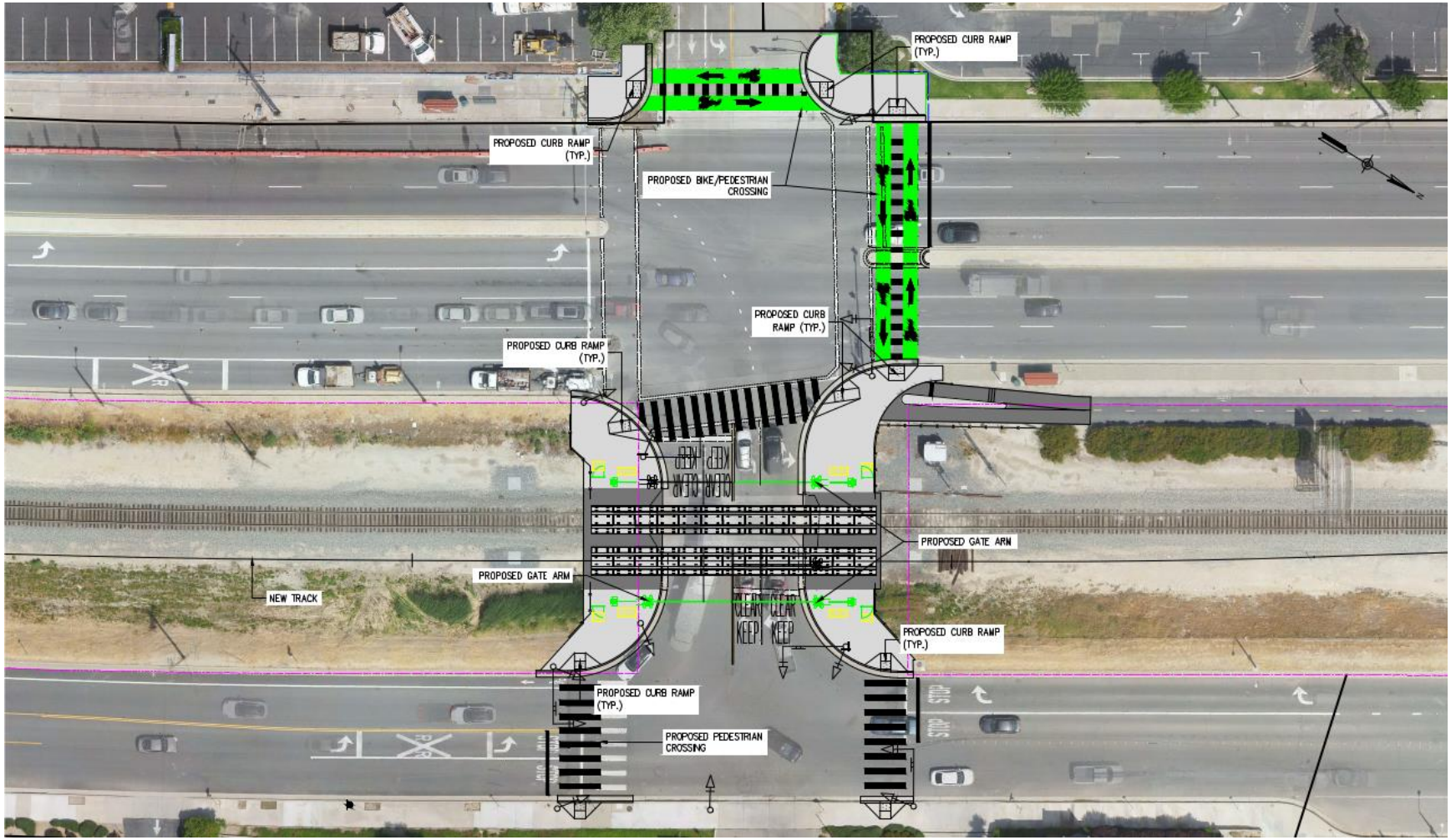
The existing Santa Clarita Metrolink Station would be updated with a second station platform, located south of the proposed Saugus Siding extension. The platform would be 680 feet in length and provide similar amenities as the existing station platform such as canopies and seating. The existing station platform would also be upgraded by extending it approximately 180 feet northward to meet the Metrolink standard for station platform length. In addition, an at-grade pedestrian crossing would be installed west and east of station platforms to allow passengers to access the proposed new station platform. **Figure 2-4** provides a sketch of the proposed station platform design. Just north of the proposed Santa Clarita Metrolink station improvements, a new bridge over Bermite Road would be constructed to support the proposed siding extension. The existing bridge supporting the Main Track would remain unaffected by construction of the Canyon Siding Extension.

From the Santa Clarita Metrolink station, the proposed Saugus Siding extension would continue parallel to the Main Track for approximately 3,500 feet to Golden Oak Road. The proposed siding extension would cross Golden Oak Road and connect back to the Main Track approximately 500 feet north of Golden Oak Road. The proposed grade crossing at Golden Oak Road would not provide enough space for vehicle storage to the east for traffic moving northwest through the intersection. Accordingly, the crossing at Golden Oak Road would require installation of new road traffic signals, new striping throughout the intersection, curb adjustments to provide pedestrian and bicycle safety improvements, installation of new crossing gates, and high visibility crosswalk markings. **Figure 2-5** provides a sketch of the proposed crossing improvements.

Due to the topography of the surrounding area, substantial grading would be required to accommodate the double track construction. Hills on the south side of the corridor abut the rail bed along the length of most of the proposed Canyon Siding Extension within the construction zone. Generally, the areas requiring grading would be located within the existing ROW and it is anticipated that retaining walls would be used in some areas to avoid encroachments outside of the ROW.

Figure 2-4: Canyon Siding Extension Proposed Station Platform Design

Figure 2-5: Canyon Siding Extension Proposed Golden Oak Road Crossing



Platform to Platform Pedestrian Undercrossing Design Option

As an alternative to the proposed at-grade pedestrian crossings, this design option would provide a grade separated pedestrian undercrossing to connect the existing platform to the new second platform. This design option would require excavation adjacent to the existing platform, beneath the existing Main Track, beneath the proposed siding extension, and would return to the surface via a ramp at, and adjacent to, the proposed side platform. **Figure 2-6** provides a sketch of the proposed Platform to Platform Pedestrian Undercrossing Design Option.

Island Platform with Platform to Parking Lot Pedestrian Undercrossing Design Option

As an alternative to the proposed additional side platform and at-grade pedestrian crossings, this design option would provide a new island platform (with two platform faces) and a grade separated pedestrian undercrossing connecting the Santa Clarita Metrolink Station parking area to the new island platform. The design option would maintain the Main Track at its existing location and add a new island platform and an additional platform track at the location of the existing side platform and Commuter Way. The grade separated pedestrian undercrossing would require excavation from the existing parking lot, under the existing station plaza, under Commuter Way and the proposed new platform track and return to the surface via a ramp on the new island platform. This would provide access to both tracks from a single platform. Commuter Way would be reduced to one lane for maintenance and emergency vehicle access. The existing bus stops, pickup/drop-off lanes and Americans with Disabilities Act (ADA) parking would be relocated to the existing parking lot and provide direct access to the pedestrian undercrossing. **Figure 2-7** provides a sketch of the proposed Platform to Platform Pedestrian Undercrossing Design Option.

Figure 2-6: Platform to Platform Pedestrian Undercrossing Design Option

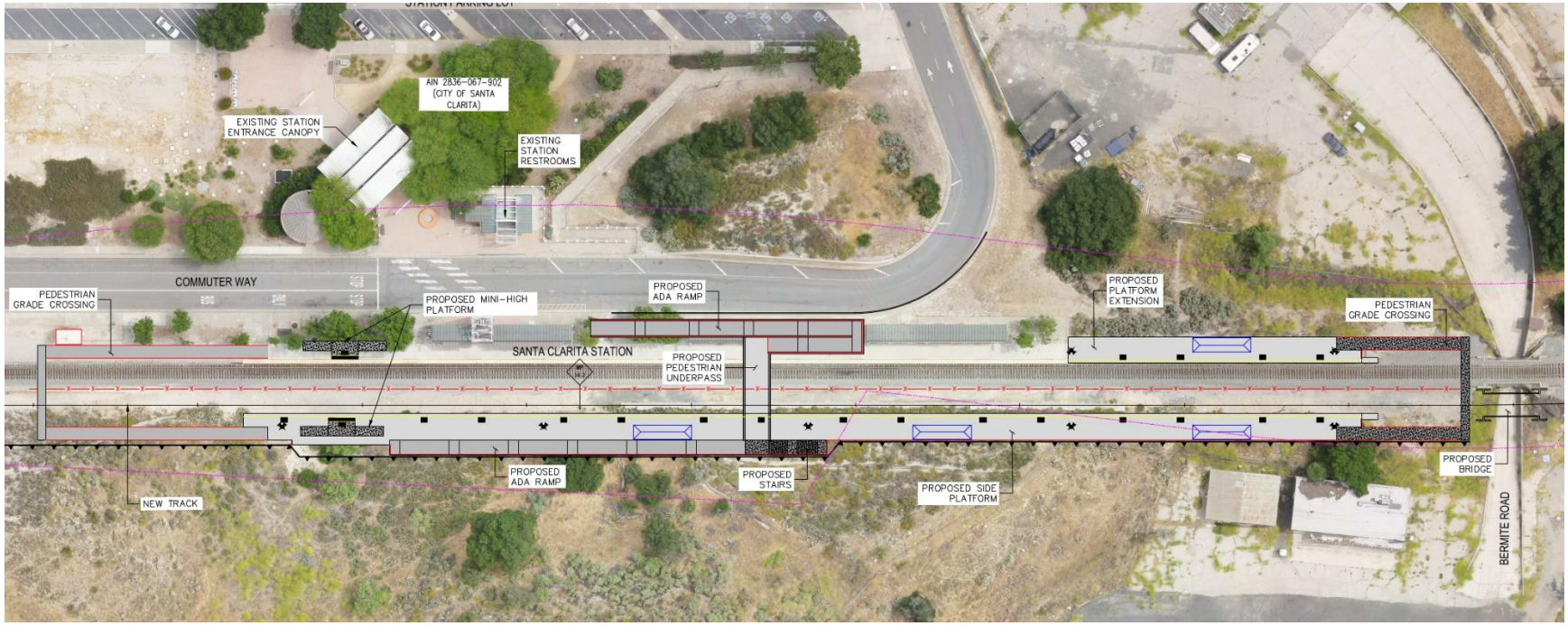
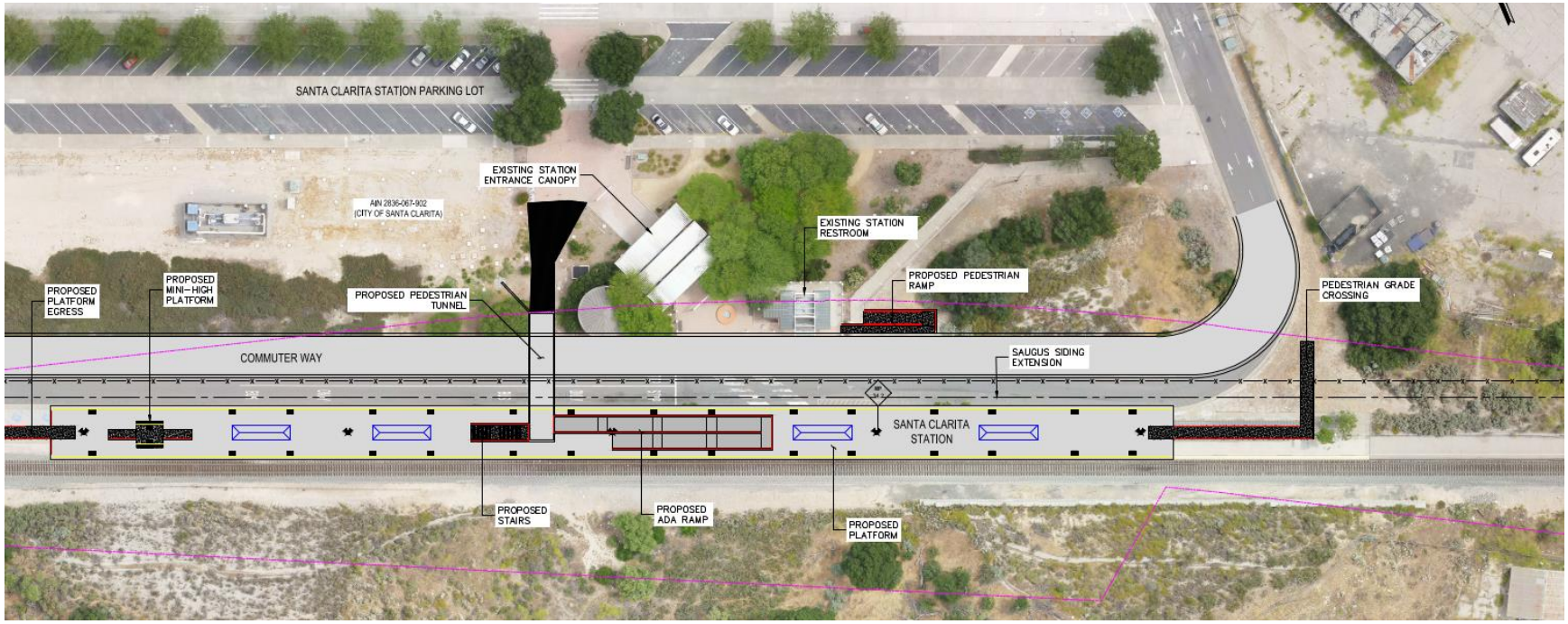


Figure 2-7: Platform to Parking Lot Pedestrian Undercrossing Design Option



Lancaster Terminal Improvements

The Lancaster Terminal Improvements would include the expansion of the existing train layover facilities by adding one new 1,000-foot-long and two 500-foot-long train storage tracks. **Figure 2-8** and **Figure 2-9** provide the location of the proposed Lancaster Terminal Improvements and its surroundings.

The existing Main Track would be extended north and across Lancaster Boulevard to the proposed new layover facility. The proposed layover facility would consist of one 1,000-foot long, two 500-foot-long train storage tracks, and provisions for an operator personnel building for restrooms, lockers, and common area for Metrolink employees. Improvements would be constructed in the existing railroad ROW and City of Lancaster parking lot to the west of the existing UPRR tracks. The proposed layover facility would accommodate up to four 5-car trains (i.e., one locomotive and five cars). New water and sewer lines will be extended from Lancaster Boulevard or Sierra Highway to serve the layover facility. A new connection to the existing storm main within Lancaster Boulevard is proposed through Sierra Highway. A new driveway would be constructed to the storage tracks to allow for train fueling from fueling trucks or a new on-site permanent fueling facility. Locomotive fueling using fuel trucks currently occurs at the southern end of the existing station platform. The train storage track design may require an operating easement within the UPRR ROW subject to further design refinements.

Island Platform with Pedestrian Undercrossing Design Option

To improve operational flexibility and passenger convenience, this design option was developed to provide two platform faces for boarding and alighting train passengers at Lancaster Station. The design option would construct an island platform and an extension of the existing track to serve both sides of the platform. The platform width would be tapered at both ends to limit impacts to the existing Child & Family Resource Center to the southwest and an existing railroad radio tower to the northwest. The island platform would be constructed within the footprint of the existing station platform and parking lot at Lancaster Station and the lost parking spaces would be relocated to the west of the proposed platform. A grade separated pedestrian under-crossing would be constructed in the middle of the new island platform with ramps for access onto the island platform. The undercrossing would traverse under the railroad track and come back to grade in the existing station parking lot. No changes to the existing Lancaster Metrolink Station building are proposed. **Figure 2-10** provides a sketch of the proposed station platform design.

Island Platform with Pedestrian Overcrossing Design Option

The Island Platform with Pedestrian Overcrossing Design Option would have generally the same track and station configuration as the Island Platform with Pedestrian Undercrossing Design Option, and would use a grade separated pedestrian overcrossing to access the island platform. The pedestrian overcrossing would be constructed on the north end of the island platform with stairs and an elevator to go up and over the railroad track. Pedestrians would access the ground level in the station parking lot near the existing Lancaster Metrolink Station

building. **Figure 2-11** provides a sketch of the proposed Island Platform with Pedestrian Overcrossing Design Option.

Island Platform with Pedestrian At-Grade Crossing Design Option

The Island Platform with Pedestrian At-Grade Design Option would have generally the same track and station configuration as the previous two options (Island Platform with Pedestrian Undercrossing Design Option and Island Platform with Pedestrian Overcrossing Design Option) and would use an at-grade pedestrian crossing to access the island platform. The pedestrian at-grade crossings would be constructed on the north and south ends of the island platform. Pedestrians would access the crossing via existing or new sidewalks in the station parking lot. **Figure 2-12** provides a sketch of the proposed Island Platform with Pedestrian Overcrossing Design Option.

Figure 2-8: Lancaster Terminal Improvements Vicinity Map

Figure 2-9: Lancaster Terminal Improvements Proposed Project

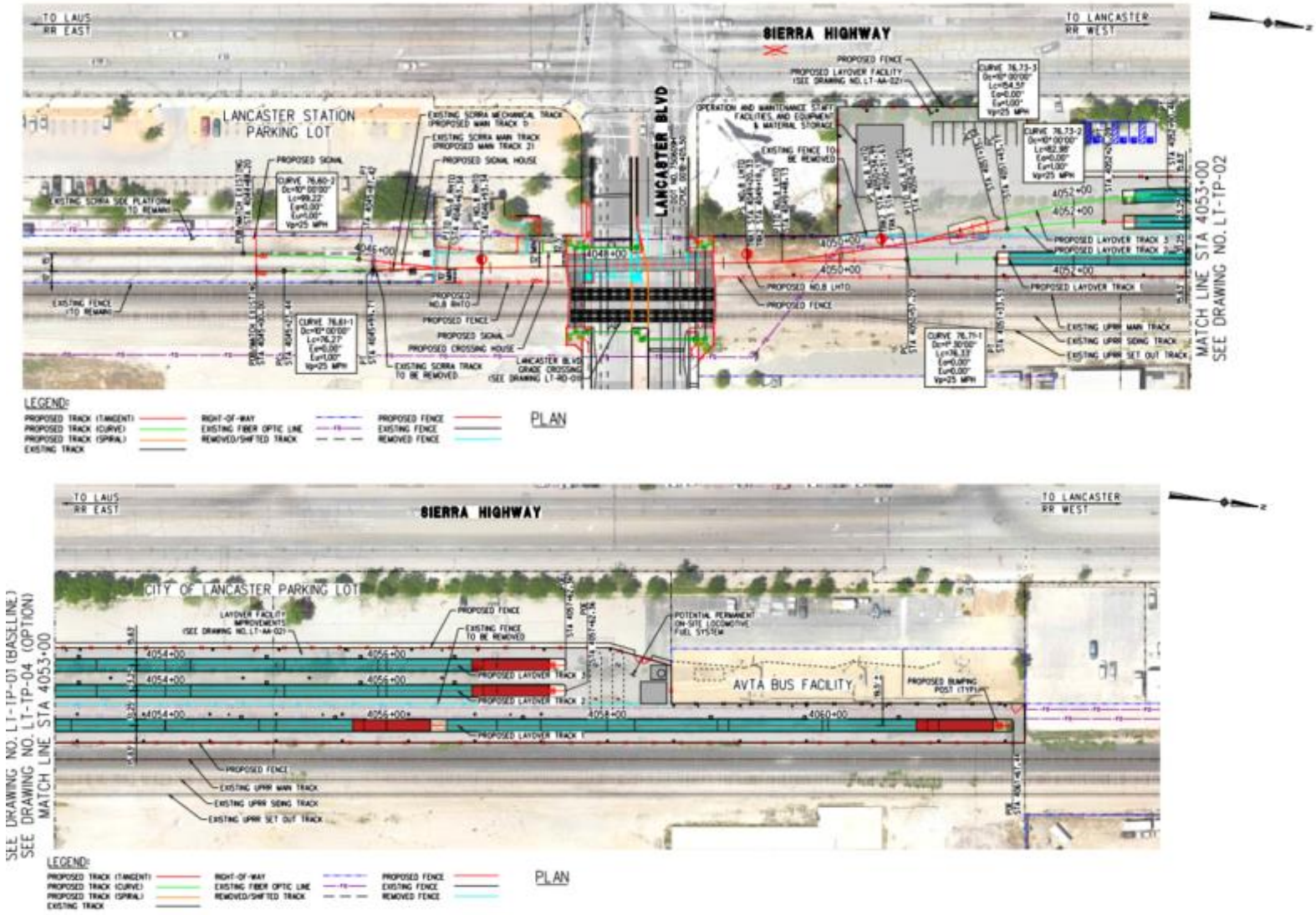


Figure 2-10: Island Platform with Pedestrian Undercrossing Design Option

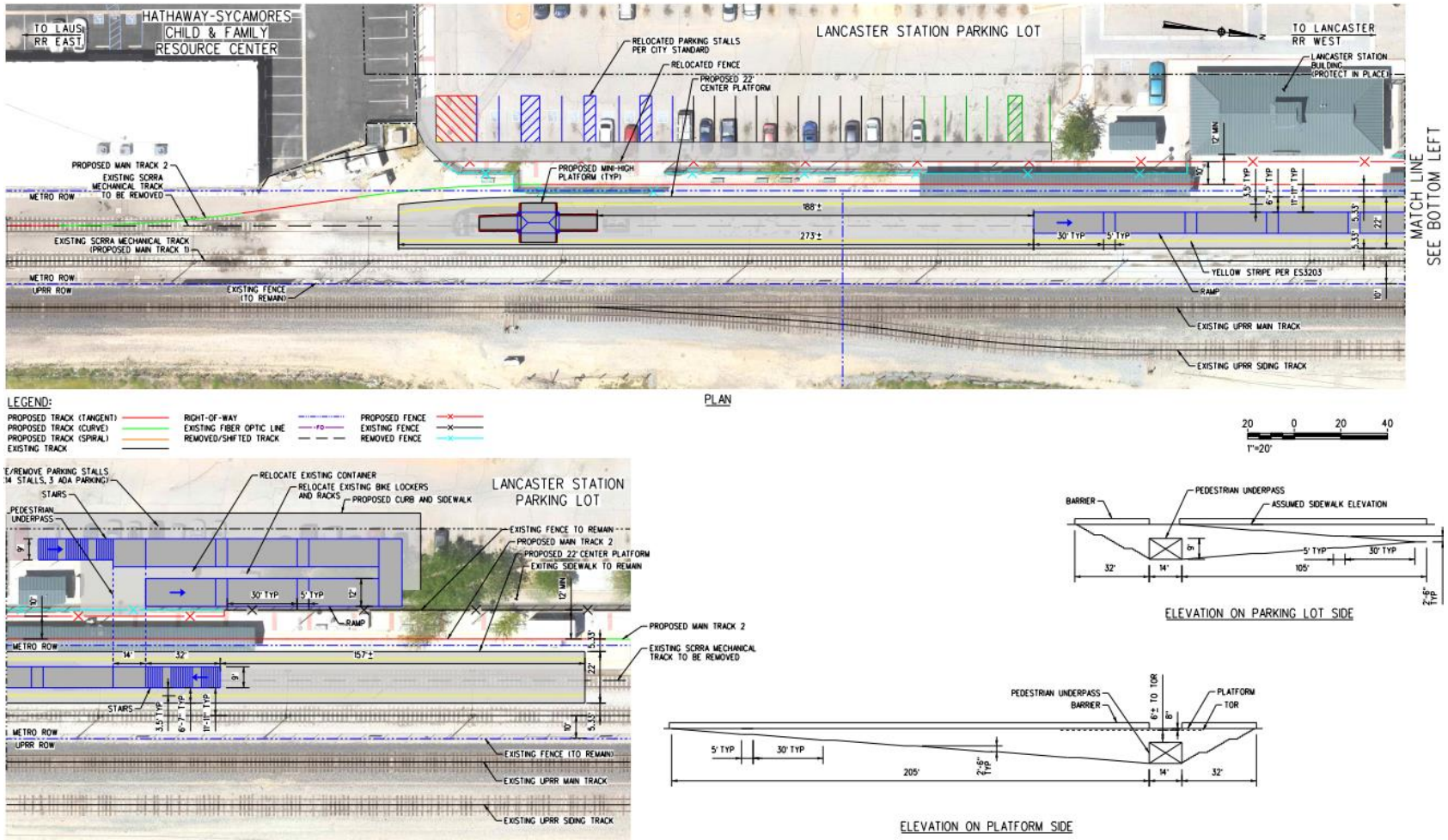


Figure 2-11: Island Platform with Pedestrian Overcrossing Design Option

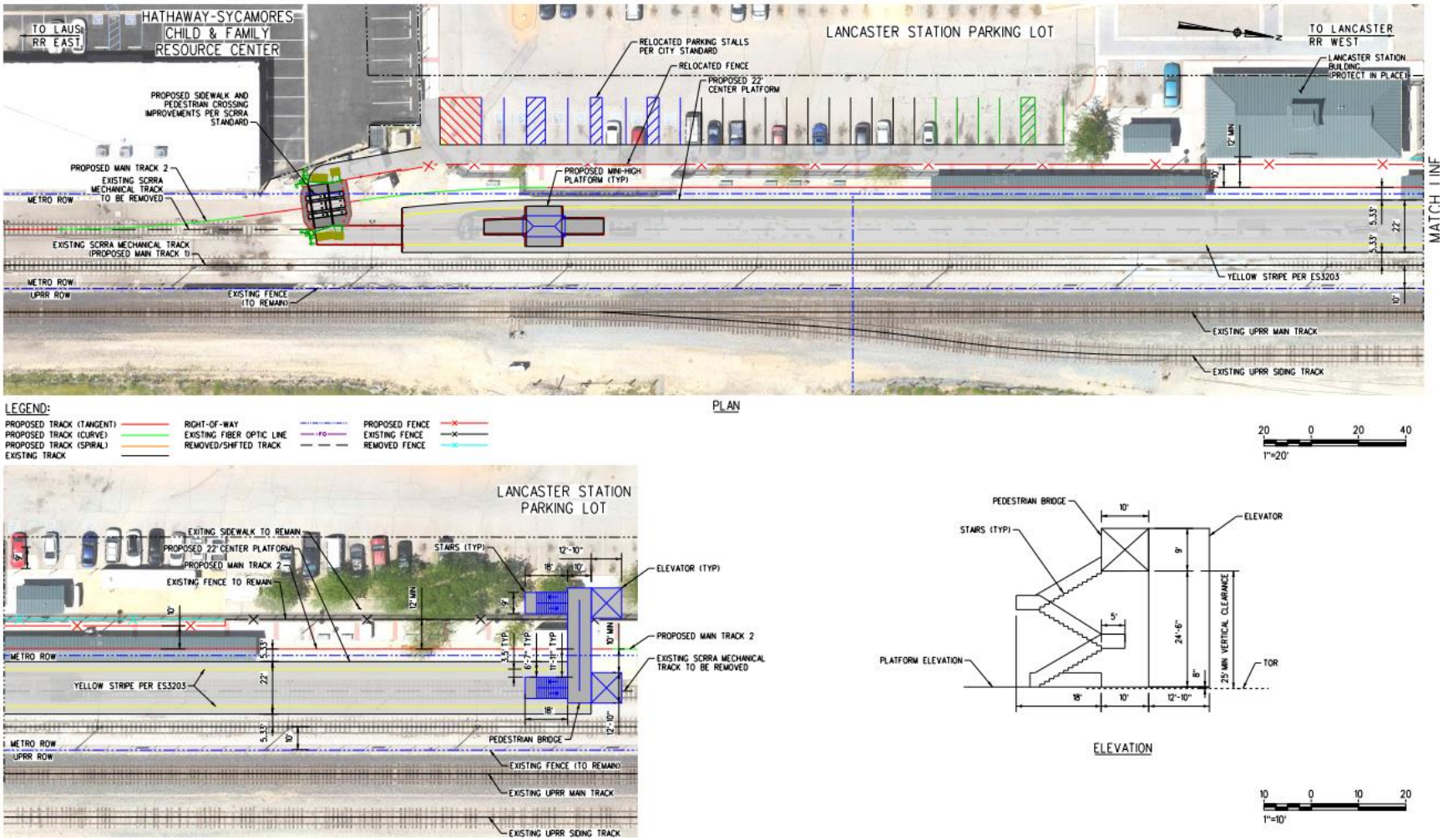
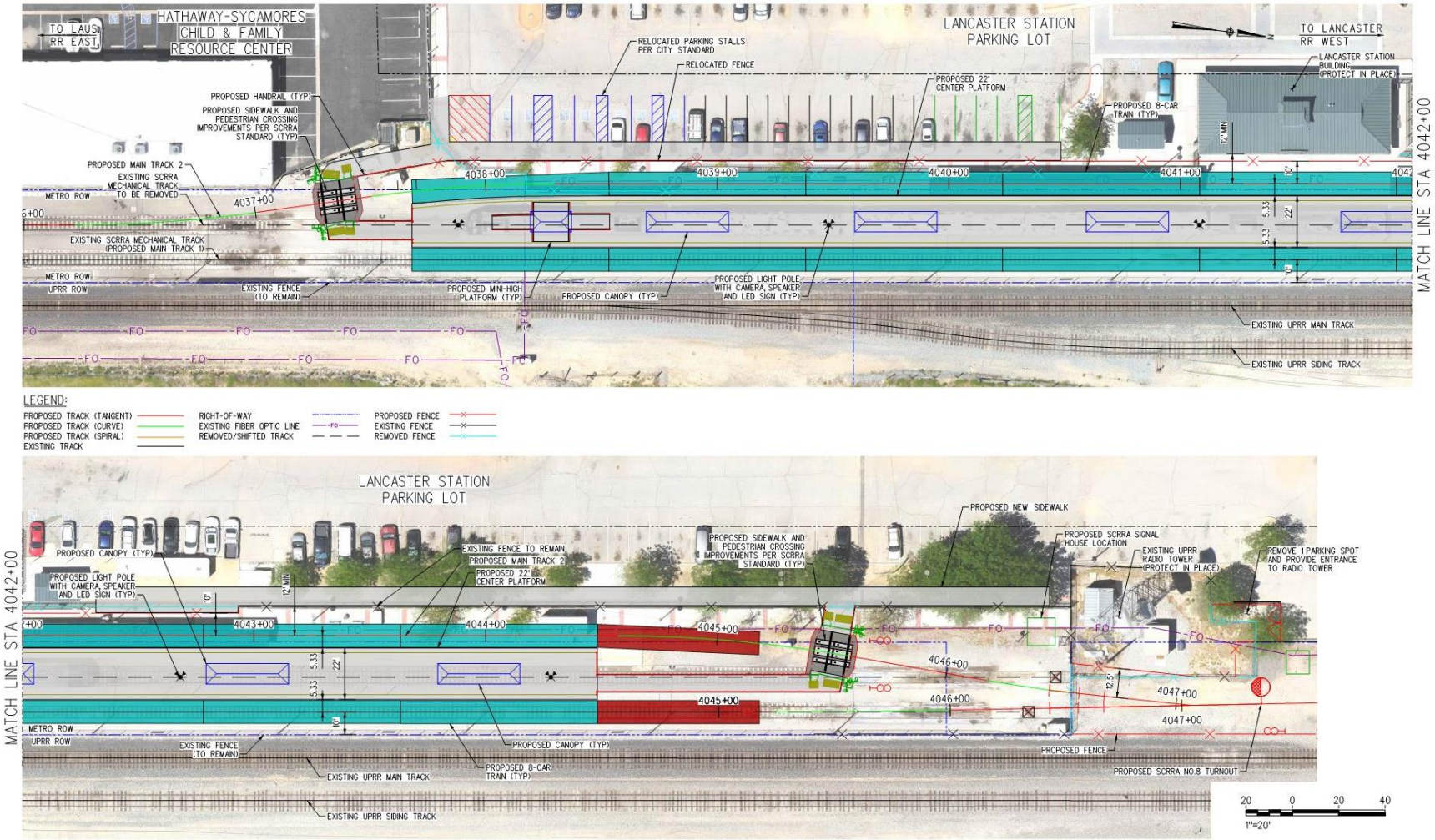


Figure 2-12: Island Platform with Pedestrian At-Grade Crossing Design Option



2.4 OPERATIONAL CHARACTERISTICS

The Proposed Project is intended to enable the increase in Metrolink service to 30-minute bi-directional service from LAUS to the Santa Clarita Valley and 60-minute bi-directional services to Lancaster. As of 2019, Metrolink operates 30 weekday trains, 12 Saturday trains, and 12 Sunday trains with an end-to-end trip time of approximately two hours and 15 minutes, depending on the timetable. Peak service operates roughly every 30-60 minutes with most of the trains making all stops, and one train providing express service. Non-peak direction service operates from every 45 minutes to over two hours, and does not serve all the northern-most stations (Vincent Grade/Acton, Palmdale and Lancaster). Train speeds along the AVL range from approximately 30 to 70 mph depending on topography, track geometry, and whether there is a single track or double track configuration.

Upon completion of the proposed capital improvements as well as the Brighton to McGinley Double Track improvement, which was previously approved as part of the Brighton to Roxford Double Track Project, the AVL services would be able to operate more efficiently and service would be increased with additional trains, timeslots, and an updated timetable.[1] Based on the analysis presented in the AVL Study, the future Metrolink service is assumed to consist of the following characteristics:

- Maintain existing peak and reverse-peak service with improved reliability and on-time-performance,
- Peak hour 20-minute to 40-minute headways depending on timetable,
- Weekday off-peak service consisting of 30-minute bi-directional service from LAUS to Santa Clarita Valley and 60-minute bi-directional service from LAUS to Lancaster,
- One late-night trip from LAUS to Lancaster Monday through Saturday, and
- No change to weekend service.

Individually, each of the proposed capital improvements, as well as the Brighton to McGinley Double Track improvement, would provide an incremental service benefit, but the total service increase proposed as part of the Project is only achievable with all four capital improvements. The assumed service increase would effectively double the volume of mid-day off-peak trains travelling in the corridor making available up to 28 daily round trip train schedule slots to serve the San Fernando Valley (compared to 14 existing), 30 daily round trip train schedule slots to serve the Santa Clarita Valley (compared to 15 existing), and 20 daily round trip train schedule slots to serve the Antelope Valley (compared to 10 existing).

[1] Funding procured by Metro would only construct the proposed capital improvements. Metrolink, as the operator of the AVL, would be responsible for the planning and funding of the proposed service increase on the AVL, including the purchase of additional rolling stock required to provide increased service.

Table 2-1 provides a summary of the existing AVL service characteristics as well as the proposed service characteristics following completion of the proposed capital improvements.

Table 2-1: Proposed Service Characteristics

Service Characteristic	Existing	Proposed Project
Weekday Roundtrips	15	30
Daily Round Trips by Service Area		
San Fernando Valley	14[1]	28[1]
Santa Clarita Valley	15	30
Antelope Valley	10	20
Saturday Round Trips	6	14
Sunday/Holiday Round Trips	6	7
Revenue Trainsets Required	6	8
Off-Peak Service at Regular Clockface Intervals	Irregular	Semi-Hourly[2]
Late Night Service, Monday-Thursday	None	1 Trip LAUS - Lancaster
Late Night Service, Friday and Saturday	None	1 Trip LAUS - Lancaster
Peak Service	6 Trains	Existing with Improved Reliability
Peak Headway	30 – 50 Minutes	20 – 40 Minutes

Notes:

[1]Excludes express train(s), which stop in the San Fernando Valley only at Sylmar/San Fernando and Downtown Burbank

[2]30-minute headways LAUS to Santa Clarita Valley; hourly headways to Lancaster.

2.5 CONSTRUCTION

The Proposed Project would almost entirely be constructed within existing rail or street ROW. Minor acquisitions, easements, or temporary construction easements may be necessary at select locations mainly to accommodate construction staging and laydown areas and to accommodate the required grading activities associated with the proposed capital improvements. Generally, construction activities associated with each of the capital improvements would include site clearing, grading and retaining wall installation, utility relocation and installation, and track and systems installation. Utility facilities potentially requiring relocation include underground fiber optic cables, water lines, electrical lines, and sewer connections. Station platforms proposed as part of the Canyon Siding and Lancaster Terminal Improvements would require cast in-place concrete slab and foundations as well as installation of typical station platform elements such as canopies and seating.

Construction equipment anticipated to be used for the Proposed Project include track installation equipment, front-end loaders, dump and haul trucks, excavators, medium to large rams for braking rock, small/medium scrapers, drills for tiebacks/rock bolts, construction forklifts,

crane, concrete pump trucks, concrete haul trucks, rail-mounted drill rig (for pier protection wall installation) and utility/service vehicles. Additional smaller equipment may also be used such as walk-behind compactors, compact excavators and tractors, and small hydraulic equipment.

During the Advanced Conceptual Engineering phase, the Project team would coordinate with utility companies to request information. These companies would be contacted to ensure they are aware of the Proposed Project and provide mark-ups, as-builts or confirmation of owner exhibits. Utility coordination meetings would be set up with each utility company with potentially affected facilities to help determine if relocation would be required or the facility could be protected-in-place. The utility coordination meetings would help to ensure all the utility companies are engaged early during Project development. Preliminary relocation concepts would be developed and presented to each utility owner with affected facilities. Utility agreements would be finalized to ensure the designs are prepared by third party utility owners.

The construction duration of the Proposed Project is expected to last approximately 24 months per capital improvement. While construction activities of each capital improvement could take place concurrently, the active nature of the AVL corridor requires careful planning and coordination to avoid disrupting Metrolink service. Accordingly, it is more likely that construction of the capital improvements would be somewhat sequential with certain, less disruptive activities at each capital improvement site occurring concurrently. In addition, for safety reasons and to limit disruptions to rail service, project specific work windows would be required for some of the construction work. Similarly, certain activities that could disrupt rail service may require nighttime and weekend construction to minimize disruption.

Construction staging and access plans have not been developed at this stage in the planning process; however, preliminary planning for each capital improvement site has identified potential staging and access areas which are described below.

The overall project schedule anticipates construction commencing 2024 and completion in 2028.

2.5.1 Balboa Double Track Extension Construction Staging and Access

Access to the capital improvement site during construction is anticipated to be provided at the southern end of the improvement limits via San Fernando Road, which would require construction equipment, materials, and personnel to cross the existing AVL tracks to access the construction zone. As such, a temporary grade crossing would likely be required to facilitate the movement of construction materials. Additionally, access to the segment north of the I-5 and south of Sierra Highway is possible from a currently vacant property (APN 2601-003-016) on the west side of the railroad. The vacant property would provide adequate space for material and plant storage but would still require a temporary crossing of the AVL tracks and an existing channel immediately adjacent to the south side of the property.

Access from the northerly limits of the Balboa segment is also possible from Sierra Highway via an existing driveway at the north end of the site that provides direct access to the east of the

existing tracks avoiding the need for a temporary grade crossing. From this driveway, an existing access road runs south along the east side of the tracks, providing access all the way to the southern limits of the Balboa segment. Use of the existing access road provides the benefit of avoiding frequent crossing of the AVL, and since the access road appears to be functional, it would also minimize any additional site disturbance. Portions of the existing access road from Sierra Highway are outside the existing AVL ROW, which will require a Caltrans encroachment permit for temporary access during construction of the proposed improvements.

2.5.2 Canyon Siding Extension Construction Staging and Access

Construction materials for the Canyon Siding Extension can be brought onsite from the western limits of the site at Soledad Canyon Road. For the western portions of the Canyon Siding Extension site, access to the existing rail ROW must occur through private property or from the existing Santa Clarita Station. Two potential access points have been identified from private property at the western limits of the Canyon Siding Extension and both provide access north of the existing tracks. Since most of the construction occurs south of the tracks, construction materials would need to cross the AVL to active work zones. Temporary construction easements would be required for both private properties to provide the necessary access for the proposed construction.

Additionally, access to the Canyon Siding Extension site could occur from Santa Clarita Station via Commuter Way which would entail access through the City-owned parking lot and related access road. From the existing station access road, the southern portion of the site can be accessed from Squib County Road, which runs underneath the existing railroad bridge, just east of the station, transitioning into Bermite Road south of the tracks. The area extending from Squib County Road to the eastern limits of the Canyon Siding Extension would likely be accessed via the existing grade crossing at Golden Oak Road.

2.5.3 Lancaster Terminal Improvement Construction Staging and Access

There are several options to access the Lancaster Terminal Improvement site, including Lancaster Station, the Lancaster Boulevard grade crossing, and a City of Lancaster parking lot east of the crossing. The existing City-owned parking lot is likely large enough to accommodate construction staging and provides enough room for material and plant storage.

2.6 PERMITS AND APPROVALS

This document is intended to environmentally clear future related discretionary actions under CEQA by Metro and other agencies, although, as noted above, the Proposed Project is exempt from CEQA. Discretionary actions include those approvals, entitlements or permits necessary in order to implement a project. Metro will prepare a Stormwater Pollution Prevention Plan (SWPPP) consistent with federal and County requirements for stormwater discharges associated with construction and industrial activities. Coordination and approvals from communications and utility purveyors would be needed for temporary or permanent utility relocation or service interruption. The Proposed Project would require approval and/or permits

from departments associated with the Cities of Los Angeles, Santa Clarita and Lancaster, (e.g., fire departments and transportation departments). It is anticipated that permits and approvals include, but are not limited to, the following:

- **Metro Board:** The Metro Board may certify the EIR, adopt Findings and Statement of Overriding Considerations, adopt the Mitigation Monitoring and Reporting Program, and direct staff to file a Notice of Determination; the Metro Board may also direct staff to file a Notice of Exemption.
- **City of Santa Clarita:** Approval of grade crossing improvements and street restriping plans; recommendation for approval by the City Council; Approval of plans by emergency service providers.
- **Caltrans:** Approval of encroachment permit for construction activities within I-5 substructure.
- **City of Lancaster:** Discretionary actions and permits would be required, including possible noise variance for nighttime construction activities.
- **California Public Utilities Commission:** Permits required for public safety considerations related to station platforms and Golden Oak Road grade crossing.
- **UPRR:** Approval of potential encroachment permit for construction activities as well as potential operating permit within UPRR-owned ROW.

2.7 IMPLEMENTATION SCHEDULE

The Draft EIR will be available for public review and comment period from July 28, 2021, to September 10, 2021. After the completion of the public review period, Metro will prepare responses to comments received during the process. As noted previously, the Proposed Project is statutorily exempt from CEQA under Section 21080 (b)(10) of the Public Resources Code. Nevertheless, Metro intends to complete the EIR process anticipated in Fall 2021, through the preparation of the Final EIR. The overall project schedule anticipates construction commencing 2024 with gradual implementation of the service increases following construction phases.

3.1. TRANSPORTATION

The following summarizes the existing transportation conditions in the Project Area and potential impacts of the Proposed Project on the transportation system. Specifically, the following components of the transportation system are included: the freeway system, local roads surrounding each of the capital improvement sites, at-grade crossings along the AVL; existing AVL stations, transit connecting to the AVL; and pedestrian and bicycle facilities (referred to as active transportation); and parking. The Project Area for this analysis includes the transportation facilities that connect with or intersect the AVL with a focus on those facilities surrounding the proposed capital improvement sites.

3.1.1 Regulatory Framework

3.1.1.1 Federal Regulations

Federal Railroad Administration Track Safety Standards. Title 49 of the Code of Federal Regulations (CFR), Part 213 provides the Federal Railroad Administration (FRA) prescribes the minimum safety requirements for railroad track that is part of the general railroad system. The regulations provide the classification system for all regulated tracks including maximum operating speeds as well as a variety of basic design requirements such as track gauge, elevations, curves, ballast, fastening systems, and switches among others. The AVL is a Class 4 track which has a maximum operating speed of 60 miles per hour (mph) for freight trains and 80 mph for passenger trains.

Federal Railroad Administration Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings. The FRA Rule on the Use of Locomotive Horns at Highway Rail Grade Crossings took effect on June 24, 2005 and requires that locomotive horns be sounded at all public highway-rail grade crossings, except where there is no significant risk to persons, where supplementary safety measures fully compensate for the absence of the warning provided by the horn, or where sounding the horn as a warning is not practical. The rule preempts all state and local laws dealing with bans on the sounding of locomotive horns at crossings. The Rule also sets out the requirements for establishing quiet zones under permitting circumstances, generally requiring a community seeking to establish a quiet zone to implement additional safety measures at public highway-rail grade crossings.

3.1.1.2 State Regulations

Senate Bill 743. Codified in Public Resources Code Section 21099, Senate Bill (SB) 743 changes the way transportation impacts are analyzed under CEQA from level of service (LOS) to vehicle miles traveled (VMT). In 2018, Section 15064.3 was added to CEQA Guidelines to reflect the provisions of SB 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. Agencies are given “broad discretion” to select the methodology for analysis, or even apply a qualitative approach. The transportation impact analysis and determinations methodology have used a VMT based approach. Pursuant to

Section 15064.3(b)(2) of the State CEQA Guidelines, transportation projects that reduce, or have no impact on, VMT should be presumed to cause a-less-than-significant transportation impact.

California State Rail Plan 2018. The California 2018 State Rail Plan (SRP) serves as a framework for planning and implementation of operations and capital investment strategies for the state's rail network for the next 20 years, and beyond. The mission of the 2018 SRP is to provide a safe, sustainable, integrated and efficient California rail network that successfully moves people and goods while enhancing the state's economy and livability. The vision of the SRP is focused on moving people and goods, both of which have implications on how the AVL will be operated.

With the goal of moving people more efficiently, this latest revision to the Rail Plan focuses on the planning and investments needed to integrate the rail system with local and regional light rail and commuter rail, and with the station communities served by the entire network. The SRP calls for the rail system to provide reliable 30-minute service at a station in denser urban areas, or at least every 60-minutes at any station in the rest of the state, with the ultimate goal of frequent single-seat passenger rail service between Northern and Southern California.

California Public Utilities Commission Code. Section 1201 of the California Public Utilities Commission (CPUC) Code provides that no public road, highway, or street shall be constructed across the track of any railroad at-grade, nor shall the track of any railroad be constructed across a public road, highway, or street without first securing permission from the CPUC. CPUC permission is also required to alter, relocate, abandon, or close any railroad/highway crossing. General Order No. 88-B provides the rules, requirements, and process for obtaining CPUC approval for alterations to at-grade crossings.

3.1.1.3 Regional Regulations

Southern California Optimized Rail Expansion Program. Metrolink's Southern California Optimized Rail Expansion (SCORE) Program intends to upgrade the regional rail system to meet the current and future needs of the traveling public. By adding tracks, grade separations, and upgrading signal systems across the entire Metrolink system, trains will operate more frequently, reliably, and with more regular schedules, making regional travel by train easier, integrating the system with better connections, and creating an even more appealing alternative to driving. Under the SCORE Program, crossings will also be upgraded so the majority of the system will be Quiet Zone-ready, enabling cities to apply for a designation so train horns are not routinely blown. To the extent additional funding is received, the full set of projects could be complete as soon as 2028, just in time for the 2028 Summer Olympics.

2020-2045 Regional Transportation Plan/Sustainable Communities Strategies. Metropolitan Planning Organizations (MPO) are designated local decision-making bodies that carry out the federal transportation planning process. Southern California Association of Governments (SCAG) is the federally designated MPO for Los Angeles County. SCAG is required to adopt and periodically update a regional transportation plan. SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS) presents the latest transportation vision for

Los Angeles County, Orange County, San Bernardino County, Riverside County, Ventura County, and Imperial County through 2045 and provides a long-term investment framework for addressing the region's transportation and growth challenges. The expansion of public transit and displacement of on-road light duty automobile and truck travel are recognized in SCAG's 2020-2045 RTP/SCS as crucial pillars of sustainable regional transportation planning.

3.1.1.4 Local Regulations

City of Los Angeles

General Plan. The City's General Plan Framework Element is the citywide plan that establishes how the City of Los Angeles will grow in the future. The Framework Element is a strategy for long-range growth and development, setting a citywide context for the update of Community Plans and citywide elements. The Framework Element responds to state and federal mandates to plan for the future by providing goals, policies, and objectives on a variety of topics, such as land use, housing, urban form, open space, transportation, infrastructure, and public services.

2010 Bicycle Plan. The City of Los Angeles' 2010 Bicycle Plan, adopted on March 1, 2011, designates a 1,680-mile bikeway system and introduces a comprehensive collection of programs and policies for the City. Collectively the policies, programs, projects and recommendations in the 2010 Bicycle Plan are intended to create an environment that increases, improves and enhances bicycling in the City as a safe, healthy, and enjoyable means of transportation and recreation for bicyclists.

Mobility Plan 2035. Adopted September 2016, the Mobility Plan 2035 provides the policy foundation for achieving a transportation system that balances the needs of all road users. The Plan recognizes that primary emphasis must be placed on maximizing the efficiency of existing and proposed transportation infrastructure through advanced transportation technology, through reduction of vehicle trips, and through focusing growth in proximity to public transit. The plan incorporates the "complete streets" principle. The Mobility Plan 2035 also incorporates the City's 2010 Bicycle Plan which contains the policies, programs, projects, and recommendations for the City's bicycle network. **Table 3.1-1** lists the Mobility Plan policies applicable to the Proposed Project.

Table 3.1-1: City of Los Angeles Mobility Plan 2035 Policies

Policy	Description
Policy 1.5	Reduce conflicts and improve safety at railroad crossings through design, planning, and operation.
Policy 2.11	Set high standards in designing public transit rights-of-way that considers user experience and supporting active transportation infrastructure.
Policy 3.4	Provide all residents, workers and visitors with affordable, efficient, convenient, and attractive transit services.

Policy	Description
Policy 3.6	Continue to promote Union Station as the major regional transportation hub linking Amtrak, Metrolink, Metro Rail, and high-speed rail service.
Policy 4.11	Communicate and partner with the Southern California Association of Governments (SCAG), Los Angeles County Metropolitan Transportation Authority (Metro), adjacent cities and local transit operators to plan and operate a cohesive regional mobility system.
Policy 5.1	Encourage the development of a sustainable transportation system that promotes environmental and public health
Policy 5.2	Support ways to reduce vehicle miles traveled (VMT) per capita.

SOURCE: City of Los Angeles, *Mobility Plan 2035*, 2016.

City of Glendale

Circulation Element of the General Plan. Adopted August 1998, the Circulation Element of the General Plan defines the goals and objectives for managing the movement of people and goods through the City. The Plan developed a vision of a circulation system which preserves and enhances the quality of life in the City by allowing for commerce to thrive, protecting the character of residential neighborhoods, and minimizing adverse environmental impacts. **Table 3.1-2** lists the City's Circulation Element goals and objectives applicable to the Proposed Project.

Table 3.1-2: City of Glendale Circulation Element Goals and Objectives

Goal/Objective	Description
Goal 2	Minimization of congestion, air pollution, and noise associated with motor vehicles
Objective	Increase/support public and high occupancy vehicle transportation improvements through mitigation of traffic impacts from new development.
Goal 3	Reasonable access to services and goods in Glendale by a variety of transportation modes.
Objective	Ensure transportation connections to regional systems by a variety of modes.

SOURCE: City of Glendale, *Circulation Element*, 1998.

Bicycle Transportation Plan. Adopted August 28, 2012, the City of Glendale's Bicycle Transportation Plan proposed a variety of measures, including the improvement of the existing bicycle facilities, construction of new bike routes linking major activity centers, the installation of secured bicycle parking equipment, and the expansion of bicycle education/advocacy programs to enhance public awareness.

City of Burbank

General Plan. Adopted February 19, 2013, the Burbank2035 is the City of Burbank's General Plan. Burbank2035 provides guidance to City decision-makers on allocating resources and determining the future physical form and character of development. Burbank2035 evaluated many different planning chapters including air quality and climate change, land use, mobility, noise, open space and conservation, safety, and plan realization. The Mobility Element defines the transportation network and describes how people move throughout the City, including the

streets, railways, transit routes, bike paths, and sidewalks. **Table 3.1-3** lists the relevant policies of the Mobility Element to the Proposed Project.

Table 3.1-3: City of Burbank Mobility Element Policies

Policy	Description
Policy 2.1	Improve Burbank's alternative transportation access to local and regional destinations through land use decisions that support multimodal transportation.
Policy 2.3	Prioritize investments in transportation projects and programs that support viable alternatives to automobile use.
Policy 4.1	Ensure that local transit service is reliable, safe, and provides high quality service to major employment centers, shopping districts, regional transit centers, and residential areas.
Policy 4.4	Advocate for improved regional bus transit, bus rapid transit, light rail, or heavy rail services linking Burbank's employment and residential centers to the rest of the region.
Policy 4.5	Improve transit connections with nearby communities and connections to Downtown Los Angeles, West San Fernando Valley, Hollywood, and the Westside.
Policy 9.1	Ensure safe interaction between all modes of travel that use the street network, specifically the interaction of bicyclists, pedestrians, and equestrians with motor vehicles.

SOURCE: City of Burbank, *Mobility Element*, 2013.

Bicycle Master Plan. Adopted December 15, 2009, the Bicycle Master Plan is a policy document to guide the development and maintenance of a bicycle network, support facilities, and other programs for Burbank over a 25-year horizon. It includes policies around bicycle planning, community involvement, utilization of existing resources, facility design, multi-modal integration, safety education, support facilities, as well as programs, implementation strategies, maintenance, and funding. The City of Burbank recognizes that a bicycle-friendly environment enhances the quality of life for residents, workers, and visitors in the City.

City of San Fernando

San Fernando Corridors Specific Plan. The AVL corridor traverses the San Fernando Road Specific Plan area. The San Fernando Corridors Specific Plan describes policies and strategies for revitalizing vital corridors in the City of San Fernando. These corridors include Maclay Avenue, Truman Street, and San Fernando Road. The Specific Plan envisions streetscape improvements within each of the above listed corridors providing pedestrian and community enhancements.

General Plan. The City of San Fernando addresses land use and transportation within their 1987 General Plan, through close coordination between the Land Use and Housing Elements and the Circulation Element. The Circulation Element is the primary source for the City's policies related to transportation facilities. One of the objectives (4b) contained in the General Plan calls for maintaining and improving vehicular traffic circulation within the San Fernando Corridors Specific Plan area while accommodating future demand for circulation by all modes of transportation. **Table 3.1-4** lists the goals and objectives applicable to the Proposed Project.

Table 3.1-4: City of San Fernando Circulation Element Goals and Objectives

Goal/Objective	Description
Goal 4	To generate a pedestrian- and transit-oriented network of complete streets within the Corridors Specific Plan area that provides high quality connections to the Metrolink Station for all travel modes, while balancing the needs of automobile access with the safety and comfort of pedestrians and bicyclists.
Objective 1	Conflicts between vehicular traffic and railway operations will be minimized to the maximum extent possible.
Objective 4b	Within the San Fernando Corridors Specific Plan (SP-5) area, maintain and improve vehicular traffic circulation within the specific plan area and the adjacent community in order to safely and efficiently move both local and though traffic to its destination, while accommodating future demand for circulation by all modes of transportation.
Objective 4e	Within the San Fernando Corridors Specific Plan (SP-5) area, ensure Metro's East San Fernando Valley Transit Corridor project preserves on-street parking, does not compromise pedestrian accessibility and comfort, or negatively impact adjacent businesses

SOURCE: City of San Fernando, *Circulation Element*, 1987.

City of Santa Clarita

General Plan. The City of Santa Clarita General Plan is the primary planning document for the incorporated areas of the City of Santa Clarita. The Circulation Element provides the framework for the continued development of sustainable and efficient transportation within the City and surrounding areas. The Circulation Element identifies and promotes a variety of techniques for improving mobility that go beyond planning for construction of new streets and highways. These techniques include development of alternative travel modes and support facilities; increased efficiency and capacity of existing systems through management strategies; and coordination of land use planning with transportation planning by promoting concentrated, mixed-use development near transit facilities. Various policies contained in the Circulation Element promote and prioritize multi-modal transportation and improving transportation options for residents of the City. The goals, objectives and policies relevant to the Proposed Project transportation analysis are listed in **Table 3.1-5**.

Table 3.1-5: City of Santa Clarita Circulation Element of the General Plan Goals, Objectives, and Policies

Goal/Objective/Policy	Description
Objective C1.1	Provide multi-modal circulation systems that move people and goods efficiently while protecting environmental resources and quality of life.
Policy C 1.1.1	Reduce dependence on the automobile, particularly single occupancy vehicle use, by providing safe and convenient access to transit, bikeways, and walkways.
Policy C 1.1.2	Promote expansion of alternative transportation options to increase accessibility to all demographic and economic groups throughout the community, including mobility-impaired persons, senior citizens, low-income persons, and youth.

Goal/Objective/Policy	Description
Policy C 1.1.5	Plan for efficient links between circulation systems at appropriate locations, including but not limited to bus-rail connections and pedestrian-bus connections.
Policy C 1.1.7	Consider the safety and convenience of the traveling public, including pedestrians and cyclists, in design and development of all transportation systems.
Policy C 1.2.8	Provide safe pedestrian connections across barriers, which may include but are not limited to major traffic corridors, drainage and flood control facilities, utility easements, grade separations, and walls.
Policy C 1.3.3	Through trip reduction strategies and emphasis on multi-modal transportation options, contribute to achieving the air quality goals of the South Coast Air Quality Management District Air Quality Management Plan.
Goal C 6	A unified and well-maintained bikeway system with safe and convenient routes for commuting, recreational use and utilitarian travel, connecting communities and the region.
Objective C 6.1	Adopt and implement a coordinated master plan for bikeways for the Valley, including both City and County areas, to make bicycling an attractive and feasible mode of transportation.
Objective C 6.2	Encourage provision of equipment and facilities to support the use of bicycles as an alternative means of travel.

SOURCE: City of Santa Clarita, *Circulation Element of the Santa Clarita General Plan*, 2011.

Non-Motorized Transportation Plan. The Non-Motorized Transportation Plan guides the future development of bicycle and pedestrian facilities, paseos, and trails within the City. This Plan focuses on the City's bicycle and pedestrian network, planning and policies related to bicycling and walking, nonmotorized connections to transit, safe routes to schools, and complete streets. The overarching, long-term goal of the Plan is to provide the cultural, infrastructure and institutional support that will guide the development of a pleasant, safe, and convenient non-motorized transportation network that everyone in City of Santa Clarita can use for their travel needs.

City of Palmdale

General Plan. The City's General Plan serves as a foundation in making land use decisions based on goals and policies related to land use, transportation routes, population growth and distribution, development, open space, resource preservation and utilization, air and water quality, noise impacts, safety issues and other related physical, social and economic development factors. In addition to serving as a basis for local decision making, the General Plan established a clear set of development rules for citizens, developers, decision makers, neighboring cities and counties, and provides the community with an opportunity to participate in the planning and decision-making process. The Circulation Element of the General Plan provides the policies and objectives for the City's circulation system. Several goals and policies contained in the Circulation Element promote and encourage public transit and regional rail service improvements within the City. **Table 3.1-6** lists the applicable goals, objectives, and policies in the Circulation Element applicable to Project.

Table 3.1-6: City of Palmdale General Plan Goals, Objectives, and Policies

Goal/Objective/Policy	Description
Goal C2	Reduce the number of trips and vehicle miles traveled by individuals within the Planning Area, to meet regional transportation and air quality goals
Objectives C2.1	Encourage development and implementation of a variety of measures to reduce trips and vehicle miles traveled by existing and future residents and workers within the Planning Area.
Objective C2.2	Increase the public transit opportunities available to Palmdale residents in order to reduce traffic impacts on streets and highways and provide travel alternatives.
Policy C2.2.1	Promote public transit operations within the Planning Area, and work with transit operators to coordinate schedules, services, service routes and fares.
Policy C2.2.4	Encourage development of regional rail transit serving the Palmdale area.
Goal C4	Promote opportunities for rail service to move goods, passengers and commuters into and out of the Planning Area.
Objective C4.1.1	Promote the use of rail service to support industry in the City.
Objective C4.2	Encourage extension of passenger rail service to the City of Palmdale.
Policy C4.2.2	Support regional efforts to provide commuter rail service from Palmdale to the Los Angeles basin

SOURCE: City of Palmdale, *General Plan,* 1993.

Palmdale Transit Area Specific Plan. In 2020, the City of Palmdale prepared a specific plan for the area surrounding the Palmdale Transportation Center which currently serves the AVL and other transit services. The Specific Plan serves as a framework and development strategy for a pedestrian oriented mixed-use district surrounding the Palmdale Transportation Center with the future high-speed rail. The specific plan is intended to be a tool for developers, property owners, City staff and decision makers by providing strong and clear policies, a vision that guides land use decisions, form-based development and design standards, infrastructure improvements, and economic development strategies. In concert with this effort, the City also developed a transit-oriented development plan called the High-Speed Rail Station Area Plan which is incorporated into the specific plan. The station area plan provides urban design recommendations, mobility strategies, and identifies economic development opportunities.

City of Lancaster

City of Lancaster General Plan. The City of Lancaster General Plan provides a vision of the future that is a compilation of a system of basic community values, ideals, and aspirations as to how the City's natural and man-made environments should be organized and managed. The Plan identifies the types of development that will be allowed, the spatial relationships among land uses, and the general pattern of future development. The Plan is organized in sections described as "Plans" that reflect the City's values and aspirations. Two such plans, Chapter IV: Plan for Active Living and Chapter V: Plan for Physical Mobility, provide the policies and actions specific to transportation.

The Chapter IV: Plan for Active Living focuses on the components of the community's shelter, culture, and lifestyle and on the manner in which those in need can be helped so that all may share in achieving a high quality of life. The Chapter IV: Plan for Active Living also contains the City's vision for its pedestrian, bicycle and equestrian network.

The Chapter V: Plan for Physical Mobility focuses on transportation issues, such as how goods and people move within the City. The Plan focuses on transportation issues at the local level and beyond with the recognition that circulation decisions must be coordinated with regional, State, and federal agencies, as well as with neighboring communities. In the Chapter V: Plan for Physical Mobility, transportation facilities are discussed, as well as alternative modes of transportation. **Table 3.1-7** lists the objectives, policies and actions applicable to the Proposed Project.

Table 3.1-7: City of Lancaster General Plan Objectives, Policies, and Actions

Objective/Policy/Action	Description
PLAN FOR ACTIVE LIVING	
Policy 10.2.4	Facilitate the use of bicycles as an alternative form of transportation, as well as form of recreation (see also Policy 14.4.3 and related Specific Actions of the Plan for Physical Mobility).
Specific Action 10.2.4(a)	Incorporate bicycle routes into the City roadway system as appropriate.
Specific Action 10.2.4(c)	Design bicycle routes and pathways to allow access to local and regional transit stops and locations.
PLAN FOR PHYSICAL MOBILITY	
Policy 14.1.6	Work with regional partners to ensure that the regional circulation system provides adequate connections across the Antelope Valley for convenient circulation and rapid emergency access.
Specific Action 14.1.6(b)	Continue to participate in regular meetings of the North County Transportation Coalition (NCTC) to identify, promote and secure funding for priority projects that address transportation needs of the City and North County.
Objective 14.3	Achieve a balance between the supply of parking and demand for parking, recognizing the desirability and availability of alternatives to the use of the private automobile.
Policy 14.3.1	Maintain an adequate supply of parking that will support the present level of automobiles and allow for the expected increase in alternative modes of transportation.
Objective 14.4	Reduce reliance of the use of automobiles and increase the average vehicle occupancy by promoting alternatives to single-occupancy auto use, including ridesharing, non-motorized transportation (bicycle, pedestrian), and the use of public transit.
Policy 14.4.1	Under the guidance of the Transportation Master Plan, support and encourage the various public transit companies, ridesharing programs and other incentive programs, that allow residents to utilize modes of transportation other than the private automobile, and accommodate those households within the Urbanizing Area of the City that rely on public transit.

Objective/Policy/Action	Description
Specific Action 14.4.1(a)	Promote programs to increase Metrolink ridership, to lessen traffic congestion on SR14 and to improve local air quality.
Specific Action 14.4.1(c)	Support and encourage the development of an efficient transportation system for the entire community, emphasizing the particular needs of the transit dependent individuals in the City, such as senior citizens, the handicapped, and students through such actions as: • Assisting the local transit providers in the coordination, location and scheduling of public transit services and facilities. • Working with Palmdale, Los Angeles County, and other agencies to maintain and enhance local transit service routes and schedules into a linked, valley-wide system. • Urging the timely extension of public transit between urban residential areas and industrial employment centers. • Examining alternatives to fixed route transit services within rural areas, such as demand response services, volunteer driver programs and taxi voucher programs.
Policy 14.4.2:	Promote the use of alternative modes of transportation through the development of convenient and attractive facilities that support and accommodate the services.
Specific Action 14.4.2(a)	Through the development review process, ensure that new developments make adequate provision for bus stop and turnout areas as necessary for both public transit and school bus service, as well as park-and-ride facilities identified as necessary.
Policy 14.4.5	Design transportation facilities to encourage walking, provide connectivity, ADA accessibility, and safety by reducing potential auto/pedestrian conflicts.
Specific Action 14.4.5(a)	Require ramps and other design features which comply with Federal and State regulations regarding transportation accessibility for the disabled in new developments, and, where practical, construct these facilities in existing urban areas.
Specific Action 14.4.5(c)	Encourage transit supportive uses in close proximity to the Metrolink station.

SOURCE: City of Lancaster, *Lancaster General Plan*, 2009.

Master Plan of Trails and Bikeway. Adopted March 2012, the Plan is intended to guide the planning and design of pedestrian, bicycle and equestrian facilities in a comprehensive manner throughout the City of Lancaster. The City's vision is to create a connected network of on-road and off-road trails and bikeway facilities to accommodate users of all ages and abilities, including equestrians. When implemented, it is anticipated that the proposed network will provide linkages between residential areas, commercial centers, transportation hubs, employment centers, and recreational venues.

County of Los Angeles

Santa Clarita Valley Area Plan. Adopted in 2012 by the Los Angeles County Board of Supervisors, the Santa Clarita Valley Area Plan is a component of the Los Angeles County General Plan and is intended to provide focused goals, policies, and maps to guide the regulation of development within the unincorporated portions of the Santa Clarita Valley. Chapter 3 of the Plan is the Circulation Element which plans for the continued development of efficient, cost-effective and comprehensive transportation systems that are consistent with regional plans, local needs, and the Santa Clarita Valley's community character. The Circulation Element identifies and promotes a variety of techniques for improving mobility that go beyond planning for construction of new streets and highways, including development of alternative travel modes and support facilities; increased efficiency and capacity of existing systems through management strategies; and coordination of land use planning with transportation planning by promoting concentrated, mixed-use development near transit facilities. **Table 3.1-8** lists the goals, objectives, and policies of the Plan that are applicable to the Project.

Table 3.1-8: Santa Clarita Valley Area Plan Circulation Element Goals, Objectives, and Policies

Goal/Objective/Policy	Description
Goal C-1	An inter-connected network of circulation facilities that integrates all travel modes, provides viable alternatives to automobile use, and conforms with regional plans.
Objective C-1.1	Provide multi-modal circulation systems that move people and goods efficiently while protecting environmental resources and quality of life.
Policy C-1.1.1	Reduce dependence on the automobile, particularly single-occupancy vehicle use, by providing safe and convenient access to transit, bikeways, and walkways.
Policy C-1.1.2	Promote expansion of alternative transportation options to increase accessibility to all demographic and economic groups throughout the community, including mobility-impaired persons, senior citizens, low-income persons, and youth.
Policy C-1.1.7	Consider the safety and convenience of the traveling public, including pedestrians and cyclists, in design and development of all transportation systems.
Objective C-1.3	Ensure conformance of the Circulation Plan with regional transportation plans.
Policy C-1.3.2	Through trip reduction strategies and emphasis on multi-modal transportation options, contribute to achieving the air quality goals of the South Coast Air Quality Management District Air Quality Management Plan
Policy C-1.3.3	Through trip reduction strategies and emphasis on multi-modal transportation options, contribute to achieving the air quality goals of the South Coast Air Quality Management District Air Quality Management Plan
Goal C-4	Rail service to meet regional and inter-regional needs for convenient, cost-effective travel alternatives, which are fully integrated into the Valley's circulation systems and land use patterns.

SOURCE: Los Angeles County, *Santa Clarita Valley Area Plan*, 2011.

3.1.2. Existing Setting

3.1.2.1 Existing AVL Service

Prior to the COVID-19 pandemic, AVL rail operations consisted of 30 weekday trains, 12 Saturday trains, and 12 Sunday trains. Peak period operations occur between the hours of 4:00 AM to 7:00 AM in the morning peak period and 4:00 PM to 7:00 PM in the evening peak period. Consistent with regional commute patterns, peak travel direction is railroad east to LAUS in the morning peak period and railroad west to Lancaster in the evening peak hour. Weekday service runs all day and is equally divided per direction, though peak period/peak direction service is more frequent than non-peak and midday period service.

The AVL runs four stopping patterns during the week. Eighteen trips make all stops between LAUS and Lancaster. Eight trips stop short at the Via Princessa Station, but have timed connections to the North County TRANSporter bus at Newhall Station for travel to the Palmdale Station. TRANSporter also stops at the Vincent Grade/Acton Station by request. Two trains make all stops between LAUS and Santa Clarita Station in the evening, one in peak direction and one in reverse peak direction. One express service is provided during each peak period, in the peak direction to provide a trip between Palmdale Station and LAUS in under two hours. **Figure 3.1-1** presents the 2019 timetable for the AVL weekday service.

Figure 3.1-1: 2019 AVL Weekday Schedule

MONDAY THROUGH FRIDAY

Metrolink Train No.	200	202	204	282	206	208	🚌	210	🚌	212	🚌	214	216	218	220	🚌	222	🚌	224	226
Lancaster	3:44	4:46	5:16		5:58	6:48				9:01			11:35		1:45					6:17
Palmdale	3:54	4:56	5:26	5:58	6:08	6:58	7:50		9:10	9:11	10:30		11:45		1:55	2:00		4:00		6:26
Vincent Grade/Acton	4:06	5:08	5:38	↓	6:21	7:10	↓		↓	9:23	↓		11:57		2:07	↓		↓		6:39
Via Princessa	4:42	5:44	6:15	↓	6:56	7:48	↓	9:05	↓	9:59	↓	11:26	12:34	1:51	2:43	↓	3:25	↓		7:25
Santa Clarita	4:48	5:50	6:21	6:48	7:02	7:55	↓	9:11	↓	10:05	↓	11:32	12:40	1:57	2:49	↓	3:32	↓	5:11	7:31
Newhall	4:56	5:58	6:29	↓	7:10	8:02	8:40 ➤	9:19	9:55 ➤	10:13	11:20 ➤	11:40	12:48	2:05	3:03	2:50 ➤	3:40	4:50 ➤	5:19	7:46
Sylmar/San Fernando	5:11	6:13	6:45	7:11	7:28	8:20		9:35		10:32		11:56	1:06	2:20	3:17		3:56		5:35	8:00
Sun Valley	5:18	6:20	6:56	↓	7:36	8:27		9:43		10:40		12:04	1:14	2:29	3:25		4:06		5:43	8:13
Burbank Airport - North (AV Line)	5:22	6:24	7:00	↓	7:40	8:31		9:47		10:44		12:08	1:18	2:33	3:29		4:10		5:47	8:17
Burbank - Downtown	5:28	6:30	7:05	7:22	7:45	8:37		9:52		10:49		12:13	1:23	2:39	3:35		4:21		5:52	8:22
Glendale	5:34	6:36	7:12	↓	7:51	8:43		9:59		10:56		12:20	1:30	2:45	3:41		4:28		5:59	8:29
L.A. Union Station	5:53	6:55	7:25	7:40	8:06	8:57		10:13		11:08		12:34	1:43	3:01	3:55		4:41		6:14	8:42

MONDAY THROUGH FRIDAY

Metrolink Train No.	201	203	🚌	205	207	🚌	209	211	213	🚌	215	217	🚌	219	285	221	223	225	227
L.A. Union Station	6:19	7:29		8:29	9:42		11:06	11:58	1:55		3:28	3:50		4:44	5:34	5:58	6:38	7:36	9:25
Glendale	6:31	7:41		8:41	9:54		11:18	12:10	2:07		3:40	4:02		4:56	↓	6:10	6:50	7:48	9:37
Burbank - Downtown	6:38	7:49		8:48	10:01		11:25	12:18	2:14		3:48	4:09		5:04	5:51	6:18	6:57	7:55	9:44
Burbank Airport - North (AV Line)	6:44	7:55		8:54	10:07		11:31	12:24	2:20		3:54	4:16		5:10	↓	6:23	7:03	8:01	9:50
Sun Valley	6:49	7:59		8:59	10:12		11:36	12:29	2:25		3:58	4:21		5:14	↓	6:28	7:08	8:06	9:54
Sylmar/San Fernando	7:01	8:08		9:08	10:21		11:45	12:38	2:36		4:10	4:30		5:24	6:05	6:37	7:17	8:15	10:03
Newhall	7:19	8:26 ➤	8:50	9:24	10:40 ➤	10:50	12:03	12:54	2:51 ➤	3:00	4:25	4:45 ➤	5:00	5:42	↓	6:52	7:32	8:30	10:18
Santa Clarita	7:26	8:33	↓	9:32	10:48	↓	12:11	1:02	3:00	↓	4:32	4:52	↓	5:49	6:25	7:00	7:43	8:38	10:26
Via Princessa	7:33	8:42	↓	9:40	10:55	↓	12:18	1:12	3:06	↓	4:39		↓	5:56	↓	7:07	7:50	8:45	10:33
Vincent Grade/Acton	8:12		↓	10:24		↓	12:59			↓	5:17		↓	6:35	↓	7:49	8:28	9:23	11:11
Palmdale	8:22		9:36	10:35		11:40	1:10			3:50	5:28		5:50	6:50	7:21	8:00	8:39	9:34	11:22
Lancaster	8:35			10:46			1:20				5:41			6:58		8:12	8:54	9:49	11:37

SOURCE: Metrolink, 2019

Weekend service operates six trains in each direction on Saturdays and Sundays, making all stops between LAUS and Lancaster Terminal. Frequency is uneven, varying from 90 minutes to almost four hours between trains depending on the time of day.

3.1.2.2 Connecting Transit Service

Metrolink operates the AVL service as well as six other commuter rail lines in Southern California which all have connections at LAUS. There are numerous transit providers along the AVL route many of which provide connections to Metrolink stations served by the AVL. Los Angeles County has a high rate of transit transfers with 55 percent of Metrolink riders using connecting transit service to travel to or from Metrolink stations.[1] Metrolink has arrangements with transit systems throughout Southern California to provide transit connections, many of which are free with a valid Metrolink ticket. In Los Angeles County, the EZ Transit Pass program allows riders with a valid Metrolink ticket to unlimited rides on participating operators' local services on the date of the Metrolink ticket. The EZ Transit Pass travel does not require a direct transfer between Metrolink and the connecting service. **Table 3.1-9** lists the transit services offering connections to the AVL and the stations served.

Table 3.1-9: Connecting Transit and Stations Served

Transit Service	AVL Stations Served
Metrolink Ventura Line	• Downtown Burbank • Glendale
Metro bus service & Metro rail service	• Sylmar/San Fernando • Sun Valley • Burbank Airport • Los Angeles Union Station
Antelope Valley Transit Authority bus service	• Lancaster • Palmdale
Amtrak rail service/Rail to Rail	• Lancaster • Palmdale • Glendale • Los Angeles Union Station
Burbank Bus	• Burbank Airport • Downtown Burbank
Beeline bus service (City of Glendale)	• Downtown Burbank • Glendale
Hollywood Burbank Airport Shuttle	• Burbank Airport
LADOT/DASH bus service	• Sylmar/San Fernando
Kern Transit bus service	• Santa Clarita

[1] Metro, *Antelope Valley Line Study*, 2019.

Transit Service	AVL Stations Served
County of Los Angeles - Department of Public Works - Acton and Agua Dulce Shuttle	• Newhall • Vincent Grade/Acton
North County Transporter bus service (operated by Antelope Valley Transit Authority)	• Palmdale • Newhall
Santa Clarita Transit bus service	• Vincent Grade/Acton • Via Princessa • Santa Clarita • Newhall • Downtown Burbank • Los Angeles Union Station

SOURCE: Metrolink, 2021.

3.1.2.3 Roadway Network

The Project Area is served by an extensive freeway system that provides access to areas throughout Los Angeles County and the Southern California region. The following freeways are located within the Project Area:

- Interstate (I)-5/Santa Ana Freeway: The AVL generally runs parallel to I-5 through the San Fernando Valley. I-5 connects Los Angeles County internally, north to the Central Valley and the City of Sacramento, and south to Orange County and the City of San Diego.
- State Route (SR)-14: SR-14 is a north-south highway that connects the Antelope Valley and Mojave Desert to the southern portions of Los Angeles County. The freeway serves as the primary means of travel for residents and commuters in the Antelope Valley to access the employment centers in the City of Los Angeles. The AVL generally follows SR-14 from its southern terminus at I-5, northeasterly through the Canyon Country to the Antelope Valley cities of Palmdale and Lancaster. Beyond the City of Lancaster, SR-14 continues north to US 395, connecting to Kern County.
- I-210: I-210 is a major east-west highway that terminates at I-5 in the Sylmar community of Los Angeles County on the west. The highway continues eastward through northern Los Angeles, Burbank, and Pasadena through the San Gabriel Valley and beyond. I-210 terminates at I-5 just south of Balboa Boulevard in the City of Los Angeles.
- SR-118: SR-118 is the primary east-west highway through northern San Fernando Valley. The highway connects Ventura County with Los Angeles County and terminates at I-210. SR-118 crosses the AVL in the City of San Fernando.
- US 101/SR-170/Hollywood Freeway: The Hollywood Freeway is one of the principal freeways that runs through the center of the City of Los Angeles. From its southern end in Downtown Los Angeles to its intersection with SR-134 in the San Fernando Valley, it is signed as part of US Route 101. North of SR-134, the highway is then signed as SR-170 north to its terminus at I-5 in the Sun Valley community of the City of Los Angeles.
- I-110/Harbor Freeway: This north south freeway crosses the southern portion of the Project Area near Downtown Los Angeles and continues south to the City of Long Beach.

- SR-134: SR-134 is an east-west highway that traverses the southern portion of the San Fernando Valley extending from the Ventura County Line east to I-210. The highway crosses the AVL in northern area of the City of Glendale.

Table 3.1-10 provides a summary of at-grade crossings along the AVL corridor. In total there are 47 public at-grade crossings of the AVL and an additional 14 private crossings. All public grade crossings include warning device infrastructure and only three crossings, Flower Street, Grandview Avenue and Sonora all in the City of Glendale, are Quiet Zone crossings which include additional infrastructure that provide inaudible warning.

Table 3.1-10: Public At-Grade Crossings Along the AVL

City/Community	Crossing Street	Rail Mile Post
Glendale	Chevy Chase Drive	6.5
	Broadway/Brazil Street	7.5
	Doran Street	7.99
	Flower Street	8.47
	Grandview Avenue	8.71
	Sonora Avenue	9.15
Sun Valley	Arvilla Avenue	14.14
	Sunland Boulevard	15.06
	Penrose Street	15.68
	Sheldon Street	17.05
	Branford Street	17.87
Pacoima	Osborne Street	18.42
	Pierce Street	19.42
	Van Nuys Boulevard	19.51
	Paxton Street	20.06
San Fernando	Jessie Street	20.81
	Brand Boulevard	20.99
	Maclay Avenue	21.12
	Hubbard Avenue	21.81
Sylmar	Polk Street	22.63
	Bledsoe Street	23.17
	Roxford Street	23.72
Santa Clarita	Calex Private Crossing*	28.92
	Newhall Avenue	29.61
	Market Street	29.92
	13th Street	30.39
	Oak Ridge Road	31.6
	Drayton Street	32.25
	LA County Sanitation District Private Crossing*	32.77
	Golden Oak Road	34.96
	Ruether Avenue	35.86

City/Community	Crossing Street	Rail Mile Post
	Rainbow Glen Drive	36.33
	Private Crossing*	37.76
	Canyon Park Boulevard	38.58
	A Street Private Crossing*	41.55
Unincorporated Los Angeles County	Lang Station Road	43.62
	Capra Road*	45.14
	Rasmussen Private Crossing*	45.68
	Private Crossing*	46.85
	Briggs Road Private Crossing*	48.67
Acton	Robins Nest Private Crossing*	50.28
	US Forest Service Pacific Crest Equestrian Trail	50.61
	Youngs Canyon Road*	51.14
	Southern California Edison Crossing*	51.62
	Polsa Rossa Ranch*	52.88
	Bootlegger Canyon Road*	53.51
	Thousand Trail Road	54.37
	Crown Valley Road	56.16
	Aliso Canyon Road	57.97
Unincorporated Los Angeles County	California Aqueduct Crossing	65.24
	Sierra Highway	65.56
	Barrel Springs Road	65.75
Palmdale	Avenue S	66.91
	Avenue R	67.92
	Palmdale Boulevard	68.4
	Sierra Highway	69.32
	Rancho Vista Boulevard	69.95
	Columbia Way and Avenue M	70.32
	Avenue N*	71.99
Lancaster	Avenue K	75.04
	Avenue J	76.05
	Lancaster Boulevard	76.7

SOURCE: Metrolink, 2019, *Positive Train Control Project – Right-of-Way and Track Chart, Valley Subdivision*.
Notes: * Denotes private crossing.

3.1.2.4 Active Transportation

Bicycle Facilities. All of the bus transit connecting services listed in **Table 3.1-9** have bicycle amenities such as on-board bicycle racks. Only six AVL stations have bicycle racks and/or lockers.[2]

- LAUS
- Glendale
- Burbank Airport – North
- Sun Valley
- Sylmar/San Fernando
- Santa Clarita

Parallel and adjacent bicycle facilities in the Project Area are numerous and the existing bicycle network varies depending on the adjacent roadway lane configurations, right-of-way and density of uses in the surroundings. Generally, bicycle facilities in the San Fernando Valley are consistent with the denser development consisting of bicycle lanes along existing roadways with few facilities that are separated from other transportation uses. The City of Santa Clarita and the Canyon Country portions of the Project Area have larger open space areas with separated bicycle facilities serving a more recreational purpose though bicycle travel and commuting are encouraged within the City of Santa Clarita. The following lists major bicycle facilities in the Project Area:

- **The San Fernando Road Bike Path**. The San Fernando Road Bike Path is a Class I bikeway that runs parallel to the AVL corridor and is adjacent to the Sylmar/San Fernando Station, but is on the opposite side of the tracks as the station platform with no direct access to the Station from the bike path. The Station is accessible to bicyclists via adjacent streets.
- **Chuck Pontius Commuter Rail Trail**. The Santa Clarita Station is served by the Chuck Pontius Commuter Rail Trail which runs along Soledad Canyon Road and terminates before the Golden Oak Road intersection.
- **South Fork Trail**. The Newhall Station is close to the South Fork Trail, and access between the trail and the Station is possible from Railroad Avenue and other low-traffic residential streets.
- **Santa Clara River Trail**. The Via Princessa Station does not have direct bicycle access, though there are bike lanes on Sierra Highway approaching the Station from the south and the Santa Clara River Trail is to the north of the Station.

[2] Metrolink, *Stations Webpage*, https://metrolinktrains.com/rider-info/general-info/stations/, 2021.

Pedestrian Facilities. Metrolink stations along the AVL provide wayfinding signage and pedestrian crossings to facilitate safe and easy pedestrian access. **Table 3.1-11** shows the pedestrian access at each station. A majority of AVL stations provide nearby parking facilities with at-grade pedestrian crossings.

Table 3.1-11: Pedestrian Circulation at AVL Stations

Station	Pedestrian Circulation
LAUS	• Regional transit center that provides parking and separated pedestrian access to platforms
Glendale	• Parking adjacent to platform • At-grade track crossing to platform
Downtown Burbank	• Parking adjacent to platform • At-grade track crossing to platform
Burbank Airport – North	• At-grade track crossing to platform
Sun Valley	• At-grade street crossings from parking lots on both sides of tracks • At-grade track crossing to platform
Sylmar/San Fernando	• Parking adjacent to platform
Newhall	• Parking lots adjacent to platforms • At-grade track crossing to platform
Santa Clarita	• At-grade street crossing from parking lot to platform • Handicap parking adjacent to platform
Via Princessa	• At-grade street crossings from parking lot • Handicap parking adjacent to platform • At-grade track crossing to platform
Vincent Grade/Acton	• Parking adjacent to platform • Handicap parking adjacent to platform • At-grade street crossings from parking lot to platform
Palmdale	• At-grade street crossings from parking lot and bus bays to platform
Lancaster	• Parking adjacent to platform • Direct pedestrian access to platform

SOURCE: Metrolink, 2021.

3.1.3 Significance Thresholds and Methodology

3.1.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to transportation if it would:

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b);
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); and/or
d) Result in inadequate emergency access.

3.1.3.2 Methodology

The AVL is an existing commuter rail line with well-established operational characteristics that interface with other transportation networks in the existing condition. The impact analysis for transportation focuses primarily on potential impacts posed by construction of the three capital improvements and the associated design. Operational characteristics enabled by the Proposed Project would generally benefit transportation conditions by improving commuter rail service and reliability.

A detailed review of regional and local transportation programs, plans, ordinances, and policies was conducted to determine if construction or operational activities would result in any conflicts with such documents. A consistency matrix was developed to conduct this analysis.

As discussed in Section 3.1.1, SB 743 guides the State to focus on VMT and related measures as an alternative to traditional LOS analysis. The Governor's Office of Planning Resources (OPR) issued a "Technical Advisory on Evaluating Transportation Impacts". It includes a specific directive that:

> *Transit and active transportation projects generally reduce VMT and therefore are presumed to cause a less-than-significant impact on transportation. This presumption may apply to all passenger rail projects, bus and bus rapid transit projects, and bicycle and pedestrian infrastructure projects. Streamlining transit and active transportation projects aligns with each of the three statutory goals contained in SB 743 by reducing* greenhouse gas *(GHG), increasing multimodal transportation networks, and facilitating mixed use development.*

For the purposes of calculating VMT reduction, this report relies upon Metro's 2019 AVL Study[3] which already calculated regional VMT for various service scenarios associated with the AVL. Of those evaluated, Service Scenario 2 (later retitled Scenario 3), most closely resembles the Proposed Project service characteristics as it contemplates 30-minute bi-directional service

[3] Metro, *Antelope Valley Line Study Final Report,* October 22, 2019.

during peak hours. The calculation associated with Service Scenario 2 was selected as it provides a conservative estimate of VMT reductions so as not to overestimate the transportation and greenhouse gas emissions benefits of the Proposed Project. To calculate VMT reductions, the AVL Study estimated ridership increase based on the increase in revenue hours over 2017 conditions. The VMT reduction was then calculated using a conservative average trip length for the AVL corridor of 35.5 miles per trip.

The analysis of geometric design-related hazards is an evaluation based upon conformity of the Proposed Project to applicable local design standards and allowable uses. The SCRRA Design Criteria Manual is the primary document upon which this assessment was based.

The emergency access evaluation considers any physical impediments to emergency vehicles or personnel. Due to the numerous at-grade crossings along the AVL, an evaluation of the potential increase in crossing delay was developed to determine if, on an hourly basis, emergency access would be impeded to a significant degree by AVL operations. This evaluation calculated the typical gate-down time of an at-grade crossing utilizing conservative estimates for the temporal progression of the various phases of the crossing warning system. The total time of delay per hour was then calculated.

3.1.3.3 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation measures (if applicable). The potential for the Proposed Project to result in an impact to transportation is independent of the specific Project design options, unless stated otherwise. The following impact conclusions are valid for the Proposed Project and all associated design options.

Impact 3.1-1) Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

The Proposed Project has been developed and planned to address the region's needs for improved passenger rail service by addressing service reliability and efficiency as well as overall service frequency along the AVL. One of the primary objectives of the Proposed Project is to support the vision and goals for rail service in the region consistent with the California SRP 2018 Plan and Metrolink's SCORE program.

Construction

Roadway

Less-Than-Significant Impact with Mitigation. Construction would require the import and export of materials and equipment, and the localized movement of equipment on local streets and highways, particularly in the areas surrounding each of the capital improvements. The additional traffic generated during construction would consist of equipment, employee vehicles, and material deliveries in trucks. In addition, construction would require temporary lane reductions as well as potential street closures where construction work is proposed within

existing at-grade crossings, including Golden Oak Road in the City of Santa Clarita and Lancaster Boulevard in the City of Lancaster. A Traffic Management Plan, which would include alternative routes to maintain connectivity, would be required to mitigate impacts to traffic circulation and access. Without mitigation, the Proposed Project would result in a significant impact on roadways related to construction activities.

Transit

Less-Than-Significant Impact with Mitigation. Construction may affect portions of the AVL mainline track as part of the Balboa Double Track Extension or Canyon Siding Extension improvements. Construction worker and vehicle movements across active tracks would occur along the portions of the AVL within the three capital improvement sites. There is potential for construction to result in schedule delays, increased dwell times, and overall decreased performance of the AVL. Construction activities associated with the Canyon Siding Extension at the Santa Clarita Station may affect passengers due to temporary access impediments, pedestrian detours, and/or temporary shuttle service to nearby stations. Under the Island Platform design option, it is anticipated that the Santa Clarita Station would be out of service for periods of construction and a shuttle service would be provided. Without mitigation, the Proposed Project would result in a significant impact on transit related to construction activities.

Active Transportation

Less-Than-Significant Impact with Mitigation. No construction activities are proposed within an existing bicycle facility such that a designated bike route or lane would be affected by construction. Construction activities at the Golden Oak Road crossing would include restriping adjacent to the bicycle facility along Soledad Canyon Road, as well as installation of chicanes; however, regular use of the bicycle facility east of the Golden Oak Road intersection would not be impeded during construction. Pedestrian and bicycle movements through the Golden Oak Road crossing would be restricted during construction in a similar fashion as vehicle traffic. Similarly, construction of the layover facility associated with the Lancaster Terminal improvements would place restrictions on pedestrian and bicycle movements through the Lancaster Boulevard crossing.

Access to and from the existing platform at the Santa Clarita Station would be modified to facilitate construction. Appropriate safety provisions would be required to be in place to minimize disruptions to pedestrian ingress and egress. Pedestrian and bicycle access to the Lancaster Terminal would also be temporarily affected under the Island Platform Design Option. Therefore, without mitigation, the Proposed Project would result in a significant impact on active transportation related to construction activities.

Operations

Less-Than-Significant Impact. The Antelope Valley service area is identified in the California SRP, which supports 30-minute service frequencies between the City of Santa Clarita and San Fernando Valley communities and the City of Los Angeles to ensure connectivity and provide access to the statewide rail network. Additionally, the capital improvements would be consistent with the SRP goals of developing greater system-wide reliability through incremental

investments to achieve more capacity, both to support passenger travel and freight travel. The Proposed Project would enable Metrolink to meet the rail network goals of the SRP. In addition, the On-time Performance Policy is one of SCRRA's key performance indicators and is tied to Metrolink's 10-Year Strategic Plan 2015-2025. The Policy requires that 95 percent of trains arrive at their final destination within five minutes 59 seconds of their scheduled time. While the AVL has historically met the goal, the Proposed Project would provide the needed capacity to avoid typical train delays and provide greater schedule reliability. Accordingly, the Proposed Project would support Metrolink's goals in meeting the On-Time Performance Policy requirements.

Further, there are several projects in the region that would have the potential to interface with the Proposed AVL commuter rail service providing additional transit and regional travel enhancements. The California High Speed Rail (CAHSR) Project intends to run parallel to the AVL between Lancaster and Palmdale and then again in Burbank. While it is anticipated that the CAHSR Project would require substantial track realignment within the AVL ROW, once the CAHSR Project is completed, the potential will exist for service coordination between Metrolink and the CAHSR. With the clock-face schedules that will be enabled by the Proposed Project, timed connections between AVL and high-speed trains will be possible at each of the stations that they are expected to jointly serve, namely Los Angeles Union Station, Burbank Airport North Station, and Palmdale Station. Similarly, the Link US Project planned at Los Angeles Union Station would reconfigure the "throat" and elevation of the rail yard, construct a loop track and provide run-through tracks over the US-101 freeway. The reconfiguration will potentially allow regional one-seat trips from Ventura County and the Antelope Valley, to San Bernardino and San Diego counties. The Proposed Project would provide the service flexibility to support this potential transportation enhancement. Other related projects that may result in added mobility benefits in combination with the Proposed Project include the proposed East San Fernando Valley Transit Corridor project which would provide service connections and transfers to or from Metrolink trains at both the Sylmar and Van Nuys stations. Also, the Brightline West Project may provide a high-speed train connection to Las Vegas at the existing Palmdale Station.

In addition, the Proposed Project includes three capital improvements in the Cities of Los Angeles, Santa Clarita, and Lancaster, enabling the increase in Metrolink service along the AVL. The proposed capital improvements would be in existing Metro-owned rail right-of-way and the Proposed Project does not include reconfigurations to any roadways or bicycle facilities. Minor alterations to existing roadways would consist of modifications to the Golden Oak Road and Lancaster Boulevard at-grade crossings to accommodate proposed second or third tracks. The provision of improved commuter rail service and associated systemwide benefits would be consistent and supportive of various adopted policies, plans, and programs related to public transit. **Table 3.1-12** provides an evaluation of consistency with regional plans and programs, as well as local general plans or transportation guidelines for the jurisdictions along the AVL Corridor. As shown in **Table 3.1-12**, the Proposed Project would be consistent with state, regional, and local programs, plans, and policies addressing the circulation system. Therefore, the Proposed Project would result in a less-than-significant impact related to operations.

Table 3.1-12: Transportation Programs, Plans, and Policy Document Consistency Matrix

Documents	Consistency Analysis
State Rail Plan	**Consistent** – The Antelope Valley service area is identified in the SRP, which calls for providing 30-minute service frequencies between the Santa Clarita and San Fernando Valley communities and Los Angeles, to ensure connectivity and provide access to the statewide rail network. Additionally, the capital improvements would also be consistent with the SRP goals of developing greater system-wide reliability through incremental investments to achieve more capacity, both to support passenger travel and freight travel. The Proposed Project would enable Metrolink to meet the rail network goals of the SRP.
Metrolink SCORE Program	**Consistent** – The Proposed Project would enable the 2028 service frequency targets for the AVL included in the Program.
SCAG 2020-2045 RTP/SCS	**Consistent** – The Proposed Project would increase service along the AVL which would improve the transit network and contribute to regional VMT reductions.
City of Los Angeles Mobility Element 2035	**Consistent** – The Proposed Project would not make modifications to the street, bicycle, or pedestrian networks within the City of Los Angeles. In addition, the Proposed Project would support the Plan's goals and policies to promote transit and VMT reductions.
City of Los Angeles Bicycle Plan	**Consistent** – The Proposed Project would not make modifications to the City's bicycle network or facilities.
City of Glendale Bicycle Transportation Plan	**Consistent** – The Proposed Project would not make modifications to the City's bicycle network or facilities.
City of Glendale Circulation Element	**Consistent** – The Proposed Project would not make modifications to the street, bicycle, or pedestrian networks within the City of Glendale. In addition, the Proposed Project would support the Plan's goals and policies to minimize congestion, air pollution, and noise associated with motor vehicles through the provision of improved commuter rail service.
City of Burbank Bicycle Master Plan	**Consistent** – The Proposed Project would not make modifications to the City's bicycle network or facilities.
City of Burbank Mobility Element	**Consistent** – The Proposed Project would not make modifications to the street, bicycle, or pedestrian networks within the City of Burbank. In addition, the Proposed Project would support the Plan's goals and policies related multimodal transportation and improving transit in the City.
City of San Fernando Corridors Specific Plan	**Consistent** – The Proposed Project is located within the San Fernando Road Specific Plan area. No modifications to any roadways or pedestrian facilities are proposed within the City of San Fernando.
City of San Fernando Circulation Element	**Consistent** – The Proposed Project would not make modifications to the street, bicycle, or pedestrian networks within the City of San Fernando. While the number and frequency of Metrolink trains along the AVL would increase as a result of the Project, no new conflicts between vehicular traffic and AVL operations would occur. In addition, the Proposed Project would support the Plan's goals and policies related multimodal transportation and improving transit in the City.

Documents	Consistency Analysis
City of Santa Clarita Circulation Element	**Consistent** – The Proposed Project supports the Circulation Element objectives and policies geared toward reducing dependence on single occupancy vehicles and improvements to accessibility and transit as the Proposed Project would provide improved Metrolink service to residents of the City. The Proposed Canyon Siding Extension would result in modifications at the Golden Oak Road at-grade crossing including reconfiguring the Golden Oak Road/Soledad Canyon and Golden Oak Road/Golden Triangle intersections to preclude vehicle storage within the crossing. In addition, the existing Class III bicycle lane along Soledad Canyon Road would be routed and restriped through the intersection with safety enhancements to protect bicyclists and pedestrians including pedestrian gates/swing gates at the crossing. These proposed modifications would improve vehicle, bicycle and pedestrian safety supporting such policies as C 1.2.8 and C 6.2 of the Circulation Element.
City of Santa Clarita Non-Motorized Transportation Plan	**Consistent** – The Canyon Siding Extension would implement improvements to the existing Class III bicycle lane along Soledad Canyon Road and provide safety enhancements to protect bicyclists and pedestrians including pedestrian gates/swing gates at the crossing.
County of Los Angeles Santa Clarita Valley Area Plan Circulation Element	**Consistent** – The Proposed Project would not make modifications to the street, bicycle, or pedestrian networks within the Santa Clarita Valley Area Plan. The Proposed Project supports the Plan's goals to enhance transit service through the Valley and provide viable alternatives to automobile use.
City of Palmdale General Plan	**Consistent** – The Proposed Project would not make any modifications to the street, bicycle, or pedestrian networks within the City of Palmdale. In addition, the Proposed Project would support the Plan's goals and policies related to reducing automobile trips and vehicle miles travelled while improving transit service to the City.
City of Lancaster General Plan	**Consistent** – The Proposed Project would not affect bicycle routes or facilities within the City of Lancaster. Modifications to Lancaster Boulevard would consist of an additional at-grade track at an existing at-grade crossing and no changes to the street designation would result. The Proposed Project supports the City's policies and objectives geared toward reducing reliance on automobiles and improving Metrolink ridership
City of Lancaster Master Plan of Trails and Bikeway	**Consistent** – The Proposed Project would not affect bicycle routes or facilities within the City of Lancaster.

SOURCE: TAHA, 2021

Mitigation Measures

TR-1 During the final engineering phase and at least 30 days prior to the start of construction of each capital improvement, a construction Traffic Management Plan (TMP) shall be prepared by the contractor for each capital improvement including the Balboa Double Track Extension in the City of Los Angeles, the Canyon Siding Extension in the City of Santa Clarita, and the Lancaster Terminal Improvements in the City of Lancaster. Each TMP shall be reviewed and approved by Metro, City of Los

Angeles, City of Santa Clarita, City of Lancaster, and Caltrans, where applicable. The TMP shall identify proposed detour routes, as well as construction traffic routes, including haul truck routes, and preferred delivery/haul-out locations and hours. Lane and/or road closures shall be scheduled in consultation with the local public works departments associated with each capital improvement site to minimize disruptions to community traffic. The nearest local fire responders shall be notified, as appropriate, of traffic control plans, and lane and/or road closures as well as detour routes and construction vehicle routes shall be coordinated with fire responders to minimize disruptions to emergency response routes. The TMP shall identify pedestrian and bicycle circulation and access detours in and around the affected stations as well as temporary bus stop locations and signage, as applicable.

TR–2 During final engineering design and prior to construction, Metro shall establish rail operating agreements and/or memoranda with Metrolink to outline mutually agreed upon work windows and contractor operating restrictions. Such agreements shall identify performance objectives such as maximum allowed dwell times and/or on-time performance requirements to be achieved throughout construction, and how construction sequencing and railroad operational protocols would be incorporated into applicable construction documents (plans and specifications) and implemented to maintain the mutually agreed upon performance objectives during construction. Prior to construction, Metro and the construction contractor shall prepare detailed construction phasing plans for each phase of construction that identify appropriate means and methods to maintain mutually agreed upon on-time performance objectives while minimizing impacts on pedestrians and passengers at Santa Clarita Station and/or Lancaster Terminal. Prior to construction, Metro and the construction contractor shall also coordinate with current rail operators to establish temporary construction detours for passengers at the Santa Clarita Station and Lancaster Terminal that correspond to detailed construction phasing plans to minimize impacts on passenger transfer times. Detailed construction phasing plans shall be deemed acceptable by Metrolink prior to commencement of construction activities that could affect regular Metrolink operations.

Throughout the duration of construction, Metro shall solicit Metrolink's participation, as-needed, in construction coordination meetings to evaluate the efficiency of the measures in place and Metro and the construction contractor shall implement changes to means and methods during construction to ensure the performance objectives are maintained at an acceptable level throughout construction.

Significance of Impacts after Mitigation

Mitigation Measure **TR-1** would implement a TMP to address construction-related disruptions to regular circulation along affected roadways, bicycle facilities, or pedestrian facilities. With mitigation, construction impacts on these facilities would be less than significant.

Mitigation Measure **TR-2** would require operating agreements between Metro, the construction contractor, and Metrolink to minimize the construction-related disruptions to Metrolink service on the AVL to the greatest extent possible. With mitigation, construction impacts on transit would be less than significant.

Impact 3.1-2) Would the Proposed Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

CEQA Guidelines Section 15064.3 describes specific considerations for evaluating transportation impacts. The Guidelines states that VMT is the most appropriate measure of transportation impacts. Other relevant considerations may include the effects of the project on transit and non-motorized travel. The Guidelines also state that transportation projects that reduce, or have no impact on, VMT should be presumed to cause a less than significant transportation impact.

Construction

Less-Than-Significant Impact. The Proposed Project would temporarily generate additional VMT related to construction work activities and the hauling of excavated materials and construction supplies. The additional VMT would be temporary and would be offset by long-term VMT reductions discussed in the following section. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

Operations

Less-Than-Significant Impact. The Proposed Project would result in a VMT reduction of 39,089 VMT per weekday based on an estimated increase of 546 daily rail riders and an average trip length of approximately 35.8 miles (71.6 miles roundtrip). It is not unusual for ridership modeling to underestimate VMT reductions. The actual VMT reduction that could result from the service improvements would likely be higher for several reasons:

- The VMT calculation does not account for off-peak service improvements;
- The VMT calculation does not account for additional ridership from the Vista Canyon Station (currently under construction) and associated transit-oriented development;
- The VMT calculation does not account for the additional late-night service; and
- Average trip length along the AVL has been higher (42.2 miles in 2018) than that assumed for the calculation.

Regardless, as a transit improvement project, the Proposed Project would attract new transit riders thus encouraging a shift from automobile use to public transit as well as improved regional connectivity and local transit access to corridor destinations. The Proposed Project would be consistent with CEQA Guidelines Section 15064.3, subdivision (b) and would reduce regional VMT. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less than significant impact.

Impact 3.1-3) Would the Proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Construction

Less-Than-Significant Impact. Construction of the capital improvements, particularly the Balboa Double Track Extension, may require construction workers and equipment to cross the active rail corridor to access work areas. Construction activity within 25 feet of the centerline of the nearest active track would follow the SCRRA operating restrictions defined within the "Basic Safety Envelope". Within this envelope, the construction contractor is considered to have the potential to foul the track, regardless of the operation or equipment being used for construction. Unless otherwise approved by SCRRA, the construction contractor would not be permitted to perform construction activities that have the potential to foul mainline tracks during weekday commute hours and must work around the weeknight and weekend train traffic. It is anticipated that a majority of construction activities would occur outside the Basic Safety Envelope and those activities that would occur within the Basic Safety Envelope can be scheduled to minimize disruptions to Metrolink service by utilizing off-peak day-time and non-operational night-time hours. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

Operations

Less-Than-Significant Impact. The AVL is an existing rail line that operates within an existing rail corridor that employs Positive Train Control. Positive Train Control uses communication-based/processor-based train control technology that provides a system capable of reliably and functionally preventing train-to-train collisions, overspeed derailments, incursions into established work zone limits, and the movement of a train through a main line switch in the wrong position. Positive Train Control technology automatically controls train speeds and movements should a train operator fail to take appropriate action for the conditions at hand.

With regard to the design of the capital improvements, all geometric design considerations would be consistent with the requirements of the SCRRA Design Criteria Manual. While adherence to SCRRA Design Criteria Manual requirements would avoid hazards there are several design considerations associated with the proposed capital improvements.

Under the Balboa Double Track Extension, the track bed below the I-5 bridge is too narrow to allow for the proposed second track to meet design criteria requirements related to horizontal clearances from bridge structures, the requirement being a distance of 25 feet between the track and bridge columns. As a result, the existing Mainline track would be re-aligned under the

I-5 bridge to balance side clearances for both the Mainline track and the proposed second track. In addition, pier protection, consisting of concrete barriers, would be installed where the 25-foot clearance cannot be achieved.

The Canyon Siding Extension proposes revisions to the existing Golden Oak Road at-grade crossing at the eastern end of the improvement site where the proposed second track would cross the roadway. The additional rail track would preclude space for road vehicle storage on the eastern arm of the rail-road intersection. To address this, new road traffic signal equipment would be installed to preempt gate arms and store traffic at the intersection of Golden Oak Road and Golden Triangle Road. As a result, the at-grade crossing would be safer as no vehicles would be queued perpendicular to the AVL tracks. Pedestrian safety would also be improved including the installation of pedestrian gates and swing gates to meet California Public Utilities Commission (CPUC) and Federal Railroad Administration requirements for Quiet Zones. The existing bicycle lane along Soledad Canyon Road would be routed and restriped through the Soledad Canyon Road/Golden Oak Road intersection and chicanes would be installed to slow down bicyclists at the crossing. Dual curb ramps are proposed at each corner to improve pedestrian and bicycle safety as well. Design of the crossing has been and will continue to be coordinated with the CPUC and the City of Santa Clarita. Design of the Proposed Project would not create or substantially increase hazards. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less than significant impact.

Impact 3.1-4) Would the Proposed Project result in inadequate emergency access?

Construction

Less-Than-Significant Impact. Lane closures, traffic detours, and designated truck routes associated with construction of the capital improvements could temporarily result in decreased access and delayed response times for emergency services. The Proposed Project may require temporary sidewalk, lane, and/or road closures. Construction activities on existing at-grade rail crossings, including Golden Oak Road in the City of Santa Clarita and Lancaster Boulevard in the City of Lancaster, would likely require partial lane closures and/or temporary closures while additional track is constructed within the roadway. Lane and/or road closures would be scheduled to minimize disruptions. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

Operations

Less-Than-Significant Impact. Operation of the AVL would include increased service that would consist of trains every 30 minutes in each direction between LAUS and Via Princessa or the new Vista Canyon Station, currently under construction, and trains every 60 minutes between the Via Princessa/Vista Canyon Station and Lancaster Terminal. This amounts to up to four trains per hour traversing a given portion of the AVL corridor between LAUS and Via Princessa/Vista Canyon Station and two trains per hour between Via Princessa/Vista Canyon Station and Lancaster Terminal. There are 47 public at-grade crossings along the AVL corridor. Of these, 29 crossings are located railroad east of the Via Princessa/Vista Canyon Station and would be subject to 30-minute bi-directional service while 18 crossings would be subject to 60-minute bi-directional service. While the proposed increase in service would have no effect on existing gate down time at a given crossing, the frequency of gate downs would increase due to the higher volume of trains traversing the corridor resulting in additional delays at crossings, particularly during off-peak periods where the volume of trains would increase most dramatically.

Gate down time at at-grade crossings is different for each crossing as it is dependent on several factors including the width and geometry of the crossing, average train speed at the crossing, and the vehicle loads along adjacent streets. Generally, gate down time is a function of the following factors:

- Minimum Warning Time
- Buffer Time
- Clearance Time – additional time above base included in Minimum Warning Time generally related to on-site conditions.
- Island Time – The time it takes the train to traverse the island circuit through the crossing from head end to hind end of the train.
- Release Time – The time for the circuit to detect that the train is off of the island circuit and the time for the gates to raise.

A theoretical gate down time can be calculated by adding Minimum Warning Time + Buffer Time + Clearance Time + Island Time + Release Time.

CPUC requires Minimum Warning Time to be at least 20 seconds which allows for any vehicles to clear a standard 35-foot wide crossing. SCRRA Guidelines account for wider crossings by adding an additional second of clearance time for every additional 10 feet of width. However, Metrolink automatically adds 10 seconds Buffer Time to the CPUC requirement for a total of 30 seconds Warning Time. Clearance Time is a site-specific consideration based on the width of a given crossing and the vehicle mix along the roadway, but a conservative additional Clearance Time of five seconds has been added. An additional 12 seconds are then added to the Warning Time to account for equipment response, gate descent movement and vehicle/gate interaction checks. The total time from the initiation of the crossing to a train entering the crossing island has been assumed to be 47 seconds.

Metrolink locomotives are 68 feet long and passenger cars 85 feet and Metrolink trains along the AVL are either four-car or five-car consists powered by one locomotive. To provide a conservative estimate of gate down time, a 5-car consist has been assumed for a total length of 493 feet. Assuming an average speed of 35 mph, and a conservative island circuit length of 80 feet, the Island Time for AVL trains would be approximately 11 seconds.

While there is limited data on typical Release Time, 12 seconds has been assumed for equipment response and gate movement. Accordingly, typical gate down time throughout the AVL has been assumed to be 70 seconds. There will be instances along the AVL where gate down time may be longer due to unique geometric configurations or higher than typical traffic conditions; however, the difference would not be substantial. Accordingly, there would be a minimal project-related increase in delays at any one crossing amounting to up to five minutes of total delay per hour at crossings between LAUS and Via Princessa/Vista Canyon Station and up to 2.5 minutes of total delay per hour at crossings between Via Princessa/Vista Canyon Station and Lancaster Terminal. Emergency access across every rail crossing would be maintained.

Station modifications proposed as part of the Canyon Siding Extension improvement and the Lancaster Terminal Improvements Design Options would be coordinated and approved by the City of Santa Clarita and City of Lancaster Fire Marshals, respectively, to ensure the safest access is provided for emergency service providers. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

3.2 AESTHETICS

This section provides the applicable regulations, the existing setting of the three capital improvements, and a detailed impact assessment related to aesthetics. The Project Area for aesthetics consists of the three capital improvement sites and the visual environment surrounding them. The following terms are commonly used in visual and aesthetic impact assessments and are used in this aesthetics section to characterize the existing visual setting and to evaluate aesthetics impacts:

- **Landscape Unit**: Landscape Unit (LU) can be conceived of as a spatially defined landscape and can be thought of as an outdoor room that exhibits a distinct visual character. Each LU has a distinct, but not necessarily homogenous, visual character. An LU will often correspond to a place or district that is commonly known among local viewers. Within the Project Areas, there are distinct transitions in the visual setting that correspond primarily to changes in land use and jurisdictional boundaries.
- **Key Views**: Key, or representative, views encompass views both to and from the Project corridor and include views that are representative of the LU. Key views for the Proposed Project are chosen for each LU to illustrate the typical visual character and/or views in each LU.
- **Scenic Resources**: Scenic resources are areas, features, and sites that contribute to the distinct character of an area. Scenic resources may include natural or urban features. Natural features can include open space, native or ornamental vegetation/landscaping, topographic or geologic features, and natural water sources. Urban features can include structures of architectural or historic significance or visual prominence; public plazas; art or gardens; heritage oaks and other trees or landscaping protected by the city; and park areas.
- **Scenic Vistas**: Scenic vistas are views that are considered to be aesthetically pleasing and unique to the area. Scenic vistas generally include panoramic views associated with a large geographic area for which the field of view can be wide and extend into the distance. Panoramic views are typically associated with vantage points that provide a sweeping geographic orientation not commonly available and can include views of urban skylines, mountain ranges, or large bodies of water (such as the ocean). Public access to these views is typically from public rights-of-way (ROWs), parklands, and other publicly-owned sites.
- **Sensitive Viewers**: Sensitive viewers are viewer groups that are sensitive to changes in the visual environment. Sensitive viewers are typically viewer groups that seek the visual resource or to which their activity is enhanced by the presence of such resource. Sensitive viewers are likely to be very aware of and concerned about their views and are likely to have expectations of the built environment. For the Proposed Project, residents are considered sensitive viewers because they spend a large amount of time in the area. Users and employees of commercial, industrial, and office facilities are less sensitive to

changes in the visual environment because these viewer groups generally do not utilize these facilities for their visual and aesthetic values. Motorists and bicyclists on streets are not considered sensitive viewers unless the roadway on which the viewers are traveling is an officially designated scenic highway, a highway with a designated scenic overlook available to the public, or offers views of distinctive built or natural features. Motorists and bicyclists on streets generally have lower expectations and sensitivity with regards to visual quality than other viewer groups due to the speed at which they move through the environment.

- **Viewer Groups**: Viewer groups are groups of people (e.g., residents, motorists, pedestrians, and people who work in the area) within the AVL that have views of the Project corridor.
- **Viewshed**: A viewshed is the surface area that is visible from any given location, as well as the area from which a location may be seen. The viewshed can be limited or expanded depending on various factors, such as landform (e.g., topography), land cover (e.g., vegetation and structure), and location and proximity of viewers. For the purposes of the Proposed Project, the viewshed is the area that is either visible from the Project corridor or the area from which the Project corridor is visible.

3.2.1 Regulatory Framework

3.2.1.1 Federal Regulations

There are no existing federal regulations pertaining to aesthetics that are applicable to the Proposed Project.

3.2.1.2 State Regulations

California Scenic Highway Program. The California Department of Transportation (Caltrans) manages the California Scenic Highway Program, which was created in 1963 by the California legislature to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. State laws governing the California Scenic Highways Program are found in Sections 260 through 263 of the Streets and Highways Code. The Program includes a list of highways that are eligible for designation as scenic highways or that have been designated as such. Caltrans defines a state scenic highway as any freeway, highway, road, or other public ROW that traverses an area of exceptional scenic quality. A highway may be designated as scenic based on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler's enjoyment of the view. The status of a proposed state scenic highway changes from eligible to officially designated when the local governing body applies to Caltrans for scenic highway approval, adopts a Corridor Protection Program, and receives notification that the highway has been officially designated a state scenic highway.

3.2.1.3 Local Regulations

The Project Area where physical changes to the visual environment would occur includes portions of three local jurisdictions: the cities of Los Angeles, Santa Clarita, and Lancaster. It is adjacent

to an unincorporated portion of Los Angeles County. The following local policies and regulations are applicable to the Proposed Project.

City of Los Angeles

City of Los Angeles General Plan. The *City of Los Angeles General Plan* is a comprehensive, long range declaration of purposes, policies, and programs for the development of the City of Los Angeles. The *City of Los Angeles General Plan* includes a Framework Element, Citywide Elements, Specific Plans, and Community Plans that makes up the Land Use Element. These elements provide long range citywide policy and direction, considering citywide goals and needs. Contained within the City of Los Angeles General Plan, the Framework Element, Conservation Element, and Mobility Plan 2035 contain objectives and policies that are intended to ensure the protection of natural terrain and landforms, unique site features, scenic highways, and panoramic public views as city staff and decision makers consider future land use development and infrastructure projects.

General Plan Framework Element. Adopted December 1996 and amended in August 2001, the Framework Element establishes the broad overall policy and direction for the City of Los Angeles General Plan. It provides a citywide context and a comprehensive long-range strategy to guide the comprehensive update of the General Plan's other elements. The General Plan Framework Element planning policies regarding urban form, neighborhood design, and the conservation of open space and other scenic resources are intended to improve community and neighborhood livability in the City of Los Angeles. The General Plan Framework Element Open Space and Conservation policies seek to conserve significant resources and use open space to enhance community and neighborhood character in the City of Los Angeles.

General Plan Conservation Element. Adopted in 2001, the Conservation Element addresses conservation, protection, development, utilization and the reclamation of natural resources, as well as the remaining natural and other open space resources in the City of Los Angles. The General Plan Conservation Element includes a discussion of existing landforms and scenic vistas within the City of Los Angeles.

Mobility Plan 2035. Adopted in 2016 as the city's circulation element, the Mobility Plan 2035 presents a guide to the development of a citywide transportation system in the City of Los Angeles that provides for the efficient movement of people and goods, and an inventory of city-designated scenic highways. Scenic highways depicted within the City of Los Angeles have special controls for protection and enhancement of scenic resources. The Plan includes Scenic Highway Guidelines for those city-designated scenic highways that do not have an adopted scenic corridor plan.

Community Plans. The Granada Hills-Knollwood Community Plan was adopted in October 2015, and the Sylmar Community Plan was adopted in June 2015. Both communities are in the northern section of the City of Los Angeles and immediately south of the City of Santa Clarita. These community plans outline the vision for the community plan areas' long-term physical and economic development and community enhancement; provides strategies and specific implementing actions that will allow this vision to be accomplished; establishes a basis for judging whether specific development proposals and public projects are in harmony with the community plan's goals and policies; directs city departments, other public agencies, and private developers to design projects that enhance the character of the community; and provides the basis for establishing a set of priorities for detailed plans and implementing programs, including zoning ordinances, design overlays, development standards, the Capital Improvements Program, facilities plans, and redevelopment and area plans.

Table 3.2-1 summarizes the applicable visual quality and aesthetics-related goals, objectives, and policies contained within the *City of Los Angeles General Plan* that are applicable to the Proposed Project.

Table 3.2-1: City of Los Angeles General Plan Visual Quality and Aesthetics Goals, Objectives, and Policies

Goal/Objective/Policy	Description
FRAMEWORK ELEMENT	
Goal 9P	Appropriate lighting required to (1) provide for nighttime vision, visibility, and safety needs on streets, sidewalks, parking lots, transportation, recreation, security, ornamental, and other outdoor locations; (2) provide appropriate and desirable regulation of architectural and informational lighting such as building façade lighting or advertising lighting; and (3) protect and preserve the nighttime environment, views, driver visibility, and otherwise minimize or prevent light pollution, light trespass, and glare.
CONSERVATION ELEMENT	
Land Form and Scenic Vistas Objective	Protect and reinforce natural and scenic vistas as irreplaceable resources and for the aesthetic enjoyment of present and future generations.
Land Form and Scenic Vistas Policy	Continue to encourage and/or require property owners to develop their properties in a manner that will, to the greatest extent practical, retain significant existing land forms (e.g., ridge lines, bluffs, unique geologic features) and unique scenic features (historic, ocean, mountains, unique natural features) and/or make possible public view or other access to unique features or scenic views.
MOBILITY PLAN 2035	
Policy 2.16	Ensure that future modifications to any scenic highway do not impact the unique identity or characteristic of that scenic highway.
Objective 11	Preserve and enhance access to scenic resources and regional open space.

Goal/Objective/Policy	Description
GRANADA HILLS-KNOLLWOOD COMMUNITY PLAN	
Policy LU4.3	Use the natural topography as the primary criteria to determine the placement and/or alignment of houses, roads, drainage facilities, equestrian facilities, and other necessary structures. Design developments to be integrated with and visually subordinate to natural features and terrain. Condition new development in the hills to protect views from public roadways and parklands to the maximum extent feasible.
Goal M7	A community with abundant opportunities for exploration of its natural assets and a circulation system that enhances the quality of life and aesthetic value of the area.
Policy M7.1	Continue to preserve existing scenic highways and byways and support programs to encourage the identification of additional scenic highways and/or byways within the community.
Policy M7.2	Require development adjacent to a scenic highway to protect public views of scenic vistas to the maximum extent feasible; be adequately landscaped to soften the visual impact of the development; and, where appropriate, provide a turnout, vista points and other complementary facilities.
Goal CF15	A street-lighting system that protects and preserves the nighttime environment and contributes to appropriate levels of lighting for streets, parking areas, and pedestrian areas, with minimum impact on the environment and adjoining properties.
SYLMAR COMMUNITY PLAN	
Policy LU6.4	Use the natural topography as the primary criteria to determine the placement and/or alignment of houses, roads, drainage facilities, equestrian facilities, and other necessary structures. Design developments to be integrated with and visually subordinate to natural features and terrain. Condition new development in the hills to protect public views from public roadways and parklands to the maximum extent feasible.
Goal LU26	The value of scenic vistas must be considered in planning for community accessibility to natural areas. Both freeways which traverse through the community (I-5 and I-210) are designated as scenic highways and are on the City's Scenic Highway Plan. They afford views of the San Gabriel Mountains, the Santa Susana Mountains, and the San Fernando Valley. The preservation and protection of these two scenic corridors should be an integral part of the design of buildings and structures that are constructed adjacent to or near freeways in order to maintain their existing panoramic scenic views.
Policy M7.1	Continue to preserve existing scenic highways and byways and support programs to encourage the identification of additional scenic highways and/or byways within the community.

Goal/Objective/Policy	Description
Goal CF15	Provision of a street-lighting system that protects and preserves the nighttime environment and contributes to appropriate levels of lighting for streets, parking areas, and pedestrian areas, with minimum impact in the environment and adjoining properties.

SOURCE: City of Los Angeles, *City of Los Angeles Framework Element*, August 2001; City of Los Angeles, *Conservation Element of the Los Angeles General Plan*, September 2001; City of Los Angeles, *Mobility Plan 2035*, September 2016; City of Los Angeles, *Granada Hills-Knollwood Community Plan*, September 2015; City of Los Angeles, *Sylmar Community Plan*, June 2015.

City of Los Angeles Municipal Code. The City of Los Angeles Municipal Code contains chapters pertaining to planning and zoning (Chapter 1) and building regulations (Chapter 9) which pertain to aesthetics and visual quality. While the municipal code regulations generally pertain to development projects and buildings, aspects of the regulations dictate allowable lighting conditions along roadways and sidewalks. The Municipal Code does not directly regulate lighting conditions along rail ROWS and the design of transportation infrastructure elements, including rail infrastructure.

County of Los Angeles

Los Angeles County General Plan 2035. The *Los Angeles County General Plan 2035*, adopted in October 2015, provides the policy framework and establishes the long-range vision for how and where the unincorporated areas of the County will grow. The *Los Angeles County General Plan 2035* addresses aesthetics in the Land Use, Mobility, and Conservation and Natural Resources Elements.

The Land Use Element addresses land use compatibility by mapping and regulating uses and intensities, and by including policies and programs that mitigate land use conflicts through design, such as the use of landscaping, walls, building orientation, and performance standards. It also provides general community design policies that help create a “sense of place” and uniqueness within the diverse communities of the unincorporated areas.

The Mobility Element assesses the challenges and constraints of the Los Angeles County transportation system and offers policy guidance to reach the County’s long-term mobility goals. The Mobility Element acknowledges that aesthetics and function are important considerations when creating comfortable places to walk, bicycle, and take transit. This can include landscaping, street furniture, and amenities, such as benches and shelters at transit stops.

The Conservation and Natural Resources Element guides the long-term conservation of natural resources and preservation of available open space areas. It addresses open space resources; biological resources; local water resources; agricultural resources; mineral and energy resources; scenic resources; and historic, cultural and paleontological resources.

Table 3.2-2 summarizes the applicable visual quality and aesthetics-related goals and policies contained within the *Los Angeles County General Plan 2035* that are applicable to the Proposed Project.

Table 3.2-2: Los Angeles County General Plan 2035 Visual Quality and Aesthetics Goals and Policies

Goal/Policy	Description
LAND USE ELEMENT	
Policy LU 10.4	Promote environmentally sensitive and sustainable design.
MOBILITY ELEMENT	
Policy M 2.9	Encourage the planting of trees along streets and other forms of landscaping to enliven streetscapes by blending natural features with built features.
CONSERVATION AND NATURAL RESOURCES ELEMENT	
Goal C/NR 13	Protect visual and scenic resources.
Policy C/NR 13.3	Reduce light trespass, light pollution and other threats to scenic resources.
Policy C/NR 13.5	Encourage required grading to be compatible with the existing terrain.

SOURCE: County of Los Angeles, *Los Angeles County General Plan 2035*, October 2015.

Santa Clarita Valley Area Plan. The *Santa Clarita Valley Area Plan (Area Plan)*, adopted in November 2012, is a component of the *Los Angeles County General Plan 2035* and provides goals, objectives, policies, and implementation actions that apply only to the unincorporated portions of the Santa Clarita Valley. The *Area Plan* includes goals, policies, and objectives that aim to preserve community character, as well as maintain and conserve the natural and scenic features of the Santa Clarita Valley. The *Area Plan* is a component of "One Valley One Vision," a joint planning effort with the City of Santa Clarita. The other component is the *City of Santa Clarita General Plan*. Together, the County's Santa Clarita Valley Area Plan and *City of Santa Clarita General Plan* provide a unified vision for development and conservation for the entire Santa Clarita Valley. Major goals of the "One Valley One Vision" joint planning effort were to achieve greater cooperation between the County of Los Angeles and the City of Santa Clarita, coordinating planning for roadways, infrastructure, and resource management, and enhanced quality of life for all who live and work in the Santa Clarity Valley.

Table 3.2-3 summarizes the applicable visual quality and aesthetics-related goals, objectives, and policies contained within the *Santa Clarita Valley Area Plan* that are applicable to the Proposed Project.

Table 3.2-3: Santa Clarita Valley Area Plan Visual Quality and Aesthetics Goals and Policies

Goal/Objective/Policy	Description
Policy LU-1.1.4	Preserve community character by maintaining natural features that act as natural boundaries between developed areas, including significant ridgelines, canyons, rivers and drainage courses, riparian areas, topographical features, habitat preserves, or other similar features, where appropriate.
Objective LU-6.1	Maintain the natural beauty of the Santa Clarita Valley's hillsides, significant ridgelines, canyons, oak woodlands, rivers and streams.

Goal/Objective/Policy	Description
Goal CO-2	Conserve the Santa Clarita Valleys hillsides, canyons, ridgelines, soils, and minerals, which provide the physical setting for the natural and built environments.
Objective CO-2.2	Preserve the Santa Clarita Valley's prominent ridgelines and limit hillside development to protect the valuable aesthetic and visual qualities intrinsic to the Santa Clarita Valley landscape.
Policy CO-2.2.6	Encourage building and grading designs that conform to the natural grade, avoiding the use of large retaining walls and build-up walls that are visible from off-site, to the extent feasible and practicable.
Goal CO-6	Preservation of scenic features that keep the Santa Clarita Valley beautiful and enhance quality of life, community identity, and property values.
Objective CO-6.1	Protect the scenic character of local topographic features.
Policy CO-6.1.1	Protect scenic canyons from overdevelopment and environmental degradation.
Policy CO-6.1.2	Preserve significant ridgelines as a scenic backdrop throughout the community by maintaining natural grades and vegetation.
Objective CO-6.2	Protect the scenic character of view corridors.
Objective CO-6.3	Protect the scenic character of major water bodies.
Objective CO-6.4	Protect the scenic character of oak woodlands, coastal sage, and other habitats unique to the Santa Clarita Valley.
Objective CO-6.5	Maintain the scenic character of designated routes, gateways, and vista points along roadways.
Objective CO-6.6	Limit adverse impacts by humans on the scenic environment.
Policy CO-6.6.1	Enhance views of the night sky by reducing light pollution through use of light screens, downward directed lights, minimized reflective paving surfaces, and reduced lighting levels, as deemed appropriate by the reviewing authority.
Policy CO-6.6.2	Improve views of the Santa Clarita Valley through various policies to minimize air pollution and smog, as contained throughout the Area Plan.

SOURCE: Los Angeles County, *Santa Clarita Valley Area Plan*, November 2012.

Los Angeles County Zoning Code. The Los Angeles County Municipal Code Title 22 is the County's Zoning Code. Development standards that influence aesthetics and visual quality in the Los Angeles County Zoning Code include height limits of buildings, fences, and walls; setback requirements; tree planting requirements; and landscaping requirements for parking lots. The Municipal Code does not directly regulate the design of transportation infrastructure elements, including rail infrastructure.

City of Santa Clarita

City of Santa Clarita General Plan. The *City of Santa Clarita General Plan*, adopted in June 2011, addresses aesthetics in the Land Use Element and Conservation and Open Space Element, which includes conserving and preserving the natural environment that are associated with the Santa Clarita Valley.

Table 3.2-4 summarizes the visual quality and aesthetics-related goals, objectives, and policies contained within the *City of Santa Clarita General Plan* that are applicable to the Proposed Project.

Table 3.2-4: Santa Clarita General Plan Visual Quality and Aesthetics Goals, Objectives, and Policies

Goal/Objective/Policy	Description
LAND USE ELEMENT	
Policy LU 1.1.4	Preserve community character by maintaining natural features that act as natural boundaries between developed areas, including significant ridgelines, canyons, rivers and drainage courses, riparian areas, topographical features, habitat preserves, or other similar features, where appropriate.
Policy LU 1.3.2	Substantially retain the integrity and natural grade elevations of significant natural ridgelines and prominent landforms that form the Valley's skyline backdrop.
Goal LU 6	A scenic and beautiful urban environment that builds on the community's history and natural setting.
Objective LU 6.1	Maintain the natural beauty of the Santa Clarita Valley's hillsides, significant ridgelines, canyons, oak woodlands, rivers, and streams.

SOURCE: City of Santa Clarita, *City of Santa Clarita General Plan*, June 2011

City of Santa Clarita Zoning Code. The City of Santa Clarita Municipal Code Title 17 is the city's Zoning Code, which sets development standards for commercial, industrial, mixed-use, and residential uses. Development standards in the Zoning Code that influence aesthetics and visual quality include building heights, setbacks, and density. The Zoning Code also includes landscape requirements for various developments and parking lots, regulations to preserve oak trees, and outdoor lighting standards to minimize adverse off-site light trespass, obtrusive light, light pollution. The Municipal Code does not directly regulate the design of transportation infrastructure elements, including rail infrastructure.

City of Lancaster

City of Lancaster General Plan. The *City of Lancaster General Plan*, adopted in July 2009, contains the vision, goals, objectives, policies, and specific actions for the city. The City's General Plan Natural Environment Element includes objectives and policies that preserve and enhance scenic resources. The Physical Development Element also provides goals, objectives, and policies that are applicable to visual character and scenic resources. However, the goals, objectives, and policies in the Physical Development Element pertain to land use development

and are not applicable to rail infrastructure projects. **Table 3.2-5** summarizes the visual quality and aesthetics-related objectives and policies contained within the *City of Lancaster General Plan* that are applicable to the Proposed Project.

Table 3.2-5: City of Lancaster General Plan Visual Quality and Aesthetics Objectives and Policies

Objective/Policy	Description
NATURAL ENVIRONMENT ELEMENT	
Objective 3.8	Preserve and enhance important views within the city, and significant visual features which are visible from the City of Lancaster.
Policy 3.8.1	Preserve views of surrounding ridgelines, slope areas and hilltops, as well as other scenic vistas.

SOURCE: City of Lancaster, *City of Lancaster General Plan*, July 2009

Downtown Lancaster Specific Plan. Approved by the City of Lancaster in September 2008 and updated in January 2020, the *Downtown Lancaster Specific Plan* is a community-based revitalization plan aimed to revitalize the downtown Lancaster economy and sense of place. It provides area-specific land use regulations and development guidelines for seven districts within downtown Lancaster, which is adjacent to the Proposed Project.

City of Lancaster Municipal Code. The City of Lancaster Municipal Code Title 17 is the city's Zoning Ordinance. It provides regulations that influence the aesthetics and visual character of development, including building heights, setbacks, building placement, building design, and landscaping. Title 8 of the City of Lancaster Municipal Code provides additional landscape requirements. The Municipal Code does not directly regulate the design of transportation infrastructure elements, including rail infrastructure.

3.2.2. Existing Setting

The proposed capital improvements are located along three segments of the AVL ROW. The three segments are visually distinct from each other. The Balboa Double Track Extension Project Area is within the City of Los Angeles and adjacent to an unincorporated area of Los Angeles County. This segment is predominately undeveloped, with several urban developments along San Fernando Road. It is situated in the valley between the Santa Susana and San Gabriel Mountains. Due to the capital improvement's location between the two mountains, the terrain varies throughout the Balboa Double Track Extension Project Area.

The Canyon Siding Extension is situated in a portion of the City of Santa Clarita that has a mix of developed and natural undeveloped areas. The mix of developed and undeveloped areas is generally located towards the western portion of the Canyon Siding Extension Project Area, while the eastern portion consists of primarily urban development. Man-made developments are generally located on relatively flat terrain, while the natural undeveloped areas consist of uneven terrain.

The Lancaster Terminal Improvements Project Area is in a fully urbanized area of the City of Lancaster and is on relatively flat terrain. Although vacant properties are present, the Lancaster Terminal Improvements Project Area does not have any natural, undeveloped areas. Distant background views of the mountains are available along some street ROWs. However, a majority of the views are obstructed by intervening structures and ornamental landscaping.

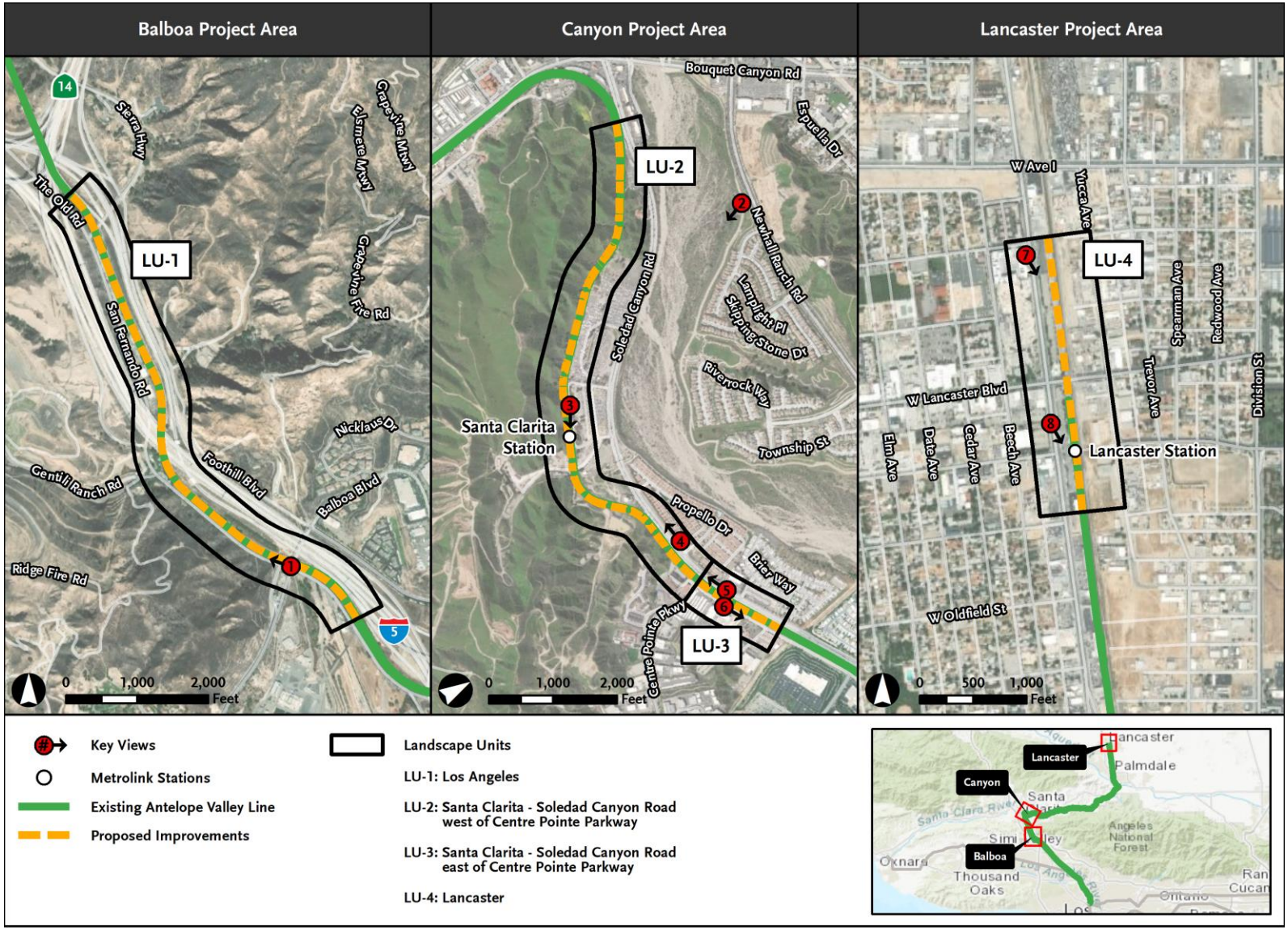
To illustrate the existing visual setting, representative LUs were selected to summarize the visual character of, as well as to identify the scenic resources that are present in the three capital improvement Project Areas. The Proposed Project segments can be divided into four LUs: City of Los Angeles, City of Santa Clarita – Soledad Canyon Road west of Centre Pointe Parkway, City of Santa Clarita – Soledad Canyon Road east of Centre Pointe Parkway, and City of Lancaster. The LUs were selected based on the geographic and jurisdictional divisions along the rail ROW with a focus on the visual consistency among development patterns, scenic resources, and overall visual character. The LUs represent typical visual characteristics, rather than detailed visual elements, of the Project Area. Key views were selected to illustrate the typical views associated with each LU.

Figure 3.2-1 provides an overview of the geographic extent for the LUs within the Project Area. Each LU is delineated and numbered from LU-1 to LU-4. Locations of key views are also identified in this figure.

3.2.2.1 LU-1 Los Angeles

LU-1 encompasses the entire Balboa Double Track Extension Project Area. The viewshed is predominantly undeveloped, with several urban developments, such as industrial and residential uses. The developed portion of LU-1 are situated in the valley between two mountain ranges (Santa Susana Mountains to the west and San Gabriel Mountains to the east). Elements of the built environment generally include low-rise wooden and metal residential and industrial structures, concrete paved surfaces on industrial properties, paved roadways (San Fernando Road and I-5 freeway), freeway overpasses and roadway bridges, utility poles and wires, retaining walls, and sound walls along the edge of the I-5 freeway. The transportation corridors (rail ROW, I-5 freeway, and San Fernando Road) are the most prominent visual element of the built environment. San Fernando Road is generally a 50-foot-wide roadway with two lanes in each direction and no sidewalks. The I-5 freeway is approximately 260 feet wide and generally has five lanes in each direction. Both the northbound and southbound sides of the I-5 freeway have two-lane truck routes that are separated from the I-5 freeway along most of the LU.

Figure 3.2-1: Landscape Unit Overview and Key View Locations



The rail ROW is adjacent to the I-5 freeway and San Fernando Road, and the terrain within the rail ROW generally slopes up towards the north with an approximately two percent grade along most of the LU. Within the rail ROW, the elevation changes by approximately 115 feet between the southern and the northern end of LU-1. The rail ROW primarily has one main track, with two tracks at the southern and northern ends of LU-1. The elevation difference between the rail ROW, the I-5 freeway, and San Fernando Road varies throughout the LU. In some areas, the railroad track in the rail ROW is at a similar grade as the I-5 freeway and/or San Fernando Road, whereas in other areas, the tracks in the rail ROW are at higher or lower elevation than these roadways.

Scenic resources in the viewshed consist of the Santa Susana and San Gabriel Mountains. The primary visual elements associated with the natural environment (i.e., undeveloped portions) in LU-1 consist of these mountains and natural vegetation (e.g., shrubs and trees). Views of these mountains are prominent and in the foreground, particularly along the I-5 freeway. Due to the prominent foreground views of the two mountains, the I-5 freeway within LU-1 is a City of Los Angeles-designated scenic highway and an eligible state scenic highway.

The viewshed is generally constrained by the Santa Susana and San Gabriel Mountains on the west and east sides of the transportation corridors, respectively. In some areas, views to and from the rail ROW are blocked by the elevation difference between the rail ROW and the adjacent transportation corridors, sound walls along the edge of I-5, and structures adjacent to the rail ROW. Key View 1 represents a view in LU-1, looking northwest (**Figure 3.2-2**). **Figure 3.2-2** shows the transportation corridors adjacent to the rail ROW and the surrounding Santa Susana and San Gabriel Mountains.

Figure 3.2-2: Key View 1 – Balboa Avenue Looking Northwest

Primary viewer groups within the viewshed of LU-1 generally include employees of industrial uses and residents adjacent to the rail ROW, as well as motorists traveling along the I-5 freeway, San Fernando Road, and roadway bridges that cross over the rail ROW. Although a few residences adjoin the rail ROW, much of the views of the rail ROW from the residential properties are obstructed by trees and other vegetation situated between the rail ROW and the residential properties. Motorists traveling on the I-5 freeway are considered sensitive viewers in LU-1 since the I-5 freeway is a City of Los Angeles-designated scenic highway and an eligible state scenic highway.

Existing sources of light and glare in the viewshed are generally from urban development that are typically associated with industrial and residential development and street rights-of-way. Sources of light include streetlights, vehicle headlights and taillights, interior and exterior lighting from buildings, lighting on surface parking lots, and lights from freight and Metrolink trains.

3.2.2.2 LU-2 Santa Clarita – Soledad Canyon Road west of Centre Pointe Parkway

LU-2 consists of the Canyon Siding Extension Project Area west of Centre Pointe Parkway. LU-2 can be characterized as semi-developed, with a mix of urban development and natural undeveloped land. Urban development is generally located on relatively flat terrain, while the undeveloped areas have uneven, natural terrain. Key Views 2 through 5 are representative views of LU-2 and are shown in **Figures 3.2-3** through **3.2-5**.

Figure 3.2-3: Key View 2 – Santa Clara River Trail Looking South

Figure 3.2-4: Key View 3 – Santa Clarita Metrolink Station Looking Southeast

Figure 3.2-5: Key View 4 – Soledad Canyon Road Looking West from Chuck Pontius Commuter Rail Trail

The built environment within the viewshed of LU-2 includes low-rise commercial and residential structures, structures at the Santa Clarita Metrolink Station, paved surface parking lots, the approximately 85-foot wide Soledad Canyon Road, a paved two-lane Chuck Pontius Commuter Trail, a paved three-lane Santa Clara River Trail, ornamental landscaping, retaining walls, fences, and walls. Soledad Canyon Road has three lanes in each direction, a landscaped median, and paved sidewalks on both sides of the road. Uniformed and evenly spaced street trees are placed along the sidewalks adjacent to Soledad Canyon Road and the Chuck Pontius Commuter Trail. In addition to street trees, ornamental landscaping (e.g., trees and bushes) is generally found within the median of Soledad Canyon Road, within surface parking lots, and on properties with residential and commercial development.

The Santa Clarita Metrolink Station is set back from Soledad Canyon Road by approximately 560 feet and is elevated from Soledad Canyon Road and the adjacent station parking lot by approximately 15 feet. The station area consists of stairways, benches, station canopies, fences, and retaining walls. Vegetation at the station and its surface parking lot primarily consist of ornamental landscaping, including trees and bushes. The hills on the south side of station and railroad tracks consists of native vegetation. Cut slopes are visible above the retaining wall on the south side of the railroad tracks. The tracks and ballast are at a similar grade as the station and the driveway along the station. **Figure 3.2-4** is a representative view of the station.

The natural environment within the viewshed of LU-2 includes undeveloped hillsides and the Santa Clara River. The primary visual element associated with the hills and river is natural vegetation (e.g., shrubs and bushes). In LU-2, the Santa Clara River range from approximately 780 feet wide to 1,215 feet wide. When dry, the river is a large natural open space area with natural vegetation (trees and shrubs) within and along the banks of the river.

The rail ROW is generally situated along the undeveloped hillsides. It is elevated above the adjacent low-rise commercial structures and Soledad Canyon Road by approximately 20 feet in the westerly portion and approximately 10 feet in the easterly portion of LU-2. The rail ROW primarily has one main track, with two tracks at the western end of LU-2. The rail ROW is generally visible along street ROWs (e.g., Soledad Canyon Road, Newhall Ranch Road, and Millhouse Drive). However, in several portions of LU-2, small hills between Soledad Canyon Road and the rail ROW obstruct views to and from the rail ROW. Where views of the rail ROW are not obstructed, the elevation of the rail ROW above the existing low-rise structures extends its visibility to the residential neighborhood north of the Santa Clara River. The rail ROW generally blends in with the adjacent hillside even though the tracks and ballast are visible. Views of the rail ROW are more apparent in the easterly portion of LU-2, and the tracks and ballast are clearly visible along Soledad Canyon Road (**Figure 3.2-5**).

The viewshed for LU-2 is generally constrained by the hillsides along the south side of the rail ROW. North of the rail ROW and west of the Santa Clarita Metrolink Station, the viewshed extends to the residential neighborhood north of the Santa Clara River. East of the Santa Clarita Metrolink Station, the viewshed extends to the Chuck Pontius Commuter Trail immediately north of Soledad Canyon Road. Although a residential community is situated immediately north of Soledad Canyon

Road, this residential community is separated from the street by walls, which obstruct views of the rail ROW.

Scenic resources in the viewshed consist of the undeveloped hillsides and the Santa Clara River. Views of these scenic resources are generally in the foreground and middle-ground, and public views are available along Soledad Canyon Road, Chuck Pontius Commuter Rail Trail, Santa Clara River Trail, Newhall Ranch Road, and Millhouse Drive. **Figure 3.2-3** presents a view of the two scenic resources looking south from the Santa Clara River Trail. In this area, views of the Santa Clara River are in the foreground and the hills are in the middle-ground behind commercial structures and the rail ROW.

Primary viewer groups within the viewshed of LU-2 consist of transit users, employees and visitors of commercial uses, residences, motorists, pedestrians, and users of the Chuck Pontius Commuter Rail Trail and Santa Clara River Trail. Sensitive viewers in LU-2 consist of residents and users of the Chuck Pontius Commuter Rail Trail and Santa Clara River Trail trails. The residents north of the Santa Clara River and users of the Santa Clara River Trail have broad views of the hillsides where the rail ROW is situated. In LU-2, users of the Chuck Pontius Commuter Rail Trail and Santa Clara River Trail are also considered sensitive viewers. The scenic views available along the trails enhance the trail users' experience as the trails generally follow the path of the Santa Clara River. At the Santa Clara River Trail, broad southerly views of the undeveloped hillsides are available. Views of the undeveloped hillsides along the Chuck Pontius Commuter Rail Trail are more limited than along the Santa Clara River Trail since the Chuck Pontius Commuter Trail is closer to the rail ROW and commercial structures on the south side of Soledad Canyon Road partially block views of the rail ROW from this trail.

Existing sources of light and glare in the viewshed are generally from urban development that are typically associated with street ROWs and commercial and residential development. Sources of light include streetlights, vehicle headlights and taillights, interior and exterior lighting from buildings, lighting on surface parking lots, and lights from freight and Metrolink trains.

3.2.2.3 LU-3 Santa Clarita – Soledad Canyon Road east of Centre Pointe Parkway

LU-3 consists of the Canyon Siding Extension Project Area east of Centre Pointe Parkway and is located within the City of Santa Clarita. LU-3 primarily consists of urban development. The topography is relatively flat and gradually slopes up towards the eastern portion of LU-3. The rail ROW, which has one railroad track, parallels and is situated between Soledad Canyon Road and Golden Triangle Road. Soledad Canyon Road has three lanes in each direction with a center median and paved sidewalks on both sides of the road. The median is primarily paved but has ornamental landscaping towards the westerly portion of LU-3. Golden Triangle Road is generally a two-lane eastbound-only roadway with a paved sidewalk along the south side of the road. The paved, two-lane Chuck Pontius Commuter Rail Trail is situated within the rail ROW on the north side of the railroad tracks. Urban development within the viewshed of LU-3 generally consists of low-rise commercial and residential structures, surface parking lots, public storage, a few billboards along the rail ROW, and a grade crossing at Golden Oak Road.

Key View 5 (**Figure 3.2-6**) is a representative view of LU-3 looking southwest from the rail ROW, and Key View 6 (**Figure 3.2-7**) shows a representative view of LU-3 looking northeast towards the rail ROW from the south side of Golden Triangle Road.

Figure 3.2-6: Key View 5 – Rail ROW Looking Southwest

Figure 3.2-7: Key View 6 – Rail ROW Looking Northeast towards Golden Oak Road

Most of the vegetation in LU-3, including those within and along the rail ROW, consists of ornamental landscaping and includes trees and bushes. Short and tall bushes line the north side of the railroad tracks, separating the Chuck Pontius Commuter Rail Trail from the railroad tracks. Some feral vegetation is also present along and within the rail ROW. Views of the rail ROW are generally unobstructed although tall bushes within the rail ROW partially obstruct southerly views of the rail ROW from portions of the Chuck Pontius Commuter Rail Trail and Soledad Canyon Road.

The built environment dominates the visual environment of LU-3, and the viewshed is generally constrained by low-rise residential, commercial and industrial structures on the north and south sides of Soledad Canyon Road and Golden Triangle Road. No scenic resources are available in LU-3. While LU-3 provides south and southeast-facing middle-ground views of undeveloped hillsides, these views are less prominent compared to LU-2 since the hills are primarily located behind urban development, and the low-rise structures along Soledad Canyon Road and Golden Triangle Road obstruct most views of the undeveloped hillsides.

Primary viewer groups within the viewshed of LU-3 include motorists, pedestrians, users of the Chuck Pontius Commuter Rail Trail, employees and visitors of commercial developments and public storage facilities. No sensitive viewers are present in the viewshed for LU-3. Although a residential community is located at the northeasterly portion of LU-3, residents in this community generally do not have views of the rail ROW. Walls along the southerly end of the residential community separate the residences from Soledad Canyon Road and block views of the rail ROW. In this LU, Chuck Pontius Commuter Trail is situated adjacent to the rail ROW between railroad tracks and Soledad Canyon Road. No scenic vistas or scenic resources are available along this trail. Due to the trail's location between the railroad tracks and Soledad Canyon Road and the lack of scenic resources in this LU, users of the Chuck Pontius Commuter Trail generally do not access the trail specifically for the purposes of seeking visual resources and are not considered sensitive viewers.

Existing lighting and glare in the viewshed are characteristic of a typical urban environment associated with street ROWs and residential and commercial development. Sources of light include streetlights, vehicle headlights and taillights, interior and exterior lighting from buildings, lighting on surface parking lots, and lights from freight and Metrolink trains.

3.2.2.4 LU-4 Lancaster

LU-4 encompasses the entire Lancaster Terminal Improvements site. The viewshed primarily consists of urban development. LU-4 is relatively flat with a less-than-one percent grade. The elevation gradually slopes down towards the north. LU-4 can be characterized as primarily industrial with low-rise structures. A few low-rise residential and commercial structures are also within the viewshed. The rail ROW is generally situated adjacent to industrial structures, paved surface parking lots, or large, flat, unpaved vacant land. The Lancaster Metrolink Station currently has several low-rise structures, two of which are station platforms that are approximately 115 feet long with canopies above the platforms. A United States Air Force Jet is on display at the northeast corner of the Sierra Highway/Lancaster Boulevard intersection.

Vegetation in the viewshed generally consists of ornamental landscaping (bushes and trees) in surface parking lots and street trees. Vegetation within the rail ROW is sparse and generally feral.

The viewshed is generally constrained by low-rise structures adjacent to the east and west side of the rail ROW. These structures generally obstruct views to the rail ROW from street ROWs that parallel the rail ROW. Views of the rail ROW in LU-4 are generally available where the rail ROW adjoins a surface parking lot or vacant unpaved lots, as well as along street ROWs that intersect with the rail ROW.

Due to the relatively flat terrain and predominately urbanized development, no scenic vistas are available in LU-4. The United States Air Force Jet is a visually distinctive element within LU-4 and can be considered a scenic resource.

Primary viewer groups within the viewshed include motorists, pedestrians, transit users, residents, and employees. Residents, which are primarily situated at the northwest corner of the Sierra Highway/Jackman Street intersection, are considered sensitive viewers in LU-4 and have angled views of the rail ROW. Key Views 7 and 8 (**Figures 3.2-8** and **3.2-9**) are representative views of the rail ROW from Sierra Highway. **Figure 3.2-8** represents a view of the viewshed looking southeast from Sierra Highway. In this figure, the rail ROW is situated behind the City of Lancaster parking lot. **Figure 3.2-9** represents a view of LU-4 looking southeast towards the Lancaster Metrolink Station from Sierra Highway.

Figure 3.2-8: Key View 7 – Sierra Highway Looking Southeast

Figure 3.2-9: Key View 8 – Sierra Highway looking Southeast towards Lancaster Metrolink Station

Existing lighting and glare in the viewshed are characteristic of a typical urban environment associated with street ROWs and industrial, commercial, and residential development. Existing sources of light include streetlights, vehicle headlights and taillights, interior and exterior lighting from buildings, lighting on surface parking lots, and lights from freight and Metrolink trains.

3.2.3 Significance Thresholds and Methodology

3.2.3.1 Significance Thresholds

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

a) Have a substantial adverse effect on a scenic vista;
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
c) 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 a publicly accessible vantage point). If the project is in an urbanized area, the project would conflict with applicable zoning and other regulations governing scenic quality; and/or
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

3.2.3.2 Methodology

This aesthetic impact assessment follows the principles contained within the Federal Highway Administration (FHWA) *Guidelines for the Visual Impact Assessment of Highway Projects*, adopted in January 2015. Physical features of the Proposed Project have been considered when assessing changes to scenic vistas, scenic resources within a state scenic highway, visual character and quality, light, and glare. To evaluate potential visual and aesthetics effects of the Proposed Project, the following steps were used:

- The existing views, scenic resources, visual character, and lighting and glare conditions were identified and used to create LU specific to the Proposed Project.
- Maps were prepared and photographs were taken to illustrate existing views, scenic resources, and visual character of the LUs.
- Primary viewer groups found along and surrounding the Project corridor were identified and used to characterize potential viewer sensitivity.
- The potential impacts the Proposed Project would have on scenic vistas, scenic resources, visual character and quality, lighting, and glare were assessed.

Background research, including the review of existing land use and aerial maps, was conducted to identify the regulatory and planning context for the Proposed Project. A field survey was performed on February 24, 2021, to identify major geographical features, scenic resources, vegetated areas, types of uses, and patterns of development along and surrounding the Project corridor. Views from representative vantage points were digitally photographed to depict the existing visual character and views in the Proposed Project viewsheds.

Potential significant impacts on scenic vistas would occur if the Proposed Project would introduce physical features that contrast enough with a visually interesting view so that the content and quality of the view is permanently affected.

For scenic resources, potential significant impacts would occur if the Proposed Project would involve the loss or obstruction of a valued public view or a valued scenic resource within a state scenic highway.

With regards to visual character and quality, CEQA Guidelines Section 15387 defines an urbanized area as “a central city or a group of contiguous cities with a population of 50,000 or more, together with adjacent densely populated areas having a population density of at least 1,000 persons per square mile.” Based on this CEQA Guidelines definition, the Balboa Double Track Extension, Canyon Siding Extension, and the Lancaster Terminal Improvements are in an urbanized area as the population and population density for the cities of Los Angeles, Santa Clarita, and Lancaster are greater than 50,000 persons and 1,000 persons per square mile, respectively. Although the Balboa Double Track Extension and Canyon Siding Extension are located in the cities of Los Angeles and Santa Clarita, respectively, and both cities are considered urbanized areas based on the definition in the CEQA Guidelines, the viewsheds for the two Project Areas consist of a mix of undeveloped land and urban development. As a result, for the purposes of this visual and aesthetic impact assessment, the evaluation of visual character and quality

includes an assessment of how the Proposed Project would alter the existing visual character and quality of the Proposed Project viewsheds, along with whether the Proposed Project would conflict with the applicable zoning and other regulations governing scenic quality.

The Proposed Project's effects on visual character and quality are evaluated based on its compatibility with the existing visual character of the viewsheds and viewer group sensitivity to the changes in the visual character associated with the Proposed Project. To assess whether the Proposed Project would be compatible with the visual character of the viewsheds, the height, massing, and form of the Proposed Project components were compared to the existing visual character of the built environment, natural environment (i.e., landform, waterways, and vegetation), and rail ROW. Viewer group sensitivity was assessed based on viewer exposure and viewer response to changes associated with the Proposed Project. The Proposed Project's effect on scenic resources was also considered when determining the Proposed Project's effect on visual character and viewer sensitivity. Viewer sensitivity is ranked as low, moderate, or high:

- Low – Viewers would have little to no reaction to changes in the visual environment. Sensitive viewers would experience little to no change to views of scenic vistas or scenic resources.
- Moderate – Viewers would notice changes to visual environment but would not be sensitive to the change. Sensitive viewers would experience noticeable changes to views of scenic vistas or scenic resources.
- High – Viewers would be highly sensitive to changes in the visual environment (such as incompatible scale, massing, and form) and would likely react to the change. Views of scenic vistas and scenic resources would be obstructed at sensitive viewer locations.

Based on the changes that the Proposed Project would have on visual character and viewer sensitivity, the overall visual quality of the Proposed Project was qualitatively categorized as adverse, neutral, or beneficial:

- Adverse – Proposed Project components would negatively affect visual quality. Proposed Project components would be visually incompatible with the visual character of the Affected Area. Viewer groups would be highly sensitive to changes in visual character or changes to their views of scenic vistas or scenic resources.
- Neutral – Proposed Project components would have little to no change to the visual environment. Proposed Project components would be compatible with the visual character of the Affected Area, and viewer group sensitivity to the changes in visual character or changes to their views of scenic vistas or scenic resources would be low or moderate.
- Beneficial – Proposed Project components would improve the quality of the visual environment. Proposed Project components would be compatible with the visual character of the Affected Area, and visual character would improve by either enhancing views of scenic resources or by creating better views of those resources, including views of scenic vistas. Viewer group sensitivity to the changes in visual character or changes to their views of scenic vistas or scenic resources would be low. Viewer groups would experience

beneficial changes due to improvements in the visual environment and/or better views of scenic vistas or scenic resources.

Significant impacts related to light and glare would occur if Project-related light would spill over onto light-sensitive uses, such as residential uses, or if Project-related light causes glare at light-sensitive uses. The introduction of new light sources in low-lit areas and the potential for the Proposed Project to introduce reflective surfaces were also considered when evaluating light and glare impacts.

3.2.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation measures (if applicable).

Impact 3.2-1) Would the Proposed Project have a substantial adverse effect on a scenic vista?

Scenic vistas available in LU-1 consist of foreground views of the undeveloped Santa Susana Mountains and San Gabriel Mountains. Views of these mountains are generally available to motorists traveling along the I-5 freeway. Although motorists are not typically considered sensitive to changes in the visual environment, motorists along the I-5 in this LU are considered sensitive viewers since the I-5 freeway in this LU is a City of Los Angeles-designated scenic highway and an eligible state scenic highway. Although San Fernando Road generally parallels the I-5 freeway and broad views of the mountains are available towards the southern end of LU-1, a majority of the mountain views along San Fernando Road are more limited and not as wide as those from the I-5 freeway due to the road's lower elevation compared to the I-5 freeway along most of LU-1 and its location relative to adjacent industrial and residential development and nearby infrastructure (e.g., freeway overpasses, sound walls and retaining walls). The surrounding development and infrastructure detract from and partially obstruct views of the mountains.

Scenic vistas available in LU-2 include foreground views of the Santa Susana River and undeveloped hillside. The undeveloped hillsides and rivers in the Santa Clarita Valley are part of the natural features that the *Santa Clarita Valley Area Plan* and *Santa Clarita General Plan* aim to preserve. Public views of these scenic resources are generally available in most areas of the viewshed, including along Soledad Canyon Road, Chuck Pontius Commuter Rail Trail, Santa Clara River Trail, and in the residential community north of the Santa Clara River. In this LU, sensitive viewers that would be most affected by changes in the visual environment associated with the Proposed Project include residents north of the Santa Clara River and users of the Santa Clara River Trail. The scenic views available in these areas enhance the residents and trail users' experience as the trail generally follows the path of the Santa Clara River, which provides broad views of the undeveloped hillsides. Users of the Chuck Pontius Commuter Rail Trail would not be as affected by construction or operations of the Proposed Project. Although the Chuck Pontius Commuter Rail Trail is closer to the rail ROW compared to the Santa Clara River Trail, views of the rail ROW from the Chuck Pontius Commuter Rail Trail is partially blocked by commercial structures that are situated between the trail and the rail ROW. Towards the eastern end of LU-2, the residences on the north side of Soledad Canyon Road would not be as sensitive to the change in views of the hillside since the walls along the south side of the residential development

obstruct views of the hillside from these residences. Motorists, transit users, bicyclists, and pedestrians within street ROWs are not considered sensitive viewers due to the speed at which they travel, and these viewer groups are not likely to access the area to seek these scenic vistas. Employees and users of commercial uses are also not considered sensitive viewers since these viewer groups do not access the area specifically for the purposes of viewing the scenic vistas.

No notable scenic vistas are present in LU-3 and LU-4. Although LU-3 has middle-ground views of the undeveloped hillsides and LU-4 have distant mountain views, these views are not considered scenic vistas as most of the views are blocked by the urban landscape, such as street trees and intervening buildings, both of which prevents clear views of the undeveloped hillsides.

Construction

Less-Than-Significant Impact with Mitigation. The presence of construction vehicles, equipment, visual signs of construction, and construction staging, and laydown of materials would present visually disruptive elements in each LU but would be temporary. Construction activities would introduce heavy equipment (e.g., loaders, excavators, scrapers), security fencing, barricade materials, stockpiled building materials, and safety and directional signage into the Project Areas. Tall construction equipment, such as cranes and drill-rigs would be used along some portions of the rail ROW to construct the Proposed Project. In LU-1, construction activities would generally be at a similar or lower grade as the surrounding roadways and uses. Although tall construction equipment would be used, views of the surrounding undeveloped hillsides from the I-5 freeway would remain and would not be substantially altered or obstructed. Construction activities would not significantly alter scenic vistas in LU-1 since views of construction activities.

In LU-2, construction activities would occur along the hillside within and adjacent to the rail ROW. Among the sensitive viewers in LU-2, residents north of the Santa Clara River and users of the Santa Clara River Trail would be most affected by views of these construction activities. Given the residents and trail users' distance from the rail ROW and the rail ROW being elevated above the low-rise commercial structures along Soledad Canyon Road, these sensitive viewers would have unobstructed views of the rail ROW. Since construction activities would temporarily alter the views of the undeveloped hillsides from the residential area north of the Santa Clara River and along the Santa Clara River Trail, impacts to scenic vistas would be considered potentially significant. Construction would be temporary and construction barriers and equipment would be removed once construction is completed.

No scenic vistas are available in LU-3 and LU-4, and Proposed Project construction activities would not adversely affect scenic vistas in these two LUs.

In summary, construction activities would substantially alter views of scenic vistas in LU-2 and residents north of the Santa Clara River and users of the Santa Clara River Trail would be sensitive to the change. As a result, potentially significant impacts would occur during construction, and implementation of mitigation measures would be required.

Design Options. Construction for the proposed design options would occur at the Santa Clarita and Lancaster Metrolink Stations. No scenic vistas are available at these stations. Therefore, construction activities associated with the design options would not adversely affect scenic vistas.

Operations

Less-Than-Significant Impact with Mitigation. In LU-1, the proposed improvements include the installation of a spur track and a track siding, realignment of the existing Main Line track, a new walkway, and realignment of the existing access road at Sierra Highway. In some portions of the rail ROW, soil cut slopes and retaining walls are proposed. The height of the soil cut slopes would range from 4 to 31 feet above the railroad tracks, and the height of the proposed retaining walls would range between 11 feet to 26 feet above the railroad tracks. From the I-5 freeway, the proposed retaining walls and soil cut slopes would be situated below the freeway and would not obstruct views of the surrounding mountains. From San Fernando Road, the retaining walls and soil cut slopes would be generally situated behind existing industrial structures. Given the height of the proposed retaining walls and soil cut slopes, these Proposed Project components would be visible along some portions of San Fernando Road. However, the retaining walls and soil cut slopes would not significantly alter views of the undeveloped hillsides from San Fernando Road since the proposed retaining wall and soil cut slope would be located along portions of San Fernando Road where views of scenic vistas are obstructed. Additionally, the proposed retaining walls and soil cut slopes would be consistent with existing views of the sound walls along the edge of the I-5 freeway, the I-5 truck route, industrial properties, and the track and ballast within the rail ROW. The Proposed Project components would not obstruct or substantially alter views of the surrounding mountains in LU-1. Additionally, the existing landforms outside of the rail and transportation corridors and the scenic features of the surrounding mountains would not be disturbed. Public views of scenic vista in LU-1 would be maintained.

In LU-2, the proposed improvements include the installation of a track siding; a walkway; an access road; an at-grade pedestrian crossing, retaining walls, and a new station platform at the existing Santa Clarita Metrolink Station; a bridge over Bermite Road; and fencing. Retaining walls would generally be located at the existing Santa Clarita Metrolink Station and the height of the retaining walls would generally range from 13 to 19 feet above the railroad tracks. No scenic vistas are available where the retaining walls are proposed.

To make room for the track siding and walkway within the rail ROW, portions of the hillside within and adjacent to the rail ROW would be cut into and soil/rock cut slopes would be installed. The height of the soil/rock cut slopes would range from 15 to 47 feet above the railroad tracks and would generally be visible to the public along Soledad Canyon Road, Chuck Pontius Commuter Rail Trail, Santa Clara River Trail, and at the residential community north of the Santa Clara River. From Soledad Canyon Road and Chuck Pontius Commuter Rail Trail, the elevated rail ROW and soil/rock cut slopes are situated behind existing commercial structures and ornamental landscaping along the street right-of-way and surface parking lots. Views of the soil/rock cut slopes would be partially obstructed due to the location of the rail ROW behind commercial properties and the elevation of the rail ROW in relation to the surrounding commercial structures and ornamental landscaping. Along a portion of the LU, a hill that is situated between Soledad Canyon Road and the rail ROW completely obstruct views of the rail ROW.

From the Santa Clara River Trail and residential neighborhood north of the Santa Clara River, the proposed soil/rock cut slopes would be visible since the existing rail ROW is elevated above the commercial structures and ornamental landscaping that are situated in front of the rail ROW. While views of the Santa Susana River would remain unobstructed and undisturbed, views of the undeveloped hillside would be altered by the proposed soil/rock cut slope if no vegetation is planted on the disturbed slopes. Therefore, a potentially significant impact would occur.

No scenic vistas area available in LU-3 and LU-4, and the Proposed Project would not adversely affect scenic vistas in these two landscape units.

With implementation of the Proposed Project, an increase in Metrolink trains would occur throughout the Antelope Valley Line. The increase in Metrolink trains is not expected to have an adverse effect on scenic vistas since similar types of Metrolink trains currently traverse along the rail ROW.

In summary, the Proposed Project components would not adversely affect scenic vistas in LU-1, and no scenic vistas are available in LU-3 and LU-4. However, in LU-2, if vegetation is not planted on the soil/rock cut slopes, views of scenic vistas could potentially be altered along the Santa Clara River Trail and at the residential neighborhood north of the Santa Clara River. Therefore, a potentially significant impact on scenic vistas would occur.

Design Options. The proposed design options would be at the Santa Clarita and Lancaster Metrolink Stations. No scenic vistas are available at these stations. Therefore, the design options would not adversely affect scenic vistas.

Mitigation Measures

AES-1 During construction in the City Santa Clarita, the perimeter of construction areas, including but not limited to, staging and laydown areas, shall be screened to shield views of construction activities from the residential neighborhood north of Santa Clara River and the Santa Clara River Trail.

AES-2 In areas where the slope ratio of the soil/rock cut slopes permits vegetation growth, plants shall be placed on the soil/rock cut slopes. The type of vegetation to be planted shall be consistent with the natural vegetation that is generally associated with the undeveloped hillsides adjacent to the rail right-of-way.

Significance of Impacts after Mitigation

Mitigation Measure **AES-1** would limit views of most construction activities at the residential neighborhood north of Santa Clara River and the Santa Clara River Trail. While some taller construction equipment, such as cranes and drill rigs, would be visible to sensitive viewers north of the Santa Clara River and along the Santa Clara River Trail, construction activities would be temporary and given the viewers' distance from the Canyon Siding Extension site impacts would be less than significant with implementation of Mitigation Measure **AES-1**.

With implementation of Mitigation Measure **AES-2**, vegetation consistent with the types of plants that are currently found along the hillsides adjacent to the rail ROW would be planted on the soil/rock cut slope reducing the degree to which the hillside would change visually. While the proposed soil/rock cut slopes would be too steep for vegetation to be planted in some areas, the overall visual quality of the hillside would not be affected to a substantial degree as the existing ridgelines would remain unaffected by the proposed soil/rock cut slopes and the hillside has already been substantially graded to accommodate the existing AVL track. Accordingly, with implementation of Mitigation Measure **AES-2**, views of the undeveloped hillside in LU 2 would not be noticeably permanently altered and impacts associated with grading along the hillside lining the Canyon Siding Extension site would less than significant.

Impact 3.2-2) Would the Proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

The I-5 freeway within LU-1 is an eligible state scenic highway due to foreground views of the Santa Susana Mountains on the west side and San Gabriel Mountains on the east side of the freeway, rail ROW, and San Fernando Road. No state scenic highways or eligible state scenic highways are located in the viewsheds for LU-2 through LU-4.

Construction

Less-Than-Significant Impact. Construction activities are not anticipated to damage any scenic resources. While construction activities may involve cut-and-fill activities on natural terrain in LU-1, construction activities would primarily occur within the existing rail ROW and a portion of the Caltrans right-of-way for the I-5 freeway. Construction activities would be situated adjacent to transportation corridors (I-5 freeway and San Fernando Road) and industrial and residential properties. No construction activities or tree removals are proposed in the surrounding Santa Susana and San Gabriel Mountains. Therefore, construction activities in LU-1 would not damage scenic resources associated with the I-5 freeway, and a less-than-significant impact on state scenic highways would occur.

Design Options. The proposed design options would not be located within a state scenic highway or eligible state scenic highway. Therefore, construction of the design options would have no impact on scenic resources within a state scenic highway.

Operations

Less-Than-Significant Impact. In LU-1, the changes associated with the Proposed Project would primarily occur within the rail ROW and some portions of the Caltrans ROW. The Proposed Project is not expected to permanently alter or damage any of the scenic resources in LU-1 (i.e., Santa Susana and San Gabriel Mountains). The Proposed Project components that would be introduced to LU-1, such as retaining walls, soil cut slopes, an access road, and railroad tracks, would be similar to the types of visual elements that are currently found within the rail ROW and the surrounding street and freeway rights-of way. The height of the retaining walls would range from 11 to 18 feet, and the height of the soil cut slopes would range from 4 to 31 feet. The retaining walls and soil cut slopes would generally not be noticeable along the I-5 freeway since the soil

cut slopes would be at a lower elevation than the freeway. Therefore, a less-than-significant impact is expected.

Design Options. The proposed design options would not be located within a state scenic highway or eligible state scenic highway. Therefore, implementation of the design options would have no impact on scenic resources within a state scenic highway.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less than significant.

Impact 3.2-3) In non-urbanized areas, would the Proposed Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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?

Construction

Visual Character and Quality

Less-Than-Significant Impact with Mitigation. Construction activities would introduce heavy equipment (i.e., loaders, excavators, scrapers), security fencing, barricade materials, stockpiled building materials, and safety and directional signage into LU-1 through LU-4. Tall construction equipment, such as cranes and drill-rigs, would be used along some portions of the LUs to construct the Proposed Project. The presence of construction vehicles, equipment, staging and laydown of materials, personnel, and other visual signs of construction would present visually disruptive elements in each LU, but the effects would be temporary.

At LU-1, construction activities would occur within or adjacent to the rail ROW. Along most of LU-1, the rail ROW is at a lower elevation than the adjacent I-5 freeway, and construction activities within and adjacent to the rail ROW generally would not obstruct views of the surrounding Santa Susana and San Gabriel Mountains. Construction activities would be consistent with and would not detract from the visual character of the built environment, which consists of industrial and residential uses and transportation corridors. Industrial development adjacent to the rail ROW include open storage piles of firewood and exterior storage of construction trucks. Residents would have limited views of construction activities since construction activities would occur to the rear of the residences, where views of construction activities would be mostly blocked by existing vegetation that separate the rail ROW from the residential properties. Motorists traveling along the I-5 freeway would continue to have unobstructed views of the Santa Susana and San Gabriel Mountains. Construction activities, including construction equipment, would not conflict with the visual character of the LU, and viewer sensitivity would be low. Therefore, the Proposed Project would have a neutral effect on visual character and quality in LU-1.

At LU-2, construction activities would occur primarily within and adjacent to the rail ROW, which is situated along the sides of undeveloped hills and is elevated above the commercial structures facing Soledad Canyon Road. From Soledad Canyon Road and Chuck Pontius Commuter Rail Trail, construction activities are not expected to degrade the visual character and quality of the area since much of the construction activity would be set back away from the street and behind commercial properties. Intervening structures would partially obstruct views, and existing ornamental landscaping would soften views of the construction activities. As a result, views of the construction activities from Soledad Canyon Road and Chuck Pontius Commuter Rail Trail would not be prominent, and viewer sensitivity in this area would be low. Motorists, pedestrians, transit users, and employees and visitors of commercial uses would not be sensitive to views of the construction activities since these viewer groups do not primarily access the area for its visual and aesthetic values.

Construction activities would temporarily alter the visual character of the hillsides from the perspective of residents north of the Santa Clara River and users of the Santa Clara River Trail. The residential neighborhood north of Santa Clara River and the Santa Clara River Trail provide wide views of the hillside on which the rail ROW is situated. Given the viewer groups' distance from the rail ROW and the elevation of the rail ROW above intervening low-rise commercial structures, construction activities would be noticeable at this residential neighborhood and trail. Cut-and-cover activities would be particularly noticeable since construction activities would involve cutting into the hillside to install soil/rock cut slopes that could be as tall as 47 feet above the railroad tracks. In this area, construction activities would be incompatible with the existing visual character of the hillsides, and sensitive viewers would be moderately sensitive to views of the construction activities. Therefore, adverse effects on visual character and quality would occur in LU-2. Construction activities, however, is temporary and construction equipment would be removed once construction is completed. Nevertheless, the construction-related aesthetic impact within LU-2 is considered potentially significant.

At LU-3, construction activities would be situated between Soledad Canyon Road and Golden Triangle Road and would be visible to viewer groups in the viewshed. Although construction activities have the potential to alter the visual character of LU-3, construction activities would not detract from the mixed industrial, commercial, and residential character of the LU. Additionally, construction activities are temporary and would be removed once construction is completed. Viewer groups in LU-3 (e.g., motorists, pedestrians, users of the Chuck Pontius Commuter Rail Trail, employees and visitors of commercial developments and public storage facilities) would not be sensitive to views of construction activities, and no sensitive viewers would have views of the construction activities. As construction activities would not detract from the visual character of LU-3 and viewer sensitivity would be low, construction activities would have a neutral effect on the visual character and quality of LU-3.

At LU-4, construction activities would not detract from the mixed industrial and commercial character of the viewshed. A majority of the construction activities would occur within or adjacent to the rail ROW and would be set back from the street ROWs. Where structures are situated on both sides of the rail ROW, views of construction activities would be obstructed. Motorists, pedestrians, transit users, and employees of the area would not be sensitive to views of the

construction activities since these viewer groups do not primarily access the area for its visual and aesthetic values. Views of construction activities from the residential development at the northeast corner of Jackman Street/Sierra Highway would be limited since the views of construction activities at the City of Lancaster parking lot would be at an angle. Additionally, public views of the United States Air Force Jet at the northeast corner of Sierra Highway/Lancaster Boulevard intersection would remain available during construction. As such, viewer sensitivity would be low. Since construction activities in LU-4 would not detract from the visual character of LU-4 and viewer sensitivity would be low, construction activities would have a neutral effect on the visual character and quality in LU-4.

Design Options. Construction for the proposed design options would occur at the Santa Clarita Metrolink Station in LU-2 and Lancaster Metrolink Station in LU-4. Construction activities at the two stations would be set back from the public street rights-of-way and, as a result, views of construction activities from the public street rights-of-way would not be as prominent from the streets. Construction activities would not detract from the visual character of the station areas, which consists of paved surface parking lots, railroad tracks, and station platforms. No sensitive viewers have views of the two stations, and primary viewer groups (e.g., motorists, pedestrians, transit users, and employees and visitors of commercial and industrial uses) would not be sensitive to views of the construction activities since these viewer groups do not primarily access the area for its visual and aesthetic values. Since construction activities would not detract from the visual character of the Santa Clarita and Lancaster Metrolink Stations and viewer sensitivity would be low, construction activities for the design options would have a neutral effect on the visual character and quality.

Consistency with Regulations that Affect Scenic Quality

Less-Than-Significant Impact. None of the jurisdictions in the Project Area have policies or plans that govern visual quality during construction as visual quality is typically a permanent condition that cities regulate. Adherence to South Coast Air Quality Management District Rules 401 and 403 would reduce the amount of visible Project-related emissions that are released into the air (Rule 401) and the amount of Project-related fugitive dust that are entrained into the air (Rule 403). Project-related construction activities would be required to comply with these rules.

Summary

The Proposed Project would have a neutral effect on the visual character and quality in LU-1, LU-3, and LU-4 but would have an adverse effect on visual character and quality in LU-2 since construction activities would be incompatible with the existing visual character of the hillsides and sensitive viewers would be moderately sensitive to views of construction activities. Therefore, potentially significant impacts would occur, and Mitigation Measure **AES-1** would be required to reduce impacts.

Operations

Visual Character and Quality

Less-Than-Significant Impact. In LU-1, the Proposed Project would realign the existing railroad track and introduce two additional tracks, an access road, a walkway, retaining walls, and soil cut slopes within and adjacent to the rail ROW. Similar visual elements exist in the built environment

associated with LU-1. The proposed changes would be consistent with the visual elements that are present in the rail ROW, the adjacent transportation corridors, and the adjacent industrial properties. The proposed retaining walls would range from 11 to 26 feet in height, and soil cut slopes would range from 4 to 31 feet in height. The proposed retaining walls and soil cut slopes would be similar in scale, form, material, and massing as the existing retaining walls, sound walls, and cut slopes in the viewshed for LU-1. The surrounding natural resources (i.e., undeveloped hillsides) would remain undisturbed. Primary viewer groups in LU-1 would not be sensitive to the proposed changes since the Proposed Project components would be consistent with those that are found in the viewshed and views of the Santa Susana and San Gabriel Mountains would remain unchanged.

Along the I-5 freeway, which is an eligible scenic highway in LU-1, Proposed Project components would be at a similar grade or lower than the freeway. While tall retaining walls and soil cut slopes are proposed along some portions of LU-1, these structures would be located in portions of the LU where views of the surrounding undeveloped hillsides from the I-5 freeway would not be obstructed. The Proposed Project would not alter the unique identity or characteristic of the I-5 freeway, and the scenic resources associated with this eligible state scenic highway would be preserved. From San Fernando Road, the proposed retaining walls and soil cut slopes would not substantially alter the visual character of the area since similar visual elements are visible along this street. Public views of the surrounding mountains would not be noticeably different from existing conditions. As the Proposed Project components would be compatible with the visual elements in LU-1 and viewer group sensitivity to the proposed changes would be low, the Proposed Project would have a neutral effect on the visual character and quality of LU-1.

In LU-2, the Proposed Project would introduce a track siding, an access road, a walkway, fencing, and soil/rock cut slope within and adjacent to the rail ROW. In addition, retaining walls, an at-grade pedestrian crossing, a new bridge over Bermite Road, a second station platform, station canopies, and other station amenities would be provided at the Santa Clarita Metrolink Station. The new bridge over Bermite Road would accommodate the new track and would be located adjacent to the existing bridge, which would remain in place. The height of the retaining walls at the station would range from 13 to 19 feet tall. The Proposed Project components at the Santa Clarita Station, including retaining walls, would be similar in scale, form, massing, and materials as the visual elements that are currently located at the station.

Along the rest of LU-2, the proposed track siding, access road, walkway, fencing would be consistent with the form, scale, massing, and materials of the visual elements that are currently found in the viewshed. The proposed soil/rock cut slopes would range from 15 feet to 47 feet in height above the railroad tracks within the rail ROW, with is presently elevated above the surrounding low-rise commercial structures. If the vegetation on the hills are not replaced after the soil/rock cut slopes are installed, the visual character of the soil/rock cut slopes would be noticeably different from the existing visual character of the hillside. The soil/rock cut slopes would generally be visible in the viewshed, although portions of the soil/rock cut slopes would be visually obstructed along Soledad Canyon Road and Chuck Pontius Commuter Rail Trail given that some of the cut slopes would be situated behind commercial structures. Where small hills are situated between the rail ROW and Soledad Canyon Road, views of the soil/rock cut slopes would also be obstructed from the street and Chuck Pontius Commuter Rail Trail. Motorists, bicyclists, and pedestrians in the viewshed would have low

sensitivity to the change due to the speed at which they are traveling through LU-2 and their focus and attention are not primarily associated with views of the undeveloped hillsides.

In LU-2, the soil/rock cut slopes would be most apparent at the residential neighborhood north of Santa Clara River and along the Santa Clara River Trail. Although this area is further away from the rail ROW than Soledad Canyon Road and the Chuck Pontius Commuter Rail Trail, Proposed Project components would be more visible in in this area. The commercial uses adjacent to the north side of the rail ROW would not obscure views of the rail ROW from the residential neighborhood north of the river and along the Santa Clara River Trail since the rail ROW is at a higher elevation than its adjacent commercial structures.

The proposed soil/rock cut slopes would involve the removal of natural vegetation and, without the planting of similar types of vegetation, the soil/rock cut slopes would potentially conflict with the existing visual character of the hillsides. Residents north of the Santa Clara River and users of the Santa Clara River Trail would be highly sensitive to the proposed change. Therefore, the proposed soil/rock cut slopes would have an adverse effect on the visual character and quality in LU-2. This is considered a potentially significant impact.

In LU-3, the Proposed Project would install a track siding within the rail ROW and would modify the existing grade crossing at Golden Oak Road to accommodate the track siding. The grade crossing modification would also include the relocation and installation of new traffic signals, new striping throughout the Soledad Canyon Road/Golden Oak Road/Golden Triangle Road intersection, curb adjustments to provide pedestrian and bicycle safety improvements, installation of new crossing gates, and high visibility crosswalk markings. LU-3 has similar visual elements as the Proposed Project components. Additionally, the Proposed Project components would be consistent with the scale, form, massing, and materials of the visual environment associated with LU-3. The grade crossing modifications and other Proposed Project components would be compatible with and would not degrade the visual character of LU-3.

In LU-3, residents north of Soledad Canyon Road would not have views of the Proposed Project components since walls currently separate the residential neighborhood from the street and would obstruct views to and from the rail ROW. None of the viewer groups with views of the Proposed Project components would be sensitive to the changes associated with the Proposed Project since Proposed Project components would be consistent with and would not degrade the existing visual environment of LU-3. As a result, viewer sensitivity to the proposed changes would be low. Due to the Proposed Project's compatibility with the existing visual character and the low viewer sensitivity, the Proposed Project would have neutral effects on the visual character and quality in LU-3.

In LU-4, the Proposed Project would develop a new layover facility at the existing Lancaster surface parking lot. The new layover facility would include layover facility buildings and two new storage tracks on the east side of the Lancaster surface parking lot. At the Lancaster Metrolink Station, a new station platform would be constructed. The Proposed Project would also extend the existing main track across Lancaster Boulevard to the proposed layover facility, install double tracks between W Avenue and Jackman Street, install fencing, and modify the existing grade crossing at Lancaster Boulevard. The viewshed for LU-4 has similar visual components as the

Proposed Project, and the Proposed Project components would be consistent with the industrial character of LU-4. At the new layover facility, the proposed buildings would be at a similar height, scale, and massing, and would use similar materials as the existing structures in the viewshed. Additionally, two new storage tracks would be located next to the existing tracks that are currently within the rail ROW. The proposed layover facility would accommodate up to four 4-car trains. Views of the trains at the proposed layover facility would not detract from the industrial character of the LU, and the trains would not be a new visual element since Metrolink trains currently travels within the rail ROW in this LU.

The visual character at the Lancaster Metrolink Station would remain similar to existing conditions. The Proposed Project would provide similar station elements as those that are currently found at the Lancaster Metrolink Station, and the new station platform would be similar in design and materials as the existing structures at the station. Additionally, the canopies over the station platforms would be similar in height as the existing canopies.

Residents at the northwest corner of Sierra Highway/Jackman Street would have angled views of the proposed layover facility. This viewer group, as well as other viewer groups (e.g., employees, transit users, motorists, and pedestrians), would not be sensitive to the proposed changes as the Proposed Project components would not detract from the visual character of the existing Lancaster parking lot and the Lancaster Metrolink Station. While the Proposed Project would construct a layover facility inclusive of a Metrolink staff building, the Proposed Project components would be consistent with the visual character of the existing Lancaster parking lot and Lancaster Metrolink Station and would be consistent with the industrial character of LU-4. Additionally, while the proposed Metrolink staff building would be constructed in close proximity to the United States Air Force Jet, views of the Jet at the northeast corner of Sierra Highway/Lancaster Boulevard intersection would remain unobstructed from east facing views which are the only views accessible to viewer groups in the area. No physical alterations to the United States Air Force Jet or surrounding plaza would occur and therefore, no impacts to the visual resource would result. Since the Proposed Project components would be compatible with the visual character of LU-4 and viewer sensitivity would be low, the Proposed Project would have a neutral effect on the visual character and quality of LU-4.

With implementation of the Proposed Project, an increase in Metrolink trains would occur throughout the AVL. The increase in Metrolink trains is not expected to alter the visual character of the Antelope Valley Line and viewer sensitivity to the additional Metrolink trains would be low since similar types of Metrolink trains currently traverse along the rail ROW. As a result, the increase in Metrolink trains would have a neutral effect on visual character and quality throughout the AVL.

Platform to Platform Pedestrian Undercrossing, Island Platform to Parking Lot Pedestrian Undercrossing, and Island Platform Pedestrian Undercrossing Design Options. The Platform to Platform Pedestrian Undercrossing and Island Platform to Parking Lot Pedestrian Undercrossing design options would occur at the Santa Clarita Metrolink Station, and the Island Platform Pedestrian Undercrossing would occur at the Lancaster Metrolink Station. These design options are not expected to detract from the visual character of the existing stations. The scale, massing, and form of the proposed undercrossings would not conflict with visual elements associated with the stations.

Viewer groups would have low sensitivity to the proposed change since sensitive viewers (residents) would have limited views of the stations and the proposed changes would not be noticeably different from the existing visual character of the stations. Therefore, the proposed design options would have a less-than-significant impact on visual character and quality.

Island Platform with Pedestrian Overcrossing Design Option. This design option would construct a pedestrian overpass at the Lancaster Metrolink Station. Although the proposed pedestrian overpass would be taller than the existing structures at the station, the height and massing of the pedestrian overpass would not be noticeably different from the surrounding area since it would be setback by approximately 100 feet or more from Sierra Highway and by approximately 290 feet from Yucca Avenue. In addition, the pedestrian overcrossing would have similar design elements as the existing structures (e.g., similar color schemes, roofing style, and building materials) at the station. Sensitive viewers would not have views of the proposed pedestrian overcrossing, and primary viewer groups with views of the overcrossing would have low sensitivity to the proposed changes given that the proposed overcrossing would be setback away from the street rights-of-way and would be consistent with the style of the existing structures in the station. Views of the United States Air Force Jet from Sierra Highway would be unaffected by the proposed design option. Only north-facing views of the United States Air Force Jet from the Lancaster Terminal platform would be partially obstructed by the proposed overcrossing; however, Metrolink rider viewer sensitivity is considered low. Therefore, the proposed design option would have a less-than-significant impact on visual character and quality.

Consistency with Regulations that Affects Scenic Quality

Less-Than-Significant Impact. While each jurisdiction in the Project Area has a zoning ordinance that regulates the scenic quality of development projects, the zoning ordinances do not directly regulate the design of transportation infrastructure elements including rail facilities such as stations. The Proposed Project elements would be primarily located within the rail ROW, and changes to existing land uses are not anticipated. Metro has been coordinating and continues to coordinate with the affected jurisdictions regarding Proposed Project design to ensure that the Proposed Project would be consistent with the visual element of the surrounding area. As such, the Proposed Project would be consistent with zoning requirements of the affected jurisdictions.

Summary

The Proposed Project would have a neutral effect on the visual character and quality in LU-1, LU-3, and LU-4. In LU-2, if vegetation along the hillsides are not replaced after the soil/rock cut slopes are installed, the proposed soil/rock cut slopes would be inconsistent with the visual character of the undeveloped hillsides, and sensitive viewers (i.e., residents north of the Santa Clara River and users of the Santa Clara River Trail) would notice and be highly sensitive to the change. Therefore, a potentially significant impact would occur, and Mitigation Measure **AES-2** would be required to reduce the impact.

Mitigation Measures

See Mitigation Measures **AES-1** and **AES-2**.

Significance of Impacts after Mitigation

Mitigation Measure **AES-1** would limit views of some construction activities in LU-2, including at the residential neighborhood north of Santa Clara River. While tall construction equipment, such as cranes and drill-rigs, and construction activities for the soil/rock cut slopes may be remain visible above the temporary screening such construction activities would be temporary and are distant enough from sensitive viewers that, with implementation of Mitigation Measure AES-1, impacts would be less than significant.

With implementation of Mitigation Measure **AES-2**, vegetation consistent with the types that are currently found along the hillsides would be planted on the proposed soil/rock cut slope reducing the degree to which the hillside would change visually. While the proposed soil/rock cut slopes would be too steep for vegetation to be planted in some areas, the overall visual quality of the hillside would not be affected to a substantial degree as the existing ridgelines would remain unaffected by the proposed soil/rock cut slopes and the hillside has already been substantially graded to accommodate the existing AVL track. Accordingly, with implementation of Mitigation Measure **AES-2**, views of the undeveloped hillside in LU 2 would not be noticeably permanently altered and impacts associated with grading along the hillside lining the Canyon Siding Extension site would be less than significant.

Impact 3.2-4) Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Construction

Less-Than-Significant Impact with Mitigation. Most construction activities would occur during daytime hours; however, if necessary, nighttime construction work could potentially increase nighttime light or glare, temporarily affecting visibility and may result in temporary adverse effects related to spillover lighting and glare if not mitigated. Nighttime lighting and glare would be temporary and would not result in permanent effects to nighttime views in the Project Area. No construction equipment or activities have been identified that would result in a substantial source of light or glare during daytime hours. As construction activities may temporarily affect nighttime lighting and may result in glare, a potentially significant impact related to light and glare would occur during construction. Mitigation measures would be required to reduce these impacts.

Design Options. Lighting and glare effects during construction of the design options would be similar to those described for the Proposed Project, above. As discussed, construction activities may temporarily affect nighttime lighting and may result in glare. Therefore, a potentially significant impact related to light and glare would occur during construction and mitigation measures would be required.

Operations

Less-Than-Significant Impact. The Proposed Project would include one late night trip along the AVL Mondays through Saturdays. Lighting from the Metrolink trains would be directed towards the rail ROW and would be directed away from light-sensitive uses, such as residences and, thus, would not be a substantial source of glare. Additionally, lighting from trains are not expected to

extend beyond the rail ROW. Light intensity from Metrolink trains are expected to be comparable to lighting from existing buildings and vehicles from the surrounding area.

At the proposed laydown facility in the City of Lancaster and the stations in the cities of Santa Clarita and Lancaster, the Proposed Project would not create new sources of light or glare. Lighting levels from the proposed laydown facility and station areas would be comparable to the existing lighting levels from existing buildings in the surrounding area, vehicles, parking lots, and station areas.

The Proposed Project does not include the use of materials that would be a substantial source of glare. Therefore, a less-than-significant impact related to light and glare would occur.

Design Options. Lighting and glare effects associated with the design options would be similar to those described for the Proposed Project, above. Lighting from the Proposed Project components are not expected to extend beyond the Santa Clarita and Lancaster Metrolink Stations and would not create new sources of light or glare. Lighting levels would be comparable to the existing levels of the station areas, as well as from existing buildings in the surrounding area, vehicles, parking lots, and station areas. Additionally, the design options would not include the use of materials that would be a substantial source of glare. Therefore, a less-than-significant impact related to light and glare would occur for the design options.

Mitigation Measures

AES-3 During construction, nighttime construction lighting shall be directed toward the interior of the construction area and shielded with temporary construction screening to limit light spillover into adjacent areas.

Significance of Impacts after Mitigation

With implementation of Mitigation Measure **AES-3**, nighttime construction lighting would be limited to the construction areas, would not result in spillover lighting, and would not cause glare onto adjacent areas. Therefore, with implementation of Mitigation Measure **AES-3**, a less than significant impact would occur during construction.

3.3 AIR QUALITY

The following summarizes the applicable regulations, existing setting, and provides a detailed impact assessment related to air quality. The Project Area for air quality consists of the Los Angeles County portion of the South Coast Air Basin (SCAB) and the Antelope Valley portion of the Mojave Desert Air Basin (MDAB).

3.3.1 Regulatory Framework

3.3.1.1 Federal Regulations

Clean Air Act. The Clean Air Act (CAA) is the comprehensive federal law that regulates air emissions from stationary and mobile sources. Among other things, this law authorizes the United States Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and public welfare based on the latest science and requires states to adopt enforceable plans to achieve the standards. Congress designed the law to minimize pollution increases from growing numbers of motor vehicles, and from new or expanded stationary sources (i.e., power plants, industrial plants, and other facilities that are not mobile). The USEPA administers national programs to monitor concentrations of certain air pollutants and control emissions from major sources. Through the CAA, the USEPA regulates emission sources that are under the exclusive authority of the federal government, such certain types of locomotives, as well as mandating various emission standards, including those for on-road vehicles.[1,2] The CAA also contains specific provisions to address:

- "Hazardous" or "toxic" air pollutants that pose health risks such as cancer or environmental threats such as bioaccumulation of heavy metals,
- Acid rain that damages aquatic life and ecosystems, acidifies forest soils, damages property, and forms from pollution that degrades visibility and harms public health,
- Chemical emissions that deplete the stratospheric ozone layer, and
- Regional haze that impairs visibility in national parks and other recreational areas.

In addition, the CAA was drafted with general authorities that can be used to address pollution problems that emerge over time, such as greenhouse gas emissions that contribute to global climate change.

Criteria Air Pollutants. The CAA requires USEPA to set and revise NAAQS for certain common and widespread pollutants, known as "criteria pollutants," and provides authority for the agency to add additional pollutants. Standards are in effect today for six pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (regulated as subsets of particles with diameter less than 2.5 microns and less than 10 microns denoted as

[1]USEPA, *Overview of the Clean Air act and Air Pollution*, accessed March 2021.
[2]USEPA, *The Clean Air Act in a Nutshell: How It Works*, March 2013.

$PM_{2.5}$ and PM_{10}, respectively), and lead (Pb). Brief descriptions of the criteria air pollutants, common sources, and documented health concerns from exposure are provided in **Table 3.3-1**.

Table 3.3-1: Federal Criteria Air Pollutants and Characteristics

Pollutant	Characteristics
Ozone (O_3)	▪ Colorless gas and secondary pollutant formed by complex atmospheric interactions between two or more reactive organic gas compounds (including VOC and NO_X) in the presence of ultraviolet sunlight. Automobile travel and industrial sources are the greatest sources of atmospheric O_3 formation. ▪ Short-term exposure (lasting for a few hours) to O_3 levels typical in Southern California can result in breathing pattern changes, restricted breathing, increased susceptibility to infections, inflammation of the lung tissue, and immunological changes.
Nitrogen Dioxide (NO_2)	▪ Formed in the atmosphere through chemical reaction between nitric oxide (NO) and atmospheric oxygen. NO and NO_2 are collectively referred to as NO_X and are major contributors to O_3 formation and contribute to the formation of PM_{10}. ▪ High concentrations can cause breathing difficulties, are linked to chronic pulmonary fibrosis, an increase of bronchitis in children (two and three years old), and result in a brownish-red cast to the atmosphere with reduced visibility.
Carbon Monoxide (CO)	▪ Colorless, odorless gas formed by incomplete combustion of fossil fuels (e.g., motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains) ▪ Excess exposure can reduce the blood's ability to transport oxygen, causing dizziness, fatigue, and impairment of central nervous system functions.
Sulfur Dioxide (SO_2)	▪ Refers to any compounds of sulfur and oxygen. A colorless, pungent gas that forms primarily through the combustion of sulfur-containing coal and oil. ▪ Stringent controls placed on stationary SO_2 emissions and limits on sulfur content of fuels have reduced atmospheric SO_2 concentrations. Highest levels of SO_2 are found near large industrial complexes (e.g., power plants) and can harm plant leaves and erode iron and steel. ▪ An irritant gas that attacks the throat and lungs; can cause acute respiratory symptoms and diminished lung function in children.
Respirable Particulate Matter (PM_{10})	▪ Comprised of airborne liquid and solid particles (e.g., smoke, soot, dust, salts, acids, and metals) formed by atmospheric chemical reactions of gases emitted from industrial and motor vehicles. ▪ Results from crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. ▪ Collects in the upper portion of the respiratory system and can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections.

Pollutant	Characteristics
Fine Particulate Matter ($PM_{2.5}$)	▪ Formed in the atmosphere from gases (i.e., SO_2, NO_X, and VOC) and results from fuel combustion (e.g., motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. ▪ Inhalation (i.e., Pb, sulfates, nitrates, chlorides, ammonia) can be absorbed into the bloodstream and damage human organs, tissues, and cells throughout the body. Suspended $PM_{2.5}$ can damage and discolor surfaces and produce haze and reduce regional visibility.
Lead (Pb)	▪ Occurs in atmosphere as PM emitted from leaded gasoline combustion; manufacture of batteries, paint, ink, ceramics, and ammunition; and secondary lead smelting facilities. ▪ Phased-out leaded gasoline reduced overall airborne Pb by 95% between 1978 and 1987. Current emission sources of greater concern include lead smelters, battery recycling, and manufacturing facilities. ▪ Prolonged exposure can lead to serious threats to human health (i.e., gastrointestinal disturbances, anemia, kidney disease, and neuromuscular and neurological dysfunction). Infancy and childhood exposure can impair neurobehavioral performance.

SOURCE: California Air Resources Board (CARB), *Common Air Pollutants*, Accessed March 2021.
Notes: µm = micrometers; nm = nanometers; NO = nitric oxide; NOx = nitrogen oxide; VOC = volatile organic compounds

National Ambient Air Quality Standards. An air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without presenting concerns related to public health, and thus, it is used as a threshold metric to define clean air. The National Ambient Air Quality Standards (NAAQS) are selected by the USEPA Administrator at the conclusion of a public process that takes about five years for completion. The process starts with a comprehensive review of the relevant scientific literature, which is then synthesized to inform a risk and exposure assessment conducted by the USEPA staff. The CAA requires USEPA to review and, if necessary, revise each of the NAAQS at five-year intervals. The current NAAQS are presented in **Table 3.3-2** along with the corresponding averaging times. The USEPA is tasked with the regulatory authority of monitoring pollutant concentrations and determining whether areas have attained the NAAQS. Those areas with recurring concentrations of criteria pollutants exceeding the air quality standard values are designated as “Nonattainment” of the standard and are required to prepare air quality plans to demonstrate regional control strategies that will reduce emissions. Also shown in **Table 3.3-2** are the California Ambient Air Quality Standards (CAAQS), which are generally more stringent than the federal standards and are discussed in greater detail below.

Table 3.3-2: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS	CAAQS
Ozone (O_3)	1-Hour	--	0.09 ppm (180 µg/m^3)
	8-Hour	0.07 ppm (137 µg/m^3)	0.07 ppm (137 µg/m^3)
Carbon Monoxide (CO)	1-Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
	8-Hour	9.0 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1-Hour	0.10 ppm (188 µg/m^3)	0.18 ppm (339 µg/m^3)
	Annual Average	0.053 ppm (100 µg/m^3)	0.030 ppm (57 µg/m^3)
Sulfur Dioxide (SO_2)	1-Hour	0.075 ppm (196 µg/m^3)	0.25 ppm (655 µg/m^3)
	24-Hour	0.14 ppm (180 µg/m^3)	0.04 ppm (105 µg/m^3)
Respirable Particulate Matter (PM_{10})	24-Hour	150 µg/m^3	50 µg/m^3
	Annual Average	--	20 µg/m^3
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	35 µg/m^3	--
	Annual Average	12 µg/m^3	12 µg/m^3
Lead (Pb)	30-Day Average	--	1.5 µg/m^3
	3-Month Average	0.15 µg/m^3	--
Visibility Reducing Particles	8-Hour	No National Standard	Extinction rate of 0.23 per kilometer
Sulfates	24-Hour	No National Standard	25 µg/m^3
Hydrogen Sulfide	1-Hour	No National Standard	0.03 ppm (42 µg/m^3)
Vinyl Chloride	24-Hour	No National Standard	0.01 ppm (26 µg/m^3)

SOURCE: California Air Resources Board (CARB), Ambient Air Quality Standards, updated May 2016.

State Implementation Plan. Federal law requires that all states attain the NAAQS. Areas of the State that are designated as "Nonattainment" for one or more of the NAAQS are required under the federal CAA to develop plans meeting specific requirements depending on the severity of the pollution problem. The severity of the pollution problem for "Nonattainment" areas is based on the measured ambient air quality data and the interim design values set for the region. "Nonattainment" areas can be described as "Marginal", "Moderate", "Serious", "Severe-15", "Severe-17", and "Extreme" based on the concentrations measured over recent years. An area must demonstrate continual achievement of the interim design value concentrations in order to be redesignated to a lower "Nonattainment" tier. The type of Nonattainment designation is based on the amount of reductions in pollutant concentrations that must occur for the NAAQS to be achieved.

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a State Implementation Plan (SIP) that demonstrates the means to attain the federal standards. Nonattainment areas that demonstrate extended periods of time with concentrations measured below the air quality standards can be redesignated to "Maintenance" following a request to the USEPA. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution, using a combination of performance standards and market-based programs within the timeframe identified in the SIP. Failure of a state to reach attainment of the NAAQS by the target date can trigger penalties, including withholding of federal highway funds.

3.3.1.2 State Regulations

In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). In California, the CCAA is administered by California Air Resources Board (CARB) at the State level and by air quality management districts and air pollution control districts at the regional and local levels. CARB, which became part of the California Environmental Protection Agency (Cal/EPA) in 1991, is responsible for meeting the State requirements of the CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA, which was amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS.

California Ambient Air Quality Standards. The CAA requires all areas of the state to achieve and maintain the CAAQS by the earliest practicable date. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a state standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a state standard and are not used as a basis for designating areas as nonattainment. The state standards are summarized in **Table.3-2**.

Air Toxics Program. The CARB's statewide comprehensive air toxics program was established in the early 1980s. According to section 39655 of the California Health and Safety Code, a toxic air contaminant (TAC) is "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose or present a potential hazard to human health." The Toxic Air Contaminant Identification and Control Act created California's program to reduce exposure to air toxics. Under the Toxic Air Contaminant Identification and Control Act, the CARB is required to prioritize the identification and control of air toxics emissions. In selecting substances for review, the CARB must consider criteria relating to the risk of harm to public health, such as the amount or potential amount of emissions, manner of and exposure to usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community. The Toxic Air Contaminant Identification and Control Act also require CARB to use available information gathered from the Air Toxics Hot Spots Information and Assessment Act to include in the prioritization of compounds.

The CARB classified particulate emissions from diesel-fueled engines (diesel PM) as TACs in August 1998. Following the identification process, the CARB was required by law to determine if there was a need for further control, which led to the risk management phase of the program. For the risk management phase, CARB formed the Diesel Advisory Committee to assist in the development of a risk management guidance document and a risk reduction plan. With the assistance of the Advisory Committee and its subcommittees, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines.

The Diesel Advisory Committee approved these two documents on September 28, 2000, paving the way for the next step in the regulatory process: the control measure phase. During the control measure phase, specific statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles have and continue to be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

3.3.1.3 Regional Regulations

Southern California Association of Governments. Federal law (23 United States Code Section 134 et seq.) requires that any urbanized area with population of 50,000 or more be guided and maintained by a regional entity known as a Metropolitan Planning Organization (MPO). The MPO for the Project Area is the Southern California Association of Governments (SCAG), which also serves as the Regional Transportation Planning Agency. The SCAG region encompasses six counties—Imperial, Los Angeles, Orange, Riverside, Bernardino, and Ventura—and 191 cities in an area covering more than 38,000 square miles. The Project corridor spans across portions of northern Los Angeles County, and Metrolink facilities within the SCAG region are accounted for in SCAG regional planning activities.

SCAG develops long-range regional transportation plans (RTPs) including sustainable communities strategies (SCSs) and growth forecast components, regional transportation improvement programs, regional housing needs allocations, and a portion of the South Coast Air Quality District (SCAQMD) management plans. SCAG publishes a new iteration of its RTP/SCS every four years, with the most recently adopted plan being the Connect SoCal 2020–2045 RTP/SCS (Connect SoCal) adopted by the SCAG Regional Council on September 3, 2020 after receiving federal approval from the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on June 5, 2020.[3] The foundation of Connect SoCal is rooted in its “Core Vision” that focuses on maintaining and better managing the regional transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit in close proximity and increasing investment in transit and complete streets. The Core Vision was originally developed in the 2008 and 2012 RTP documents and Connect SoCal provides the most comprehensive RTP/SCS to date that builds upon previous work. SCAG’s regional transportation and land use planning initiatives are closely intertwined with improving regional air quality.

Most areas within the SCAG region are designated “Nonattainment” or "Maintenance” areas for one or more transportation-related criteria pollutants, meaning that the air quality standards have not been met or were not met in the past. Pursuant to the federal CAA, SCAG’s RTP/SCS is required to meet all federal transportation conformity requirements, including regional emissions analysis, financial constraint, timely implementation of transportation control measures, and interagency consultation and public involvement (42 United States Code Section 7401 et seq.). The regional emissions analysis for the Connect SoCal plan was developed using demographic data and forecasts from the 2012 and 2016 RTP/SCS plans in conjunction with a more robust

[3] SCAG, *Connect SoCal – The 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy of the Southern California Association of Governments*, adopted May 7, 2020.

collaborative effort at the local level to refine regional growth projections through the planning horizon of 2045.[4] One of the guiding principles of Connect SoCal is to encourage transportation investments that will result in improved air quality and public health. The expansion and enhancement of the regional public transit network and the associated displacement of vehicle trips is a fundamental tenet of the regional planning initiatives to attain the air quality standards.

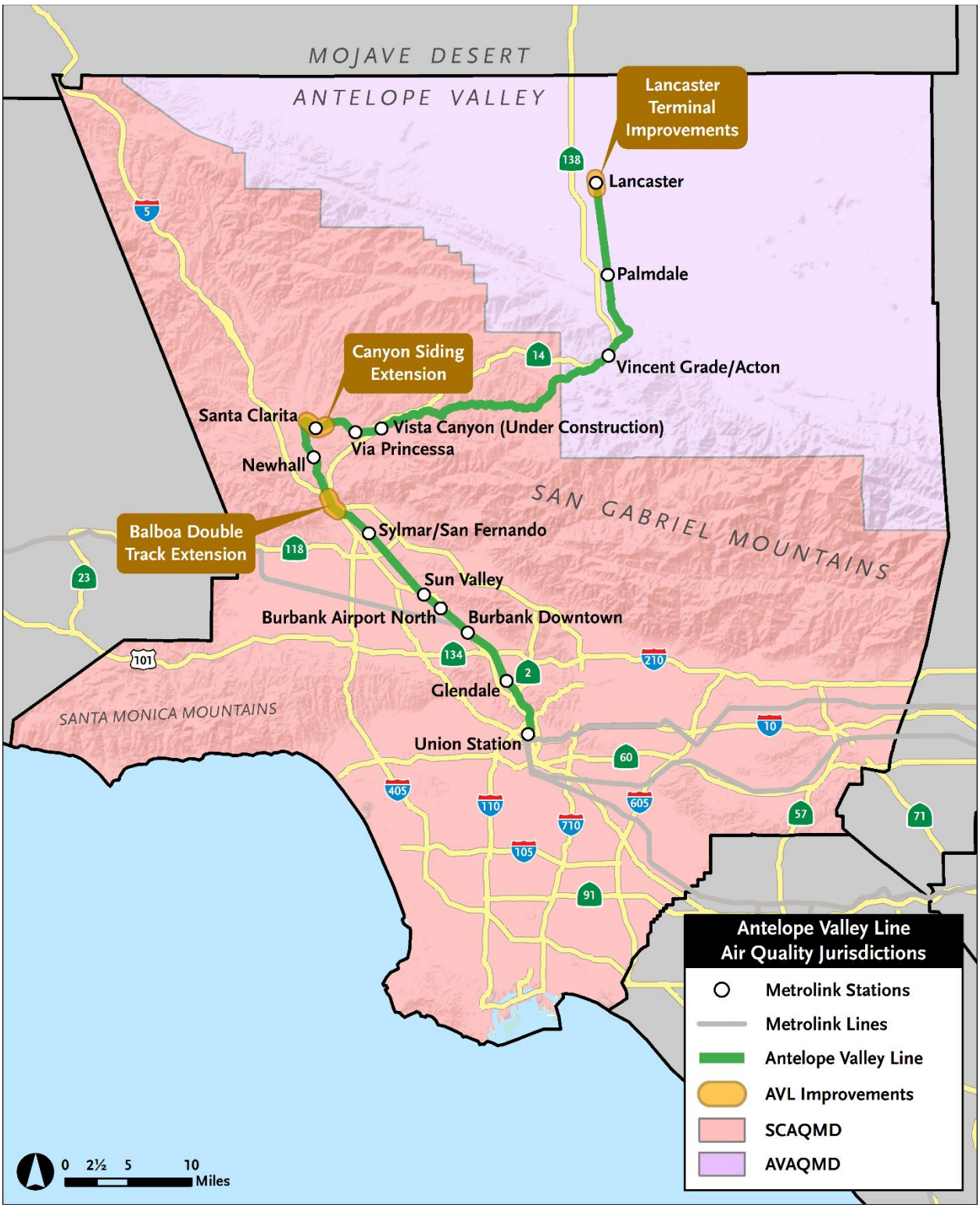
South Coast Air Quality Management District. The SCAQMD was created for planning, implementing, and enforcing air quality standards for the SCAB, which includes all of Orange County; Los Angeles County (excluding the Antelope Valley portion); the western, non-desert portion of San Bernardino County; and the western Coachella Valley and San Gorgonio Pass portions of Riverside County. The SCAB is an approximately 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. The SCAB is a subregion within the western portion of the SCAQMD jurisdiction. While air quality in the SCAB has improved, the SCAB requires continued diligence to meet the air quality standards. **Figure 3.3-1** displays the AVL corridor, capital improvement sites, and Los Angeles County in the context of the air quality jurisdictions. As shown in **Figure 3.3-1**, a majority of the proposed AVL improvements, including the Balboa Double Track Extension site and the Canyon Siding Extension site, are located within the SCAQMD while the Antelope Valley portions of the AVL including the Lancaster Terminal Improvements site are located within the AVAQMD, discussed below.

The SCAQMD is tasked with preparing regional programs and policies designed to improve air quality within the SCAB, which are assessed and published in the form of the SCAQMD Air Quality Management Plan (AQMP). The AQMP is generally updated every three to four years to evaluate the effectiveness of the adopted programs and policies and to forecast attainment dates for nonattainment pollutants to support the SIP based on measured regional air quality and anticipated implementation of new technologies and emissions reductions. The most recent publication is the 2016 AQMP, which is intended to serve as a regional blueprint for achieving the federal air quality standards and healthful air.[5]

As the SCAB is currently designated nonattainment of the federal ozone and particulate matter ($PM_{2.5}$) standards, the 2016 AQMP prioritized focus on control strategies for reducing emissions of NO_X and $PM_{2.5}$. The AQMP includes a robust array of strategies to ensure that attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the air quality standards are not met by the established date.

[4]SCAG, *Final Connect SoCal Program Environmental Impact Report*, May 7, 2020.
[5]SCAQMD, *Final 2016 Air Quality Management Plan*, March 2017.

Figure 3.3-1: Air Quality Jurisdictions within Los Angeles County



The 2016 AQMP represents a thorough analysis of existing and potential regulatory control options, and includes available, proven, and cost-effective strategies to pursue multiple goals in promoting reductions in GHG emissions and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The 2016 AQMP focuses on demonstrating NAAQS attainment dates for the 2008 8-hour O_3 standard, the 2012 annual $PM_{2.5}$ standard, and the 2006 24-hour $PM_{2.5}$ standard. The 2016 AQMP acknowledged that the most significant air quality challenge in the SCAB is the reduction of NO_X emissions sufficient to meet the upcoming ozone standard deadlines. The 2016 AQMP includes both stationary and mobile source strategies to ensure that rapidly approaching attainment deadlines are met, that public health is protected to the maximum extent feasible, and that the region is not faced with burdensome sanctions if the NAAQS are not met by the established date.

The AQMP also includes an element that is related to transportation and sustainable communities planning. Pursuant to California Health and Safety Code Section 40450, SCAG has the responsibility of preparing and approving the portions of the AQMP relating to regional demographic projections and integrated regional land use, housing, employment, and transportation programs, measures, and strategies. The growth projections that are incorporated into the AQMP inventory for evaluating emission control strategies and determining air quality standards attainment dates are based on analyses prepared for the RTP/SCS, which is required to be prepared by the MPO in accordance with Senate Bill 375. The formulation of the AQMP is a prime example of the correlation and intersectionality of regional transportation planning and air quality planning.

The SCAQMD has also established various rules to manage and improve air quality in the SCAB.[6] Metro would be required to comply with all applicable SCAQMD Rules and Regulations pertaining to construction activities, including, but not limited to:

Regulation IV – Prohibitions: This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events, including the following rules directly applicable to the Project:

- Rule 401 (Visible Emissions) states that a person shall not discharge into the atmosphere from any single source of emission whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade as that designated No 1. On the Ringelmann Chart or of such opacity as to obscure an observer's view.
- Rule 402 (Nuisance) states that a person should not emit air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

[6] SCAQMD, *South Coast AQMD Rule Book,* March 2021.

- Rule 403 (Fugitive Dust) controls fugitive dust through various best management practices (BMPs) requirements including, but not limited to:
    - applying water in sufficient quantities to prevent the generation of visible dust plumes,
    - applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible,
    - utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the Project site,
    - limiting vehicle speeds on unpaved roads to 15 miles per hour (mph) and maintaining effective cover over exposed areas,

  Rule 403 also prohibits the release of fugitive dust emissions from any active operation, open storage piles, or disturbed surface area beyond the property line of the emission source and prohibits particulate matter deposits on public roadways.

Regulation XI – Source Specific Standards: Regulation XI sets emissions standards for specific sources, including the following rules most relevant to the Project:

- Rule 1113 (Architectural Coatings) requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.
- Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations) applies to owners and operators of paved and unpaved roads and livestock operations. The rule is intended to reduce PM_{10} emissions by requiring the cleanup of material deposited onto paved roads, use of certified street sweeping equipment, and treatment of high-use unpaved roads.

Antelope Valley Air Quality Management District. The Antelope Valley Air Quality Management District (AVAQMD) jurisdiction extends over the northern, desert portion of Los Angeles County (see **Figure 3.3-1**). The region includes the incorporated cities of Lancaster and Palmdale, Air Force Plant 42, and the southern portions of Edwards Air Force Base. The Kern County-Los Angeles County boundary forms the northern boundary of the AVAQMD jurisdiction, and the San Bernardino-Los Angeles County boundary is the eastern extent. The AVAQMD has adopted federal attainment plans for the ozone standards pursuant to the CAA—including a Federal 75 parts per billions (ppb) Ozone Attainment Plan and a 2008 Federal 8-Hour Ozone Attainment Plan—and maintains a set of Rules and Regulations to improve air quality throughout the Antelope Valley.[7,8] The AVAQMD has incorporated SCAQMD Rules 401, 402, and 403 into its Rule Book, which represent the most applicable regulations to the Proposed Project.[9]

Los Angeles County Metropolitan Transportation Authority. Construction activities to complete the Proposed Project will be contracted by Los Angeles County Metropolitan

[7] AVAQMD, *Federal 75 ppb Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)*, March 21, 2017.
[8] AVAQMD, *Federal 8-Hour Ozone Attainment Plan (Western Mojave Desert Nonattainment Area)*, May 20, 2008.
[9] AVAQMD, *Rule & Plans*, March 2021.

Transportation Authority (Metro). Therefore, construction contractors will be required to comply with the provisions of the Metro Green Construction Policy, which was adopted in 2011 to reduce harmful air pollutant emissions (particularly particulate matter and NO_X) during Metro construction projects.[10] Through adopting the Green Construction Policy, Metro committed to the following construction equipment requirements, construction BMPs, and implementation strategies for all construction projects performed on Metro properties or within Metro right-of-way (ROW):

- All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 4 off-road emission standards at a minimum. In addition, if not already supplied with a factor-equipped diesel particulate filter, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB achieving no less than the equivalent of a Level 3 diesel emission control strategy.
- All on-road heavy-duty diesel trucks or equipment with a Gross Vehicle Weight Rating (GVWR) of 19,500 pounds or greater shall comply with USEPA 2007 on-road emission standards for PM and NO_X (0.01 g/bhp-hr. and 1.2 g/bhp-hr., respectively).
- Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, onsite generators must:
    - Meet a 0.01 gram per brake-horsepower-hour standard for PM, or
    - Be equipped with BACT for PM emissions reductions.
- BMPs shall include, at a minimum:
    - Use of diesel particulate traps or BACT, as feasible;
    - Maintain equipment according to manufacturer's specifications;
    - Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of five (5) minutes when not in use (CARB exceptions apply);
    - Maintain a buffer zone that is a minimum of 1,000 feet between truck traffic and sensitive receptors, where feasible;
    - Work with local jurisdictions to improve traffic flow by signal synchronization during construction hours, where feasible;
    - Configure construction parking to minimize traffic interference, where feasible;
    - Enforce truck parking restrictions, where applicable;
    - Prepare haul routes that conform to local requirements to minimize traversing through congested streets or near sensitive receptor areas;
    - Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, as feasible;
    - Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable;
    - Use electric power in lieu of diesel power where available; and
    - Maintain traffic speeds on all unpaved areas at or below 15 mph.

All Metro construction project solicitations shall include provisions authorizing enforcement of the requirements of the Green Construction Policy. Contractors operating under Metro agreements

[10]Los Angeles County Metropolitan Transportation Authority (Metro), *LACMTA Green Construction Policy*, Adopted July 2011.

shall provide certified statements and documentation ensuring that equipment and vehicles employed to complete construction activities conform to the requirements listed above.

Metrolink. Metrolink published its Climate Action Plan on March 30, 2021. The plan addresses climate change, air quality, and other pressing sustainability issues to help advance the regional railway's aggressive goal for zero emissions by 2028. While the plan sets a framework for improvements over the next decade, Metrolink is embarking on more immediate measures to reduce its carbon footprint. Currently, a pilot program is underway utilizing a single Tier 2 locomotive to test renewable plant-based diesel fuel—the latest, greenest alternative fuel on the market that is chemically similar to petroleum diesel, but 100 percent renewable and sustainable. Metrolink hopes to see a reduction in pollutant emissions during the pilot period. If the Tier 2 pilot proves successful, testing will begin on a single new Tier 4 locomotive. If all goes well with the Tier 4 locomotive, then Metrolink can transition its entire fleet to renewable diesel fuel.

3.3.1.4 Local Regulations

City of Los Angeles

The City of Los Angeles' General Plan is a comprehensive, long-range declaration of purposes, policies and programs. The Air Quality Element of the General Plan identifies existing air quality issues the City of Los Angeles and contains goals, objectives and policies for improving air quality.[11] The Air Quality Element of the General Plan identifies existing air quality issues for the City of Los Angeles and contains goals, objectives, and policies related to the Proposed Project are shown in **Table 3.3-1**.

Table 3.3-1: Los Angeles General Plan – Relevant Air Quality Goals, Objectives, and Policies

Goal/Objective/Policy	Description
Goal 1	Good air quality and mobility in an environment of continued population growth and healthy economic structure.
Objective 1.1	It is the objective of the City of Los Angeles to reduce air pollutants consistent with the regional AQMP, increase traffic mobility, and sustain economic growth.
Objective 1.3	It is the objective of the City of Los Angeles to reduce particulate air pollutants emanating from unpaved areas, parking lots, and construction sites.
Policy 1.3.1	Minimize particulate matter emissions from construction sites.
Goal 3	Efficient management of transportation facilities and system infrastructure using cost effective system management and innovative demand management techniques.
Objective 3.2	It is the objective of the City of Los Angeles to reduce vehicular traffic during peak periods.
Policy 3.2.1	Manage traffic congestion during peak periods.
Goal 4	Minimize impact of existing land use patterns and future land use development on air quality by addressing the relationship between land use, transportation, and air quality.

[11] City of Los Angeles, *Air Quality Element of the Los Angeles General Plan*, 2001.

Goal/Objective/Policy	Description
Objective 4.1	It is the objective of the City of Los Angeles to include the regional attainment of ambient air quality standards as a primary consideration in land use planning.
Policy 4.1.1	Coordinate with all appropriate regional agencies the implementation of strategies for the integration of land use, transportation, and air quality policies.
Objective 4.2	It is the objective of the City of Los Angeles to reduce vehicle trips and vehicle miles traveled associated with land use patterns.
Policy 4.2.1	Revise the City's General Plan/Community Plans to achieve a more compact, efficient urban form and to promote more transit-orientated development and mixed-use development.
Policy 4.2.2	Improve accessibility for the City's residents to places of employment, shopping centers and other establishments.
Policy 4.2.3	Ensure that new development is compatible with pedestrians, bicycles, transit, and alternative fuel vehicles.
Policy 4.2.5	Emphasize trip reduction, alternative transit and congestion management measures for discretionary projects.

SOURCE: City of Los Angeles, *Air Quality Element of the Los Angeles General Plan*, 2001.

City of Santa Clarita

The City of Santa Clarita has not published any local regulations directly pertaining to air quality. The Conservation and Open Space Element of the City of Santa Clarita General Plan provides an overview of state and regional regulatory structure for administering air quality, as well as a summary of local actions to implement land use planning strategies that reduce on-road vehicle miles traveled (VMT) and result in reductions of air pollutant and greenhouse gas emissions.[12]

City of Lancaster

The City of Lancaster recognizes that automobile emissions and fugitive dust represent two of the major emission source categories presenting challenges to achieve healthy air in the region. To protect air quality in Lancaster, the Lancaster General Plan 2030 presents an Air Quality Program embedded within the Plan for the Natural Environment and the Plan for Physical Mobility.[13] The program contains specific actions for achieving the following objectives:

- Minimizing vehicular travel generated by new development through the promotion of efficiently arranged land uses, implementation of the goals and objectives described in the Plan for Economic Development and Vitality and use of appropriate public transportation.
- Minimizing air pollution emissions generated by stationary sources through the implementation of energy conservation programs outlined in the Plan for the Natural Environment and mitigation of impacts to air resources resulting from new development.
- Protection of sensitive uses from the impacts of air pollution by ensuring that potential air pollution sources are located away from residential areas and other sensitive receptors.

[12] Los Angeles County Department of Regional Planning and City of Santa Clarita, *Santa Clarita Valley Area Plan – One Valley One Vision*, 2012.
[13] City of Lancaster, *General Plan 2030 – Air Quality Program*, July 14, 2009.

- Mitigate construction activities to minimize fugitive dust by implementing the dust abatement procedures described in the Land Resources section of the Plan for the Natural Environment.
- Cooperating with the AVAQMD and regional agencies on air quality issues to maximize traffic flow improvements, increase public awareness of air quality issues, and find creative and effective approaches to addressing air quality issues.

Furthermore, in response to the adoption of Senate Bill 1000 in September 2016, the City of Lancaster is preparing a new Environmental Justice Element of its General Plan that will address the following environmental justice goals, policies, and objectives as required by State law:

- Reduction of pollution exposure and improving air quality
- Promoting access to public facilities
- Promoting access to healthy foods
- Promoting access to safe and sanitary homes
- Promoting physical activity
- Promoting civic engagement

3.3.2 Existing Setting

The southern portion of the AVL corridor extending from Los Angeles Union Station to the ridge of the San Gabriel Mountains lies within the SCAQMD jurisdiction (see **Figure 3.3-1**), and the northern portion of the AVL corridor extending from the ridge of the San Gabriel Mountains up to the Lancaster Terminal lies within the AVAQMD jurisdiction. This section provides an overview of the existing regional and local air quality setting relevant to the Proposed Project.

3.3.2.1 Regional Air Quality

Regional air quality is best characterized by the attainment status designations of the areas in which the AVL corridor is located. With regards to air quality standards attainment areas, Los Angeles County is geographically divided into its non-desert SCAB and Western Mojave Desert portions, which are under the jurisdiction of the SCAQMD and AVAQMD, respectively.

South Coast Air Basin (SCAB)

The SCAB region lies in the semi-permanent high-pressure zone of the eastern Pacific.[14] As a result, the climate is mild, tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The topography and climate of Southern California combine to make the SCAB an area of especially high pollution potential. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cooler surface layer which inhibits the pollutants from dispersing upward. Light winds during the summer

[14] SCAQMD, *Final Program Environmental Impact Report – 2016 Air Quality Management Plan*, January 2017.

further limit ventilation. Additionally, abundant sunlight triggers photochemical reactions which produce O_3 and the majority of PM.

The greatest air pollution throughout the SCAB occurs from June through September. This condition is generally attributed to the large amount of pollutant emissions, light winds, and shallow vertical atmospheric mixing. This frequently reduces pollutant dispersion, thus causing elevated air pollution levels. Pollutant concentrations in the SCAB vary with location, season, and time of day. O_3 concentrations, for example, tend to be lower along the coast, higher in the near inland valleys, and lower in the far inland areas of the SCAB and adjacent desert. Substantial progress has been made in reducing air pollution levels in Southern California in recent years. However, the SCAB still faces considerable challenges to attain the federal and state air quality standards. **Table 3.3-4** presents the attainment status designations for the non-desert portion of Los Angeles County within the SCAQMD jurisdiction.

Table 3.3-4: Attainment Status Designations – South Coast Air Basin Portion of Los Angeles County

Pollutant	Averaging Time	CAAQS Status	NAAQS Status
Ozone (O_3)	1-Hour	Nonattainment	Nonattainment (Extreme)
	8-Hour	Nonattainment	Nonattainment (Extreme)
Carbon Monoxide (CO)	1-Hour	Attainment	Attainment (Maintenance)
	8-Hour	Attainment	Attainment (Maintenance)
Nitrogen Dioxide (NO_2)	1-Hour	Attainment	Unclassifiable/Attainment
	Annual Average	Attainment	Attainment (Maintenance)
Sulfur Dioxide (SO_2)	1-Hour	Attainment	Unclassifiable/Attainment
	24-Hour	Attainment	Unclassifiable/Attainment
Respirable Particulate Matter (PM_{10})	24-Hour	Nonattainment	Attainment (Maintenance)
	Annual Average	Nonattainment	No Federal Standard
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No State Standard	Nonattainment (Serious)
	Annual Average	Nonattainment	Nonattainment (Moderate)
Lead (Pb)	30-Day Average	Attainment	No Federal Standard
	3-Month Average	Attainment	Nonattainment (Partial)

SOURCE: SCAQMD, 2017; CARB, 2019.

The SCAB portion of Los Angeles County is currently designated Nonattainment of the NAAQS for O_3 and $PM_{2.5}$, and is designated Nonattainment of the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. The 2016 AQMP acknowledged that the most significant air quality challenge in the SCAB is to reduce NO_X emissions sufficiently to meet the upcoming ozone standard deadlines (2023 for the 1997 8-hour standard and 2031 for the 2008 8-hour standard as set forth in the AQMP). SCAQMD has committed to reducing regional NO_X emissions by 45 percent by 2023 and 55 percent by 2031.

Western Mojave Desert

The AVAQMD jurisdiction covers a western portion of the MDAB. The MDAB is an assemblage of mountain ranges interspersed with long broad alleys that often contain dry lakes. Many of the lower mountains that dot the vast terrain rise from 1,000 to 4,000 feet above the valley floor.

Prevailing winds in the MDAB are out of the west and southwest. The MDAB is separated from the southern California coastal and central California valley regions by mountains, whose passes form the main channels for air mass migration. During the summer, the MDAB is generally influenced by a Pacific Subtropical High cell that sits off the coast, inhibiting cloud formation and encouraging daytime solar heating. Most desert moisture arrives from infrequent warm, moist and unstable air masses from the south. The MDAB is classified as a dry-hot desert climate. The Antelope Valley portion of the MDAB is bordered in the northwest by the Tehachapi Mountains, separated from the Sierra Nevada Mountains in the north by the Tehachapi pass, and bordered on the south by the San Gabriel Mountains.

Table 3.3-5 presents the attainment status designations for the AVAQMD jurisdiction of the Western Mojave Desert portion of Los Angeles County. The Antelope Valley is classified as Nonattainment of the ozone NAAQS and the ozone and PM_{10} CAAQS.

Table 3.3-5: Attainment Status Designations – Mojave Desert Portion of Los Angeles County

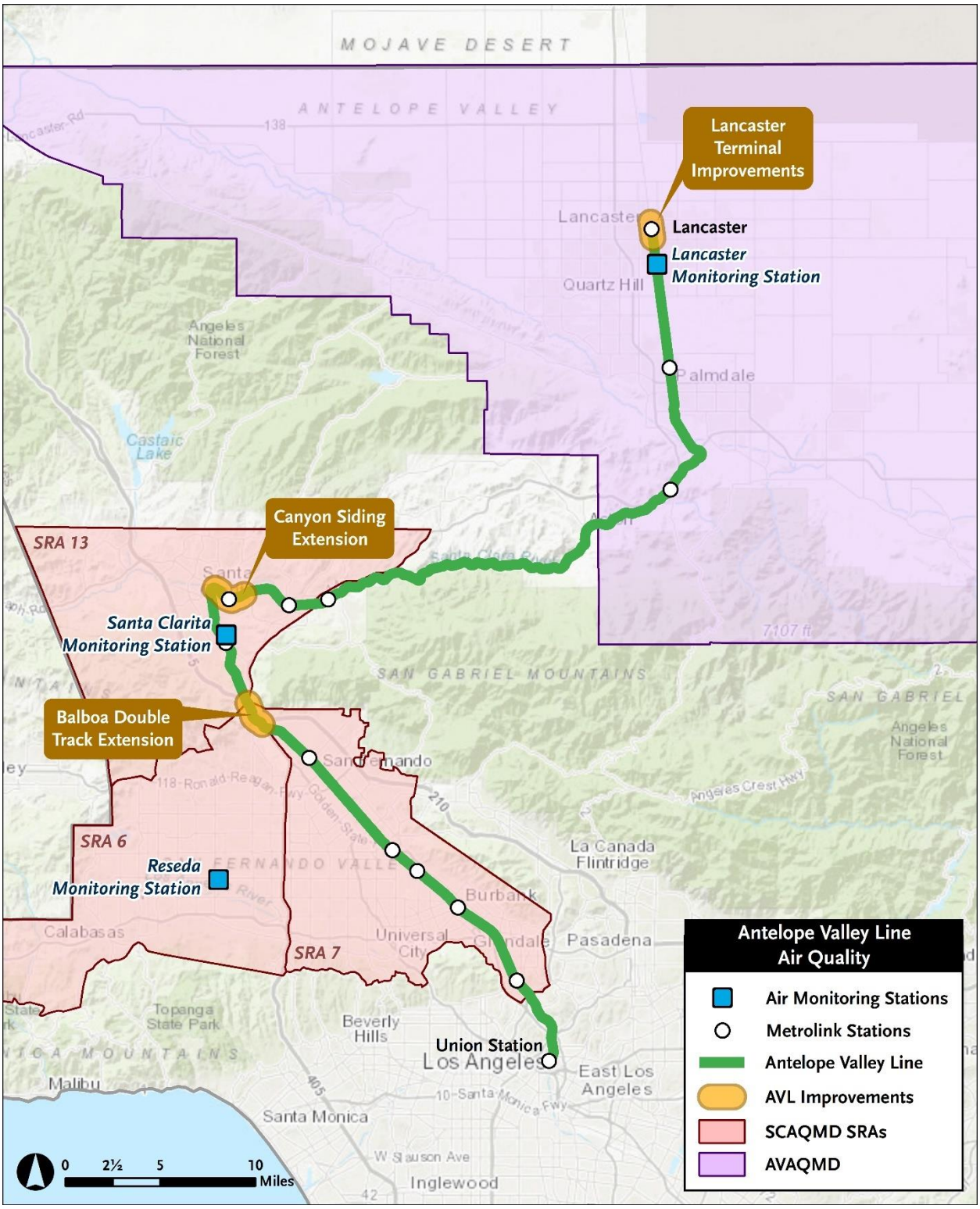
Pollutant	Averaging Time	CAAQS Status	NAAQS Status
Ozone (O_3)	1-Hour	Nonattainment	Attainment (Maintenance)
	8-Hour	Nonattainment	Nonattainment (Severe-15)
Carbon Monoxide (CO)	1-Hour	Attainment	Unclassified/Attainment
	8-Hour	Attainment	Unclassified/Attainment
Nitrogen Dioxide (NO_2)	1-Hour	Attainment	Unclassified/Attainment
	Annual Average	Attainment	Unclassified/Attainment
Sulfur Dioxide (SO_2)	1-Hour	Attainment	Unclassified/Attainment
	24-Hour	Attainment	Unclassified/Attainment
Respirable Particulate Matter (PM_{10})	24-Hour	Nonattainment	Attainment (Maintenance)
	Annual Average	Nonattainment	No Federal Standard
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No State Standard	Unclassified/Attainment
	Annual Average	Unclassified	Unclassified/Attainment
Lead (Pb)	30-Day Average	Attainment	No Federal Standard
	3-Month Average	Attainment	Unclassified/Attainment

SOURCE: AVAQMD, 2016; CARB, 2019.

3.3.2.2 Local Air Quality

Air quality throughout California is measured by a network of air monitoring stations that continuously detect and record concentrations of regulated pollutants in ambient air at time intervals consistent with the air quality standards. Concentration data obtained at the air monitoring stations are used to determine whether areas are in attainment of the NAAQS and CAAQS. The locations of the Proposed Project improvement sites and the air quality monitoring stations providing the most relevant data are shown in **Figure 3.3-2**.

Figure 3.3-2: Air Monitoring Stations and Proposed Project Improvements



The SCAQMD jurisdiction is geographically divided into 38 Source Receptor Areas (SRAs), each with a corresponding monitoring station—except for SRA 7—that provides air quality data representative of the SRA in which it is located. The Proposed Balboa Double Track Extension site is situated on the boundary of SRA 6 West San Fernando Valley and SRA 7 East San Fernando Valley (see **Figure 3.3-2**), and local air quality in the surrounding area is best represented by concentrations of air pollutants measured at the Reseda monitoring station in SRA 6, as SRA 7 does not presently contain an active air monitoring site.

Table 3.3-6 presents pollutant concentrations measured at the Reseda monitoring station during the time period between 2017–2019. As shown in **Table 3.3-6**, concentrations of O_3 exceeded applicable standards numerous times during the most recent three-year period of data available, and there was a single day of $PM_{2.5}$ concentration above the applicable NAAQS. The Reseda air monitoring station is not equipped to measure concentrations of PM_{10}, and SO_2 and Pb data are no longer collected at most monitoring stations following perennial demonstration of attainment of applicable federal and state standards. The air monitoring data recorded at the Reseda station reflect the Nonattainment status of the SCAB portion of Los Angeles County for the O_3 and $PM_{2.5}$ NAAQS and CAAQS.

Table 3.3-6: Reseda Air Monitoring Station Data (SRA 6)

Pollutant	Statistic	Maximum Concentrations and Frequencies of Exceeded Standards		
		2017	2018	2019
Ozone (O_3)	Maximum 1-Hour Concentration	0.140	0.120	0.101
	Days > 0.09 ppm (CAAQS)	26	14	1
	Maximum 8-Hour Concentration	0.114	0.101	0.087
	Days >0.070 ppm (NAAQS/CAAQS)	64	49	6
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	3.0	3.4	2.6
	Days > 20 ppm (CAAQS)	0	0	0
	Maximum 8-Hour Concentration	2.5	2.1	2.2
	Days >9.0 ppm (NAAQS/CAAQS)	0	0	0
Nitrogen Dioxide (NO_2)	Maximum 1-Hour Concentration	0.063	0.057	0.064
	Days > 0.10 ppm (NAAQS)	0	0	0
	Annual Average	0.013	0.012	0.011
	>0.030 ppm (CAAQS)	No	No	No
Respirable Particulate Matter (PM_{10})	Maximum 24-Hour Concentration	N/A	N/A	N/A
	Days > 50 µg/m^3 (CAAQS)	-	-	-
	Annual Average Concentration	N/A	N/A	N/A
	> 20 µg/m^3 (CAAQS)	-	-	-
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-Hour Concentration	35.2	31.0	30.0
	Days > 35 µg/m^3 (NAAQS)	1	0	0
	Annual Average Concentration	9.7	10.3	9.2
	> 12 µg/m^3 (NAAQS/CAAQS)	No	No	No

SOURCE: CARB, *iADAM: Air Quality Data Statistics – Top 4 Summary*, accessed March 2021.
N/A: Data not available.

Local air quality within the area surrounding the Proposed Canyon Siding Extension site is best represented by data collected at the Santa Clarita monitoring station in SRA 13, which is depicted in **Figure 3.3-2**. Concentrations of air pollutants measured at the Santa Clarita monitoring station during the time period 2017–2019 are shown in **Table 3.3-7**. The Santa Clarita station is not currently equipped to monitor concentrations of $PM_{2.5}$, SO_2, or Pb.

Table 3.3-7: Santa Clarita Air Monitoring Station Data (SRA 13)

Pollutant	Statistic	Maximum Concentrations and Frequencies of Exceeded Standards		
		2017	2018	2019
Ozone (O_3)	Maximum 1-Hour Concentration Days > 0.09 ppm (CAAQS)	0.151 45	0.132 21	0.128 34
	Maximum 8-Hour Concentration Days >0.070 ppm (NAAQS/CAAQS)	0.128 73	0.106 52	0.106 56
Carbon Monoxide (CO)	Maximum 1-Hour Concentration Days > 20 ppm (CAAQS)	1.3 0	1.0 0	1.5 0
	Maximum 8-Hour Concentration Days > 9.0 ppm (NAAQS/CAAQS)	0.8 0	0.8 0	1.2 0
Nitrogen Dioxide (NO_2)	Maximum 1-Hour Concentration Days > 0.10 ppm (NAAQS)	0.058 0	0.059 0	0.046 0
	Annual Average > 0.030 ppm (CAAQS)	0.011 No	0.011 No	0.009 No
Respirable Particulate Matter (PM_{10})	Maximum 24-Hour Concentration Days > 50 µg/m^3 (CAAQS)	66.0 2	49.0 0	62.0 1
	Annual Average Concentration > 20 µg/m^3 (CAAQS)	23.6 Yes	23.4 Yes	18.4 No
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-Hour Concentration Days > 35 µg/m^3 (NAAQS)	N/A -	N/A -	N/A -
	Annual Average Concentration > 12 µg/m^3 (NAAQS/CAAQS)	N/A -	N/A -	N/A -

SOURCE: CARB, *iADAM: Air Quality Data Statistics – Top 4 Summary*, accessed March 2021.
NOTE: N/A = Data not available.

As displayed in **Table 3.3-7**, Concentrations of O_3 and PM_{10} exceeded applicable air quality standards on numerous occasions at the Santa Clarita monitoring station during the three year period, reflecting the Nonattainment status of Los Angeles County in the SCAB. Ozone presents an especially difficult air quality challenge in the Santa Clarita Valley and San Fernando Valley due to local topographic features and meteorological patterns.

The Proposed Lancaster Terminal Improvements would occur in closest proximity to the Lancaster air monitoring station on Division Street, depicted in **Figure 3.3-2**, which provides the most representative air quality data available and is the only active monitoring station within

AVAQMD jurisdiction. Similar to the Reseda and Santa Clarita sites, the Lancaster monitoring station does not provide SO_2 or Pb data.

Table 3.3-8 presents concentrations of criteria pollutants measured at the Lancaster monitoring station during the 2017–2019 time period. On numerous occasions, concentrations of O_3 and PM_{10} exceeded applicable CAAQS in all three years of data and O_3 concentrations regularly exceeded applicable NAAQS as well. The air monitoring data reflect consistency with the Nonattainment designations presented in **Table 3.3-5**, above. Emissions of ozone precursors and particulate matter are of particular concern in the Antelope Valley.

Table 3.3-8: Lancaster Air Monitoring Station Data (AVAQMD)

Pollutant	Statistic	Maximum Concentrations and Frequencies of Exceeded Standards		
		2017	2018	2019
Ozone (O_3)	Maximum 1-Hour Concentration	0.109	0.125	0.096
	Days > 0.09 ppm (CAAQS)	10	5	1
	Maximum 8-Hour Concentration	0.087	0.104	0.081
	Days > 0.070 ppm (NAAQS/CAAQS)	43	48	13
Carbon Monoxide (CO)	Maximum 1-Hour Concentration	1.3	1.2	1.4
	Days > 20 ppm (CAAQS)	0	0	0
	Maximum 8-Hour Concentration	0.9	1.0	0.9
	Days > 9.0 ppm (NAAQS/CAAQS)	0	0	0
Nitrogen Dioxide (NO_2)	Maximum 1-Hour Concentration	0.047	0.048	0.050
	Days > 0.10 ppm (NAAQS)	0	0	0
	Annual Average	0.008	0.008	0.008
	> 0.030 ppm (CAAQS)	No	No	No
Respirable Particulate Matter (PM_{10})	Maximum 24-Hour Concentration	82.4	89.3	165.1
	Days > 50 µg/m^3 (CAAQS)	>4	>4	>4
	Annual Average Concentration	26.3	25.2	22.5
	> 20 µg/m^3 (CAAQS)	Yes	Yes	Yes
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-Hour Concentration	26.6	40.4	13.6
	Days > 35 µg/m^3 (NAAQS)	0	1	0
	Annual Average Concentration	7.3	7.2	6.9
	> 12 µg/m^3 (NAAQS/CAAQS)	No	No	No

SOURCE: CARB, iADAM: Air Quality Data Statistics – Top 4 Summary, Accessed March 2021; USEPA, Air Data: Air Quality Data Collected at Outdoor Monitors Across the US, Published, 2020.

3.3.2.3 Sensitive Receptors

Sensitive individuals refer to those segments of the population most susceptible to poor air quality (i.e., children, the elderly, and those with pre-existing serious health problems affected by air quality). Land uses where sensitive individuals are most likely to spend extended periods of time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities. These types of land uses are considered sensitive receptors in air quality planning.

The sensitive land uses in closest proximity to each of the capital improvement sites are:

- **Balboa Double Track Extension Site:** multi-family residential communities along Foothill Blvd approximately 175 meters northeast of the redevelopment area across the Interstate 5 corridor.
- **Canyon Siding Extension Site:** multi-family residential communities along Soledad Canyon Road approximately 50 meters north of the redevelopment area.
- **Lancaster Terminal Improvements Site:** Lancaster Community Shelter located adjacent (within approximately 25 meters) to the east of the Lancaster Terminal.

3.3.3 Significance Thresholds and Methodology

3.3.3.1 Significance Thresholds

State CEQA Guidelines

Contained within the State CEQA Guidelines in Appendix G is an Environmental Checklist that provides sample criteria for assessing the potential significance of environmental impacts for CEQA projects throughout California. In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan; and/or
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard; and/or
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The local air districts have developed regionally-specific CEQA air quality significance thresholds for projects within their respective jurisdictions based on measured ambient air quality and provisions of the corresponding air quality plans.

SCAQMD Air Quality Significance Thresholds

The SCAQMD has developed Air Quality Significance Thresholds and analysis methodologies in the SCAQMD CEQA Air Quality Handbook to guide air quality impact assessments for CEQA purposes.[15] As mentioned above, the Balboa Double Track Extension and Canyon Siding Extension sites are located within the SCAQMD jurisdiction, and construction activities at these locations will be the primary source of air pollutant emissions associated with implementation of the Proposed Project. The SCAQMD established quantitative mass daily thresholds that apply to CEQA project pollutant emissions at the regional scale that are compared to maximum daily

[15]SCAQMD, *CEQA Air Quality Handbook*, April 1993.

emissions from all Project sources, including those located both on and outside of the construction site.

Regional-scale Air Quality Significance Thresholds developed by the SCAQMD are shown in **Table 3.3-9**. Maximum daily air pollutant emissions during construction of the Proposed Project are compared to the Air Quality Significance Thresholds to determine the potential for significant environmental impacts related to air quality at the regional scale.

Table 3.3-9: SCAQMD Regional Air Quality Significance Thresholds

Pollutant	Construction (Pounds/Day)	Operation (Pounds/Day)
Volatile Organic Compounds (VOC)	75	55
Nitrogen Oxides (NO_X)	100	55
Carbon Monoxide (CO)	550	550
Sulfur Oxides (SO_X)	150	150
Respirable Particulate Matter (PM_{10})	150	150
Fine Particulate Matter ($PM_{2.5}$)	55	55
Lead (Pb)	3	3

SOURCE: SCAQMD, *Air Quality Significance Thresholds* 2019.

In addition to regional significance thresholds, SCAQMD has developed specific CEQA localized significance thresholds (LSTs) that apply to only sources of emissions situated on sites that could present public health concerns to nearby sensitive receptors. According to the SCAQMD, implementation of proposed projects would result in a significant air quality impact if on-site source activities generated emissions sufficient to produce air pollutant concentrations that exceed the localized threshold values presented in **Table 3.3-10**.

Table 3.3-10: SCAQMD Localized Air Quality Significance Thresholds

Pollutants and Averaging Times	Construction	Operation
Nitrogen Dioxide (NO_2) – Annual Average Nitrogen Dioxide (NO_2) – 1-Hour Average	0.03 ppm (CAAQS) 0.18 ppm (CAAQS)	0.03 ppm (CAAQS) 0.18 ppm (CAAQS)
Carbon Monoxide (CO) – 8-Hour Average Carbon Monoxide (CO) – 1-Hour Average	9.0 ppm (CAAQS) 20 ppm (CAAQS)	9.0 ppm (CAAQS) 20 ppm (CAAQS)
Sulfur Dioxide (SO_2) – 24-Hour Average Sulfur Dioxide (SO2) – 1-Hour Average	0.04 ppm (CAAQS) 0.075 ppm (NAAQS)	0.04 ppm (CAAQS) 0.075 ppm (NAAQS)
Respirable Particulate Matter (PM_{10}), Annual Average[1] Respirable Particulate Matter (PM_{10}), 24-Hour Average[1]	1.0 µg/m^3 10.4 µg/m^3	1.0 µg/m^3 2.5 µg/m^3
Fine Particulate Matter ($PM_{2.5}$) – 24-Hour Average[1]	10.4 µg/m^3	2.5 µg/m^3

SOURCE: SCAQMD, 2019.
[1] Threshold is based on SCAQMD Rule 403.

The localized concentration thresholds for gaseous pollutants are the ambient air quality standards. Since the SCAB is designated Nonattainment for PM_{10} and $PM_{2.5}$ under the California standards, the threshold for these pollutants was derived as an incremental "allowable change" in concentration as a result of Project implementation, as opposed to total concentration in air.

Therefore, the PM thresholds are project-specific and background concentration is irrelevant. Emissions of NO_X and fine particulate matter contribute to atmospheric ozone formation.

To prevent the occurrence of localized pollutant concentrations exceeding the significance thresholds, the SCAQMD devised regionally-specific Mass Rate Look-Up Tables in its Final LST Methodology containing daily thresholds for construction activity for NO_X, CO, PM_{10}, and $PM_{2.5}$.[16] Applicable LST values for construction sites within SRA 6 – West San Fernando Valley, SRA 7 – East San Fernando Valley, and SRA 13 – Santa Clarita Valley are shown in **Table 3.3-11**.

Table 3.3-11: Applicable SCAQMD Localized Significance Thresholds – Construction

Source Receptor Area (SRA)	Site Size (Acres)	Receptor Distance (m)	CO (lbs/day)	NOX (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
6 West San Fernando Valley	1	25	426	103	4	3
		50	652	104	11	4
		100	1,089	121	27	7
		200	2,096	157	59	18
		500	6,815	245	155	79
	2	25	664	147	6	4
		50	903	143	17	5
		100	1,497	156	33	9
		200	2,629	187	66	21
		500	7,460	263	162	84
	5	25	1,158	221	11	6
		50	1,537	212	35	8
		100	2,438	226	51	13
		200	3,871	250	84	26
		500	9,271	313	181	96
7 East San Fernando Valley	1	25	498	80	4	3
		50	732	81	13	4
		100	1,158	94	26	8
		200	2,227	122	54	18
		500	7,267	191	136	68
	2	25	786	114	7	4
		50	1,068	111	21	6
		100	1,594	121	34	10
		200	2,786	144	62	21
		500	7,947	204	144	73
	5	25	1,434	172	14	8
		50	1,872	165	42	10
		100	2,599	176	56	15
		200	4,119	194	84	28
		500	9,848	242	167	86

[16] SCAQMD, *Final Localized Significance Threshold Methodology Appendix C – Localized Significance Threshold Screening Tables*, October 21, 2009.

Source Receptor Area (SRA)	Site Size (Acres)	Receptor Distance (m)	CO (lbs/day)	NOX (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
13 Santa Clarita Valley	1	25	590	114	4	3
		50	879	115	12	4
		100	1,294	133	25	7
		200	2,500	173	51	18
		500	8,174	273	131	74
	2	25	877	163	6	4
		50	1,256	159	19	5
		100	1,787	172	32	9
		200	3,108	204	59	20
		500	8,933	291	139	80
	5	25	1,644	246	12	6
		50	2,095	236	38	8
		100	2,922	251	52	13
		200	4,608	275	79	26
		500	11,049	345	161	95

SOURCE: SCAQMD, 2009

The LST mass rate lookup tables were developed for voluntary use in CEQA analyses for projects within the SCAQMD jurisdiction. The Balboa Double Track Extension and Canyon Siding Extension sites are located within the SCAQMD jurisdiction, and the analysis voluntarily incorporated the LST look up values to assess potential localized impacts surrounding these sites.

The SCAQMD has also established thresholds related to TAC exposures. TAC exposures are assessed in terms of increased carcinogenic risk for cancer-causing pollutants and acute and chronic non-carcinogenic hazards for other TACs. Construction or operation of a project would have a significant localized air quality impact if emissions would generate TAC concentrations at sensitive receptor locations resulting in carcinogenic risks of greater than 10 excess cancers per million at a sensitive receptor location or an acute or chronic noncarcinogenic Hazard Index (HI) of greater than 1.0. The HI is estimated by summing the Hazard Quotients of the TACs within the emissions speciation profile, which are computed by dividing the acute or chronic TAC concentration by the reference exposure level established by the USEPA.

AVAQMD Significance Thresholds

Similar to the SCAQMD, the AVAQMD CEQA and Federal Conformity Guidelines contain significance thresholds to assess emissions of CEQA projects within the AQAQMD jurisdiction.[17] Any project is significant if it triggers or exceeds the most appropriate evaluation criteria. For projects applying the emissions-based significance thresholds, project emissions quantification is required. The Proposed Project is not a standard land use development project and the most relevant AVAQMD thresholds are the quantitative, emissions-based thresholds. In general, a

[17]AVAQMD, *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*, August 2016.

project would have a significant air quality impact if daily or annual emissions of regulated pollutants exceeded the respective threshold values presented in **Table 3.3-12**.

Table 3.3-12: AVAQMD Air Quality Significance Thresholds

Pollutant	Daily Threshold (Pounds/Day)	Annual Threshold (Tons/Year)
Carbon Monoxide (CO)	548	100
Nitrogen Oxides (NO_X)	137	25
Volatile Organic Compounds (VOC)	137	25
Sulfur Oxides (SO_X)	137	25
Respirable Particulate Matter (PM_{10})	82	15
Fine Particulate Matter ($PM_{2.5}$)	65	12
Lead (Pb)	54	10
Hydrogen Sulfide (H_2S)	3	0.6

SOURCE: AVAQMD, 2016.

Similar to the SCAQMD, the AVAQMD has also established thresholds related to TAC exposures. Construction or operation of a project would have a significant localized air quality impact if emissions would generate TAC concentrations at sensitive receptor locations resulting in carcinogenic risks of greater than 10 excess cancers per million or an acute or chronic noncarcinogenic HI of greater than 1.0.

3.3.3.2 Methodology

Implementation of the Proposed Project would produce temporary, direct air pollutant emissions during construction activities, and would result in changes to long-term regional emissions during future operations. The methodologies used to analyze air pollutant emissions for construction and operations are described below.

Construction

Construction of the Proposed Project would occur at three proposed capital improvement sites: the Balboa Double Track Extension site, the Canyon Siding Extension site, and the Lancaster Terminal Improvements site. All construction activities would be completed within the years 2024–2028. It is anticipated that construction of each improvement site would require approximately 24 months of continuous activity, and the individual schedules may be extended based on periods of lighter daily activity throughout the schedule duration. The Constructability Review for the Proposed Project identified five major construction activities comprising the improvements:[18]

- Track and systems installation;
- retaining walls;
- station platforms;

[18] Mott MacDonald, *Antelope Valley Line (AVL) Double Track Improvements Constructability Review*, October 5, 2020.

- bridges and under-crossings;
- utilities.

Improvements at all three sites would involve track and systems installation, retaining walls, and utilities. The Balboa Double Track Extension includes new pier protection with drilled piles under the I-5 crossing, and the Canyon Siding Extension includes a new railroad bridge and a pedestrian undercrossing. The Canyon Siding Extension involves a new station platform, and the Lancaster Terminal Improvements includes a new layover facility under the base option. The Lancaster Terminal Improvements base design would not include a station platform; however, design options would replace the existing Lancaster station platform with a new island platform. The construction activities modeled for the Lancaster Terminal Improvements accounted for the maximal amount of ground disturbance, excavation and fill volumes, and haul truck activity that could occur under any of the base and design options to capture all possible air pollutant emissions regardless of which is ultimately selected.

Air pollutant emissions that would be generated by sources involved in Proposed Project construction activities were quantified using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2), which is the regulatory standard model for estimating emissions for CEQA projects.[19,20] Sources of air pollutant emissions accounted for in the emissions modeling include off-road equipment exhaust; area sources including particulate fugitive dust produced by ground disturbance and off-gassing from asphalt paving; on-road vehicle exhaust; and on-road dust emissions from vehicle brake and tire wear and resuspension of deposited particles on roadway surfaces. Construction phasing in CalEEMod was characterized by the following activities, for which equipment and personnel inventories were populated based on the Constructability Review and conservative assumptions regarding daily hours of use:

- site clearing and tree/shrub removal;
- cut, fill, and slope and underpass stabilization requiring excavation, grading, piling, and shoring, as well as grade separation for the railway bridge;
- installation of retaining walls, platforms, bridge and pedestrian underpass construction;
- relocation and installation of track facilities, paving of hardscape features and layover;
- utilities, signals, and other systems features.

Table 3.3-13 presents an overview of the parameters input to CalEEMod to characterize project construction activities. The preliminary construction schedules were developed based on site feasibility constraints, anticipated rate of track installation, total duration to complete activities at each improvement site, and the quantities of material movement and structure installation.

[19] California Air Pollution Control Officers Association (CAPCOA), *California Emissions Estimator Model (Version 2016.3.2)*, September 2016.
[20] California Air Pollution Control Officers Association (CAPCOA), *California Emissions Estimator Model (Version 2016.3.2) User's Guide*, October 2017.

Table 3.3-13: Proposed Project Construction Parameters

Parameter	Balboa Double Track Extension	Canyon Siding Extension	Lancaster Terminal Improvements
Start Date	2024	2026	2026
End Date	2026	2028	2028
Length of Track Installation	9,615 Linear Ft.	9,220 Linear Ft.	3,985 Linear Ft.
Total Site Acreage	11.39	8.53	3.22
Max. Daily Site Disturbance	2 acres	2 acres	1 acre
Approx. Material Export	65,675 CY	61,680 CY	7,470 CY
Approx. Material Import	5,725 CY	12,935	12,970
Average Daily Haul Loads	40-50	40-50	40-50
Maximum Daily Haul Loads	80	80	80
PRELIMINARY SCHEDULE (APPROX. DURATION IN MONTHS)			
Site Clearing & Tree Removal	3	3	1
Cut/Fill/Piling/Shoring	6	6	3
Retaining Walls/Platforms	4	6	6
Track Install/Layover Facilities	3	2	6
Utilities, Signals, and Systems	2	1	2
Total Duration	**18**	**18**	**18**

The emissions modeling was developed based on consistent levels of activity occurring on a daily and weekly basis to complete the improvements at each site. During cut and fill activities that will produce substantial material import and export, daily hauling activity is anticipated to be approximately 40-50 trips per day on average. For the purposes of characterizing maximum daily emissions, an upper limit of 80 haul loads per day at each site was assumed based on site accessibility, preliminary understanding of the project schedule, and the equipment inventory that will be employed to complete the work. Daily haul truck emissions were modeled assuming 50 round trips per day and an adjustment factor of 1.6 was applied to represent maximum daily hauling activity of 80 truckloads for the regional emissions analysis.

Regarding the schedule, it is anticipated that the Canyon Siding Extension and the Lancaster Terminal Improvements would be undertaken concurrently, beginning in 2026 and completing in 2028. The Canyon Siding Extension site is located within SCAQMD jurisdiction (as is the Balboa Double Track Extension site), while the Lancaster Terminal Improvements site is located within the AVAQMD jurisdiction. The air quality significance thresholds developed by the local air districts correspond to sources of emissions that are located within the geographic region under their respective regulatory purview. Therefore, for the purposes of this analysis, emissions that would be generated by sources involved in the Canyon Siding Extension construction are compared to the SCAQMD regional and localized air quality significance thresholds, and emissions from construction sources for the Lancaster Terminal Improvements are compared to the AVAQMD thresholds.

Construction of the Proposed Project site improvements would occur in the Metro ROW and would be contracted by Metro. Thus, all heavy-duty, diesel-fueled off-road equipment and on-road vehicles employed for construction activities would be required to comply with Tier 4 Final engine emissions standards and 2007 USEPA truck engine emission standards, respectively, in accordance with the Green Construction Policy. Tier 4 equipment was used as the baseline for emissions estimation in CalEEMod. Contractors will ensure that all haul trucks used in construction of the Proposed Project would conform to 2007 USEPA engine standards; however, due to limitations in available information about the regional fleet and mitigation options in CalEEMod, emissions modeling does not account for the use of newer heavy-duty trucks for material hauling. Furthermore, fugitive dust BMPs consistent with SCAQMD Rule 403 and the Green Construction Policy include watering unpaved areas and material stockpiles up to three times daily, which would reduce windblown dust emissions from those sources by 61 percent. Water truck vehicle activity was accounted for as vendor trips during the site preparation and grading phases within CalEEMod. Detailed modeling files are available in the **Appendix C**.

Operations

Following the completion of all improvements, implementation of the Proposed Project would expand transit services along the existing AVL corridor which would require additional diesel fuel combustion associated with rail propulsion. With regards to its locomotive fleet, as detailed in its Climate Action Plan, Metrolink is phasing in its fleet of 40 Tier 4 locomotives, which received CARB Tier 4 Verification Certificates in September 2020 after Emissions Verification testing was successfully completed following over 100,000 locomotive service miles. The Tier 4 engines reduce emissions by approximately 85 percent and 65 percent relative to older Tier 0 and Tier 2 engines, respectively. Between 2018 and 2028, Metrolink plans to replace its Tier 0 locomotives with Tier 4 locomotives. By the opening year of 2028, it is anticipated that Metrolink operations along the AVL corridor will have phased out Tier 0 engines entirely, and the fleet will be comprised by a majority of Tier 4 engines (40) and a lesser amount of Tier 2 engine locomotives (14), which would subsequently be incrementally phased out over time or upgraded to Tier 4 standards, as feasible.

By the end of 2019, locomotives with Tier 4 engines accounted for approximately 73 percent of Metrolink rail travel, with the remaining 27 percent attributed to Tier 2 locomotives.[21] For the purposes of this analysis, the existing baseline AVL rail activity was assumed to be comprised of 75 percent Tier 4 and 25 percent Tier 2 rail miles with a fleetwide average fuel consumption rate of 2.695 gallons per mile (gal/mi). In the operational year of 2028, it was assumed that the Metrolink locomotive travel providing service on the AVL would be 90 percent Tier 4 locomotives and the remaining 10 percent would be Tier 2 locomotives with a fleetwide average fuel consumption rate of 2.6125 gal/mi. The fuel consumption rates were multiplied by the daily rail miles traveled to estimate daily fuel consumption, and then multiplied by emission factors

[21] Metrolink, *Climate Action Plan – The Link to a Zero Emissions Future*, Adopted March 26, 2021.

developed by the USEPA corresponding to each tier of locomotive based on the fleet mix.[22] The portion of the AVL corridor that is located within the SCAQMD jurisdiction is approximately 57 miles long and the portion within the AVAQMD jurisdiction is approximately 19.6 miles long. **Table 3.3-14** provides a summary of the daily locomotive travel along the AVL corridor based on the day of the week for the existing train operations and for the Proposed Project separated into the corresponding air districts.

Table 3.3-14: AVL Corridor Rail Miles by Air District

Day of Week	Existing Conditions (Daily Miles)			Proposed Project (Daily Miles)		
	Total	SCAQMD	AVAQMD	Total	SCAQMD	AVAQMD
Weekday	1,936.0	1,558.8	377.2	3,872.0	3,117.6	754.4
Saturday	919.2	684.0	235.2	2,144.8	1,596.0	548.8
Sunday*	919.2	684.0	235.2	1,072.4	798.0	274.4

SOURCE: TAHA, 2021.

The expansion of transit service along the AVL corridor would attract increased ridership. When transit ridership rises, there is a displacement effect of on-road VMT for passenger vehicle trips do not occur. Transportation analysis was completed for the Proposed Project in the opening year of 2028 that determined weekday transit service expansion (approximately 1,936 additional daily rail miles) would result in a daily VMT displacement of 39,089 vehicle miles. As transit service is reduced on weekends and holidays, the VMT displacement would also be lower. Based on AVL ridership data and existing service, ridership and associated on-road VMT offset is approximately 40 percent of the weekday levels on Saturdays and approximately 30 percent of weekday levels on Sundays and holidays. Therefore, daily on-road VMT displacement on Saturdays would be approximately 15,636 vehicle miles and on Sundays/Holidays would be approximately 11,727 vehicle miles. The operational air quality analysis estimated daily changes in regional on-road vehicle emissions based on the VMT reductions in the opening year of 2028. On-road mobile source emission factors for passenger vehicles were obtained for Los Angeles County from CARB's EMission FACtor (EMFAC2017, v1.0.3). **Table 3.3-15** presents the regional average emission rates in grams per VMT that were used for the operational analysis. Daily air pollutant emissions displaced by expanded AVL services were estimated for weekdays, Saturdays, and Sundays/holidays based on the daily VMT reductions and emission factors for Los Angeles County in 2028.

[22] USEPA Office of Transportation and Air Quality, *Technical Highlights – Emission Factors for Locomotives*, EPA-420-F-09-025, April 2009.

Table 3.3-15: Regional Average On-Road Emission Factors – 2028

Los Angeles County Mobile Source Emission Rates (grams per mile)					
VOC	**NOX**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
0.0214	0.0453	0.7394	0.0025	0.0809	0.0245

SOURCE: CARB, 2019.

3.3.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significant after mitigation (if applicable). The SCAQMD *CEQA Air Quality Handbook* explicitly differentiates that operational emissions occur following the completion of construction activities. Therefore, potential air quality impacts are analyzed separately for Proposed Project construction activities and future operations under each impact criterion.

Impact 3.3-1) Would the Proposed Project Conflict with or obstruct implementation of the applicable air quality plan?

The applicable air quality plans are the SCAQMD 2016 AQMP and the AVAQMD Ozone Attainment Plan, which are prepared to support the SIP. The SCAQMD 2016 AQMP was approved by CARB in April 2017 and the AVAQMD Ozone Attainment Plan was approved by CARB in May 2017, and both plans were adopted into the 2018 SIP Updates. The 2016 AQMP incorporates regional growth projections developed for the SCAG 2016–2040 RTP/SCS, and the two plans are heavily interrelated. The 2016 AQMP is a regional and multi-agency collaborative effort involving the SCAQMD, CARB, SCAG, and the USEPA. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions.

The following indicators of consistency are used to formulate the determination of significance for the Proposed Project:

1. Whether the project will:
    a. Result in an increase in the frequency or severity of existing air quality violations.
    b. Cause or contribute to new violations of the air quality standards.
    c. Delay timely attainment of air quality standards or the interim emission reductions specified in applicable air quality plans.
2. Whether the project will exceed horizon or incremental assumptions in applicable air quality plans related to:
    a. Regional population and housing growth projections.
    b. Implementation of control strategies to attain the air quality standards.
    c. Quantities of electricity generated, petroleum fuels refined, or solid waste disposed.

Construction

Less-Than-Significant Impact.

1) Air Quality Violations

Violations of the air quality standards typically occur when large scale sources generate sufficient pollutant emissions to produce elevated concentrations that exceed the NAAQS and CAAQS. Recurring emissions that exacerbate the occurrence of existing air quality violations or cause or contribute to new air quality violations may affect regional attainment of the air quality standards. The local air quality districts derived the mass-based emission thresholds as screening tools for determining the potential significance of emissions generated by CEQA projects. The SCAQMD and AVAQMD CEQA emissions thresholds for VOC and NO_X were established based on the regional attainment designations and federal Clean Air Act annual emissions thresholds for extreme ozone nonattainment areas. The mass daily and annual thresholds serve as screening criteria to identify potentially significant projects. Construction of the Proposed Project would not have the potential to generate significant air quality impacts related to air quality violations if maximum daily emissions resulting from construction activities remain below the applicable mass-based thresholds established by the SCAQMD and AVAQMD, presented in **Table 3.3-9** and **Table 3.3-12**, respectively.

Construction of the Proposed Project would involve temporary emission source activity within the SCAQMD and AVAQMD jurisdictions. Construction of the Balboa Double Track Extension would last for between 18 and 24 months beginning in 2024, and construction of the Canyon Siding Extension and Lancaster Terminal Improvements would last for between 18 and 24 months each beginning in 2026, with all source activity completing in 2028. During construction activities, air pollutant emissions would fluctuate on a daily basis corresponding to the major construction activity, types and hours of equipment use, ground disturbance and truck loading, and on-road VMT. The Balboa Double Track Extension and Canyon Siding Extension sites are both located in the SCAQMD jurisdiction, and the assessment of potential construction-induced air quality impacts related to air quality violations and air quality standards attainment analyzed both regional scale and localized emissions in accordance with the SCAQMD *CEQA Air Quality Handbook* and the *Final Localized Significance Threshold Methodology*. The Lancaster Terminal Improvements site is located within the Antelope Valley under the purview of the AVAQMD. The assessment of potential air quality impacts was informed by comparing the maximum daily emissions during Lancaster Terminal Improvements to the daily and annual AVAQMD thresholds in **Table 3.3-12**.

Table 3.3-16 presents daily air pollutant emissions that would be generated during construction activities involved in the Balboa Double Track Extension, accounting for the maximum daily equipment activity and haul truck trips that would occur for each phase. The emissions analysis for the Balboa Double Track Extension demonstrates that maximum daily emissions of criteria pollutants and ozone precursors would remain well below the applicable SCAQMD mass daily thresholds at the regional and local scales.

Table 3.3-16: Daily Construction Emissions – Balboa Double Track Extension

Phase/Source Location	Maximum Daily Emissions (Pounds per Day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
SITE PREPARATION						
On-Site Emissions	0.5	3.0	27.9	<0.1	2.5	1.4
Off-Site Emissions	0.5	7.8	4.7	<0.1	1.5	0.4
Total Daily Emissions	**1.0**	**10.8**	**32.6**	**0.1**	**3.9**	**1.8**
CUT/FILL & STABILIZATION						
On-Site Emissions	0.8	3.3	35.9	<0.1	3.1	1.5
Off-Site Emissions	1.4	27.7	13.6	0.1	4.3	1.2
Total Daily Emissions	**2.1**	**31.0**	**49.6**	**0.2**	**7.4**	**2.7**
RETAINING WALLS & FOUNDATION						
On-Site Emissions	0.5	2.0	26.0	<0.1	0.1	0.1
Off-Site Emissions	0.7	5.9	5.3	<0.1	1.9	0.6
Total Daily Emissions	**1.1**	**7.9**	**31.4**	**<0.1**	**1.9**	**0.6**
TRACK & HARDSCAPE FEATURES						
On-Site Emissions	0.4	3.3	23.0	<0.1	0.1	0.1
Off-Site Emissions	0.3	2.9	2.5	<0.1	0.9	0.2
Total Daily Emissions	**0.8**	**6.2**	**25.5**	**<0.1**	**1.0**	**0.3**
UTILITIES & SYSTEMS						
On-Site Emissions	0.4	3.3	23.6	<0.1	0.1	0.1
Off-Site Emissions	0.3	2.9	2.5	<0.1	0.9	0.2
Total Daily Emissions	**0.8**	**6.2**	**26.1**	**<0.1**	**1.0**	**0.3**
REGIONAL ANALYSIS						
Maximum Daily Emissions	**2.1**	**31.0**	**49.6**	**0.2**	**7.4**	**2.7**
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***
LOCALIZED ANALYSIS						
Maximum On-Site Emissions	**-**	**3.3**	**35.9**	**-**	**3.1**	**1.5**
SCAQMD LST Value	-	121	1,497	-	32	9
Threshold Exceeded?	**-**	***No***	***No***	**-**	***No***	***No***

SOURCE: TAHA, 2021; CAPCOA, 2017.

The LST values presented in **Table 3.3-16** correspond to a two-acre site with sensitive receptors located at least 100 meters (approximately 328 feet) from the project boundary, and are the lowest applicable thresholds between SRA 6, SRA 7, and SRA 13 presented in **Table 3.3-11**. The nearest sensitive receptors to the Balboa Double Track Extension site are approximately 175 meters away, thus the localized analysis is conservatively protective of public health. Based on SCAQMD guidance, construction activities involved in completing the Balboa Double Track Extension would not pose any concerns related to air quality violations. Although the region is currently in nonattainment of state and federal air quality standards for ozone and particulate matter, construction of the Balboa Double Track Extension would not generate sufficient emissions to exacerbate the frequency or severity of existing air quality violations or cause or contribute to new violations. Nor would construction of the Balboa Double Track Extension have the potential to delay timely attainment of the air quality standards as set forth in the 2016 AQMP.

Therefore, construction of the Balboa Double Track Extension would result in a less than significant impact related to air quality violations and implementation of the air quality plan.

Table 3.3-17, below, presents daily air pollutant emissions that would be generated during construction activities involved in the Canyon Siding Extension, accounting for the maximum daily equipment activity and haul truck trips that would occur for each phase. The emissions analysis for the Canyon Siding Extension demonstrates that maximum daily emissions of criteria pollutants and ozone precursors would remain well below the applicable SCAQMD mass daily thresholds at the regional and local scales. The LST values presented correspond to a two-acre site in SRA 13 having sensitive receptors no closer than 50 meters (about 165 feet) from the project site.

Based on SCAQMD guidance, construction activities involved in completing the Canyon Siding Extension would not pose any significant impacts related to air quality violations. Although the region is currently in nonattainment of state and federal air quality standards for ozone and particulate matter, construction of the Canyon Siding Extension would not generate sufficient emissions to exacerbate the frequency or severity of existing air quality violations or cause or contribute to new violations. Nor would construction of the Canyon Siding Extension have the potential to delay timely attainment of the air quality standards as set forth in the 2016 AQMP. Therefore, construction of the Canyon Siding Extension would result in a less than significant impact related to air quality violations and implementation of the air quality plan.

Table 3.3-17: Daily Construction Emissions – Canyon Siding Extension

Phase/Source Location	Maximum Daily Emissions (Pounds per Day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
SITE PREPARATION						
On-Site Emissions	0.5	3.2	28.0	<0.1	2.4	1.4
Off-Site Emissions	0.5	7.6	4.4	<0.1	1.5	0.4
Total Daily Emissions	**1.0**	**10.9**	**32.4**	**<0.1**	**3.9**	**1.8**
CUT/FILL & STABILIZATION						
On-Site Emissions	0.8	3.3	35.9	<0.1	3.1	1.5
Off-Site Emissions	1.3	26.9	13.2	0.1	16.7	4.3
Total Daily Emissions	**2.1**	**30.2**	**49.1**	**0.2**	**19.8**	**5.7**
RETAINING WALLS, PLATFORMS, & RAILWAY BRIDGE						
On-Site Emissions	0.5	2.0	26.0	<0.1	0.1	0.1
Off-Site Emissions	0.6	5.6	4.5	<0.1	1.9	0.5
Total Daily Emissions	**1.1**	**7.7**	**30.6**	**<0.1**	**1.9**	**0.6**
TRACK & HARDSCAPE FEATURES						
On-Site Emissions	0.4	3.7	23.2	<0.1	0.1	0.1
Off-Site Emissions	0.3	2.8	2.3	<0.1	0.9	0.2
Total Daily Emissions	**0.7**	**6.6**	**25.5**	**<0.1**	**1.0**	**0.3**
UTILITIES, SIGNALS & SYSTEMS						
On-Site Emissions	0.4	3.8	23.8	<0.1	0.1	0.1
Off-Site Emissions	0.3	2.8	2.2	<0.1	0.9	0.2
Total Daily Emissions	**0.7**	**6.6**	**26.0**	**<0.1**	**1.0**	**0.3**
REGIONAL ANALYSIS						
Maximum Daily Emissions	**2.1**	**30.2**	**49.1**	**0.2**	**19.8**	**5.7**
SCAQMD Threshold	75	100	550	150	150	55
Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***
LOCALIZED ANALYSIS						
Maximum On-Site Emissions	**-**	**3.3**	**35.9**	**-**	**3.1**	**1.5**
SCAQMD LST Value	-	159	1,256	-	19	5
Threshold Exceeded?	**-**	***No***	***No***	**-**	***No***	***No***

SOURCE: TAHA, 2021; CAPCOA, 2017.

Table 3.3-18 presents daily air pollutant emissions that would be generated during construction activities involved in the Lancaster Terminal Improvements, accounting for the maximum daily equipment activity and haul truck trips that would occur for each phase. At the bottom of the table is an analysis of total Lancaster Terminal Improvements construction emissions compared to the AVAQMD annual thresholds for construction, which represents a conservative approach.

Table 3.3-18: Construction Emissions – Lancaster Terminal Improvements

Phase/Source Location	Maximum Daily Emissions (Pounds per Day)					
	VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
SITE PREPARATION						
On-Site Emissions	0.5	3.2	28.0	<0.1	2.4	1.4
Off-Site Emissions	0.3	5.4	3.0	<0.1	0.9	0.3
Total Daily Emissions	**0.8**	**8.6**	**30.9**	**<0.1**	**3.3**	**1.6**
CUT/FILL & STABILIZATION						
On-Site Emissions	0.8	3.3	35.9	<0.1	3.1	1.5
Off-Site Emissions	1.2	27.5	12.5	0.1	24.7	6.2
Total Daily Emissions	**2.0**	**30.8**	**48.4**	**0.2**	**27.8**	**7.7**
RETAINING WALLS & PLATFORMS						
On-Site Emissions	0.5	2.0	26.0	<0.1	0.1	0.1
Off-Site Emissions	0.5	5.7	3.9	<0.1	1.5	0.4
Total Daily Emissions	**1.0**	**7.7**	**30.0**	**<0.1**	**1.6**	**0.5**
TRACK & LAYOVER FACILITIES						
On-Site Emissions	0.4	3.6	20.7	<0.1	<0.1	<0.1
Off-Site Emissions	0.2	2.8	2.0	<0.1	0.8	0.2
Total Daily Emissions	**0.7**	**6.4**	**22.6**	**<0.1**	**0.8**	**0.3**
UTILITIES, SIGNALS & SYSTEMS						
On-Site Emissions	0.4	3.8	23.8	<0.1	<0.1	<0.1
Off-Site Emissions	0.2	2.8	1.9	<0.1	0.8	0.2
Total Daily Emissions	**0.7**	**6.6**	**25.7**	**<0.1**	**0.8**	**0.3**
DAILY ANALYSIS						
Maximum Daily Emissions	**2.0**	**30.8**	**48.4**	**0.2**	**27.8**	**7.7**
AVAQMD Daily Threshold	137	137	548	137	82	65
Daily Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***
ANNUAL ANALYSIS (TONS PER YEAR)						
Total Construction Emissions	**0.2**	**1.9**	**5.8**	**<0.1**	**0.5**	**0.2**
AVAQMD Annual Threshold	25	25	100	25	15	12
Annual Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

SOURCE: TAHA, 2021; CAPCOA, 2017.

As shown in **Table 3.3-18**, construction of the Lancaster Terminal Improvements would not generate daily or annual emissions in excess of any applicable AVAQMD threshold. Construction of the Proposed Project would not exacerbate existing air quality violations or cause or contribute to new violations in the AVAQMD jurisdiction, and construction emissions would result in a less than significant impact regarding air quality violations and timely attainment of the air quality standards.

2) Air Quality Plan Assumptions

The SCAQMD and AVAQMD regional emissions inventories to support the AQMP attainment demonstrations are based on assumptions related to regional population growth and associated changes in emission source activity, as well as implementation of pollution control strategies. If implementation of a CEQA project were to introduce sufficient growth to a planning area that it would render the emission source activity assumptions in the attainment demonstration invalid, then that project would have a significant impact and would be required to identify potential mitigation measures to reduce emissions. The Proposed Project is a transit infrastructure improvement project, and construction activities to develop the capital improvements would represent temporary sources of air pollutant emissions within the SCAQMD and AVAQMD jurisdictions.

Proposed Project construction activities would not induce regional population or housing growth, require additional petroleum fuel refining, or generate substantial solid waste for disposal in landfills that would exceed quantities accounted for in the applicable air quality plans. Construction activities would employ BMPs consistent with the Green Construction Policy and local air quality districts to minimize excess fuel and electricity consumption, and excavated materials would be transported to disposal sites with sufficient and appropriate capacity for wastes. Therefore, construction of the Proposed Project would result in less than significant impacts related to assumptions accounted for in the applicable air quality plans.

Operations

Less-Than-Significant Impact.

1) Air Quality Violations

The primary effect on regional air quality resulting from Proposed Project operations would be the displacement of on-road vehicle trips spurred by the expansion of transit operations and increased ridership projections, in addition to direct locomotive emissions. As described in the Methodology, implementation of the Proposed Project would reduce weekday on-road VMT by approximately 39,089 vehicle miles and would reduce Saturday and Sunday/Holiday regional travel by approximately 15,636 and 11,727 vehicle miles, respectively, in the opening year of 2028. The expansion of public transit services is acknowledged at the state, regional, and local planning levels to be one of the critical tenets of enhancing regional transportation efficiency, displacing and shortening commute and recreational vehicle trips, and encouraging active transportation. The daily VMT reductions would produce regional benefits to air quality through displaced and shortened vehicle trips. **Table 3.3-19** presents the daily changes in air pollutant emissions resulting from increased transit ridership along the AVL corridor during Project operations in the opening year of 2028.

Table 3.3-19: Daily Change in Regional Emissions from VMT Reduction - Operations

Day of Week	VMT Reduction	Daily Change in Emissions (Pounds per Day)					
		VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Weekday	39,089	-1.8	-3.9	-63.7	-0.2	-7.0	-2.1
Saturday	15,636	-0.7	-1.6	-25.5	-0.1	-2.8	-0.8
Sunday/Holiday	11,727	-0.6	-1.2	-19.1	-0.1	-2.1	-0.6
DAILY THRESHOLDS							
SCAQMD Daily Thresholds		55	55	550	150	150	55
AVAQMD Daily Thresholds		137	137	548	137	82	65
Daily Threshold Exceeded?		***No***	***No***	***No***	***No***	***No***	***No***

SOURCE: TAHA, 2021; CARB, 2019.

The Proposed Project would generate new air pollutant emissions related to increased locomotive activity. As discussed in Section 3.6, Energy Resources, the Proposed Project would result in a 1,457,786-gallon increase in diesel fuel consumption per year for locomotives, or broadly approximately 3,994 gallons per day on average. Rail travel would occur within both the SCAQMD and AVAQMD jurisdictions. The length of the rail corridor within the AVAQMD jurisdiction is 19.6 miles, and 19.5 percent of rail travel would occur within the Antelope Valley with the remainder being in the SCAQMD jurisdiction. Assuming that the locomotive fleet would be 90 percent Tier 4 by 2028, **Table 3.3-20**, below, presents the change in weekday rail propulsion emissions that would occur with implementation of the Proposed Project in both the SCAQMD and AVAQMD jurisdictions.

The results of the analysis determined that implementation of the Proposed Project would increase daily regional emissions from rail propulsion within the SCAQMD jurisdiction by a maximum of 4.9 pounds of VOC, 138.1 pounds of NO_X, 231.5 pounds of CO, less than a pound of SO_X, 5.9 pounds of PM_{10}, and 5.7 pounds of $PM_{2.5}$ and would exceed the regional NO_X threshold. The Proposed Project would also increase daily regional emissions within the AVAQMD jurisdiction by a maximum of 1.3 pounds of VOC, 33.9 pounds of NO_X, 56.0 pounds of CO, 0.2 pounds of SO_X, and 0.4 pounds of PM_{10} and $PM_{2.5}$. When added to the reduction from VMT-related emissions, total regional emissions within the SCAQMD jurisdiction would exceed the daily operational emissions threshold for NO_X. Maximum incremental increases in AVAQMD regional emissions would not exceed any applicable district threshold. Therefore, without mitigation, Proposed Project operations would result in a significant impact related to NO_X emissions exceeding the regional SCAQMD threshold that could potentially contribute to increases in the frequency or severity of instances of the ozone air quality standards being exceeded in the SCAB.

Table 3.3-20: Daily Regional Emissions Associated with Rail Travel Operations

Scenario	Day of Week	Daily Pollutant Emissions (Pounds per Day)					
		VOC	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
SCAQMD JURISDICTION							
Existing	Weekday	18.3	382.9	246.6	0.9	10.8	10.5
Proposed Project	Weekday	23.2	521.0	478.1	1.7	11.8	11.4
Net Change	***Weekday***	***4.9***	***138.1***	***231.5***	***0.9***	***0.9***	***0.9***
Existing	Saturday	8.0	168.0	108.2	0.4	4.8	4.6
Proposed Project	Saturday	11.9	266.7	244.7	0.9	6.0	5.8
Net Change	***Saturday***	***3.8***	***98.7***	***136.5***	***0.5***	***1.3***	***1.2***
Existing	Sunday	8.0	168.0	108.2	0.4	4.8	4.6
Proposed Project	Sunday	5.9	133.4	122.4	0.4	3.0	2.9
Net Change	***Sunday***	***-2.1***	***-34.6***	***14.2***	***0.1***	***-1.7***	***-1.7***
Maximum Daily Change		**4.9**	**138.1**	**231.5**	**0.9**	**1.3**	**1.2**
SCAQMD Regional Thresholds		*55*	*55*	*550*	*150*	*150*	*55*
Daily Threshold Exceeded?		***No***	***Yes***	***No***	***No***	***No***	***No***
AVAQMD JURISDICTION							
Scenario	**Day of Week**	**VOC**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Existing	Weekday	4.4	92.6	59.7	0.2	2.6	2.5
Proposed Project	Weekday	5.6	126.1	115.7	0.4	2.8	2.8
Net Change	***Weekday***	***1.2***	***33.4***	***56.0***	***0.2***	***0.2***	***0.2***
Existing	Saturday	2.8	57.8	37.2	0.1	1.6	1.6
Proposed Project	Saturday	4.1	91.7	84.2	0.3	2.1	2.0
Net Change	***Saturday***	***1.3***	***33.9***	***46.9***	***0.2***	***0.4***	***0.4***
Existing	Sunday	2.8	57.8	37.2	0.1	1.6	1.6
Proposed Project	Sunday	2.0	45.9	42.1	0.1	1.0	1.0
Net Change	***Sunday***	***-0.7***	***-11.9***	***4.9***	***<0.1***	***-0.6***	***-0.6***
Maximum Daily Change		**1.3**	**33.9**	**56.0**	**0.2**	**0.4**	**0.4**
AVAQMD Daily Thresholds		*137*	*137*	*548*	*137*	*82*	*65*
Daily Threshold Exceeded?		***No***	***No***	***No***	***No***	***No***	***No***

SOURCE: TAHA, 2021; CARB, 2019.

The SCAQMD regional thresholds for VOC and NO_X were derived from the federal Clean Air Act which identifies 10 tons per year of VOC emissions as the significance level for stationary sources of emissions in extreme non-attainment areas.[23] This emission level was converted to a pounds per day threshold by the SCAQMD for the operational phase of CEQA projects. However, the fact

[23]SCAQMD, *CEQA Air Quality Handbook (Version 3)*, November 2001.

that a project emits VOC or NO_X in excess of the regional operational threshold does not establish a direct correlation to an increase in the frequency or severity of air quality violations or have the potential to delay attainment of the air quality standards (O_3) as demonstrated in the 2016 AQMP. As an example, the SCAQMD modeled the release of 6,620 pounds per day of NO_X and 89,847 pounds per day of VOC as part of its Rule 1315 proposal, and this magnitude of emissions resulted in a miniscule increase in air basin wide O_3 concentrations (2.6 ppb) and NO_2 concentrations (less than 1 ppb).[24] The incremental increase in VOC (9.8 pounds per day) and NO_X (258 pounds per day) emissions resulting from implementation of the Proposed Project would not be sufficient to cause specific health concerns related to air quality violations, especially when spread over the 57-mile portion of the AVL corridor within the SCAQMD jurisdiction.

Furthermore, limitations in available emissions modeling capabilities would preclude the evaluation of potential health effects associated with incremental increases in O_3 and NO_2 concentrations that can be attributed to the Proposed Project's net daily emissions increases of 4.9 pounds of VOC and 138.1 pounds of NO_X.[25] Air quality violations are instances in which the ambient concentration of a criteria pollutant exceeds the applicable air quality standard over the averaging period. Attainment of the ambient air quality standards is established through robust monitoring efforts at the regional scale. The magnitude of emissions that would be generated by implementation of the Proposed Project would not be sufficient to correlate to incremental regional increases in O_3 or NO_2 concentrations within the SCAB or the Los Angeles County subarea within it based on the technical limitations of available air quality models, which are designed to simulate regional emissions on the scale of hundreds of kilometers.

As a demonstrative example, the SCAQMD LST screening values were derived to prevent the localized occurrence of pollutant concentrations exceeding air quality standards and presenting public health concerns at sensitive receptors near sources of emissions. As shown in **Table 3.3-11**, the lowest applicable SCAQMD LST value for NO_X emissions is 80 pounds per day for a one-acre site in SRA 7 East San Fernando Valley. Characterizing the 57-mile segment of the AVL corridor within the SCAQMD jurisdiction as a series of 1-acre parcels of width 20 feet and length 2,178 feet, there would be a total of 138.2 parcels stretched along the corridor segment. Based on the daily emissions increase of 138.1 pounds NO_X, each single-acre parcel would generate approximately 1.0 pound of NO_X per acre. This daily mass quantity of pollutant emissions equates to approximately 1.25 percent of the lowest SCAQMD LST value for the Project Area. From the SCAQMD LST methodology guidance document, "the mass emissions result is the maximum amount of emissions a project can emit, when added to ambient concentrations, without causing or contributing to an exceedance of the most stringent applicable air quality standard (i.e., background + project contribution)."[26] As the Proposed Project would release NO_X emissions on a per-acre basis at a rate approximately 1.25 percent of the lowest LST screening value, it's unlikely that NO_X emission in excess of the regional SCAQMD threshold exacerbate the frequency or severity of air quality violations. However, because the additional diesel fuel consumption for

[24]SCAQMD, *Final Program Environmental Assessment for Re-Adoption of Proposed Rule 1315 (pp. 1–11),* 2011.
[25]City of Los Angeles, *Air Quality and Health Effects – Sierra Club v. County of Fresno*, October 2019.
[26]SCAQMD, *Final Localized Significance Threshold Methodology,* Revised July 2008.

AVL rail propulsion would produce incremental increases in daily NO_X emissions that would exceed the SCAQMD regional threshold, this Draft EIR conservatively concludes that operational-related emissions represent a potentially significant impact related to regional attainment of the O_3 air quality standards.

2) Air Quality Plan Assumptions

During long-term future operations, the Proposed Project would not directly or indirectly induce population or housing growth to the region, would not interfere with implementation of control strategies to reduce ambient concentrations of O_3 and particulate matter on the attainment schedule of the applicable air quality plans, and would not disproportionately burden energy resources beyond available capacity. Expansion of public transit infrastructure is a critical tenet of the air quality plans and the SCAG Connect SoCal. Displacing additional vehicle trips would improve upon Metrolink's existing operations and would serve to further air quality and climate adaptation initiatives developed in the regional plans. Public transit is far more efficient from an emissions standpoint than equivalent passenger vehicle trips. Implementation of the Proposed Project would contribute to accommodating regional growth in an efficient manner by providing expanded opportunities to take advantage of AVL corridor services between Union Station in Downtown Los Angeles and Lancaster in the Antelope Valley. However, as discussed above, operation of the Proposed Project would result in emissions of NO_X that could present significant air quality impacts by exceeding the regional SCAQMD threshold for NOx.

Mitigation Measures

No mitigation measures were identified to reduce AVL corridor rail propulsion NO_X emissions. The application of emerging technologies such as renewable diesel fuel could substantially reduce future emissions. However, it would be speculative and provide no further informational value to evaluate hypothetical NO_X emissions scenarios based on a presumed implementation schedule, as Metrolink research efforts are still underway. Therefore, this impact is considered significant and unavoidable.

Significance of Impacts after Mitigation

Significant and unavoidable impact.

Impact 3.3-2) Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

As described in the Existing Setting, Los Angeles County is designated as a Nonattainment area for the federal and state ozone and particulate matter air quality standards. Therefore, implementation of the Proposed Project would cause a significant impact on air quality if it would result in a cumulatively considerable net increase in ozone precursor or particulate matter emissions during construction or operations. Cumulative air pollution impacts are adverse health effects, risks, or nuisances from exposure to pollutants released into the air from multiple air pollution sources. Emissions of air pollutants that would be generated by construction and

operation of the proposed project must be considered from a cumulative perspective in combination with other nearby sources that affect local air quality. In its White Paper on assessing cumulative impacts under CEQA, the SCAQMD recognized that a project may generate emissions without having a cumulatively considerable impact on air quality if project-level emissions remain below the applicable Air Quality Significance Thresholds developed by the air district. The AVAQMD has not established significance thresholds for assessing cumulative impacts. The impact analysis for improvements within both air district jurisdictions follows the SCAQMD guidance based on their subject matter expertise and for corridor-wide consistency in the impact analysis. If project emissions exceed an applicable Air Quality Significance Threshold, even after mitigation, then it could result in a significant and unavoidable cumulatively considerable net increase in emissions contributing to regional Nonattainment conditions.

Construction

Less-Than-Significant Impact. As shown in **Table 3.3-16**, **Table 3.3-17**, and **Table 3.3-18**, construction of the Proposed Project capital improvements would not generate daily or annual emissions in excess of any applicable mass-based threshold developed by the SCAQMD or AVAQMD. In accordance with SCAQMD guidance on evaluating potential cumulative impacts, the demonstration that maximum possible emissions during construction activities would remain substantially below applicable thresholds is sufficient to establish that construction of the Proposed Project would not generate cumulatively considerable net increases in ozone precursors or particulate matter. Construction of the Proposed Project would not delay attainment of the air quality standards.

Operations

Significant and Unavoidable Impact. Operation of the Proposed Project would not introduce a new, permanent source of ozone precursor or particulate matter emissions to the SCAQMD or AVAQMD jurisdictions. As the Metrolink fleet is gradually upgraded over time, older Tier 0 engines and eventually Tier 2 engines will be phased out of operations. Based on the level of NO_X and PM emission reductions achieved by implementing the newer Tier 4 engines—approximately 65 percent and 85 percent reduction from Tier 2 and Tier 0 engines, respectively—it is anticipated that fleetwide average emissions per mile will be reduced over time. However, as shown in **Table 3.3-20**, the Proposed Project rail propulsion operations would generate emissions of NO_X that would exceed the SCAQMD regional threshold. Emissions of NO_X contribute to the formation of O_3 in the atmosphere through photochemical reactions and are considered ozone precursors. The SCAB is designated nonattainment of the O_3 air quality standards at both the federal and state level. The SCAQMD applies its regional project-level thresholds to its cumulative analysis, and therefore operation of the Proposed Project would result in a significant and unavoidable impact related to cumulatively considerable net increases in Nonattainment pollutants.

As discussed above in the Methodology, the Metrolink Climate Action Plan charts a course toward a greener future for the agency. Metrolink's Climate Action Plan includes a target of transitioning to 100 percent petroleum fuel free through the application of renewable diesel fuel by 2022 and a "moon shot" goal of achieving 100 percent zero emissions by 2028 through the application of alternative propulsion technologies. If Metrolink can realize these goals Project-related NO_X

emissions would be significantly reduced by not using petroleum fuel and eliminated by using locomotive technology that results in zero emissions. As these emission reduction goals are considered aspirational and Metrolink is in the process of studying fleet modernization and emerging zero- and near-zero-emissions applications, the implementation schedule for transitioning away from the existing locomotive fleet to a petroleum-free fleet and then to a net zero emissions fleet is not known at this time. Therefore, NO_X reductions associated with these goals have not been quantified and impacts associated NOx emissions from Project operations are considered significant and unavoidable. Regardless, it is important to note that Metrolink's "moon shot" is to transition its fleet to zero emissions by 2028 which is also the anticipated time AVL service would be increased as a result of the Proposed Project.

Mitigation Measures

There are no practicably feasible mitigation measures available to address significant impacts associated with Proposed Project operations. As discussed in the preceding discussion, Metrolink is pursuing various emission reduction strategies through separate planning efforts.

Significance of Impacts after Mitigation

Significant and unavoidable impact.

Impact 3.3-3) Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?

Construction

Less-Than-Significant Impact.

Localized Pollutant Emissions

The SCAQMD developed its Final Localized Significance Threshold Methodology as a screening tool to prevent the occurrence of elevated pollutant concentrations at sensitive receptor locations that could potentially present public health concerns. The daily emissions presented in **Table 3.3-15**, **Table 3.3-16**, and **Table 3.3-17** represent conservative estimates of on-site emissions assuming the highest levels of equipment activity that may occur on a daily basis. As shown in **Table 3.3-15** and **Table 3.3-16**, maximum localized pollutant emissions during construction of the Balboa Double Track Extension and Canyon Siding Extension would remain well below the applicable SCAQMD LST values, demonstrating that there would be no potential for localized concentrations to exceed the concentration-based thresholds presented in **Table 3.3-10** at either of the capital improvement sites within the SCAQMD jurisdiction. In lieu of established localized significance criteria for evaluating potential air quality impacts at sensitive receptor locations in the AVAQMD jurisdiction, the most conservative LST values presented in **Table 3.3-11** for each air pollutant are invoked to screen on-site emissions from sources at the Lancaster Terminal Improvements site. **Table 3.3-21** compares maximum daily emissions from sources located on the Lancaster Terminal Improvements site to the lowest SCAQMD LST values corresponding to one-acre disturbance areas within 25 meters of sensitive receptors.

Table 3.3-21: On-Site Construction Emissions – Lancaster Terminal Improvements

Phase	Maximum Daily Emissions (Pounds per Day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Site Preparation	3.2	28.0	2.4	1.4
Cut/Fill & Stabilization	3.3	35.9	3.1	1.5
Retaining Walls & Platforms	2.0	26.0	0.1	0.1
Track & Layover Facilities	3.6	20.7	<0.1	<0.1
Utilities, Signals, & Systems	3.8	23.8	<0.1	<0.1
SURROGATE LOCALIZED ANALYSIS				
Maximum Daily Emissions	**3.8**	**35.9**	**3.1**	**1.5**
Lowest SCAQMD LST Value	80	426	4	3
Daily Threshold Exceeded?	***No***	***No***	***No***	***No***

SOURCE: TAHA, 2021; CAPCOA, 2017.

As shown in **Table 3.3-21**, on-site sources involved in construction activities at the Lancaster Terminal Improvements site would not generate emissions of NO_X, CO, PM_{10}, or $PM_{2.5}$ in excess of the lowest LST values derived by the SCAQMD for screening localized air quality impacts. Maximum daily on-site emissions would represent approximately five percent of the lowest NO_X LST value, approximately nine percent of the lowest CO LST value, approximately 80 percent of the lowest PM_{10} LST value, and approximately 50 percent of the lowest $PM_{2.5}$ LST value. Therefore, on-site emissions at the Lancaster Terminal Improvements site would not be of sufficient magnitude to produce concentrations of pollutants exceeding the SCAQMD localized significance thresholds. Since the AVAQMD is designated nonattainment of air quality standards for O_3 precursors and particulate matter, similar to the SCAQMD, this analysis substantiates that localized impacts at the Lancaster Terminal Improvements site would be less than significant.

Both the SCAQMD and the AVAQMD have codified rules related to Visible Emissions, Nuisance, and Fugitive Dust. All construction activities would be required to comply with the provisions of the Metro Green Construction Policy, including the use of off-road equipment with engines meeting Tier 4 Final emissions standards. Adhering to the BMPs of the Metro Green Construction Policy would eliminate the possibility of localized criteria pollutant concentrations from presenting concerns related to sensitive receptor exposures. This impact would be less than significant.

Toxic Air Contaminant (TAC) Emissions

During construction activities, TAC emissions would predominantly be attributed to diesel particulate emissions from operating heavy-duty equipment. However, construction activities would be sporadic, transitory, and short-term in duration. Metro has committed to using equipment outfitted with engines meeting Tier 4 emissions standards that would substantially reduce diesel PM emissions and associated exposures. Since the assessment of cancer risk is typically based on chronic exposure (e.g., 30 years) and each capital improvement project would last two years or less, any potential exposure is well below the chronic duration and would not result in an

elevated cancer risk to local residents or workers. Therefore, the Proposed Project would result in a less-than-significant impact related to TAC exposures during activities.

Operations

Less-Than-Significant Impact. Future operation of the Proposed Project would not substantially change the nature of pollutant emissions along the AVL corridor, as the incremental increase in NO_X emissions would be approximately three pounds per mile distributed along the 76.6-mile route and approximately one pound per acre throughout the corridor. Implementation of the Proposed Project would not introduce a new permanent source of emissions at any particular location that would present air quality concerns related to sensitive receptor exposures to substantial pollutant concentrations. The installation of double tracks along the AVL corridor would not place sensitive receptors in closer proximity to substantial sources of localized pollutant concentrations. The potential for localized CO or PM effects are tied closely to intersection volumes and delays. The potential for mobile source hot spots has decreased in recent years as tailpipe emissions have improved with regulatory controls. Studies have shown that hot spots may occur at intersections with daily traffic exceeding 400,000 vehicles per day.[27] There are no intersections affected by the Proposed Project with volumes that exceed 400,000 vehicles per day. There is no potential for proposed improvements to result in a CO or PM hot spot. Therefore, operation of the Proposed Project would result in a less than significant impact related to sensitive receptor exposures to substantial pollutant concentrations.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less than significant impact.

Impact 3.3-4) Would the Proposed Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Construction

Less-Than-Significant Impact. Construction activities associated with the Proposed Project may generate detectable odors from heavy-duty equipment exhaust and architectural coatings. However, construction-related odors would be short-term in nature and cease upon project completion. In addition, the Proposed Project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing the time of idling to no more than five minutes. This would reduce the detectable odors from heavy-duty equipment exhaust. The Proposed Project would also be required to comply with the SCAQMD Rule 1113 – Architectural Coatings, which would minimize odor impacts from ROG emissions during architectural coating. Any odor impacts to existing adjacent land uses would be short-term and

[27]SCAQMD, *Federal Attainment Plan for Carbon Monoxide*, 1992.

not substantial. SCAQMD Rule 402 gives the agency investigation and enforcement authority related to odor nuisances. The Proposed Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

Operations

Less-Than-Significant Impact. Implementation of the Proposed Project would not change the nature of materials and substances located at the improvement sites or anywhere along the AVL corridor, nor would it bring sources of odorous emissions in closer proximity to sensitive land uses. The SCAQMD *CEQA Air Quality Handbook* (1993) identifies certain land uses as sources of odors. These land uses include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. Stations would include waste bins that would be maintained on a regular basis and would not typically generate significant odors. The Proposed Project would not include any of the land uses that have been identified by the SCAQMD as odor sources. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less than significant impact.

3.4 BIOLOGICAL RESOURCES

The following summarizes the applicable regulations and existing setting, and provides a detailed impact assessment related to biological resources. The Project Area for biological resources consists of the three capital improvement sites and the natural environment surrounding them. Refer to the Biological Resources Technical Report (Appendix D) for additional details related to applicable regulations and the existing setting.

3.4.1 Regulatory Framework

3.4.1.1 Federal Regulations

Federal Endangered Species Act. The Federal Endangered Species Act (FESA) provides a framework to conserve and protect endangered and threatened species and their habitat. Section 10 of the FESA allows for the "incidental take" of endangered and threatened wildlife species by non-federal entities. Section 10(a)(2)(A) of the FESA requires an applicant for an incidental take permit to submit a habitat conservation plan that specifies, among other things, the impacts likely to result from the taking of the species, and the measures the permit applicant will take to minimize and mitigate impacts on the species. The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.[1]

Migratory Bird Treaty Act. Prohibits taking of migratory birds unless specifically exempt or authorized; taking can include loss of habitat. Must be addressed as part of the CEQA process and United States Army Corp of Engineering (USACE) Section 404 permitting. This act prohibits the take (killing, capturing, trading, and transport) of protected migratory bird species without prior authorization from the Department of the Interior (DOI) and USFWS (USFWS, 2020). In addition, the United States Fish and Wildlife Service (USFWS) provided clarification that the Migratory Bird Treaty Act (MBTA) does not apply to any nonnative species whose presence in the United States are solely the result of intentional or unintentional human-assisted introduction.[2]

3.4.1.2 State Regulations

California Environmental Quality Act. Section 15380 of the California Environmental Quality Act (CEQA) Guidelines requires that species of special concern be included in an analysis of project impacts. California Species of Special Concern include species that are native to California and are experiencing population declines but are not currently listed as threatened or endangered, all State and federally protected and candidate species, and Bureau of Land Management and United States Forest Service sensitive species. Species considered declining or rare by the California Native Plant Society (CNPS) or National Audubon Society, and a selection of species

[1] USFWS, *Endangered Species Act*, 1973.
[2] USFWS, *Migratory Bird Treaty Act – Bird Protection*, 2013.

which are considered to be under population stress but are not formally proposed for listing, are also included under species of special concern.[3]

California Fish and Game Code. Section 2126 states that it is unlawful for any person to take any mammals that are identified within Section 2118, including all species of bats; Sections 3503, 3513, and 3800 prohibit the take of birds, including any birds in the order of Falconiformes or Strigiformes (birds-of-prey) protected under the MBTA, and protect their occupied nests. Section 3801 and 3800 state that the house sparrow and European starling are the only species authorized for take without prior authorization from the California Department of Fish and Wildlife (CDFW). Section 2080.1 states that, if a project would result in take of a species that is both federally and State listed, a consistency determination may be completed in lieu of undergoing a separate California Endangered Species Act (CESA) consultation. Under Section 2081, if a project would result in take of a species that is State-only listed as threatened or endangered, then an incidental take permit from the CDFW is required. Sections 3511, 4700, 5050, and 5515 prohibit the take or possession of 37 fully protected bird, mammal, reptile, amphibian, and fish species. The CDFW will not authorize the incidental take of fully protected species when activities are proposed in areas inhabited by those species.[4]

3.4.1.3 Local Regulations

City of Los Angeles

The City of Los Angeles' General Plan. The City of Los Angeles' General Plan is a comprehensive, long range declaration of purposes, policies and programs for the development of the City. The Framework Element contains objectives and policies for the provision, management, and conservation of Los Angeles' biological resources.[5] In addition to the Framework Element, the Conservation Element includes relevant objectives and policies to biological resources.[6]

Protected Tree Relocation and Replacement Ordinance. The ordinance protects the following native tree species: California black walnut (*Juglans californica*), California bay (*Umbellularia californica*), western sycamore *(Platanus racemosa*), and all oak tree species *(Quercus sp.*). This ordinance applies to trees that have a diameter of four inches or greater at 4.5 feet above the ground level. Removal of protected trees requires a permit by the City of Los Angeles Department of Public Works.[7]

[3] California State Legislature, *The California Environmental Quality Act (CEQA)*, 1970.
[4] California State Legislature, *California Fish and Game Code*, 2020.
[5] City of Los Angeles Department of City Planning, *Los Angeles General Plan – Framework Element*, 1974
[6] City of Los Angeles Department of City Planning, *Los Angeles General Plan – Conservation Element*, 2001.
[7] City of Los Angeles Department of City Planning, *Protected Tree Relocation and Replacement Ordinance #177404*, 2006.

City of Santa Clarita

The Conservation and Open Space Element of the City of Santa Clarita General Plan contains objectives and policies for the provision, management, and conservation of Santa Clarita's biological resources, including forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources.[8]

County of Los Angeles

The Conservation and Natural Resources Element of the County of Los Angeles' General Plan contains goals, objectives, and policies for the preservation, enhancement, and conservation of the County's biological resources, regional habitat linkages; forests; coastal zone; riparian habitats, streambeds and wetlands; woodlands; chaparral; desert shrubland; alpine habitats; Significant Ecological Areas (SEAs); and Coastal Resource Areas (CRAs).[9]

City of Palmdale

The Environmental Resources Element of the City of Palmdale's General Plan contains policies concerning the conservation, preservation, and managed use of open space, including the animal and plant habitats and ecological systems within the City's jurisdiction.[10]

City of Lancaster

The City of Lancaster's General Plan 2030 contains objectives and policies for the conservation and preservation of the City's biological resources, including the Joshua tree - California Juniper Woodlands.[11]

3.4.2 Existing Setting

This section provides an overview of the biological resources within the Project Area. The Biological Study Area (BSA) includes the three capital improvement sites and the ecological habitats which overlap them. See the Biological Resources Technical Report (Appendix D) for more information.

3.4.2.1 Significant Ecological Areas

SEAs are areas within the Los Angeles County with irreplaceable biological resources that contribute to biological diversity. Although there are a few SEAs close to the proposed capital improvement sites, none are within any of the capital improvement sites. SEAs in proximity to the capital improvement sites include:

[8] City of Santa Clarita Planning Division, *City of Santa Clarita General Plan - Conservation and Open Space Element*, June 2011.
[9] County of Los Angeles, *County of Los Angeles General Plan – The Conservation and Natural Resources Element*, 2015.
[10] City of Palmdale Planning Department, *City of Palmdale General Plan - Environmental Resources Element*, 1993.
[11] City of Lancaster, *General Plan 2030*, July 2009.

- Santa Susanna Mountains/Simi Hills SEA located approximately 1,000 feet to the north and northwest of northern limits of the Balboa Double Track Extension site;

- Santa Clara River SEA located approximately 900 feet to the northeast of the northern limits of the Balboa Double Track Extension site. The SEA also covers the extent of the Santa Clara River located approximately 700 feet north of the Canyon Siding Extension site.

3.4.2.3 Special Status Species

According to the USFWS, there are 18 federally listed threatened or endangered species and associated habitat within the vicinity of the three capital improvement sites, including two crustaceans. Both crustacean species were omitted from this study because their range did not include Los Angeles County.

Threatened and endangered species that could potentially occur within and in the vicinity of the capital improvement sites include the Arroyo (arroyo Southwestern) toad, the California red-legged frog, the California Condor, the coastal California gnatcatcher, the least Bell's vireo, the Southwestern Willow Flycatcher, the Riverside fairy shrimp, the vernal pool fairy shrimp, the Santa Ana sucker, the unarmored three spine stickleback, Braunton's milk vetch, California orcutt grass, Gambel's Watercress, the Marsh sandwort, Nevin's barberry, the slender-horned spineflower, spreading navarretia, and the desert tortoise. No critical habitats are within the capital improvement sites. Of the identified species, only the coastal California gnatcatcher's critical habitat is in proximity to the Balboa Double Track Extension site and/or Canyon Siding Extension site. No critical habitat is in the vicinity of the Lancaster Terminal Improvements. All other critical habitats are well outside the vicinity of the capital improvement sites. See the Biological Resources Technical Report (Appendix D) for a complete overview and evaluation of considered species within the Project Area.

3.4.2.4 Site Reconnaissance Findings

A tree survey was conducted at all three capital improvement sites on February 23, and 24, as well as March 2, and 9, 2021, to establish existing conditions and sensitive habitats, as well as to take an inventory of all trees at the capital improvement sites. An additional nesting bird survey was completed on May 18, 2021 to coincide with nesting season. The bird presence/absence and nesting surveys observed several blue jays, a white-throated swift, a swallow, crows, pigeons, killdeer, finches, and hummingbirds but no special status species were observed during site reconnaissance. The following provides a summary of the site conditions, including ground cover and presence of wetland features for each capital improvement site.

Balboa Double Track Extension

The Balboa Double Track Extension site has a mix of developed low to mid intensity land, with a few spots of developed open space land, and shrub/scrub cover. There is a riverine system running west to east that traverses through the Project Area, and one travels parallel to the Project Area from north to south. The land surrounding the Project Area is mostly foothills with mixed

forest and evergreen forest with patches of herbaceous and developed land to the north, northeast, and west. The south and southeast contains low to high intensity developed land, with a few spots of barren and cultivated crop land. Based on the site reconnaissance, Southern California Black Walnut, Western Sycamore, Fremont Cottonwood, Arroyo Willow, California Sagebrush, Brittlebrush, California Buckwheat, Purple Sage, White Sage, Laurel Sumac, and Wild Cucumber were identified in the understory. The majority of these species are considered upland species. The Southern California Black Walnut trees were observed on steep slopes in the southern and northern part of the project boundaries and in the open channel, west of the Balboa Double Track Extension site. Western Sycamore were limited to within the open channel. Several trees were over 30 feet in height, and saplings were observed in the northern end of the Balboa Double Track Extension site on steep slopes north of the Interstate (I)-5 underpass.

Field observations suggest the presence of hydrology supporting a possible wetland adjacent to the Balboa Double Track Extension site, situated between I-5 and the AVL, just south of the I-5 overpass, with an area of approximately 2.43 acres; however, due to site access restrictions wetland conditions could not be established. In addition, an existing riverine open channel runs from the southern portion of the Balboa Double Track Extension site which may support wetland conditions and could not be verified due to site access restrictions. There are multiple other water features surrounding the Balboa Double Track Extension site. However, none of these facilities demonstrate wetland indicators. See Appendix D for further detail on jurisdictional waters and wetlands.

The Balboa Double Track Extension site contains potential bat roosting areas, including underneath the I-5 overpass and on two properties north of the I-5 overpass, just west of the Balboa Double Track Extension site. No bats were observed during site reconnaissance.

Canyon Siding Extension

The Canyon Siding Extension site has a mix of developed medium intensity and open space land, with several areas containing shrub scrub. The Castaic Creek runs from east to west, north of the Canyon Siding Extension site, opposite Soledad Canyon Road. The Castaic Creek is surrounded by emergent herbaceous wetlands. The land surrounding the Canyon Siding Extension site is mostly foothills with mixed forest and spots of herbaceous, and developed low, medium, high intensity, and open space areas. Based on the site reconnaissance Coast live oak, California sagebrush, Brittlebush, Purple Sage, White Sage, Black Sage, Laurel Sumac, and tree tobacco were identified in the understory. The majority of these species are considered upland species. Other chaparral species were spread throughout the site. The Canyon Siding Extension site included the greatest number of trees, primarily Coast Live Oak saplings observed east of the Santa Clarita Station platform.

While there are no wetlands within the Canyon Siding Extension site, there are numerous wetland features located north of the site and separated by Soledad Canyon Road. These wetland features consist of freshwater emergent wetland habitats, freshwater forested/shrub wetland habitat, and riverine wetlands all associated with the Santa Clara River. See Appendix D for further detail on jurisdictional waters and wetlands

Lancaster Terminal Improvements

The Lancaster Terminal Improvements site has a mix of developed low to medium intensity and developed open space land while the land surrounding the site is mostly developed medium intensity land, with patches of developed open space and low to high intensity land. Based on the site reconnaissance, no natural habitat was observed in the project boundary and adjacent areas. There is landscaped vegetation present, including non-native trees and shrubbery along street right-of-way (ROW).

The Lancaster Terminal Improvements site is a mostly disturbed area where most trees were found to be located in narrow sidewalk and passenger walkway cutouts. Most trees found in this Project Area included City of Lancaster approved street trees. One mature western Joshua Tree was observed east of the existing station platform, outside the rail right-of-way and proposed construction activities, but within 500 feet of the construction boundary. The CDFW has recently accepted a petition to list this species as threatened.

3.4.3 Significance Thresholds and Methodology

3.4.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, a Proposed Project would have a significant impact related to biological resources if it would:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service;
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service;
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
e) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance; and/or
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.4.3.2 Methodology

The AVL is an existing active commuter rail line and operation of the Proposed Project is not anticipated to result in any new impacts to biological resources. Accordingly, the analysis of biological resource impacts focused primarily on the three capital improvement sites as

construction activities associated with these improvements would require ground disturbance and other activities potentially affecting habitat supporting sensitive species.

The following steps were followed to determine potential impacts to biological resources:

- Desktop Study:
  - USFWS IPaC online system was used to generate a species list of state listed species whose known ranges overlap the capital improvement sites.
  - Eighteen species were determined to have ranges overlapping the capital improvement sites.
  - Two crustacean species identified as part of the IPaC search were removed from further consideration because their habitats are not within Los Angeles County.
- Literature Review:
  - Review the federally listed species by USFWS and cross-check with IPaC species lists (determined by USFWS offices in California).
  - Determination of federal and state species that could potentially be present within the capital improvement sites based on established habitat requirements.
- Site Reconnaissance:
  - A field survey of each capital improvement site was conducted to assist in the development of a biological assessment.
  - A tree survey to establish existing conditions, sensitive habitats and inventory the type and number of trees at each of the capital improvement sites.
  - A western Joshua tree focused field survey was conducted at the Lancaster Terminal Improvements site.
  - A roosting bat survey was conducted at each of the capital improvement sites.
  - A bird presence/absence and nesting survey was conducted at each of the capital improvement sites.

Once potential presence of sensitive species and associated habitat were established, the assessment reviewed Proposed Project designs to determine potential impacts to habitat based on the locations of proposed ground disturbance activities that would occur within each of the capital improvements sites.

3.4.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation measures (if applicable). Species identified as “possibly affected” are determined due to existing habitats that could be suitable for temporary or permanent residence; potentially impacted during sediment, water, air, and noise disturbances likely to occur during the construction phases of the Proposed Project. Impacts in general will be based on construction activities, including grading and earthwork.

Impact 3.4-1) Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

A total of 18 federal- and state-listed plant and animal species were identified on or adjacent to the three capital improvement sites.

Construction

Less-Than-Significant Impact with Mitigation. Construction of the Proposed Project would occur within existing rail or street ROW. Construction activities associated with each capital improvement would include site clearing, grading and retaining wall installation, utility relocation and installation, and track and systems installation. Station platforms proposed as part of the Canyon Siding Extension site and Lancaster Terminal Improvements site would require cast in-place concrete slab and foundations as well as installation of typical station platform elements such as canopies and seating. Equipment used would include typical construction equipment as well as truck transport. Examples include track installation equipment, front-end loaders, dump and haul trucks, excavators, medium to large rams for braking rock, small/medium scrapers, drills for tiebacks/rock bolts, construction forklifts, crane, concrete pump trucks, concrete haul trucks, rail mounted drill rig (for pier protection wall installation) and utility/service vehicles. Additional smaller equipment may also be used such as walk-behind compactors, compact excavators and tractors, and small hydraulic equipment.

Though the majority of the Proposed Project improvements would occur within the existing AVL ROW, some natural habitat areas still exist as noted above. These habitats are located primarily in open space areas immediately outside of the existing ROW along track segments that would be double tracked as part of the Proposed Project. Such habitats have the potential or are known to support sensitive plant and animal species.

As previously discussed, the majority of Proposed Project improvements, including both track and station expansion, would take place within the existing footprint of the AVL. No major changes in land use patterns would occur on lands adjacent to existing facilities where construction of the Proposed Project would occur. Nor occur within the open space areas beyond the existing limits of urban development. Therefore, the Proposed Project would not impact sensitive species or associated habitat. Although it is not expected that the footprint of the Proposed Project development adjacent to existing rail infrastructure would result in significant impacts to listed special status species, construction activities do have the potential to disturb wildlife due to vegetation removal and construction equipment moving through the capital improvement sites. Certain species of birds are protected by the MBTA and California Fish and Game Code from removal or destruction of an active nest (defined as a nest with eggs or young being attended by one or more adults) or direct mortality or injury of individual birds. However, as required by Mitigation Measures **BIO-1** through **BIO-7**, construction activities associated with the Proposed Project would be monitored by a qualified biologist and any vegetation removal would be required to be scheduled outside of nesting bird season or conducted in a manner that would avoid

inadvertent disturbance of active nests and habitat. Any construction that would occur would be required to coordinate project design and implementation with federal and state resource agencies to minimize impacts to special-status species. In addition, should the Proposed Project construction impact any state-listed endangered, threatened, rare, or candidate species, Metro would be required to secure a permit from CDFW before the Proposed Project could proceed. Therefore, compliance with federal, state, and local regulations and compliance with any terms and conditions within those permits, issued by the state or federal resource agencies, are designed to offset impacts to sensitive plant and wildlife species and their habitats. Impacts to special status species would be less than significant with mitigation incorporated.

Operations

Less-Than-Significant Impact. Project operations would primarily consist of the movement of trains through the capital improvement sites as well as periodic track maintenance requiring heavy equipment and the movement of personnel. Because these activities would take place in areas that are either already disturbed, including by maintenance personnel and equipment typically associated with railroad tracks, or adjacent to such areas, impacts would be less than significant.

The noise and vibration analysis conducted for the Proposed Project found that the average noise in decibels (dBA) would increase by one dBA or none from existing to future conditions. None of the averages fall within the harmful range to people and animals. Bats calls can reach up to 140 dBA, and therefore, the increased sound level from the Proposed Project should not have any effect on bats. Although there can be effects from increased sound levels on animals, the increased noise from the Proposed Project would be unlikely to have any negative effects on the species, and any sound increase would be temporary as train traffic increases and passes the animals' location.

Mitigation Measures

BIO-1 Vegetation removal shall be conducted outside of the bird nesting season (nesting typically occurs between February 1 through September 30) to the extent feasible. If vegetation removal cannot be conducted outside of the nesting season, a Metro-approved qualified bird biologist shall conduct preconstruction surveys to locate active nests within seven days prior to vegetation removal in each area with suitable nesting habitat. If nesting birds are found during preconstruction surveys, an exclusionary buffer (150 feet for passerines and 500 feet for raptors) suitable to prevent nest disturbance shall be established by the biologist. The buffer may be reduced based on species-specific and site-specific conditions as determined by the qualified biologist. This buffer shall be clearly marked in the field by construction personnel under the guidance of the biologist, and construction or vegetation removal shall not be conducted within the buffer until the biologist determines that the young have fledged or the nest is no longer active.

If work occurs on existing bridges with potential nest sites that will be removed or will have modifications to the substructure, these should be conducted between February 1 and September 30. All bird nests shall be removed prior to February 1.

Immediately prior to nest removal, a qualified biologist shall inspect each nest for the presence of torpid bats, which are known to use old swallow nests.

Nest removal shall be conducted under the guidance and observation of a qualified biologist. Removal of nests on bridges that are under construction shall be repeated as frequently as necessary to prevent nest completion unless a nest exclusion device has already been installed. Nest removal and exclusion device installation shall be monitored by a qualified biologist. Such exclusion efforts shall be continued to keep the structures free of birds until October or the completion of construction.

A biological monitor shall be present during all ground-disturbing activities to ensure no impacts occur to nesting birds during nesting bird season (mid-March to mid-May), if applicable, as well as to ensure minimal impacts to other plant and animal species

BIO-2 To avoid impacts to nesting birds, Metro shall submit to the California Department of Fish and Wildlife (CDFW) and United States Fish and Wildlife Service (USFWS) a Nesting Bird Management, Monitoring, and Reporting Plan for review and approval prior to commencement of Proposed Project construction activities during the breeding season (February 1 to August 31, and as early as January 1 for some raptors). The Nesting Bird Management, Monitoring, and Reporting Plan should include the following:

- Nest survey protocols describing the nest survey methodologies including the following:
    - A management plan describing the methods to be used to avoid nesting birds and their nests, eggs, and chicks;
    - A monitoring and reporting plan detailing the information to be collected for incorporation into a regular Nest Monitoring Log (NML) with sufficient details to enable USFSW and CDFW to monitor Metro's compliance with California Fish and Game Code Sections 3503, 3503.5, 3511, and 3513;
    - A schedule for the submittal (usually weekly) of the NML;
    - Standard buffer widths deemed adequate to avoid or minimize significant project related edge effects (disturbance) on nesting birds and their nests, eggs, and chicks;
    - A detailed explanation of how the buffer widths were determined; and
    - All measures the applicant will implement to preclude birds from utilizing project related structures (i.e., construction equipment, facilities, or materials) for nesting.

- Preconstruction nesting bird surveys shall be completed within 72 hours of construction-related activities and implement appropriate avoidance measures for identified nesting birds. To determine the presence of nesting birds that the project activities may affect, surveys should be conducted beyond the Project Area - 300 feet for passerine birds and 500 feet for raptors. The survey protocols should include a detailed description of methodologies utilized by CDFW-approved avian biologists to search for nests and describe avian behaviors that indicate active nests. The protocols should include but are not limited to the size of the Project Area being surveyed, method of search, and behavior that indicates active nests. Each nest identified in the Project Area should be included in the NML.

  The NMLs should be updated daily and submitted to the CDFW weekly. Since the purpose of the NMLs is to allow the CDFW to track compliance, the NMLs should include information necessary to allow comparison between nests protected by standard buffer widths recommended for the Proposed Project (300 feet for passerine birds, 500 feet for raptors) and nests whose standard buffer width was reduced by encroachment of project-related activities. The NMLs should provide a summary of each nest identified, including the species, status of the nest, buffer information, and fledge or failure data. The NMLs will allow for tracking the success and failure of the buffers and will provide data on the adequacy of the buffers for certain species. The applicant(s) will rely on its avian biologists to determine the appropriate standard buffer widths for nests within the Project Area to employ based on the sensitivity levels of specific species or guilds of avian species. The determination of the standard buffer widths should be site- and species-/guild-specific and data-driven and not based on generalized assumptions regarding all nesting birds.

- The determination of the buffer widths should consider the following factors:
  - Nesting chronologies;
  - Geographic location;
  - Existing ambient conditions (human activity within line of sight—cars, bikes, pedestrians, dogs, noise);
  - Type and extent of disturbance (e.g., noise levels and quality—punctuated, continual, ground vibrations—blasting-related vibrations proximate to tern colonies are known to make the ground-nesting birds flush the nests);
  - Visibility of disturbance;
  - Duration and timing of disturbance;
  - Influence of other environmental factors; and
  - Species' site-specific level of habituation to the disturbance. Application of the standard buffer widths should avoid the potential for project-related nest abandonment and failure of fledging, and minimize any disturbance to the nesting behavior. If project activities cause or contribute to a bird being flushed from a nest, the buffer must be widened.

BIO-3 Prior to tree removal or demolition activities, Metro shall retain a qualified biologist to conduct a focused survey for bats and potential roosting sites within buildings to be demolished or trees to be removed. The surveys can be conducted by visual identification and can assume presence of hoary and/or pallid bats or the bats can be identified to a species level with the use of a bat echolocation detector such as an "Anabat" unit. If no roosting sites or bats are found, a letter report confirming absence shall be sent to the CDFW and no further mitigation is required. If roosting sites or hoary bats are found, then the following monitoring and exclusion, and habitat replacement measures shall be implemented.

If bats are found roosting outside of nursery season (nursery season typically occurs between May 1 through October 1), then they shall be evicted as described below. If bats are found roosting during the nursery season, then they shall be monitored to determine if the roost site is a maternal roost. This could occur by either visual inspection of the roost bat pups, if possible, or monitoring the roost after the adults leave for the night to listen for bat pups. If the roost is determined to not be a maternal roost, then the bats shall be evicted as described below. Because bat pups cannot leave the roost until they are mature enough, eviction of a maternal roost cannot occur during the nursery season. A 250-foot (or as determined in consultation with CDFW) buffer zone shall be established around the roosting site within which no construction or tree removal shall occur.

Eviction of bats shall be conducted using bat exclusion techniques, developed by Bat Conservation International (BCI) and in consultation with CDFW that allow the bats to exit the roosting site but prevent re-entry to the site. This would include, but not be limited to, the installation of one-way exclusion devices. The devices shall remain in place for seven days and then the exclusion points and any other potential entrances shall be sealed. This work shall be completed by a BCI-recommended exclusion professional. The exclusion of bats shall be timed and carried concurrently with any scheduled bird exclusion activities.

Each roost lost (if any) will be replaced in consultation with the California Department of Fish and Game and may include construction and installation of BCI-approved bat boxes suitable to the bat species and colony size excluded from the original roosting site. Roost replacement will be implemented before bats are excluded from the original roost sites. Once the replacement roosts are constructed and it is confirmed that bats are not present in the original roost site, the structures may be removed or sealed.

BIO-4 A revegetation plan will be developed by a qualified biologist to guide the restoration of native vegetation temporarily or permanently impacted by project implementation.

BIO-5 Limits of disturbance will be staked during construction activities to ensure that impacts to the Project Area are minimized, and staking will stay in place until final site stabilization.

BIO-6 If construction must occur during nighttime hours, lighting that produces a green colored beam with an automatic sensor shall be utilized.

BIO-7 All native vegetation in California gnatcatcher habitat (coastal sage scrub) that must be cleared for project construction must be cleared outside of breeding season (breeding season typically occurs between February 15 to August 31). If construction activities must take place in gnatcatcher breeding season, a pre-construction survey will be conducted for active nests within 500 feet of the construction footprint. Surveys will continue weekly throughout the breeding season. If a nest is within 250 feet of ongoing project activities, Proposed Project work will cease within that 250 feet until the nest has failed or fledged.

Significance of Impacts after Mitigation

Mitigation Measures **BIO-1** and **BIO-2** would ensure that project construction activities avoid nesting birds to the greatest extent possible by minimizing the amount of construction work that would take place during nesting season and by requiring a nesting bird management plan that would require the monitoring and management of construction activities that take place during nesting season. These mitigation measures ensure that construction impacts on nesting birds would be less-than-significant.

Mitigation Measure **BIO-3** would avoid Proposed Project construction impacts on bats by requiring a preconstruction survey for the presence of bats and identifying measures to remove roosted bats or otherwise protect bat roots from construction activities ensuring that construction impacts on bats would be less than significant.

Mitigation Measures **BIO-4**, **BIO-5**, and **BIO-6** would address potential impacts to existing site vegetation by delineating the construction site to avoid inadvertent disturbance to surrounding vegetation, requiring a revegetation plan to replace vegetation removed during construction and by requiring nighttime lighting that does not disrupt photosynthesis cycles. These mitigation measures ensure impacts on vegetation would be less than significant.

Mitigation Measure **BIO-7** would avoid potential impacts on California gnatcatcher, a special status species, by ensuring that identified California gnatcatcher habitat is not affected by construction during breeding season. If vegetation clearing must happen during breeding season, a preconstruction survey would be required with restrictions on construction activities if active nests are identified thus ensuring impacts on California gnatcatcher would be less than significant.

Impact 3.4-2) Would the Proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?

Construction

Less-Than-Significant Impact with Mitigation. CDFW considers riparian habitat to be a sensitive biological community. Construction of the Proposed Project could temporarily impact riparian vegetation in both the Balboa Double Track Extension site and Canyon Siding Extension site. Although, there are no permanent impacts to riparian habitat since the permanent features of the Proposed Project at these sites would be limited to the existing ROW. Construction would be temporary and limited in scope as the proposed improvements in areas of riparian habitat are limited to the construction of new rail lines in existing ROW. Adherence to Mitigation Measures **BIO-8** through **BIO-10** in this document would ensure that impacts would be less than significant.

Operations

Less-Than-Significant Impact. Riparian vegetation is maintained year-round by groundwater or stream underflow, which would not be affected by the Proposed Project. As discussed, the overall groundwater table is not likely to be affected by the Proposed Project, therefore the riparian corridor along both the Balboa Double Track Extension site and Canyon Siding Extension site would not be significantly affected by the Proposed Project's ongoing operations. In addition, a Section 1602 Lake or Streambed Alteration Agreement would be obtained from CDFW, as well as adherence to the appropriate Los Angeles County permit for impacts to riparian habitat, and all conditions and requirements of the permits to further avoid any potential impacts to riparian habitat posed by the Proposed Project. Operation of the Proposed Project would result in a less-than-significant impact to riparian habitat.

Mitigation Measures

BIO-8 Riparian zones within the three capital improvement sites shall be protected through control of invasive plant and animal species following final site stabilization.

BIO-9 In areas where riparian features are below upland features, a qualified biologist shall determine if any disturbance would occur in upland areas such that runoff could affect wetlands.

BIO-10 Native biota shall be re-introduced to riparian areas impacted by Proposed Project construction as required.

Significance of Impacts after Mitigation

Mitigation Measures **BIO-8** through **BIO-10** would ensure that impacts to riparian habitat would be less-than-significant by controlling invasive species, identifying potential runoff into riparian wetland areas, and by reintroducing native biota in areas where Proposed Project construction has cleared vegetation.

Impact 3.3-3) Would the Proposed Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Construction

Less-Than-Significant Impact with Mitigation. There are multiple riverine and freshwater pond features within the vicinity of the capital improvement sites, including one riverine feature that demonstrates indicators of wetland presence adjacent to the Balboa Double Track Extension site. None of these features contain State or federally protected wetlands. However, construction activities have the potential to result in hydrological interruption through the inadvertent disturbance of water features associated with grading activities. Mitigation Measures **BIO-11** and **BIO-12** would ensure that any potential impacts to water features surrounding the capital improvement sites would have less than significant impacts on any potential wetlands.

Operations

No Impact. Operation of the Proposed Project is not expected to result in impacts to protected wetlands as the operation of the AVL will occur in existing rail ROW and would be similar to existing conditions.

Mitigation Measures

BIO-11 To prevent inadvertent disturbance to areas outside the limits of grading, all grading shall be monitored by a biologist. A Metro-approved Project Biologist shall be contracted to perform biological monitoring during all grading, clearing, grubbing, trenching, and construction activities.

The following shall be completed:

- The Project Biologist shall perform the monitoring duties before, occasionally during, and after construction. The Project Biologist shall perform the following duties:
  - Attend the preconstruction meeting with the contractor and other key construction personnel prior to clearing, grubbing, or grading to reduce conflict between the timing and location of construction activities and other mitigation requirements (e.g., seasonal surveys for nesting birds);
  - Conduct meetings with the contractor and other key construction personnel describing the importance of restricting work to designated areas prior to clearing, grubbing, or grading;
  - Discuss procedures for minimizing harm to or harassment of wildlife encountered during construction with the contractor and other key construction personnel prior to clearing, grubbing, or grading;
  - Review and/or designate the construction area in the field with the contractor in accordance with the final grading plan prior to clearing, grubbing, or grading;

- Conduct a field review of the staking to be set by the surveyor, designating the limits of all construction activity prior to clearing, grubbing, or grading;
- Be present during initial vegetation clearing, grubbing, and grading;
- Flush special-status species (i.e., avian or other mobile species) from occupied habitat areas immediately prior to brush-clearing and earthmoving activities; and
- To address hydrology impacts, the Project Biologist shall verify that grading plans include a Stormwater Pollution Prevention Plan.

BIO-12 To comply with the state and federal regulations for impacts to "waters of the United States and state," the following agency permits are required, or verification that they are not required shall be obtained.

- The following permit and agreement shall be obtained, or provide evidence from the respective resource agency that such an agreement or permit is not required:
  - A Clean Water Act, Section 401/404 permit issued by the California Regional Water Quality Control Board (RWQCB) and the USACE for all project-related disturbances of waters of the United States and/or associated wetlands.
  - A Section 1602 Streambed Alteration Agreement issued by the CDFW for all project related disturbances of any streambed.
- Documentation: Metro shall consult each agency to determine if a permit or agreement is required. Upon completion of the agency review of this project, the applicant shall provide a copy of the permit(s)/agreement(s), or evidence from each agency that such an agreement or permit is not required for compliance.
- Timing: Prior to approval of any grading and or improvement plans and issuance of any Grading or Construction Permits.
- Monitoring: Metro shall review the permits/agreement for compliance with this condition. Copies of these permits should be implemented on the grading plans.

Significance of Impacts after Mitigation

Mitigation Measure **BIO-11** would avoid impacts to wetlands by requiring a Project biologist to conduct monitoring activities during construction to ensure that no wetlands are removed or otherwise affected by construction activities ensuring a less-than-significant impact.

Mitigation Measure **BIO-12** would ensure that appropriate regulatory permits are acquired prior to construction so that regional and State regulatory agencies can provide additional requirements and conditions for construction activities affecting bodies of water and water conveyance facilities ensuring a less-than-significant impact.

Impact 3.3-4) Would the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Construction

Less-Than-Significant Impact with Mitigation. Native migratory birds and native bats may use the trees in the capital improvement sites as nursery sites (nesting). Tree removal during construction activities, including staging, could interfere with bird nesting and bat roosting. Therefore, without mitigation, the Proposed Project would result in a potentially significant impact related to construction activities. Implementation of Mitigation Measures **BIO-1** through **BIO-7** would reduce this impact to less than significant by ensuring that tree removal during construction does not interfere with bird nesting and bat roosting.

Operations

Less-Than-Significant Impact. The primary result of the Proposed Project in terms of operations would be the ability of Metro to increase the frequency of trains along the AVL corridor. However, as the corridor's infrastructure is already in place and train traffic already traverses the area, the long-term operations resulting from the Proposed Project would not affect wildlife movement. Impacts would be less than significant, and no mitigation is required.

Mitigation Measures

Refer to Mitigation Measures **BIO-1** and **BIO-2**.

Significance of Impacts after Mitigation

Mitigation Measures **BIO-1** and **BIO-2** would mitigate inadvertent impacts to biological resources during construction activities by ensuring compliance with the MBTA and California Fish and Game Code (Sections 2126, 3503, 3513, and 3800). Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to construction activities.

Impact 3.3-5) Would the Proposed Project conflict with any local policies or ordinance protecting biological resources, such as tree preservation policy or ordinance?

Construction

Less-Than-Significant Impact with Mitigation. Construction activities of the Proposed Project have the potential to remove mature trees as part of site clearing activities and associated grading activities. Of the three capital improvement sites, the Balboa Double Track Extension site contains the greatest tree diversity, and several mature trees grow along the slope adjacent to the ROW. For the Canyon Siding Extension site, Coast Live Oak saplings were observed east of the Santa Clarita station platform which may require removal. Trees growing along slopes and in depressions immediately adjacent to existing ROW are prone to construction-related impacts of cut and fill. For the Lancaster Terminal Improvements site, no trees were observed within the ROW, and impacts to trees only includes landscaped trees that are present within the existing

Metrolink parking lot and the existing city parking lot where the proposed layover facility would be constructed. Compliance with Mitigation Measures **BIO-13** through **BIO-19** would ensure that the impacts related to the removal of any trees during construction would be reduced to less than significant levels.

Operations

No Impact. Operational activities of the Proposed Project would not involve the removal of or damage to protected or mature trees. Therefore, no operational impacts would occur.

Mitigation Measures

BIO-13 Preconstruction surveys for protected trees (native trees four inches or more in cumulative diameter, as measured at 4.5 feet above the ground level, that are subject to protection under any relevant tree protection ordinance, shall be conducted by a registered consulting arborist with the American Society of Consulting Arborists at least 120 days prior to construction. The locations and sizes of all protected trees shall be identified prior to construction and overlaid on project footprint maps. The registered consulting arborist shall prepare a Protected Tree Report and shall submit three copies to the relevant local jurisdiction. Any protected trees that must be removed due to project construction shall be replaced at a 2:1 ratio (or up to a 4:1 ratio for protected trees on private property) except when the protected tree is relocated on the same property, the relevant local agency has approved the tree for removal, and the relocation is economically reasonable and favorable to the survival of the tree. Each replacement tree shall be at least a 15-gallon specimen, measuring one inch or more in diameter, one foot above the base, and shall be at least seven feet in height measured from the base.

BIO-14 Protect trees that will possibly receive impacts to the root system by restricting root cuts to the outer region of the roots using a distance formula recommended by the International Society of Arboriculture. Adjust utility relocations to avoid as many tree trunks and root clusters as possible and eliminate direct impacts/removal of trees. Hand digging the root protection zones will reduce indirect impacts to the root systems.

BIO-15 Provide temporary supplemental irrigation to existing trees during construction, as necessary.

BIO-16 Replace all impacted trees that cannot be saved with native drought tolerant trees of comparable size to the impacted trees.

BIO-17 Determine proven methods of stabilizing the existing landscape to minimize disturbances beyond the area of cut and fill.

BIO-18 Consider “Geo-cell” type planted retaining wall stabilization structures if they can be planted with native chaparral seed.

BIO-19 Provide compost to hold moisture in the soil. Utilize watering bags for the establishment period.

Significance of Impacts after Mitigation

Mitigation Measures **BIO-13** through **BIO-19** would ensure a less-than-significant impact related to local ordinances by requiring compliance with local tree ordinances including conducting a preconstruction tree survey, requiring replacement of displaced trees and providing protections of existing trees, including root protection, compost, and slope stabilization measures.

Impact 3.3-6) Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Construction

Less-Than-Significant Impact. Los Angeles County has determined certain areas that contain irreplaceable biological resources that contribute to the County's overall biodiversity. Although there are no identified SEAs in either the Lancaster Terminal Improvements site or the Canyon Siding Extension Site, there is an identified SEA within 1,000 feet of the Balboa Double Track Extension site. Construction activities would occur within existing Metro ROW, including the Balboa Double Track Extension site, and therefore impacts would be less than significant as they relate to the SEA. There are other no habitat conservation plans, community conservation plans, or other related plans that apply to the construction of the Proposed Project.

Operations

No Impact. As stated above, no habitat conservation plans, community conservation plans, or other related plans apply to the Project Area. Operations of the Proposed Project would not involve any activities which would conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

Mitigation Measures

No mitigation measures required.

Significance of Impacts after Mitigation

Less-than-significant impact.

3.5 CULTURAL RESOURCES

The following summarizes the applicable regulations, the existing setting, and provides a detailed impact assessment related to cultural resources. The Project Area for cultural resources consists of the three capital improvement sites where construction activities would take place.

3.5.1 Regulatory Framework

3.5.1.1 Federal Regulations

National Register of Historic Places. The National Register of Historic Places (National Register) is the authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment.[1] To be eligible for listing in the National Register, a property must be at least 50 years of age (unless the property is of exceptional importance) and possess significance in American history and culture, architecture, or archaeology. The National Register includes significant properties, which are classified as buildings, sites, districts, structures, or objects. A historic district "derives its importance from being a unified entity, even though it is often composed of a variety of resources. The identity of a district results from the interrelationship of its resources, which can be an arrangement of historically or functionally related properties."[2] A district is defined as a geographically definable area of land containing a significant concentration of buildings, sites, structures, or objects united by past events or aesthetically by plan or physical development.[3]

3.5.1.2 State Regulations

California Environmental Quality Act. Lead Agencies and project proponents are required to comply with the California Environmental Quality Act (CEQA) Statute and Guidelines (as amended through 2015) by determining if cultural resources that could be affected by project activities are "historically significant" and whether project activities will have a significant impact on these resources (Title 14 California Code of Regulations [CCR] Section 15064.5[b]).

A cultural resource is considered "historically significant" if the resource is 50 years old or older, possesses integrity of location, design, setting, materials, workmanship, feeling, association" and meets the requirements for listing in the California Register of Historical Resources (California Register) under any one of the criteria listed in Title 14 CCR Section 15064.5. Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The fact that a

[1] Title 36 Code of Federal Regulations Part 60.2.
[2] United States Department of the Interior, National Park Service, *National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation*, accessed March 31, 2020, https://www.nps.gov/subjects/nationalregister/upload/NRB-15_web508.pdf, 5.
[3] Title 36 Code of Federal Regulations Part 60.3(d).

resource is not listed in or determined to be eligible for listing in the California Register or is not included in a local register of historical resources, does not preclude a lead agency from determining that the resource may be a historical resource.

California Register of Historical Resources. The California Register is an authoritative guide used by state and local agencies, private groups, and citizens to identify historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse impacts.[4] The California Register consists of properties that are listed automatically as well as those that must be nominated through an application and public hearing process. Properties eligible for listing in the California Register may include buildings, sites, structures, objects, and historic districts. It is possible that properties may not retain sufficient integrity to meet the criteria for listing in the National Register, but they may still be eligible for listing in the California Register. An altered property may still have sufficient integrity for the California Register if it maintains the potential to yield significant scientific or historical information or specific data.[5] A property less than 50 years of age may be eligible if it can be demonstrated that sufficient time has passed to understand its historical importance.[6]

California Public Resources Code. Archaeological and historical sites are protected pursuant to policies and regulations enumerated under the California Public Resources Code (PRC). California PRC Sections 5020–5029.5 continue the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. California PRC Sections 5079–5079.65 define the functions and duties of the Office of Historic Preservation (OHP). The OHP is responsible for the administration of federally and state-mandated historic preservation programs in California and the California Heritage Fund. California PRC Sections 5097.9–5097.991 provide protection to Native American historical and cultural resources and sacred sites and identify the powers and duties of the Native American Heritage Commission (NAHC). It also requires notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods. California PRC Section 21083.2(g) protects archaeological resources. California PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Assembly Bill 52. Assembly Bill (AB) 52 of 2014 amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that tribal cultural resources must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency. Refer to Section 3.11, Tribal Cultural Resources for additional details related to AB 52.

[4] Public Resources Code Section 5024.1 (a).
[5] California Code of Regulations Section 4852 (c)
[6] California Code of Regulations Section 4852 (d) (2).

California Health and Safety Code. The California Health and Safety Code Section 7050.5(b) specifies protocol when human remains are discovered. Specifically, burials or human remains found either inside or outside a known cemetery are not to be disturbed or removed unless by authority of law, and the area of a discovery of human remains should remain undisturbed until the County Coroner is notified and has examined the remains prior to determining the appropriate course of action.

3.5.1.3 Local Regulations

City of Los Angeles

The City of Los Angeles General Plan is a comprehensive, long range declaration of purposes, policies and programs for the development of the City. The Conservation Element of the General Plan identifies paleontological, archaeological, and historic cultural resources within the City of Los Angeles and describes objectives, policies, and programs for their protection, preservation, and management. Relevant Conservation Element objectives and policies related to cultural resources are shown in **Table 3.5-1**.

Table 3.5-1: City of Los Angeles Conservation Element of the General Plan

Objective/Policy	Description
Objective	Protect the city's archaeological and paleontological resources for historical, cultural, research and/or educational purposes.
Policy 1	Continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities.

SOURCE: City of Los Angeles, *Conservation Element of the Los Angeles General Plan*, 2001.

In the City of Los Angeles, the procedures for Historic-Cultural Monument designations and their preservation are described in the Cultural Heritage Ordinance (Number 178,402, effective April 2, 2007). The ordinance also establishes the Cultural Heritage Commission and defines its roles and responsibilities.[7]

City of Burbank

The City of Burbank's 2035 General Plan is a comprehensive, long range declaration of purposes, policies and programs for the development of the City. The Burbank 2035 General Plan addresses cultural resources in the Land Use Element. Policy 3.10 of the Land Use Element requires the City to preserve historic resources, buildings and sites, and to only alter such resources as necessary and in a manner not affecting historic integrity.

[7] City of Los Angeles Municipal Code, *Cultural Heritage Ordinance (Number 178,402)*, 2007.

In addition, the City of Burbank's historic preservation regulations are outlined in the Historic Resources Management Ordinance, including the procedures for designating and maintaining historic properties and the duties and responsibilities of the Heritage Commission. The Historic Preservation Plan provides further direction for implementing the ordinance with specific guidelines and polices for historic preservation.[8]

City of Santa Clarita

The Conservation and Open Space Element of the City of Santa Clarita's General Plan contains policies, goals, and objectives to protect and preserve the City's cultural resources. Relevant Conservation and Open Space Element objectives and policies related to cultural resources are shown in **Table 3.5-2**.

Table 3.5-2: City of Santa Clarita Conservation and Open Space Element of the General Plan

Objective/Policy	Description
Objective CO 5.1	Protect sites identified as having local, state, or national significance as a cultural or historical resource.
Policy CO 5.1.1	For sites identified on the Cultural and Historical Resources Map (Exhibit CO-6), review appropriate documentation prior to issuance of any permits for grading, demolition, alteration, and/or new development, to avoid significant adverse impacts. Such documentation may include cultural resource reports, environmental impact reports, or other information as determined to be adequate by the reviewing authority.
Objective CO 5.3	Encourage conservation and preservation of Native American cultural places, including prehistoric, archaeological, cultural, spiritual, and ceremonial sites on both public and private lands, throughout all stages of the planning and development process.
Policy CO 5.3.2	For any proposed development project that may have a potential impact on Native American cultural resources, provide notification to California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands within the City's jurisdiction, and consider the input received prior to a discretionary decision.

SOURCE: City of Santa Clarita, *Conservation and Open Space Element of the Los Angeles General Plan*, June 2011.

County of Los Angeles

The Conservation and Natural Resources Element of the Los Angeles County General Plan contains goals and policies related to the protection and conservation of cultural resources within the County. Goals and policies relevant to the Proposed Project are found in **Table 3.5-3** below:

[8] City of Burbank Municipal Code, *Historic Resource Management Ordinance (Number 10-1-925),* 2011.

Table 3.5-3: Los Angeles County General Plan Conservation and Natural Resources Element

Goal/Policy	Description
Goal C/NR 14	Protected historic, cultural, and paleontological resources
Policy C/NR 14.1	Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
Policy C/NR 14.2	Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.
Policy C/NR 14.5	Promote public awareness of historic, cultural, and paleontological resources.
Policy C/NR 14.6	Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

SOURCE: County of Los Angeles, *Los Angeles County General Plan*, 2015.

Title 22 Division 1 Chapter 22.52 Part 28 of the Los Angeles County Historic Preservation Ordinance outlines the purpose and goals of the historic preservation program. Specifically, the goals include:

A. Enhance and preserve the County's distinctive historic, architectural, and landscape characteristics that are part of the County's cultural, social, economic, political, and architectural history.

B. Foster community pride in the beauty and noble accomplishments of the past as represented by the County's historic resources.

C. Stabilize and improve property values in and around the County's historic resources and enhance the aesthetic and visual character and environmental amenities of these historic resources.

D. Recognize the County's historic resources as economic assets and encourage and promote the adaptive reuse of these historic resources.

E. Further establish the County as a destination for tourists and as a desirable location for businesses.

F. Specify significance criteria and procedures for the designation of landmarks and historic districts and provide for the ongoing preservation and maintenance of these landmarks and historic districts.

City of Palmdale

The Conservation and Natural Resources Element of the City of Palmdale General Plan contains goals and policies related to the protection and conservation of cultural resources within the City. Goals, objectives, and policies relevant to the Proposed Project are found in **Table 3.5-4** below:

Table 3.5-4: City of Palmdale General Plan Environmental Resources Element

Goal/Objective/Policy	Description
Goal ER 7	Protect historical and culturally significant resources which contribute to the community's sense of history
Objective ER 7.1	Objective ER7.1: Promote the identification and preservation of historic structures, historic sites, archaeological sites, and paleontological resources in the City.
Policy ER 7.1.1	Identify and recognize historic landmarks from Palmdale's past.
Policy ER7.1.3	Require that new development protect significant historic, paleontological, or archaeological resources, or provide for other appropriate mitigation.
Policy ER7.1.5	When human remains, suspected to be of Native American origin are discovered, cooperate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate disposition of the human remains and any associated grave goods.
Policy ER7.1.8	Discourage historic landmark properties from being altered in such a manner as to significantly reduce their cultural value to the community.

SOURCE: City of Palmdale, *Environmental Resources Element of the City of Palmdale General Plan*, January 1993.

City of Lancaster

The Lancaster General Plan outlines the way in which the City works to promote community appreciation for the unique history of the Antelope Valley and the City of Lancaster and to promote community involvement in the protection, preservation, and restoration of the area's significant cultural, historical, or architectural features. Chapter 4 of the General Plan, Plan for Active Living, addresses objectives and policies relevant to cultural facilities. Relevant Plan for Active Living objectives, policies, and actions related to cultural resources are shown in **Table 3.5-5**.

Table 3.5-5: City of Lancaster General Plan

Objective/Policy/Action	Description
Objective 12.1	Identify and preserve and/or restore those features of cultural, historical, or architectural significance.
Policy 12.1.1	Preserve features and sites of significant historical and cultural value consistent with their intrinsic and scientific values
Specific Action 12.1.1(a)	As part of the CEQA review process, require site-specific historical, archaeological, and/or paleontological studies when there exists a possibility that significant environmental impacts might result or when there is a lack of sufficient documentation on which to determine potential impacts.
Specific Action 12.1.1(b)	Include a condition of approval on all development projects that addresses State and Federal regulations with respect to the disposition of cultural resources.

Objective/Policy/Action	Description
Specific Action 12.1.1(c)	Process requests for inclusion in state and federal historic registers those historic and prehistoric sites and features which meet state or federal criteria.
Specific Action 12.1.1(d)	Prior to permitting demolition of any historic structure, require that an evaluation of the condition of the structure, potential adaptive reuse of the structure, and the cost of rehabilitation be undertaken.
Specific Action 12.1.1(e)	Work with area school districts and historical/archaeological/paleontological preservation support groups to establish educational programs related to all phases of Lancaster's cultural and historical heritage.

SOURCE: City of Lancaster, *Lancaster General Plan*, 2006.

3.5.2. Existing Setting

The Project Area encompasses a 0.25-mile buffer surrounding the Proposed Project alignment and stations. A record search was conducted of the Project Area to identify previously-recorded cultural resources, including historical and archaeological resources. In addition, historic maps and aerial photographs of the Project Area were reviewed to identify potential historic-age (i.e., 50 years old or older) resources that may not have been identified from the records search. A pedestrian survey of the Project Area was also conducted; however, no newly identified prehistoric or historic-age archaeological resources were observed.

The results of the South Central Coastal Information Center (SCCIC) records search indicate that 126 previously-recorded resources are located within the 0.25-mile records search radius of the Project area. Resources that have been identified as overlapping or adjacent to the Project Area are discussed below. Appendix E provides additional detail on the records search results.

3.5.2.1 Historical Resources

Historical resources identified in the records search of the Project Area include two historic-age sites adjacent to the Lancaster Terminal (P-19-002215/CA-LAN-002215H and P-19-004181/CA-LAN-004181H), 13 historic-age built environment resources adjacent to the Lancaster Terminal (P-19-188295, P-19-188296, P-19-188297, P-19-188298, P-19-188324, P-19-188331, P-19-188333, P-19-188387, P-19-188389, P-19-188390, P-19-188391, P-19-188392, and P-19-189432), one historic-age district adjacent to the Lancaster Terminal (P-19-188293), and three built environment resources adjacent to the Balboa Double Track Extension (P-19-188007, P-19-190043, and P-19-192301).

Of the recorded historic-age resources identified in the records search, all but six sites have been previously determined not to be eligible for listing in the National Register, California Register, or designation in a local register. The six identified historic sites are listed in the National Register and are all located within the City of Lancaster. They consist of P-19-188293, P-19-188295, P-19-188296, P-19-188297, P-19-188298, and P-19-188324. Specifically, P-19-188293 is the Lancaster Boulevard Downtown Neighborhood, the boundaries of which consist of the properties along Lancaster Boulevard between Sierra Highway and 10th Street West. P-19-188295, P-19-188296, P-19-188297, P-19-188298, and P-19-188324 are all within the

locally important districts and have been identified as important contributors to the district. Of all historic-age resources identified in the records search, only one is located within the AVL ROW just north of the Balboa Double Track Extension. This resource, P-19- 192301, consists of an unnamed rail bridge and was determined ineligible for the National Register, California Register, or local designation.

Local planning documents and related CEQA documentation was also reviewed to identify any locally designated or documented National Register or California Register listed or eligible sites. Based on this review, there have been no historic sites identified within 0.25 miles of the Balboa Double Track Extension or the Canyon Siding Extension.[9]

Review of City of Lancaster documents identified several additional historic sites near the Lancaster Terminal including the Western Hotel (557 Lancaster Boulevard), a California Historic Landmark; 547 Lancaster Boulevard, a National Register listed site; and the Cedar Avenue Complex, which includes 44843-44855 Cedar Avenue and 606 West Lancaster Boulevard, all of which were formally included in the National Register in 1993.[10] The High Speed Rail Bakersfield to Palmdale Project Section also conducted a detailed survey of the Lancaster Terminal Improvements site and its surroundings and identified one additional historic site, the Lancaster Post Office Building (567 West Lancaster Boulevard) which was determined eligible for the National Register and California Register in 2017.[11] No locally designated historic sites have been identified within the three capital improvement sites.

3.5.3.2. Archaeological Resources

The two historic-age archaeological resources consist of buried structural remains and features (P-19-002215/CA-LAN-002215H), which have since been developed and are no longer extant, and a refuse deposit (P-19-004181/CA-LAN-004181H), which based on the field assessment does not appear eligible for listing on either the National Register or California Register.

Although no prehistoric resources overlap the Project Area, nine prehistoric resources have been previously-recorded within 0.25 miles of the Canyon Road station. The prehistoric resources include four deposits of lithic tools, lithic debitage, ground stone artifacts (P-19-000351/CA-LAN-000351, P-19-001824/CA-LAN-001824, P-19-003043/CA-LAN-003043, and P-19-120063) and five isolated lithic flakes (P-19-100341, P-19-100343, P-19-100344, P-19-100345, and P-19-100346).

3.5.3.3 Cemeteries and Sites of Human Remains

The results of the record searches from the SCCIC and the NAHC indicated that no human remains have been recorded within the Project Area.

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[9] City of Los Angeles, *SurveyLA Historic Resources Survey Report for the Sylmar Community Plan Area*, 2015; City of Santa Clarita, *List of Structures Designated as Historic by the City of Santa Clarita Historic Preservation Ordinance*, 2013; City of Santa Clarita, *One Valley One Vision Draft Program EIR*, 2010.

[10] City of Lancaster, *Master Environmental Assessment for City of Lancaster 2030 General Plan*, 2009; City of Lancaster, *Downtown Lancaster Specific Plan Program EIR*, 2008.

[11] California High Speed Rail Authority, *Bakersfield to Palmdale Project Section Draft Project EIR/EIS*, 2020.

3.5.6 Significance Thresholds and Methodology

3.5.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to cultural resources if it would:

a) Cause a substantial adverse change in the significance of a historic resource pursuant to § 15064.5;

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5; and/or

c) Disturb any human remains, including those interred outside of dedicated cemeteries.

3.5.3.2 Methodology

Historical Resources

The definition of historical resource for CEQA includes properties listed in or determined eligible for the California Register. Properties listed in a local register of historical resources or identified as historically significant in a historic resources survey (provided certain statutory criteria and requirements are satisfied) are also presumed to be a historical resource unless a preponderance of evidence demonstrates that the property is not historically or culturally significant. A lead agency may also treat a property as historical resource if it meets statutory requirements and substantial evidence supports the conclusion.[12]

The State CEQA Guidelines set the standard for determining the significance of impacts to historical resources in Title 14 CCR Section 15064.5(b), which states:

> *A project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.*

Title 14 CCR Section 15064.5(b)(1) further clarifies "substantial adverse change" as follows:

> *Substantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired.*

Title 14 CCR Section 15064.5(b)(2) in turn explains that a historical resource is "materially impaired" when a project:

> *Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register of Historical Resources as determined by a lead agency for purposes of CEQA.*

[12] Title 14 California Code of Regulations §15064.5(a).

Projects that may affect historical resources are considered mitigated to a level of less than significant if they are conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties (Standards).[13] The Standards were issued by the National Park Service and are accompanied by Guidelines for four types of treatments for historical resources: Preservation, Rehabilitation, Restoration, and Reconstruction. The most common treatment is rehabilitation. The definition of rehabilitation assumes that at least some alteration of the historic property will be needed in order to provide for an efficient contemporary use; however, these alterations must not damage or destroy materials, features, or finishes that are important in defining the property's historic character.

The Standards for Rehabilitation are as follows:

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

[13] Title 14 California Code of Regulations §15126.4(b).

10. New additions and adjacent or related new construction will be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

It is important to note that the Standards are not intended to be prescriptive, but instead provide general guidance. They are intended to be flexible and adaptable to specific project conditions to balance continuity and change, while retaining materials and features to the maximum extent feasible. Their interpretation requires exercising professional judgment and balancing the various opportunities and constraints of any given project. Not every Standard necessarily applies to every aspect of a project, nor is it necessary to comply with every Standard to achieve compliance.

Archaeological Resources

Archaeological sites are usually adversely affected only by physical destruction or damage. The CEQA Guidelines contain specific standards for determining the significance of impacts to archaeological sites (PRC Section 21083.2; 14 CCR Section 15064.5(c)). If the lead agency determines that the project may have a significant effect on unique archaeological resources, the EIR must address those archaeological resources.[14] The analysis of archaeological resources was based on a cultural resource records search and literature review at the SCCIC, a Sacred Lands File (SLF) file search, a windshield survey, and AB-52 consultation results.

3.5.4 Impact Analysis

Impact 3.5-1) Would the Proposed Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Construction

No Impact. The Proposed Project is located within the existing railroad ROW. Other than the movement of construction vehicles and equipment along adjacent roadways, all construction activities would occur within the railroad ROW. The only structures that would be affected by construction consist of rail-related facilities including the Santa Clarita and Lancaster Metrolink Station platforms, existing track, retaining walls, and rail systems facilities. As discussed, no historic sites have been identified within any of the three capital improvement sites. The only historic sites within 0.25 mile of any of the capital improvements are those located in the City of Lancaster, generally along Lancaster Boulevard, west of Sierra Highway. No construction activities would occur within the historic boundaries of any identified site and there is no potential for destruction or damage of any historic sites. Therefore, there is no potential for construction activities to result in a substantial adverse change in the significance of a historic resource pursuant to Section 15064.5.

[14] California PRC Section 21083.2(a).

Operations

No Impact. The Proposed Project would operate on existing and newly constructed rail track, serving existing stations. Operations would have no potential to result in changes to the significance of a historic resource, and no operational impacts would occur.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

Impact 3.5-2) Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Construction

Less-Than-Significant Impact with Mitigation. The Proposed Project is located within the existing railroad alignment that has been subject to disruption by development activities. Surficial archaeological resources that may have existed have likely been displaced or destroyed. However, there is the possibility that ground-disturbing activities during the excavation of the cut slopes and addition of retaining walls could impact previously undiscovered prehistoric or archaeological resources. Additional excavation activities for the Platform to Platform Pedestrian Undercrossing, Island Platform with Platform to Parking Lot Pedestrian Undercrossing, and Island Platform with Pedestrian Undercrossing Design Options present further risk of impact to these resources. Therefore, without mitigation, the Proposed Project would result in a significant impact related to archaeological resources.

Operations

No Impact. The surface-running AVL would operate on existing and newly constructed rail track. There is no potential for operations to cause a substantial adverse change in the significance of an archaeological resource, and no operational impact would occur.

Mitigation Measures

CUL-1 Prior to issuance of grading permits for each capital improvement site, a qualified archeologist, meeting the Secretary of the Interior's Standards shall be retained to serve as Project Archaeologist and to develop and supervise the archaeological monitoring program. In addition, Native American monitors from the Consulting Tribe(s) shall be retained to monitor earth-moving activities in native (i.e., non-fill) sediments. Native American monitoring shall be conducted on a rotational basis between Consulting Tribes (should more than one be involved) during these construction activities, and attendance is ultimately at the discretion of the Tribe(s).

The archaeological and Native American monitors shall be present for all ground-disturbing activities in native soil within the Project Area. All archaeological monitors, working under the supervision of the Project Archaeologist, shall have construction monitoring experience and be familiar with the types of historical and prehistoric resources that could be encountered. Ground-disturbing activities include, but are not limited to, excavation, trenching, grading, and drilling. A sufficient number of archaeological and Native American monitors shall be present each workday to ensure that simultaneously-occurring ground-disturbing activities receive thorough levels of monitoring coverage. The Project Archaeologist shall have the ability to recommend, with written and photographic justification, the reduction or termination of monitoring efforts to the Lead Agency (i.e., Metro), and should the Lead Agency and the Native American participant(s) concur with this assessment, then monitoring shall be reduced or ceased.

If an inadvertent discovery of archaeological materials is made during project-related construction activities, the archaeological and Native American monitors shall have the authority to halt ground-disturbing activities within 50 feet of the resource(s) and an Environmentally Sensitive Area physical demarcation shall be constructed. The Project Archaeologist and Lead Agency shall be notified regarding the discovery. If prehistoric or potential tribal cultural resources (TCRs) are identified, the Consulting Tribes shall be notified. In the event of an inadvertent discovery, the procedures outlined in a Cultural Resources Monitoring Plan (CRMP; Mitigation Measure **CUL-2**) shall be followed.

CUL-2 Prior to commencement of any grading activities on site, the Project Archaeologist shall prepare a CRMP. The CRMP shall be reviewed by the Lead Agency. The Consulting Tribe(s) shall be provided an opportunity to review and comment on the CRMP. The CRMP should include at a minimum: (1) the roles and responsibilities of the Project Archaeologist, archaeological monitors, and Native American monitors; (2) a description of monitoring procedures; (3) a description of the frequency of monitoring (e.g., full-time, part-time, spot checking); (4) a description of what types of resources may be encountered; (5) a description of circumstances that would result in the halting of work at the project site (e.g., what is considered a “significant” archaeological site); (6) a description of procedures to follow when a resource is encountered; (7) communication/notification protocols; and (8) a description of monitoring reporting procedures. If any significant historical resources, archaeological resources, TCRs, or human remains are found during monitoring, work shall be stopped within 50 feet of the resource until such time as the resource can be evaluated by the Project Archaeologist in coordination with the Lead Agency and Consulting Tribe(s).

At the commencement of construction, an archaeologist and Native American representative shall provide a Worker Environmental Awareness Program (WEAP) training for all earth-moving personnel and their supervisors. WEAP materials will be developed and distributed to construction personnel over the

lifetime of the Project. The program will inform personnel of the types of artifacts and features that may be encountered, the procedures to be followed if archaeological materials are unearthed during project excavation, contact information for the archaeological personnel, and the regulatory requirements for the protection of archaeological resources including penalties for violations.

Significance of Impacts after Mitigation

Implementation of Mitigation Measures **CUL-1** and **CUL-2** would mitigate inadvertent impacts to potential subsurface archaeological deposits during construction activities. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to archaeological resources.

Impact 3.5-3) Would the Proposed Project disturb any human remains, including those interred outside of dedicated cemeteries?

Construction

Less-Than-Significant Impact. No human remains have been recorded within the Project Area, and it is highly unlikely that human remains would be uncovered during construction. If human remains are encountered during construction, the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1); Health and Safety Code Section 7050.5, subdivision (c); and PRC Section 5097.98 (as amended by AB 2641) shall be followed. According to these requirements, if human remains are discovered, all work within 100 feet of the find shall be halted immediately and the Los Angeles County Coroner and the lead agency shall be notified.

If the Coroner determines that the remains are Native American, the Coroner shall contact the NAHC. The NAHC will identify the most likely descendants (MLD) to be consulted by the lead agency regarding treatment and/or reburial of the remains. The MLD shall be afforded an opportunity to inspect the find and make recommendations for treatment options. If an MLD cannot be identified, or the MLD fails to make a recommendation regarding the treatment of the remains within 48 hours after being granted access to the Project Area to examine the remains, the landowner, working with the lead agency, shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance. Therefore, a less-than-significant impact would occur.

Operations

No Impact. The surface-running AVL would operate on existing and newly construction rail track. There is no potential for operations to disturb human remains, and no operational impacts related to human remains would occur.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

3.6 ENERGY RESOURCES

The following summarizes the applicable regulations and the existing setting and provides a detailed impact assessment related to energy resources. The Project Area for energy resources consists of the Southern California region.

3.6.1 Regulatory Framework

3.6.1.1 Federal Regulations

Energy Policy and Conservation Act. The Federal Energy Policy and Conservation Act of 1975 established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the Act, the National Highway Traffic Safety Administration (NHTSA) is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 Federal Register 62624–63200).

Intermodal Surface Transportation Efficiency Act. Intermodal Surface Transportation Efficiency Act (ISTEA), passed in 1991, presented an intermodal approach to highway and transit funding with collaborative planning requirements, giving additional powers to state and local transportation decision-makers and metropolitan planning organizations.

Energy Policy Act. The Energy Policy Act of 1992 was passed to reduce United States dependence on foreign petroleum and improve air quality. The Energy Policy Act includes several provisions intended to build an inventory of alternative fuel vehicles in large, centrally fueled fleets in metropolitan areas. The Energy Policy Act requires certain federal, state, and local government and private fleets to purchase a percentage of light duty alternative fuel vehicles each year.

Transportation Equity Act for the 21st Century. The Transportation Equity Act for the 21st Century (TEA-21) was enacted in 1998 as the successor legislation to ISTEA and builds on its established initiatives. This Act reauthorized the Congestion Management Air Quality Program and authorized federal highway, highway safety, transit and other surface transportation programs over the next six years.

Energy Policy Act. The Energy Policy Act of 2005 includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources (i.e., landfill gas), provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification, and establishes a federal purchase requirement for renewable energy called the Renewable Fuels Standard (RFS).

Energy Independence and Security Act. On December 19, 2007, the Energy Independence and Security Act (EISA) was signed into law requiring increased levels of renewable fuels to replace petroleum. The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the Act, the original RFS program required 7.5 billion gallons of renewable fuel to be blended into

gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in greenhouse gas (GHG) emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States.

Moving Ahead for Progress in the 21st Century Act. Signed in 2012, the Moving Ahead for Progress in the 21st Century Act (MAP-21) represented the first multi-year transportation authorization enacted since 2005, funding surface transportation programs with more than $105 billion for fiscal years 2013 and 2014. MAP-21 also authorized $70 million for a public transportation research program that focuses on energy efficiency and system capacity, among other items. With the exception of the provisions of MAP-21, there is no federal legislation related specifically to the subject of energy efficiency in public transportation project development and operation.

3.6.1.2 State Regulations

Warren-Alquist Act. The California Legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the California Energy Commission (CEC), which is the State's primary energy policy and planning agency. The legislation directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California; removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC; and directed CEC to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources. Several regulatory entities administer energy policy throughout the State. The California Public Utilities Commission (CPUC) regulates privately owned utilities providing the telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation services.

Senate Bill 1389. Senate Bill (SB) 1389 requires the CEC to prepare a biennial integrated energy policy report assessing major energy trends and issues facing the State's electricity, natural gas, and transportation fuel sectors. The report is also intended to provide policy recommendations to conserve resources, protect the environment, and ensure reliable, secure, and diverse energy supplies.

Senate Bill 1078 and Senate Bill 107. SB 1078 (2002) and SB 107 (2006) created the Renewable Energy Standard, which required electric utility companies to increase procurements from eligible renewable energy resources by at least 1 percent of their retail sales annually until reaching 20 percent by 2010. In November 2008, Governor Schwarzenegger signed Executive Order S-14-08, which expands the State's Renewables Portfolio Standard to 33 percent renewable power by 2020. On April 12, 2011, Governor Jerry Brown signed SB X1-2 to increase California's Renewables Portfolio Standard to 33 percent by 2020. SB 350 (Chapter 547, Statues of 2015) further increased the Renewables Portfolio Standard to 50 percent by 2030. The legislation also included interim targets of 40 percent by 2024 and 45 percent by 2027.

Senate Bill 100. On September 10, 2018, Governor Jerry Brown signed SB 100, which further increased California's Renewables Portfolio Standard to achieve 50 percent renewable resources by December 31, 2026, and a 60 percent target by December 31, 2030, while requiring retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030, and that the California Air Resource Board (CARB) should plan for 100 percent eligible renewable energy resources and zero-carbon resources by December 31, 2045.

Assembly Bill 118. In 2007, Assembly Bill 118 created the Alternative and Renewable Fuel and Vehicle Technology Program, to be administered by the CEC. This Program authorizes the CEC to award grants, revolving loans, loan guarantees and other appropriate measures to qualified entities to develop and deploy innovative fuel and vehicle technologies that will help achieve California's petroleum reduction, air quality and climate change goals, without adopting or advocating any one preferred fuel or technology. The statue was amended in 2008 and 2013, which authorized the CEC to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the State's climate change policies.

Senate Bill 350. The Clean Energy and Pollution Reduction Act of 2015, SB 350 (Chapter 547, Statutes of 2015) was approved by Governor Jerry Brown on October 7, 2015. SB 350 does the following: (1) increases the standards of California's RPS program by requiring that the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) requires the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provides for the evolution of the Independent System Operator into a regional organization; and (4) requires the State to reimburse local agencies and school districts for certain costs mandated by the State through procedures established by statutory provisions.

California Transportation Plan. The California Transportation Plan is a statewide, long-range transportation plan to meet future mobility needs developed by the California Department of Transportation. The Plan defines performance-based goals, policies, and strategies to comply with MAP-21 and to achieve an integrated, multimodal transportation system. The Plan addresses how the State will achieve maximum feasible emissions reductions, taking into consideration the use of alternative fuels, new vehicle technology and tailpipe emissions reductions.

Senate Bill 375. SB 375 addresses energy resources associated with the transportation sector through regional transportation and sustainability plans. SB 375 required the CARB to adopt regional GHG emissions reduction targets for the automobile and light-truck sector for the milestone years 2020 and 2035, and tasked regional Metropolitan Planning Organizations (MPOs) with the preparation of sustainable communities strategy (SCS) within their regional transportation plans (RTPs).

Senate Bill 743. SB 743 encourages land use and transportation planning decisions and investments to reduce VMT that contribute to GHG emissions. SB 743 requires the Office of Planning Research to develop revisions to the CEQA Guidelines and establish criteria to determine the significance of transportation impacts of projects within transit priority areas.

3.6.1.3 Regional Regulations

Metrolink Energy Management. Metrolink has implemented a number of sustainability polices related to energy use. These policies include:

- Locomotive fleet modernization study to explore engine conversion options for older Tier 2 locomotives and other Metrolink locomotive fleets to Tier 4 or other alternative propulsion technologies which are zero emissions such as hybrid, battery and hydrogen applications.
- A fuel conservation program designed to reduce train idling by 35 percent system-wide and by 50 percent at the Central Maintenance Facility (CMF).
- An electric train car mover to shuttle rail cars at the CMF thereby reducing reliance on locomotive diesel fuel.
- Support vehicles include electric, hybrid, low-emissions and flex-fuel varieties.

Metro Energy Management. Metro has implemented several policies and plans to enhance energy efficiency throughout its system. In June 2007, the Board adopted the Energy and Sustainability Policy. The purpose of the Policy is to control energy consumption and embrace energy efficiency, energy conservation, and sustainability.

In recent years, Metro has implemented several policies and plans to enhance energy efficiency throughout its system. In 2011, Metro published its Energy Conservation and Management Plan (ECMP) to serve as a strategic blueprint for proactively guiding energy use in a sustainable, cost-effective, and efficient manner. The ECMP complements Metro's 2007 Energy and Sustainability Policy, focusing on electricity for rail vehicle propulsion, electricity for rail and bus facility purposes, natural gas for rail and bus facility purposes, and the application of renewable energy.

Following publication of the ECMP, Metro began preparing annual Energy and Resource Reports to provide evaluations on the effectiveness of ECMP strategies. The most recent iteration is the 2019 Energy and Resource Reports, which analyzes the sustainability and environmental performance of Metro operational activities during the 2018 calendar year. In 2018 alone, Metro reduced total energy consumption by 7.9 percent compared to 2017 as a result of reduced vehicle fuel consumption by buses and support vehicles. Metro is on pace to surpass its goal of 33 percent renewable energy consumption by 2020. In 2018, 31 percent of Metro's electricity came from renewable energy sources, including its own solar photovoltaic systems. These strategies actively reduce GHG emissions, 95 percent of which are derived from energy use.

The Sustainable Rail Plan supports the implementation of the ECMP by identifying strategies that directly reduce energy used by rail operations, auxiliary systems, propulsion, and facilities. Specifically, the plan provides detailed recommendations that apply to the ECMP sections regarding key equipment upgrades and powerful sustainability and investment-grade opportunities to explore. While the ECMP addresses Metro's broader energy use and

procurement strategy, this plan specifically addresses the rail system and analyzes in detail the energy efficiency opportunities within Metro's rail equipment and operations.

Southern California Association of Governments. The Southern California Association of Governments (SCAG) is the MPO for the regional planning jurisdiction encompassing Los Angeles, Ventura, San Bernardino, Riverside, Orange, and Imperial Counties. SCAG is required by federal law to prepare and update a long-range RTP (23 United States Code [U.S.C.] Section 134 et seq.) California SB 375, codified in 2008 in Government Code Section 65080 (b)(2)(B), also requires that the RTP include a SCS that outlines growth strategies for land use and transportation and helps reduce the State's GHG emissions from cars and light duty trucks. SCAG adopted the Connect SoCal 2020–2045 RTP/SCS (Connect SoCal) in May 2020, which is the most recent and applicable RTP for the Proposed Project.

Los Angeles Countywide Sustainability Plan. The Los Angeles Countywide Sustainability Plan is a regional sustainability plan for unincorporated areas of Los Angeles County. The Countywide Sustainability Plan includes various goals to improve countywide sustainability features and can serve as a template for cities within Los Angeles County to formulate their own municipality-level sustainability plans.

3.6.1.3 Local Regulations

The jurisdiction through which the Proposed Projects of Balboa Double Track Extension, Canyon Siding Extension, and Lancaster Terminal Improvements traverses have published planning documents that address energy.

City of Los Angeles. The City of Los Angeles Green New Deal includes a program of actions designed to create sustainability performance targets through 2050 and advance economic, environmental, and equity objectives. Components of the Green New Deal include 100 percent renewable energy by 2045, 10,000 publicly available electric vehicle chargers by 2022 and 28,000 by 2028, 100 percent solid waste diversion by 2050, and 100 percent wastewater recycling by 2035.

City of Glendale. The City of Glendale General Plan contains several elements that address energy resources management, conservation, and efficiency that are relevant to Proposed Project implementation. The Glendale Circulation Plan contains Goals and Objectives that set direction for the City's policies, principles, standards, and programs related to community mobility. In addition to the Circulation Plan, Glendale published a Greener Glendale Plan – The City of Glendale's Sustainability Plan that also addresses energy resource management and efficiency related to public transit and transportation fuels consumption. Tenets of the Greener Glendale Plan pertinent to the Proposed Project include public transit accessibility, the energy benefits of reducing on-road passenger vehicle travel and transportation fuels consumption, and objectives and strategies aimed at expanding and encouraging public transit access and use.

City of Burbank. The City of Burbank General Plan contains numerous items related to management of energy resources. Goals include promoting planning and programs that reduce air pollutants to improve the health and sustainability of the City and County. Implement policies

that reduce fossil fuel combustion (by reducing VMT and promoting conservation and use of renewable energy) to lessen adverse impacts on both air quality and climate change.

City of Santa Clarita. The City of Santa Clarita addressed energy resources in the Conservation and Open Space Element of the General Plan. Most of the polices are related to land use development. However, the Element includes a policy to create and adopt a Climate Action Plan that considers GHG reduction strategies related to transportation. The Climate Action Plan was approved in 2012 as part of the General Plan. It does not include policies directly related to the Proposed Project, although there is a GHG reduction measure to increase transit accessibility.

Unincorporated Los Angeles County including the Town of Acton. The County has developed a Community Climate Action Plan to describe the County's plan for reducing GHG emissions, including energy conservation. The Community Climate Action Plan is a component of the Los Angeles County General Plan. There are a number of transit-related strategies in the plan, including an Action Goal to collaborate with Metro on a transit program that prioritize transit by creating bus priority lanes, improving transit facilities, reducing transit-passenger time, and providing bicycle parking near transit stations.

City of Palmdale. The City of Palmdale developed an Energy Action Plan to demonstrate commitment to achieve energy efficiency and independence by reducing GHG emissions consistent with State legislation. Goals include supporting the expansion of transit options within Antelope Valley to reduce VMT and promoting upgrades to the regional transit fleet.

City of Lancaster. The City of Lancaster General Plan includes a Plan for the Natural Environment, which addresses energy resources. The Plan encourages the reduction in energy use by encouraging mixed-use development to locate in proximity to transit connections and facilities in order to promote walking, bicycling, and increased transit use. The City's Climate Action Plan encourages the use of transit over passenger vehicles.

3.6.2. Existing Setting

Energy resources involved in the transit system implementation include direct uses such as transportation fuels for locomotives and electricity or natural gas use at stations and indirect uses such as fuel for passenger vehicles. This section provides a brief discussion of the types of energy resources that would be consumed by construction and operation of the Proposed Project and how they are produced and distributed to the respective end uses.

Transportation Fuels. The spark-ignited internal combustion engines of on-road motor vehicles, locomotives, and off-road equipment use fossil fuel energy for propulsion. Gasoline and diesel fuel are formulations of fossil fuels refined for use in various applications. Gasoline is the primary fuel source for most passenger automobiles, and diesel fuel is the primary fuel source for most off-road equipment and medium and heavy-duty trucks.

Electricity. The production of electricity requires the consumption or conversion of other natural resources, whether it be water (hydroelectric power), wind, oil, gas, coal, or solar energy. The delivery of electricity as a utility involves several system components for distribution and use.

Electricity is distributed through a network of transmission and distribution lines referred to as a power grid. Energy capacity, or electrical power, is generally measured in watts (W), while energy use is measured in watt-hours (Wh), which is the integral electricity consumption over a time period of one hour. On a utility scale, the capacity of electricity generation and amount of consumption is generally described in megawatts (MW) and megawatt-hours (MWh), respectively. Within the corridor, electricity providers include Los Angeles Department of Water and Power (LADWP), Glendale Water and Power, Burbank Water and Power, Southern California Edison (SCE), and Lancaster Choice Energy.

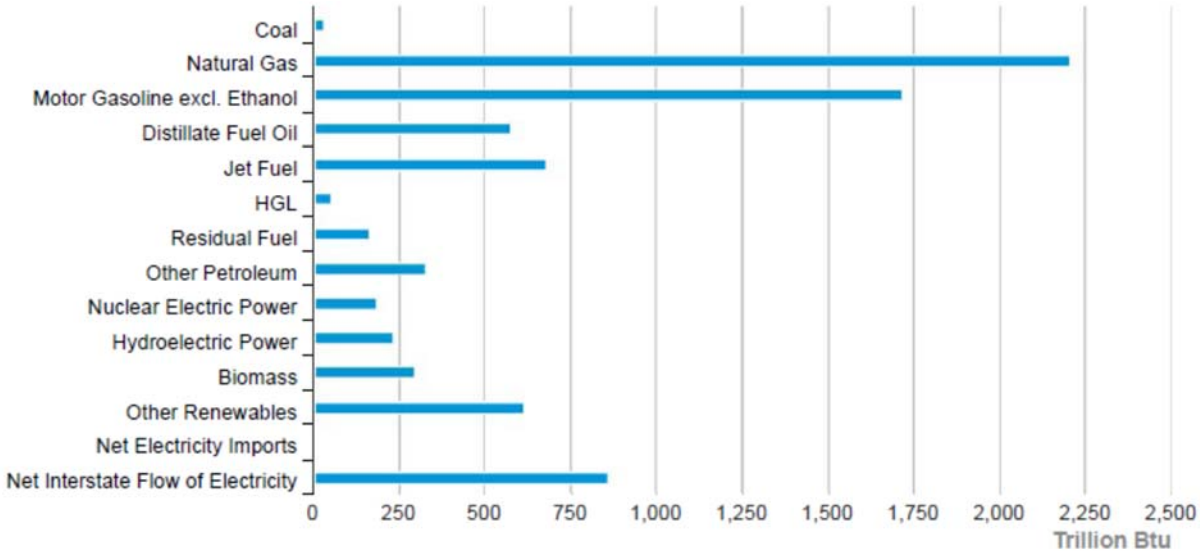
Natural Gas. Natural gas is a combustible mixture of simple hydrocarbon compounds (primarily methane) that is typically a fossil fuel energy source formed deep beneath the earth's surface. Natural gas consumed in California is obtained from its naturally occurring subterranean reservoirs and delivered through high-pressure transmission pipelines. Natural gas provides almost one-third of the total energy requirements in California and is generally measured in units of standard cubic feet or British thermal units. The Southern California Gas Company (SoCal Gas) is the natural gas provider for the corridor.

3.6.2.1 State Setting

This subsection provides a brief overview of the statewide energy resources for transportation fuels, electricity, and natural gas. Electricity, natural gas, and renewable energy production, consumption, research, and conservation within the State are managed by the CEC in coordination with the CPUC and the California Department of Conservation. California's consumption by source for the year 2018 is shown in **Figure 3.6-1**. Natural gas and gasoline are the most consumed resources and account for 27.6 percent and 21.5 percent of all energy consumption in the State.

Transportation Fuels. According to the CEC, transportation fuels account for nearly 40 percent of statewide total energy demand and approximately 39 percent of the State's GHG emissions. In 2018, California consumed 15.5 billion gallons of gasoline and 3.7 billion gallons of diesel fuel. Petroleum-based fuels currently account for more than 90 percent of California's transportation fuel use. To address the magnitude of transportation fuel consumption in the State, California has implemented several polices, rules, and regulations to improve vehicle efficiency, increase the development and use of alternative fuels, reduce air pollutants and GHG emissions from the transportation sector, and reduce on-road vehicle miles traveled. The California initiatives have begun to gradually reduce statewide dependence on fossil fuels, and the CEC predicts that demand for gasoline will continue to decline as the expansion of public transit infrastructure and use of alternative fuels becomes more prevalent.

Figure 3.6-1: California Energy Consumption by Source 2018



SOURCE: U.S. Energy Information Administration, 2020.

Electricity. According to the United States Energy Information Administration State Energy Profile, California leads the nation in electricity generation from renewable sources including solar, geothermal, and biomass. California is also a leading producer of electricity from conventional hydroelectric power and wind, ranking fourth in the nation in both categories.

Electricity in California is produced and consumed in a variety of ways. In 2018, renewable resources—including hydroelectric and non-commercial solar installations—supplied almost half (44 percent) of California's in-State electricity generation, which was approximately 195,027 gigawatt hours (GWh) of electrical power. Hydropower accounted for approximately 13 percent of generation in 2018 and fluctuates based on precipitation patterns. Non-hydroelectric renewable technologies, such as solar, wind, geothermal, and biomass, provided about 30 percent of net generation from utility-scale (greater than one MW) facilities. Natural gas-fired power plants provided more than 46 percent of in-State electricity, and nuclear power accounted for approximately 9.4 percent. Solar and wind now account for approximately 23 percent of in-State electricity generation. In 2018 California also relied on 90,648 GWh of net electricity imports, less than 15 percent of which was sourced from coal-fired power plants.

Natural Gas. California's natural gas output equals about one-tenth of State demand. Almost two-thirds of California households use natural gas for home heating, and almost half of the State's utility-scale electricity generation is fueled by natural gas. Several interstate natural gas pipelines enter the State from Arizona, Nevada, and Oregon and bring natural gas into California from the Southwest, the Rocky Mountain region, and western Canada. Almost all the natural gas delivered to California is used in the State or is placed in storage. California has 14 natural gas storage reservoirs in 12 storage fields, together those fields have a natural gas storage capacity of about 600 billion cubic feet.

3.6.2.2 Local Setting

This subsection provides an overview of local energy resource consumption in the form of gasoline consumption, and the energy resources profile for Metrolink and Metro. Since the Proposed Project would result in limited modifications to existing Metrolink stations (Santa Clarita Station and Lancaster Terminal), a negligible increase in energy consumption at station platforms would result. Therefore, the discussion of the local setting focuses on transportation fuel consumption.

The CEC maintains a statewide database of annual transportation fuel retail sales in accordance with the Petroleum Industry Information Reporting Act called the California Retail Fuel Outlet Annual Reporting system. Annual gasoline and diesel fuel sales are available by county within the database for years 2010 through 2018. Retail transportation fuels sales in Los Angeles County in 2018 were approximately 3,638 million gallons of gasoline and approximately 253 million gallons of diesel fuel. More transportation fuels were purchased in Los Angeles County than any other county in the State, accounting for 24 percent of statewide gasoline sales and 14 percent of statewide diesel sales.

3.6.2.3 Metrolink System Energy

Metrolink energy use relevant to the Proposed Project is primarily fuel use. Regional Metrolink service consumes approximately 8.5 million gallons of diesel fuel per year. Counter to direct fuel use, Metrolink service removes approximately 9.3 million weekday passenger vehicle trips every year and reduces associated VMT by 339,329,158 miles.

3.6.3 Significance Thresholds and Methodology

3.6.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project of Balboa Double Track Extension, Canyon Siding Extension, and Lancaster Terminal Improvements would have a significant impact related to energy resources if it would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; and/or
b) Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code Section 21100(b)(3)). The CEQA Guidelines recommend that the assessment of energy impacts assess energy use for all phases and components, including transportation-related energy, during construction and operation.

Appendix F of the CEQA Guidelines addresses energy conservation. The objective of conserving energy involves the wise and efficient use of energy, which is achieved through intersecting efforts to decrease overall per capita energy consumption, decrease reliance on fossil fuels such as coal,

natural gas, and oil, and increase reliance on renewable energy sources. The CEQA Guidelines acknowledge that environmental impacts analysis related to energy may consider:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project including construction, operation, maintenance and/or removal.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.

The above criteria are used to determine the potential significance of energy resources impacts associated with the Proposed Project. Consumption of transportation fuels, electricity, and natural gas during construction and operations are evaluated quantitatively in the context of local and regional resources. Consistency with relevant renewable energy and energy efficiency planning is addressed qualitatively.

3.6.3.2 Methodology

Under CEQA, energy impacts analyses should evaluate direct and indirect effects of a project on the environment. Direct energy effects include the one-time expenditure of gasoline and diesel fuels used by off-road equipment and on-road vehicles during construction activities, as well as operational transportation fuels. Indirect energy effects for the Proposed Project include the induced change in regional transportation fuels consumption resulting from mode shift associated with transit trips replacing passenger vehicle trips. Direct and indirect energy resources effects are quantified separately for construction and operations.

Construction

Construction of the Proposed Project would occur at three proposed capital improvement sites: Balboa Double Track Extension site, Canyon Siding Extension site, and Lancaster Improvements site. All construction activities would be completed within the years 2024–2028. It is anticipated that construction of each improvement site would require approximately 18 months of continuous activity, and the individual schedules may be extended based on periods of lighter daily activity throughout the schedule duration. The Constructability Review for the Proposed Project identified five major construction activities comprising the improvements: track and systems installation; retaining walls; station platforms; bridges and under crossings; and utilities.

Improvements at all three sites would involve track and systems installation, retaining walls, and utilities. The Balboa Double Track Extension includes new pier protection with drilled piles under the Caltrans I-5 undercrossing, and the Canyon Siding Extension includes a new railroad bridge and a pedestrian undercrossing. The Canyon Siding Extension involves a new station platform, and the Lancaster Terminal Improvements site includes a new layover facility under the base option. The Lancaster Terminal Improvements base design would not include an additional station

platform; however, two design options would replace the existing Lancaster station platform with a new island platform. The construction activities modeled for the Lancaster Terminal Improvements accounted for the maximal amount of ground disturbance, excavation and fill volumes, and haul truck activity that could occur under any of the base and design options to capture all possible air pollutant emissions regardless of which is ultimately selected.

Construction activities would result in the direct expenditure of gasoline and diesel fuels to power off-road equipment and on-road vehicles involved in construction activities. The estimate of fuel use is based on GHG emissions associate with the Proposed Project. Estimates of GHG emissions that would be generated by sources involved in Proposed Project construction activities were quantified using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2), which is the regulatory standard model for estimating GHG emissions for CEQA projects. CalEEMod relies on a database of emissions factors compiled from the CARB OFFROAD and Emission Factor (EMFAC) emission inventories to quantify estimates of GHG emissions from off-road equipment and on-road vehicles during construction. Construction phasing in CalEEMod was characterized by the following activities, for which equipment and personnel inventories were populated based on the Constructability Review and conservative assumptions regarding daily hours of use:

- site clearing and tree/shrub removal;
- cut, fill, and slope and underpass stabilization requiring excavation, grading, piling, and shoring, as well as grade separation for the railway bridge;
- installation of retaining walls, platforms, bridge and pedestrian underpass construction;
- relocation and installation of track facilities, paving of hardscape features and layover;
- utilities, signals, and other systems features.

Table 3.6- presents an overview of the parameters input to CalEEMod to characterize project construction activities. The preliminary construction schedules were developed based on site feasibility constraints, anticipated rate of track installation, total duration to complete activities at each improvement site, and the quantities of material movement and structure installation. The emissions modeling was developed based on consistent levels of activity occurring on a daily and weekly basis to complete the improvements at each site. During cut and fill activities that will produce substantial material import and export, daily hauling activity is anticipated to be approximately 40-50 trips per day on average.

Table 3.6-1: Proposed Project Construction CalEEMOD Parameters

Parameter	Balboa Double Track Extension	Canyon Siding Extension	Lancaster Terminal Improvements
Start Date	2024	2026	2026
End Date	2026	2028	2028
Length of Track Installation	9,615 Linear Ft.	9,220 Linear Ft.	3,985 Linear Ft.
Total Site Acreage	11.39	8.53	3.22
Max. Daily Site Disturbance	2 acres	2 acres	1 acre
Approx. Material Export	65,675 CY	61,680 CY	7,470 CY
Approx. Material Import	5,725 CY	12,935	12,970
Average Daily Haul Loads	40-50	40-50	40-50
Daily Off-Road Equipment	10-12	10-12	10-12
PRELIMINARY SCHEDULE (APPROX. DURATION IN MONTHS)			
Site Clearing & Tree Removal	3	3	1
Cut/Fill/Piling/Shoring	6	6	3
Retaining Walls/Platforms	4	6	6
Track Install/Layover Facilities	3	2	6
Utilities, Signals, and Systems	2	1	2
Total Duration	**18**	**18**	**18**

Regarding the schedule, construction of the Balboa Double Track Extension is expected to begin in 2024 and be completed at latest sometime in 2026. The Canyon Siding Extension and Lancaster Terminal Improvements would commence subsequently and be completed sometime in 2028. The emissions modeling exercise assumed 18 months of continuous construction activity occurring five days per week for each capital improvement. During site preparation and grading activities at each site, water trucks were accounted for in the GHG emissions modeling. It was assumed that the daily crew size required would comprise up to 30 workers and supervisors on-site during site preparation, track installation and paving, and utilities and systems installations, and that up to 60 workers and supervisors could be needed during heavy activity intensity involved in grading slopes, installing retaining and pier protection walls, and underpass and rail bridge construction. As a conservative approach, maximum daily crew size was assumed daily during each phase of construction, and 50 daily hauling round trips were programmed into the model during cut and fill at each site.

Estimates of GHG emissions that would be generated by construction were produced using CalEEMod, as disclosed in Section 3.8, Greenhouse Gas Emissions of the Draft EIR. The estimates of CH_4 emissions from off-road equipment and estimates of CO_2 emissions from on-road vehicles were used to quantify construction diesel and gasoline fuel consumption using the emission factors presented in **Table 3.6-2**, derived from the USEPA Emission Factors for Greenhouse Gas Inventories which is used by CARB in development of their OFFROAD and EMFAC models.

Table 3.6-2: Mobile Fuel Combustion Factors

Vehicle Type	Fuel Type	Combustion Factor (Units)
Off-Road Equipment	Diesel	0.20 gCH_4/gallon
On-Road Trucks	Diesel	10.21 $kgCO_2$/gallon
On-Road Passenger Vehicles	Gasoline	8.78 $kgCO_2$/gallon

SOURCE: USEPA, Emission Factors for Greenhouse Gas Inventories, 2020.

The CalEEMod output emissions of CH_4 from off-road equipment and emissions of CO_2 from on-road vehicles were multiplied by the corresponding conversion factors to estimate the one-time expenditure of fuel consumption during construction. The passenger vehicle emissions were multiplied by the CARB Off-Model Adjustment Factors published in response to the SAFE Vehicle Rule Part One, using a value of 1.0315.

Operations

Proposed Project operations would result in changes to energy resources consumption through direct diesel fuel consumption for locomotive propulsion and indirect, induced displacement of transportation fuels combustion from passenger vehicles on the regional roadway network due to eliminated vehicle trips. As shown in **Table 3.6-3**, implementation of the Proposed Project would increase annual rail operations by 555,082 miles from existing service on the AVL corridor. During the fiscal year from 2016–2017, Metrolink rail operations consumed an average of approximately 2.75 gallons of diesel fuel per mile of rail travel (gal_D/mi).[1] This fuel consumption rate was estimated while Metrolink was implementing new Tier 4 locomotives into its operational rolling stock and while some older Tier 0 locomotives were still in use. Tier 4 locomotives are up to eight percent more fuel efficient than Tier 0 locomotives and up to five percent more fuel efficient than Tier 2 locomotives.[2] By the end of 2019, Metrolink rail service comprised 73 percent Tier 4 locomotives with the remaining 27 percent being Tier 2 locomotives.[3] For the purposes of this analysis, it was assumed that existing AVL operations comprised 75 percent Tier 4 locomotive activity and 25 percent Tier 2 locomotive activity with an average fuel consumption rate of 2.70 gal_D/mi. For the Proposed Project analysis in 2028, it was assumed that Metrolink AVL operations would comprise 90 percent Tier 4 locomotive activity and 10 percent Tier 2 locomotive activity, with an average fuel consumption rate of 2.61 gal_D/mi.

[1]HDR, *Hybrid Rail Study Operational Cost Estimate Memo*, May 2018.
[2]SCAG, *Transportation System – Passenger Rail Technical Report for the Connect SoCal 2020–2045 RTP/SCS*, Adopted May 2020.
[3]Metrolink, *Climate Action Plan*, March 2021.

Table 3.6-3: AVL Corridor Rail Miles and Displaced Vehicle Miles Traveled in 2028

Day of Week	Existing AVL Rail Miles	Proposed Project AVL Rail Miles	On-Road VMT Reduction
Weekday	1,936	3,872	-39,089
Saturday	919	2,145	-15,636
Sunday/Holiday	919	1,072	-11,727
Total Annual	**588,7867**	**1,143,870**	**-11,445,259**

A preliminary transportation screening analysis determined that the increased ridership along the AVL corridor spurred by Proposed Project improvements would reduce on-road VMT on the regional roadway network by approximately 39,089 vehicle miles per weekday by 2028 when the proposed service increase would be operational. Based on Metrolink ridership data from fiscal year 2018–19, Saturday and Sunday/Holiday ridership correlate to approximately 40 percent and 30 percent of weekday ridership on average, respectively. These ratios are roughly consistent with the existing train service provided along the AVL corridor on weekdays and weekends/holidays. **Table 3.6-3** also presents a summary of the daily and annual on-road VMT reductions from displaced and shortened vehicle trips that would result from implementation of the Proposed Project. The annual regional on-road VMT reductions were estimated based on 50 weeks per year of standard vehicle travel and two weeks of reduced holiday travel levels (i.e., ten weekdays as holidays and four weekend days as Sunday/holiday travel levels)Fuel use was estimated using data provided by the CARB and Metrolink. The CARB EMFAC model indicates that passenger vehicles will consume an average of 30.7 miles per gallon of gasoline in 2028. The Proposed Project would result in a 372,810-gallon reduction in gasoline consumption per year as a result of on-road VMT reductions associated with the improved rail service.

3.6.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation measures (if applicable).

Impact 3.6-1) Would the Proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Construction

Less-Than-Significant Impact. Construction activities would use energy in the form of petroleum-based fuels associated with the use of off-road construction vehicles and equipment, construction worker travel, and delivery truck travel, and haul truck travel. **Table 3.6-4** presents a summary of the one-time expenditure of petroleum-based fuels that would be required for construction.

Table 3.6-4: Project Construction Energy Consumption of Petroleum-Based Fuels

Construction Activity	Off-Road Equipment Diesel (Gallons)	On-Road Vehicles Diesel (Gallons)	Total Diesel (Gallons)	Construction Worker Gasoline (Gallons)
Balboa Double Track Extension	1,228,500	71,088	1,299,588	21,433
Canyon Siding Extension	1,150,000	71,714	1,221,714	20,682
Lancaster Terminal Improvements	1,014,000	46,592	1,060,592	13,812
Total Construction Fuel Consumption (Gallons)			**3,851,894**	**55,927**
Annual Average Fuel Consumption (Gallons)			**770,379**	**11,185**

SOURCE: Terry A. Hayes Associates Inc., 2021.

Annual average petroleum-based fuels consumption during construction activities would be approximately 770,379 gallons of diesel fuel and 11,185 gallons of motor gasoline. Los Angeles County retail sales of diesel fuel and gasoline in 2018 were approximately 253 million gallons and 3,658 million gallons, respectively. Relative to existing petroleum-based transportation fuels consumption in Los Angeles County, construction would temporarily increase annual diesel fuel consumption within the County by approximately 0.30 percent and would temporarily increase annual gasoline fuel consumption by approximately 0.0000031 percent.

All equipment and vehicles that would be used in construction activities would comply with applicable CARB regulations, the Pavley and Low Carbon Fuel Standards, the Corporate Average Fuel Economy (CAFE) Standards. Construction would not place an undue burden on available petroleum-based fuel resources. The temporary additional transportation fuels consumption does not require additional capacity provided at the local or regional level.

Construction activities may include lighting for security and safety in construction zones. Lighting would be sparse and would not require additional capacity provided at the local or regional level.

Operations

Less-Than-Significant Impact. Operations would result in changes to energy resources consumption through direct diesel fuel demand for locomotive propulsion and indirect, induced displacement of transportation fuels combustion from passenger vehicles on the regional roadway network. There would be no change to existing electricity, natural gas, or other source of energy sources due to the Proposed Project.

With implementation of the Proposed Project, AVL corridor rail service would increase by approximately 555,083 rail miles, from 588,787 miles to 1,143,870 miles. The additional rail miles would represent an increase of approximately 20 percent relative to the average Metrolink service from 2016–2020.[4] Based on the 75 percent Tier 4 and 25 percent Tier 2 locomotive fleet under

[4]Metrolink, *Southern California Regional Rail Authority Comprehensive Annual Financial Report – Fiscal Years Ended June 30 2020 & 2019*, December 2020.

existing conditions, existing AVL operations were estimated to consume approximately 1,586,781 gallons of diesel fuel per year. By 2028, it was estimated that the 90 percent Tier 4 and 10 percent Tier 2 locomotive fleet under the Proposed Project would require approximately 2,988,359 gallons of diesel fuel annually. Therefore, implementation of the Proposed Project would result in a 1,401,579-gallon increase in diesel fuel consumption per year within Los Angeles County. The incremental increase in Metrolink diesel fuel use would represent an approximate increase of 0.5 percent of diesel retail sales in Los Angeles County.

As discussed in Section 3.6.1.3, Regional Regulations, Metrolink has implemented a number of energy conservation policies and programs including a fuel conservation program designed to reduce train idling by 35 percent system-wide. In addition, Metrolink is pursuing alternative locomotive propulsion technologies such as hybrid, battery, and hydrogen applications that would reduce fleetwide average fuel consumption rates in the future. However, due to uncertainties in the implementation schedule, fuel efficiency benefits from the use of renewable diesel and other emerging technologies are not practicably feasible to estimate at this time.

Additionally, implementation of the Proposed Project would displace approximately 11,445,259 on-road VMT annually from the regional roadway network in 2028 through increased ridership attracted and accommodated by the expanded transit service. The CARB EMFAC model indicates that passenger vehicles will have an average fuel efficiency of 30.7 miles per gallon of gasoline in 2028. The Proposed Project would result in a 372,810-gallon reduction in gasoline consumption per year as a result of on-road VMT reductions associated with the improved rail service.

The effects of Proposed Project operations on regional petroleum-based transportation would not constitute a wasteful or inefficient use of energy resources. On the contrary, implementation of the Proposed Project would improve regional transportation energy efficiency by resulting in substantial reduction in gasoline consumption. Therefore, the Proposed Project would not result in a significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

Impact 3.6-2) Would the Proposed Project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?

Construction

Less-Than-Significant Impact. Energy resources consumption during construction would be predominantly combustion of petroleum-based transportation fuels. Annual average petroleum-based fuels consumption during construction activities would be approximately 770,379 gallons of diesel fuel and 11,185 gallons of motor gasoline. Construction-related fuel would be used to

improve regional rail transit, which is consistent with all energy conservation plans. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

Operations

No Impact. The Proposed Project is a rail system providing energy efficient mass transit to communities in need of enhanced accessibility options. The Proposed Project would reduce auto passenger vehicle trips and reduce reliance on petroleum-based transportation fuels. The benefits of the Proposed Project are consistent with the goals, objectives, and policies of SCAG and the Cities of Los Angeles, Glendale, Burbank, Santa Clarita, the County, Palmdale, and Lancaster. The Proposed Project would not conflict with any adopted plan or regulation to enhance energy efficiency or reduce transportation fuels consumption and would support local energy conservation plans. The Proposed Project would not result in a wasteful or inefficient expenditure of energy resources. The Proposed Project would positively contribute to statewide, regional, and local efforts to create a more efficient and sustainable transportation infrastructure network. Therefore, the Proposed Project would not result in a significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

3.7. GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

The following summarizes the applicable regulations and existing setting, and provides a detailed impact assessment related to Geology, Soils, and Paleontological Resources. The Project Area for geology and soils consists of the AVL corridor and the geologic units that underlie it. For paleontological resources, the Project Area consists only of the three capital improvement sites.

3.7.1 Regulatory Framework

3.7.1.1 Federal Regulations

National Earthquake Hazards Reduction Program. The National Earthquake Hazards Reduction Program was established by the United States Congress when it passed the Earthquake Hazards Reduction Act of 1977. Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use and redevelopment controls, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs.

National Engineering Handbook. The National Engineering Handbook was prepared by the United States Department of Agriculture in 1983. Chapter 3 (Erosion) of Section 3 (Sedimentation) states that in planning programs, to reduce erosion and sediment yield, it is most important that the various types of erosion be thoroughly investigated as sources of sediment. Proper conservation practices and land stabilization measures can then be planned and applied.

Federal Soil Protection Act. The purpose of the Federal Soil Protection Act is to protect or restore the functions of the soil on a permanent sustainable basis. Protection and restoration activities include prevention of harmful soil changes, rehabilitation of the soil of contaminated sites and of water contaminated by such sites, and precautions against negative soil impacts. If impacts are made on the soil, disruptions of its natural functions and of its function as an archive of natural and cultural history should be avoided, as far as practicable. In addition, the requirements of the Federal Water Pollution Control Act (also referred to as the Clean Water Act [CWA]) through the National Pollution Discharge Elimination System (NPDES) provide guidance for protection of geologic and soil resources.

United States Geological Survey Landslide Hazards Program. The United States Geological Survey (USGS) created the Landslide Hazard Program in the mid-1970s. According to USGS, the primary objective of the Landslide Hazards Program is to reduce long-term losses from landslide hazards by improving understanding of the causes of ground failure and suggesting mitigation strategies. The federal government takes the lead role in funding and conducting this research, whereas the reduction of losses due to geologic hazards is primarily a state and local responsibility.

Clean Water Act. The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The United States Environmental Protection Agency (USEPA) has implemented

pollution control programs such as setting wastewater standards for industry. USEPA has also developed national water quality criteria recommendations for pollutants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. The NPDES permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

3.7.1.2 State Regulations

California Building Standards Code. The California Building Standards Code (CBSC) is a compilation of three types of building standards from three different origins: 1) Building standards that have been adopted by State agencies without change from building standards contained in national model codes; 2) Building standards that have been adopted and adapted from national model codes to address California's ever-changing conditions; and 3) Building standards, authorized by the California legislature, that constitute amendments not covered by national model codes, that have been created and adopted to address particular California concerns. All occupancies in California are subject to national model codes adopted into Title 24, and occupancies are further subject to amendments adopted by State agencies and ordinances implemented by local jurisdictions' governing bodies. The 2019 California Building Code, California Code of Regulations, Title 24 was published July 1, 2019, with an effective date of January 1, 2020.

California Government Code. The California Government Code requires that planning agencies of all cities and counties prepare comprehensive, long-term general plans for physical development within their jurisdictions. The plans should provide objectives and policies addressing public health and safety, including protection against the impacts of seismic ground motions, fault ruptures, and other geological and soils hazards. As stated in Section 6302 (g) (1) of the California Government Code, a general plan shall include:

> *"A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards."*

Chapter 7.8 (Section 2690) of Division 2 of the Public Resources Code (PRC), referred to above, is known as the Seismic Hazards Mapping Act (SHMA), which is described below.

The California PRC (Chapter 1.7), Sections 5097 and 30244, includes requirements for the assessment and management of paleontological resources. These statutes require reasonable mitigation of adverse impacts to paleontological resources resulting from development on State lands, and define the excavation, destruction, or removal of paleontological "sites" or "features" from public lands without the express permission of the jurisdictional agency as a misdemeanor. As used in Section 5097, "State lands" refers to lands owned by, or under the jurisdiction of, the state or any State agency. "Public lands" is defined as lands owned by, or under the jurisdiction of, the State, or any city, county, district, authority, or public corporation, or any agency thereof.

Southern California Catastrophic Earthquake Response Plan. The Southern California Catastrophic Earthquake Response Plan provides a coordinated State/federal response to a catastrophic earthquake in southern California. The mission of the unified effort of local, State, tribal, and federal emergency response is to support the needs of the impacted community by saving and sustaining human life, minimizing suffering, stabilizing and restoring critical infrastructure and setting conditions for recovery.

Seismic Hazards Mapping Act. The Seismic Hazards Mapping Act (SHMA) of 1990 directs the Department of Conservation to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides and amplified ground shaking. The purpose of the SHMA is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The SHMA was passed by the legislature following the 1989 Loma Prieta earthquake. The SHMA requires the State Geologist to establish regulatory zones (Zones of Required Investigation) and to issue appropriate maps (Seismic Hazard Zone maps).

Alquist-Priolo Earthquake Fault Zoning Act. The Alquist-Priolo Earthquake Fault Zoning Act was enacted as the Special Studies Zones Act in 1971 to prevent land development and construction of structures for human occupancy directly across the trace of active faults. The law required the State Geologist to delineate approximately one quarter mile-wide zones along surface traces of active faults. The act defines an active fault as one that has ruptured the ground surface within the past 11,000 years or Holocene period. Prior to approving construction of structures for human occupancy, permit authorities must require a project's applicant to submit a fault investigation report for review and approval by the local jurisdiction. Although the Alquist-Priolo Act does not regulate transit or transportation projects, it provides relevant information about areas that would be susceptible to ground rupture from an earthquake.

National Hazards Disclosure Act. The Natural Hazards Disclosure Act came into effect on June 1, 1998, and requires sellers and their listing agents to provide prospective buyers with a Natural Hazards Disclosure statement that designates whether the home they are selling is located in a hazard area. Hazard areas include flood, fire, earthquake fault, and seismic hazard zones.

3.7.1.3 Local Regulations

The California Government Code requires that planning agencies of all cities and counties prepare comprehensive, long-term general plans for the physical development within their jurisdictions. The plans should provide objectives and policies addressing public health and safety, including protection against the impacts of seismic ground motions, fault ruptures, and other geological and soils hazards. The legislative bodies of all California cities and counties must adopt general plans that include the following elements related to geology, soils, seismicity, and paleontological resources:

- Conservation Element, which addresses the following topics relevant to soils and paleontological resources:
  - Reclamation of land and waters;
  - Soil erosion prevention, control, and correction;
  - Location, quantity and quality of rock, sand, and gravel resources; and
  - Preservation of Paleontological resources.

- Safety Element, which addresses the protection of the community from any unreasonable risks associated with the effects of the following seismic and geologic hazards and which is required to include mapping of such known hazards:
  - Seismically induced surface rupture;
  - Ground shaking;
  - Ground failure;
  - Slope instability leading to mudslides and landslides;
  - Subsidence due to fluid or gas withdrawal;
  - Liquefaction;
  - Other seismic hazards identified pursuant to California PRC Chapter 7.8 (commencing with Section 2690) of Division 2; and
  - Other geologic hazards known to the legislative body.

Los Angeles County Metropolitan Transportation Authority (Metro)

The Metro Rail Design Criteria (MRDC) establishes detailed design requirements to address and mitigate for geologic and seismic hazards for all Metro transit projects and their associated facilities, including bridges, stations, and rail infrastructure. All new structures must be designed to resist the earthquake forces and ground displacement stipulated in the criteria. Section 5 of the MRDC dictates the required seismic performance criteria for structures. For retaining walls, the MRDC requires conformance with the Los Angeles County Building Code, which is based on the CBSC. For bridges and aerial structures, the MRDC require mandatory conformance with the latest version of the California Department of Transportation (Caltrans) Bridge Design Specifications, Caltrans Seismic Design Criteria (Caltrans 2017), and American Association of State Highway and Transportation Officials Load and Resistance Factor Design Bridge Design Specifications or the American Railway Engineering and Maintenance-of-Way Association (AREMA) specifications, as applicable, depending on the location of the structure.

The Metro Resiliency Indicator Framework is a policy overview intended to help prioritize and evaluate climate adaptation implementation priorities to ensure infrastructure resilience and maintain a good state of repair. The Framework's policies incorporate other official Metro Plans such as the Rail Design Criteria (2012), Emergency Response Plan (2010), and the State of Good Repair Asset Database (2013). The 2020 Addendum expanded the framework to cover a wider range of natural hazards, including earthquakes and landslides. Indicators which Metro uses to assess the resilience of its infrastructure and operational activities are measured by technological and organizational robustness, redundancy, and safe-to-fail principles.

Los Angeles County

The Safety Element of the County of Los Angeles General Plan describes the existing seismic and geological conditions and potential hazards within unincorporated Los Angeles County, including the Town of Acton. The Safety Element utilizes two dimensions of risk: unacceptable and tolerable risk. It is the County's responsibility to identify hazards that expose the public to unacceptable levels of risk and to cooperate with other levels of government and the public to reduce them to tolerable levels. Tolerable levels of risk are achieved through compliance with County, State and Federal safety standards and policies. **Table 3.7-1** present the goals and policies within the Safety Element that are relevant to the Project.

Table 3.7-1: Goals and Policies of the Safety Element of the Los Angeles County General Plan

Goal/Policy	Description
Goal	Minimize injury and loss of life, property damage, and the social, cultural, and economic impacts caused by earthquake hazards.
Policy	Continue enforcement of stringent site investigations and implementation of adequate hazard mitigation measures for development projects in areas of high earthquake hazard, especially those involving critical facilities.
Policy	Promote the development of seismically resistant major lifelines serving Los Angeles County and connecting it to surrounding regions and the rest of the nation.
Policy	Promote the strengthening or replacement of critical facilities and the retrofitting or abatement of potentially hazardous structures.
Goal	Protect public safety and minimize the social and economic impacts from geologic hazards.
Policy	Upgrade slope maintenance measures and improve emergency response capability in hillside areas.
Policy	Review proposals and projects proposing new development and expansion of existing development in areas susceptible to landslides, debris flow, and rockfalls, and in areas where collapsible or expansive soils are a significant problem.

SOURCE: County of Los Angeles, *Los Angeles County General Plan*, 2015.

The Conservation and Natural Resources Element of the General Plan contains goals and policies related to the protection and conservation of paleontological resources within the County. Policies relevant to the Project are shown in **Table 3.7-2**.

Table 3.7-2: Goals and Policies of the Conservation and Natural Resources Element of the Los Angeles County General Plan

Goal/Policy	Description
Goal C/NR 14	Protected historic, cultural, and paleontological resources
Policy C/NR 14.1	Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
Policy C/NR 14.2	Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.
Policy C/NR 14.5	Promote public awareness of historic, cultural, and paleontological resources.
Policy C/NR 14.6	Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

SOURCE: County of Los Angeles, *Los Angeles County General Plan*, 2015.

City of Los Angeles

The City of Los Angeles General Plan (Chapter III of the Safety Element) describes goals, objectives, policies and programs that are broadly stated to reflect the comprehensive scope of the Emergency Operations Organization.[1] All City of Los Angeles emergency preparedness, response and recovery programs are integrated into Emergency Operations Organization operations and are reviewed and revised continuously.

The Conservation Element of the General Plan identifies paleontological resources in the City of Los Angeles and contains resource management objectives and policies. The objective is to protect the City's archaeological and paleontological resources for historical, cultural, research and/or educational purposes. The primary policy is to continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities. The Element requires land development projects to contact paleontologist to conduct pre-construction assessments and the removal or protection of paleontological resources uncovered during construction. For Los Angeles city and county, the Los Angeles County Museum of Natural History, including the George C. Page Museum, provides advice concerning paleontological resources.

The City of Los Angeles' General Plan is a comprehensive, long-range declaration of purposes, policies, and programs. The Conservation Element of the General Plan identifies paleontological resources in the City of Los Angeles and contains resource management objectives and policies. Relevant Conservation Element objectives and policies related to paleontological resource are shown in **Table 3.7-3**.

[1] City of Los Angeles. *Safety Element of the Los Angeles General Plan*.1996.

Table 3.7-3: City of Los Angeles Conservation Element of the General Plan

Objective/Policy	Description
Objective	Protect the city's archaeological and paleontological resources for historical, cultural, research and/or educational purposes.
Policy 1	Continue to identify and protect significant archaeological and paleontological sites and/or resources known to exist or that are identified during land development, demolition or property modification activities.

SOURCE: City of Los Angeles, *Conservation Element of the Los Angeles General Plan*, 2001.

Chapter IX (Building Regulations) of the City of Los Angeles Municipal Code of 2020 was prepared to safeguard life, limb, health, property and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location and maintenance of all buildings and structures erected or to be erected within the City, and by regulating certain grading operations within the City. Section 91.1804 (Excavation, Grading, and Fill) adopts Section 1804 of the California Building Code.

City of Glendale

The Open Space and Conservation Element of the City of Glendale General Plan contains goals, objectives and policies for the purpose of conserving and protecting the City's inventory of natural resources. The Element complies with the requirements of the California Government Code. The Element also describes the existing geologic resources and seismological conditions of the City, including soil composition and primary seismic hazards.[2] The Element states that much of Glendale is underlain by igneous and metamorphic rock, not the sedimentary rock where paleontological resources typically found, and that due to the rapid development of Glendale with little regard for such resources, it may be assumed that most resources have already been unearthed or destroyed.

The Safety Element of the General Plan identifies existing seismic and geological conditions within the Glendale Area and a comprehensive assessment of potential risks and damages related to seismic and geological hazards. The Element also includes City-recommended mitigation measures to reduce the risk to life and property from seismic and geological activity, including geological and structural engineering construction methods. Hazards and their applicable mitigation measures addressed in the Safety Element include liquefaction and related ground failure, landslide movement and topographical displacement, and sidehill fill deformation.[3]

City of Burbank

The Safety Element of the City of Burbank General Plan 2035 identifies areas within the City that are prone to seismically induced natural hazards and potentially hazardous conditions, such as ground shaking, surface rupture from earthquakes, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other geologic hazards; flooding; wildland and urban fires; hazardous materials; and evacuation routes. The Safety

[2] City of Glendale, *Open Space and Conservation Element of the General Plan,* January 1993.
[3] City of Glendale, *Safety Element of the General Plan,* January 1993.

Element also contains goals and policies related to the mitigation and preparation for these types of hazards relevant to the Project, as shown in **Table 3.7-4**.

Table 3.7-4: Goals and Policies of the Safety Element of the Burbank General Plan 2035

Goal/Policy	Description
Goal	Seismic Safety: Injuries and loss of life are prevented, critical facilities function, and property loss and damage is minimized during seismic events.
Policy 5.1	Require geotechnical reports for development within a fault area that may be subject to risks associated with surface rupture.
Policy 5.2	Require geotechnical reports for new development projects in areas with the potential for liquefaction or landslide.
Policy 5.3	Enforce seismic design provisions of the current California Building Standards Code related to geologic, seismic, and slope hazards.

SOURCE: City of Glendale, *Safety Element of the General Plan*, January 1993.

The Open Space and Conservation Element of the General Plan requires the City to recognize and maintain paleontological structures and sites within the City and lays out requirements for future development projects where paleontological resources are discovered during earthmoving activities. In such an event, the construction crew shall immediately cease work, notify the City, and the project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan in accordance with Society of Vertebrate Paleontology guidelines (1996). Recommendations in the recovery plan shall be implemented before construction activities can resume.

City of Santa Clarita

The Conservation and Open Space Element of the City of Santa Clarita General Plan establishes a policy framework for the designation and long-term preservation of the City's unique geological features. The Element is consistent with the Safety Element of the General Plan because many of the areas prone to natural hazards, such as flooding and seismic shaking, are also subject to conservation issues such as water quality, groundwater recharge, slope stability, and soil erosion; the maps, policies and programs of both elements have been coordinated to preserve such areas as open space.[4]

The Safety Element of the General Plan identifies existing seismic and geological conditions and hazards within the City, including existing known and potential faults and liquefaction hazard zones. Both the City and the County have adopted ordinances requiring soil and geotechnical investigations for grading or new construction in areas with a potential for landslide or subsidence activity, in order to mitigate potential hazards from soil instability.[5]

[4] City of Santa Clarita, *Conservation and Open Space Element of the City of Santa Clarita General Plan,* June 2011.
[5] City of Santa Clarita, *Safety Element of the City of Santa Clarita General Plan,* June 2011.

City of Palmdale

The Safety Element of the City of Palmdale General Plan presents goals and policies for minimizing natural and man-made hazards to public health and safety within the City. It identifies present seismic and geological conditions and potential hazards, sets policies and standards for improved public safety, and plans for protection from potential disasters. **Table 3.7-5** presents the goals and objectives of the Safety Element that are relevant to the Project:

Table 3.7-5: Goals, Objectives, and Policies of the Safety Element of the City of Palmdale General Plan

Goal/Objective/Policy	Description
Goal S1	Minimize danger and damage to public health, safety, and welfare resulting from natural hazards.
Objective S1.1	Review development within or adjacent to geologic hazards, to ensure adequate provisions for public safety.
Policy S1.1.1	Provide copies of geotechnical reports for projects located within the seismic hazard zone, as shown on latest California Department of Conservation Seismic Hazard Zones Map, to the State Division of Mines and Geology.
Policy S1.1.4	Require appropriate structural setbacks from active fault rupture traces in accordance with Alquist-Priolo standards and as required by the City, based on geotechnical analysis.
Policy S1.1.5	Require structural setbacks or special foundations for structures within potentially active fault zones as determined by the City, based on geotechnical analysis.
Policy S1.1.8	Require that all structures should meet or exceed state required earthquake resistant design standards.
Policy S1.1.9	Review development proposals located in or immediately adjacent to areas of soil instability, liquefaction areas, and steep slopes to determine if a significant constraint exists and to determine appropriate land use or hazard mitigation methods and require compliance with any such measures identified.

SOURCE: City of Palmdale, *Safety Element of the City of Palmdale General Plan*, January 25, 1993.

City of Lancaster

The Safety Element of the City of Lancaster General Plan contains an evaluation of natural and manmade conditions which may pose certain levels of health and safety hazards to life and property within Lancaster, along with a comprehensive program to mitigate those hazards to acceptable levels. **Table 3.7-6** presents the goals, objectives, policies and actions pertaining to geology and seismicity that are relevant to the Project:

Table 3.7-6: Goals, Objectives, Policies, and Actions of the Safety Element of the City of Lancaster General Plan

Goal/Objective/Policy/Action	Description
Goal 4	To provide a secure manmade environment which offers a high level of protection from natural and manmade hazards to life, health, and property.
Objective 4.1	Minimize the potential for loss of life, physical injury, property damage, and social disruption resulting from seismic ground shaking and other geologic events.
Action 4.1.1(b)	Require that all new developments comply with the most recent California Building Code seismic design standards and such other supplemental design criteria.
Action 4.1.1(c)	Implement the provisions of Title 24 of the State Building Code pertaining to siting, seismic design, and review of Critical, Sensitive, and High-Occupancy structures.
Policy 4.1.2	Require development within hillside areas and areas which potentially have soils or underlying formations that might produce severe building constraints to have engineering studies performed in order to determine appropriate structural design criteria and effective construction standards.
Action 4.1.2(a)	Require specialized soils reports in areas suspected of having problems with bearing strength and in areas suspected of having problems with expansive soils, soil settlement, and subsidence.
Action 4.1.2(b)	Through the Development Review Process, ensure that any new development proposal located within an area determined by the State of California to be a seismic hazard zone is conditioned for appropriate mitigation

SOURCE: City of Lancaster, *Safety Element of the Lancaster General Plan*, 2006.

The Plan for Active Living of the General Plan contains resource management objectives and policies. Relevant Plan for Active Living objectives and policies related to paleontological resource are shown in **Table 3.7-7**.

Table 3.7-7: City of Lancaster Plan for Active Living Element of the General Plan

Objective/Policy	Description
Objective 12.1	Identify and preserve and/or restore those features of cultural, historical, or architectural significance.
Policy 12.1.1	Preserve features and sites of significant historical and cultural value consistent with their intrinsic and scientific values.
Policy 12.1.1(a)	As part of the CEQA review process, require site-specific historical, archaeological, and/or paleontological studies when there exists a possibility that significant environmental impacts might result or when there is a lack of sufficient documentation on which to determine potential impacts.

SOURCE: City of Lancaster, *Plan for Active Living of the Lancaster General Plan*, 2006.

3.7.2. Existing Setting

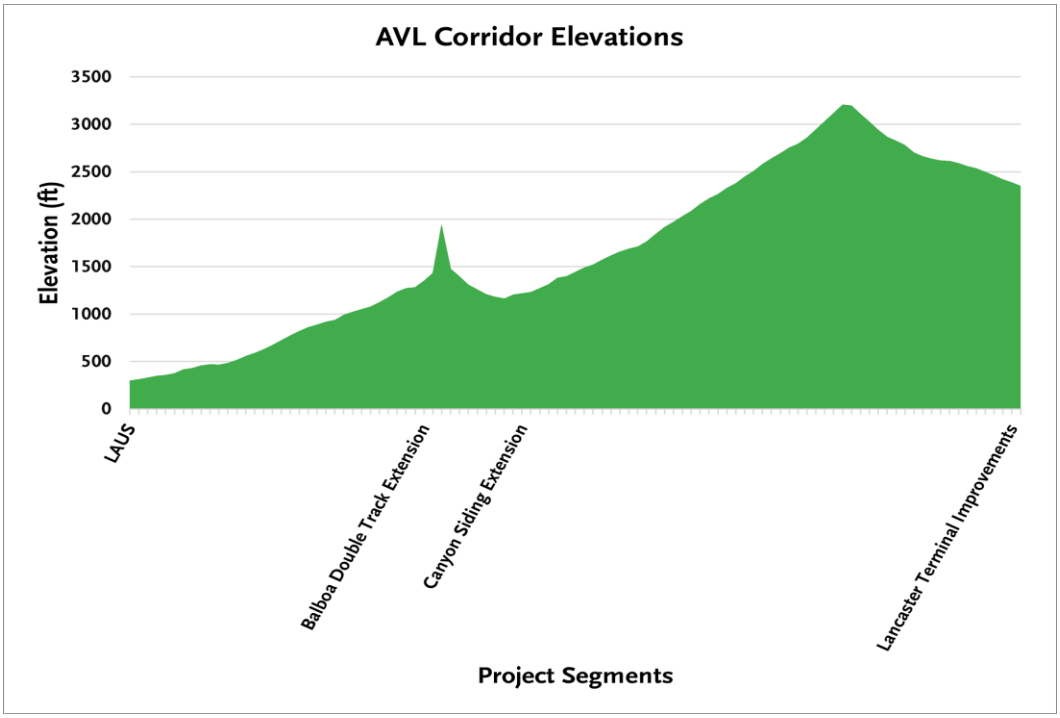
The existing 76.6-mile AVL corridor is located within the Transverse Ranges Geomorphic Province, a band of west-trending mountain ranges and valleys. A geomorphic province is a geographical area of distinct landscape character with related geophysical features, including relief, landforms, orientations of valleys and mountains, type of vegetation, and other geomorphic attributes. Generally, the AVL alignment traverses across river valleys and alluvial plains, crossing through mountain passes between the Santa Susanna Mountains and the San Gabriel Mountains before ascending to the high desert plateau of the Mojave Desert Geomorphic Province. While the operational impacts of the Project will affect the entirety of the AVL corridor, construction activities of the Project would be restricted to the boundaries of the three capital improvement sites. Analysis of existing conditions describe the conditions of the entire AVL corridor as well as the three capital improvement sites. General characteristics of each of these segments is summarized in **Table 3.7-8** below. **Figure 3.7-1** below depicts the change in elevation from south to north along the AVL corridor.

Table 3.7-8: Summary of Topography of the Project

Segment	Description	Length (in miles)	Elevation Range (in feet above sea level)
LAUS to Balboa Double Track Extension Segment	From Los Angeles Union Station to approximately the intersection of I-5 and Balboa Boulevard. Runs over a low lying alluvial plain and gradually increases in elevation.	24.4	300 – 1,940
Balboa Double Track Extension	From Balboa Boulevard to the intersection of I-5 and I-14. Located at the foothills and through a pass of the Santa Susanna Mountains.	1.5	1,120 – 1,940
Balboa Double Track Extension to Canyon Siding Extension Segment	From the intersection of I-5 and I-14 to the intersection of Bouquet Canyon Road and Soledad Canyon Road.	6.7	1,120 – 1,940
Canyon Siding Extension	From the intersection of Bouquet Canyon Road and Soledad Canyon Road to Golden Triangle Road	1.8	1,220 – 1,380
Canyon Siding Extension to Lancaster Terminal Improvements Segment	From Golden Triangle Road to the intersection of Sierra Highway and Avenue J.	41.0	1,220 – 3,200
Lancaster Terminal Improvements	From the intersection of Sierra Highway and Avenue J to Jackman Street.	0.6	2,350

SOURCE: USGS, 2021.

Figure 3.7-1: South to North Elevation Changes for the AVL Corridor



Geology and Soils

The Project traverses over a diverse array of geological and soil conditions which vary in geologic age, consolidation, and composition. Geologic mapping indicates that the Project Area is underlain by Holocene-age younger sedimentary deposits (Q, Qoa), Pleistocene-age older sedimentary deposits (QPc, P), Miocene-age sedimentary deposits (Mc), Mesozoic-age granite (grMz), and Precambrian-era rocks in the San Gabriel Mountains (grpC). Additionally, mapped within the half mile buffer of the Project Area are tertiary volcanic flow rocks (Tv).[6] Paleo Solutions' paleontologist Daniel Nolan, B.S., surveyed the Project Area on January 14, 2021, inspecting the Project Area for exposures of the geologic units. Refer to the Paleontological Resources Technical Report (Appendix F) for additional details and maps related to geological and soil details and location maps.

- Af (Artificial fill) – Artificial fill is located along the freeways in the Project Area, including I-5 and SR-14. These fills may be engineered and compacted to modern standards or may be undocumented with unknown properties. In general, it can be expected that the engineered fill materials will be predominantly sand, silt, and fine gravel. These sediments are not mapped within the boundaries of the Project Area but are likely to be encountered within previously disturbed portions of the Project. Scientifically significant fossils are generally not known from artificial fill (af) since any discovered resource would lack stratigraphic context. Therefore, artificial fill (af) has a low paleontological potential

[6] California Department of Conservation, *Geologic Map of California.* California Geological Survey. https://maps.conservation.ca.gov/cgs/gmc/App/, accessed February 24, 2021.

(Potential Fossil Yield Classification [PFYC] 2) using Bureau of Land Management BLM (2016) guidelines.

- Q (Pleistocene/Holocene) – Alluvium, lake, playa, and terrace deposits. Located within the LAUS to Balboa Double Track Extension Segment, Balboa Double Track Extension to Canyon Siding Extension Segment, Canyon to Lancaster Terminal Segment, and the Lancaster Terminal Improvements site.
- QPc (Pleistocene/Pliocene) - Sandstone, shale and gravel deposits; mostly loosely consolidated. Can be found within all Project segments excluding the Lancaster Terminal Improvements site.
- Qoa (Pleistocene) - Older alluvium, lake, playa and terrace deposits. Located within the Canyon Siding Extension to Lancaster Terminal Improvements Segment.
- Qa (Holocene) – Younger surface-sedimentary deposits consisting of unconsolidated deposits of clay, sand, and gravel. Located in the valleys and floodplain areas of the Project Area between LAUS and the Balboa Double Track Extension Segment.
- Qg (Holocene) – Stream channel deposits composed of sand and gravel. Located along the Santa Clara River between the Canyon Siding Extension site and the Lancaster Terminal Improvements site.
- P (Pliocene) - Marine sandstone, siltstone, shale, and conglomerate; mostly moderately consolidated. Located within the Balboa Double Track Extension site and Balboa Double Extension to Canyon Siding Extension Segment.
- M (Miocene) – Marine sedimentary deposits, including sandstone, shale, siltstone, conglomerate, and breccia; moderately to well consolidated. Located between LAUS and the Balboa Double Track Extension Segment,
- MC (Miocene) - Nonmarine sandstone, shale, conglomerate, and fanglomerate; moderately to well consolidated. Located within the Canyon Siding Extension to Lancaster Terminal Improvements Segment.
- grpC (Precambrian) - Granite, syenite, anorthosite, and gabbroic rocks in the San Gabriel Mountains; also various Precambrian plutonic rocks elsewhere in southeastern California. Located within the Canyon Siding Extension to Lancaster Terminal Improvements Segment.
- grMz (Mesozoic) - Granite, quartz monzonite, granodiorite, and quartz diorite. Located within the Canyon Siding Extension to Lancaster Terminal Improvements Segment.
- Tv (Tertiary) - Volcanic flow rocks; minor pyroclastic deposits. Located within the Canyon Siding Extension to Lancaster Terminal Improvements Segment.
- Tp (Pleistocene/Pliocene) – Micaceous siltstone-claystone. Mapped as part of the Pico Formation, a deep marine, Pliocene-age (approximately 2.51 to 5.3 million years old) deposits in the vicinity of Pico Canyon in the Santa Susana Mountains. Located within the Balboa Double Track Extension site.

- Tps (Pleistocene/Pliocene) – Sandstone; consisting of mostly light gray to white, medium to coarse grained sandstone and some pebble-cobble conglomerate of granitic detritus. Mapped as part of the Pico Formation. Located within the Balboa Double Track Extension site.
- Ttos (Pliocene/Miocene) - Interfingering lenticular beds of sandstone, mudstone, and conglomerate deposits located within the Towsley Formation, a formation of marine deposits underlying the Pico Formation. Located within the Balboa Double Track Extension. OgC (Oligocene) – Nonmarine sedimentary rocks, including sandstone, shale, and conglomerate; mostly well consolidated. Located between the Canyon Siding Extension site and Lancaster Terminal Improvements site.

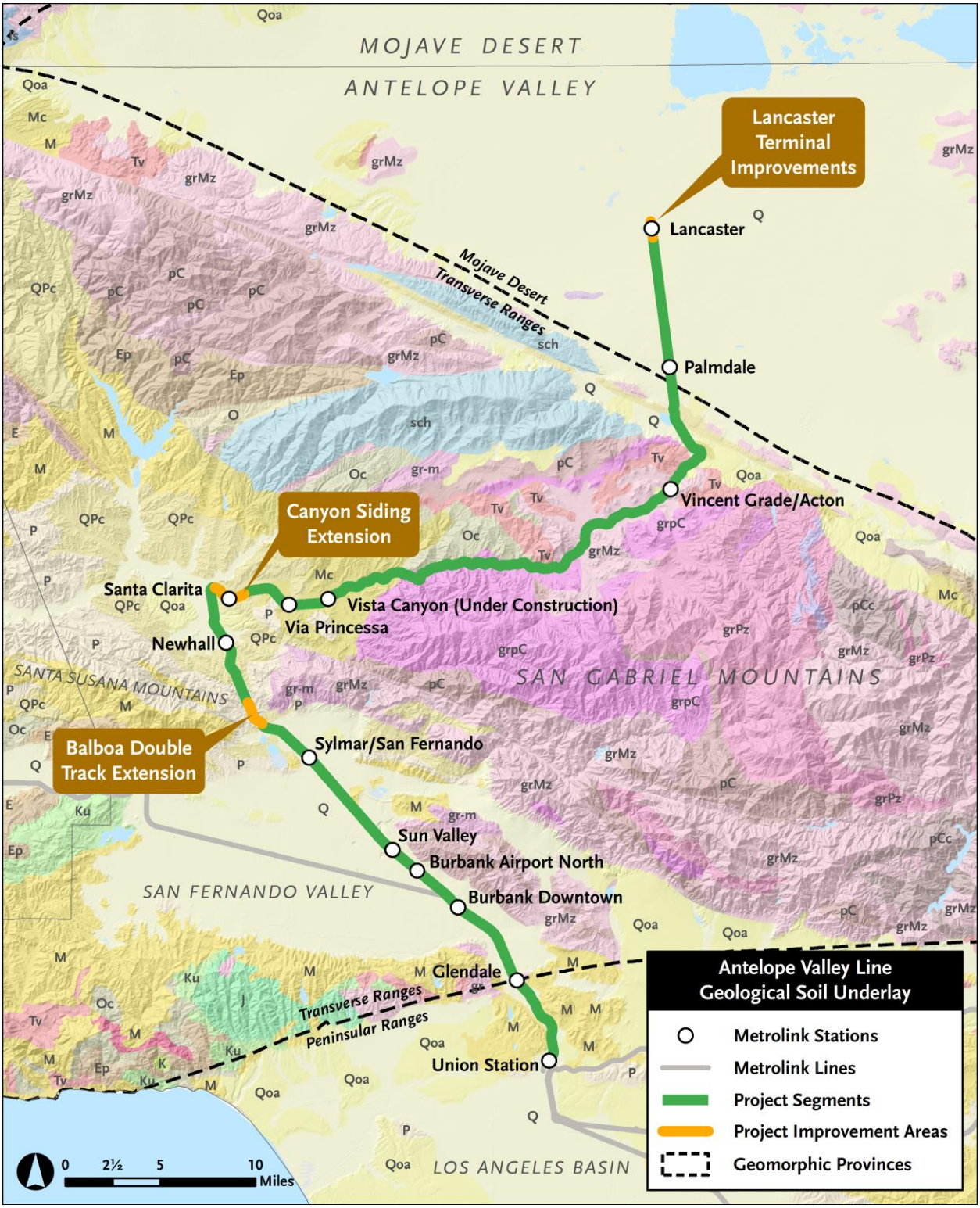
While the alignment would run parallel to significant areas of mountainous, undisturbed native soils, most soils alongside the AVL ROW have been modified and disturbed by grading and earthmoving associated with development, which includes the placement of Af. **Figure 3.7-2** depicts the location of these various quaternary deposits along and adjacent to the AVL Corridor.

Subsurface Soil Conditions

Subsurface soil conditions for the Balboa Double Track Extension site and Canyon Siding Extension site were evaluated based on data from previous borehole drilling explorations and soil sample collections performed near these sites. Conditions for the Lancaster Terminal Improvements site and the rest of the Project alignment is based on other previous explorations and USGS data. Using the Unified Soil Classification System, previous explorations encountered mostly coarse-grained cohesionless soils (sand, silty sand, gravel) with cobbles and boulders. Interbedded fine-grained cohesionless and cohesive soils (sandy silt, sandy silty clay, clay) are also present. Precambrian granitic rock (grpC) and Mesozoic-era granite (grMz) is also present in the mountainous terrain adjacent to the AVL ROW between the Canyon Siding Extension site and the Lancaster Terminal Improvements site. Within the Balboa Double Track Extension site silt, silty sand, and sandstone deposits have been identified during previous borehole drilling explorations. Silt, silty, sand, clayey sand and poorly-and well-graded sand have been documented within 300-feet of the rail ROW associated with the Canyon Siding Extension. There are currently no data on the soil associations of the Lancaster Terminal Improvements.[7] Historical mineral investigations conducted by USGS indicate that the area around the Lancaster Station overlays Qa surface deposits at a depth of approximately 100-feet, which intern overlays older Qoa deposits up to a depth of 1,000-feet.[8]

[7] City of Lancaster, *General Plan 2030 Master Environmental Assessment,* https://www.cityoflancasterca.org/home/showpublisheddocument?id=11352, accessed February 23, 2021.
[8] USGS, *Mineral Investigations Field Studies Map MF-76*, https://ngmdb.usgs.gov/Prodesc/proddesc_2981.htm, accessed February 23, 2021.

Figure 3.7-2: Geological Quaternary Deposits of the Project Area



Faulting

Special Publication 42 of the California Geological Survey (CGS) defines a fault as a shear or zone of closely associated shears across which earth materials on one side have been displaced with respect to those on the other side because of tectonic forces.[9] A fault is distinguished from those fractures or shears caused by landsliding or other gravity-driven surficial failures. The Project is located in a seismically active region containing several historic (<200 years), numerous Holocene (<11,700 years), and potentially active (<1.6 million years) faults.

The four active fault zones in the Project Area are the Verdugo, the San Andreas, the Sierra Madre, and the San Gabriel Fault Zones. The Verdugo Fault parallels the Project along San Fernando and intersects the Project alignment at I-5 and I-118. The entirety of the Balboa Double Track Extension is located within the Sierra Madre Fault zone in an area which has historically experienced surface ground rupture and failure. The Project alignment within and south of the Canyon Siding Extension along Railroad Avenue intersects with the San Gabriel Fault Zone, which has been historically seismically active. As the Project ascends Soledad Canyon along the Santa Clara River, it intersects and runs parallel to the Soledad Fault for approximately 12 miles. As the Project descends into the Antelope Valley running parallel to the Sierra Highway, the alignment crosses over approximately 1.5 miles of the San Andreas Fault Zone. Each of these major fault lines poses a potential ground shaking, rupture, and operational failure risk. All three of the capital improvement sites lie within an Alquist-Priolo Zone. **Figure 3.7-3** demonstrates the location of major fault zones intersecting the Project Area.

Seismic Hazards

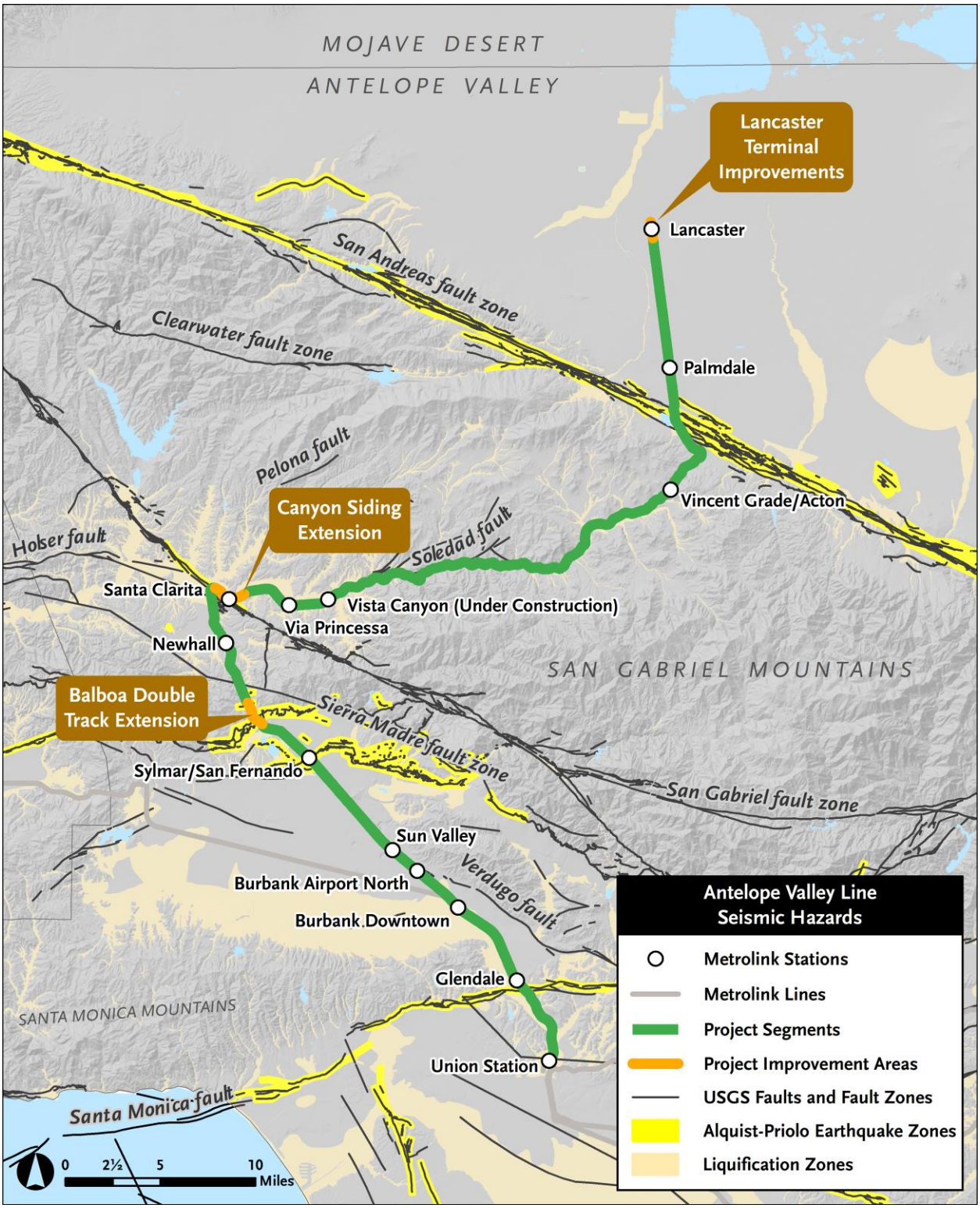
Primary seismic hazards include ground shaking and surface fault rupture. Secondary seismic effects resulting from soil responses to ground shaking includes liquefaction. These hazards may cause deformation of man-made structures.

Earthquake-induced ground shaking is a seismic hazard that can result in liquefaction, lurching and lateral spreading of soils, and landslide of soil and rock as well as dynamic oscillation of man-made structures. Differential settlements can occur at the ground surface due to subsurface liquefaction and densification caused by strong ground shaking. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active major fault trace.

As an area characterized by the presence of multiple major fault zones, the Project Area has experienced moderate to strong ground shaking during past earthquakes in recent decades. Moderate to strong ground shaking during earthquakes has the potential to impact adjacent rock and or soil cut slopes along the rail ROW, causing slope failure. **Figure 3.7-3** demonstrates the location of seismic hazards within the Project Area.

[9] CGS, 2018.

Figure 3.7-3: AVL Seismic Hazards Map



The Project Area and ROW overlays multiple zones of alluvium material, which has the potential for liquefaction if relatively shallow fine- to coarse-grained sand layers are saturated and experience moderate to strong ground shaking. According to the Earthquake Hazards Zone map, several rail track segments of the Project lie within a liquefaction zone: between LAUS and North Buena Vista Street in Burbank, between the start of the Balboa Double Track Extension and Newhall Avenue, and along the entirety of the Santa Clara River and Soledad Canyon pass from Railway Avenue to Sierra Highway.[10] **Figure 3.7-3** demonstrates the location of liquefaction zones within the Project Area.

Lateral Spreading

One of the consequences of seismic liquefaction in sloping ground areas is lateral spreading, which refers to the translation of ground laterally after the loss of support due to liquefaction. For this to occur, the liquefied area must be relatively near a free face, a vertical, or sloping face such as a road cut or stream/riverbank. The area most at risk for lateral sliding begins at the Balboa Double Track Extension and continues northward and eastward until the rail track descends into the Antelope Valley. Considering that the Project Area crosses multiple liquefaction zones and earthquake fault zones along canyon slopes, riverbanks, and mountainous ranges, the potential for lateral spreading is moderate to high along the Project corridor.

Seismically-Induced Slope Failure

Slope failure can occur when the force of gravity overcomes the strength of the soil or rock within a hillside or built embankment. The primary factors influencing the stability of a slope are the nature of the underlying soil or bedrock, slope geometry (height and steepness), rainfall, and groundwater. Excavation or erosion of material at the toe of a slope can destabilize the slope above it. Slope failure can be initiated or exacerbated by seismic movements. Earthquake-induced ground shaking can cause activation of new or previously existing landslides and other slope instabilities, especially during periods of high groundwater. According to CGS, the area of the Project alignment between the Balboa Double Track Extension and the rail track descent into the Antelope Valley are located within earthquake-induced landslide areas.[11]

Groundwater

The Project alignment traverses over the Central Coastal Plain of Los Angeles, San Fernando Valley, Santa Clara River Valley, and Antelope Valley Groundwater Basins. Groundwater depths may vary due to irrigation, season, and anthropogenic and natural influences. There is potential for perched water can be encountered at discrete locations along the Project corridor. Recent groundwater measurements indicate that the water table is at a below-surface depth of approximately 21.3 feet at the Balboa Double Track Extension, 32 feet at the Canyon Siding Extension, and 240 feet at the Lancaster Terminal.[12] At the Balboa Double Track Extension and Canyon Siding Extension sites, groundwater levels would be highest during the rainy season from

[10] California Department of Conservation, *Earthquake Zones of Required Investigation Map Viewer.* https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed February 24, 2021.
[11] *Ibid.*
[12] LADWP, *Groundwater Wells Map Viewer.* https://dpw.lacounty.gov/general/wells/, accessed February 24, 2021.

September to April and may extend into May to July depending on the permeability of alluvial plain sedimentary deposits. Groundwater has the potential to impact either construction efforts or built structures within the ROW. Groundwater-related impacts are most likely to occur where excavation of alluvial or bedrock material is performed during periods of high groundwater or after construction of retaining walls where drains behind the walls collect and divert groundwater.

Expansive Soils

The shrink-swell potential is a reflection of the ability of some soils with high clay content to change in volume with a change in moisture content. Shrink-swell potential poses a less significant hazard where soil moisture is relatively constant (either always wet or always dry). Shrink-swell potential poses a significant hazard to sites, which undergo seasonal variation in soil moisture content, such as on hillsides or flatlands with a seasonally fluctuating water table. Most of the Project lies within low expansion prone areas, with the exception being the area west of the LAUS, which contains Altamont clay loam.

Collapsible Soils

Collapsible soils are soils that undergo volume reduction or settlement upon the addition of water, which weakens or destroys soil particle bonds of loosely packed structure, reducing the bearing capacity of the soil. Other mechanisms for soil collapse include the sudden closure of voids in a soil, whereby the sudden decrease in volume results in loss of the soil's internal structure, causing the soil to collapse. Specific soil types, such as loess and other fine-grained aeolian soils, are most susceptible to collapse, although certain coarser-grained, rapidly deposited alluvial soils can also be susceptible. The Project Area includes coarser-grained and rapidly deposited alluvial soils.

Erodible Soils

The National Engineering Handbook defines erosion as a series of complex and interrelated natural processes that loosen or dissolve and move earth or rock material. The land surface is worn away through the detachment and transport of soil and rock materials by moving water, wind, or other geologic agents. Erosion can be divided into two categories according to the conditions under which it occurs. The first category is normal (geologic) erosion, which has been occurring at variable rates, depending on climatic and terrestrial conditions, since the first solid materials formed on earth. The second category is accelerated erosion caused by the activities of man. The Project is underlain by mostly coarse-grained cohesionless soils (sand, silty sand, gravel) with cobbles and boulders, which can be susceptible to erosion.

Consolidation Settlement

Consolidation settlement occurs when a fine-grained soil (silt or clay) is loaded with the weight of new fill or of improvements such as structures or fills. New loads cause increases in soil pore water pressure. As the excess pore pressures dissipates, the soil volume decreases, and water is expelled slowly. Settlement rate depends on the soil permeability and layer thickness. Thick layers of clay with low permeability can take years for pore pressures to fully dissipate. There is no evidence of thick clay layers in the Project Area. It is expected that most of the sporadic

cohesive soil lenses underlying the Project Area be normally consolidated under the operational load trains on the new rail track.

Shallow Landslides

Shallow landslides are a common and widespread phenomenon during periods of intense winter rainfall in Southern California. Debris flows can occur as isolated flows, in small numbers or can number in the tens of thousands during a single rainfall event. Areas susceptible to shallow landslides and debris flows include the hillsides adjacent to the Balboa Double Track Extension ROW, the Canyon Siding Extension, and the portion of the Project alignment that runs parallel to Soledad Canyon and Santa Clara River. The hillsides adjacent to the ROW have the potential of producing landslides during periods of moderate to high precipitation and or moderate to strong ground shaking. The highest potential to impact the rail tracks would occur during periods of moderate to high precipitation and or moderate to strong ground shaking.

Natural Slope Instability

Landslides occur when shear stress in a soil or rock mass exceeds their shear strength. Landslide movements often result in significant deformation of ground surfaces, producing open cracks with vertical and horizontal displacements measured in a few inches to multiple feet. The Project alignment crosses topographically variant geographies and several landslide and liquefaction zones, and therefore the Project would be at risk to impacts from natural slope instability, particularly within the Canyon Siding Extension site.

Land Subsidence

Land subsidence is a form of ground settlement that usually results from change in fluid content within soil or rock. The volume change can result from localized dewatering of peat, organic soils, or soft silts and clay. This type of ground settlement is often associated with construction activities when groundwater is lowered to allow construction below the groundwater table. The other form of land subsidence is from a regional withdrawal of groundwater, petroleum, or geothermal resources. Regional subsidence can also result from vertical fault movement. Although the mechanism is different, another cause of land subsidence is the ongoing decomposition of organic-rich soils. There is little susceptibility of large-scale land subsidence in the Project Area except for the alignment portion within the City of Lancaster due to groundwater pumping activities.

Paleontological Resources

Paleontological resources are invertebrate and vertebrate fossils, excluding human fossils, which have been preserved in geological formations and settlements. Fossils are usually found in sedimentary and metasedimentary deposits. Los Angeles County has several diverse and well-documented deposits of paleontological resources, including the La Brea Tar Pits and Topanga Canyon. The Natural History Museum of Los Angeles County (NHMLA) collects, preserves, and catalogues millions of fossil deposits mollusks, vertebrate animals (fishes, amphibians, reptiles, birds, and mammals), insects, and invertebrate paleontology. A paleontological search of records maintained by NHMLA was completed on December 11, 2020, which located multiple fossil

localities within the capital improvement areas. No paleontological resources were observed or collected during the paleontological survey. **Table 3.7-9** summarizes the findings of the record search for the Project Area.

3.7.3 Significance Thresholds and Methodology

3.7.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to Geology, Soils, and Paleontological Resources if it would:

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:
   i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault. Refer to division of Mines and Geology Special Publication 42.
   ii. Strong seismic ground shaking.
   iii. Seismic-related ground failure, including liquefaction.
   iv. Landslides.
b) Result in substantial soil erosion or the loss of topsoil;
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potential result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
d) Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (UBC, 1994), creating substantial direct or indirect risks to life or property;
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water; and/or
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Table 3.7-9: Paleontological Literature and Record Search Summary

Locality Number/ Name	Geologic Unit	Taxon	Common Name	Location
LACM IP 21500	Pliocene-age deposits	Invertebrata	Invertebrate	within Balboa Double Track Extension area
LACM IP 4484, 22533	Pico Formation (Pliocene)	*Dendraster gibbsii*	sand dollar	above Southern Pacific Railroad Tunnel
LACM VP 7950	Towsley Formation (Pliocene to late Miocene)	Pinnipedia	Seal	Sunshine Canyon Landfill
LACM VP 7421	Towsley Formation (Pliocene to late Miocene)	Mysticeti	baleen whale	Third of a mile south of the intersection of Foothill Boulevard and Sierra Highway
LACM IP 15729	Towsley Formation (Pliocene to late Miocene)	Invertebrata	Invertebrate	quarter mile south of the I-5 and SR 14 Interchange
LACM VP 5745	Pleistocene-age deposits	*Mammut* sp. *Equus* sp.	Mastodon horse	near the intersection of Pala Avenue and Excelsior Street
LACM VP 6804	Saugus Formation (Pleistocene to Pliocene)	*Equus* sp.	Horse	intersection of Bouquet Canyon Road and Cinema Drive (Saugus Elementary School)
LACM IP 22017	Towsley Formation (Pliocene to late Miocene)	Invertebrata	Invertebrate	Nadeau Canyon's confluence with the Santa Clarita River
LACM VP 7988 and 7989	Saugus Formation (Pleistocene to Pliocene)	Aves Rodentia	Bird rodent	intersection of Golden Valley Road and Five Knolls Road
LACM VP 7884	Pleistocene-age deposits	*Camelops hesternus*	Camelid	southeast of the intersection between East 3rd Street and East Avenue H-13
LACM VP 7853	Pleistocene-age deposits	Osteichthyes Amphibia Mammalia Camelidae	Fish amphibian small mammal camel	Lancaster Landfill
LACM VP 5946, 5947	Holocene-age deposits	*Gambelia wislizenii* *Thomomys* sp.	Lizard pocket gopher	East Avenue S between 90th Street East and 110th Street East
UCMP IP2259, UCMP V-7004, UCMP V-70027, UCLA 1063.12, PBDB 73752	Older sedimentary deposits (Pleistocene)	Osteichthyes cf. *Rana* sp. Emydinae *Emys marmorata* Squamata Serpentes *Parapavo californicus* Callipepla *Ardenna grisea* Anatidae *Chendytes lawi* *Aechmophorus occidentalis* *Gavia* sp.	Fish frog turtle tortoise scaled reptile snake pheasant quail shearwater duck diving goose western grebe loon	Los Angeles County

Locality Number/ Name	Geologic Unit	Taxon	Common Name	Location
		Chondrichthyes	cartilaginous fish	
		Carcharodon sp.	white shark	
		Teleostei	ray-finned fish	
		Rhacochilus vacca	perch	
		Citharichthys sp.	speckled sanddab	
		Genyonemus lineatus		
		Merluccius productus	North Pacific hake	
		Microtus californicus	white croaker	
		Peromyscus sp.	rodentrodent	
		Neotoma sp.	woodrat	
		Thomomys sp.	pocket gopher	
		Dipodomys cf. *agilis*	kangaroo rat	
		Chaetodipus cf.	rodent	
		formosusNotiosorex		
		crawfordi	rodent	
		Enhydra sp.	sea otter	
		Lepus californicus	rabbit	
		Sylvilagus sp.	rabbit	
		Equus sp.	horse	
		Equus simplicidens	horse	
		Tapirus haysii	tapir	
		Tapirus cf. *californicus*	tapir	
		Felinae	cat	
		Ursus americanus	black bear	
		Bison sp.	bison	
		Mammuthus primigenius	mammoth	
		Mammuthus cf. *columbi*	mammothmastodo	
		Mammut pacificus	n	
		Megalonychidae	ground sloth	
		Megalonyx sp.	ground sloth	
		Paramylodon harlani	ground sloth	
		Odocoileus cf. *hemionus*	deercamel	
		Camelops sp.	camel	
		Camelops cf. *hesternus*	camel	
		Hemiauchenia sp.	dire wolf	
		Canis cf. *dirus*	coyote	
		Canis cf. *latrans*	lynx	
		Lynx rufus	saber-toothed cat	
		Smilodon sp.		
			sea lion	
		Zalophus sp.	sea lion	
		Phoca cf. *vitulina*	whale	

Locality Number/ Name	Geologic Unit	Taxon	Common Name	Location
		Cetacea Otariidae Phocidae *Lissodelphis* sp.	seal seal dolphin	
Not reported	Older sedimentary deposits (Pleistocene)	*Mammuthus* sp. *Mammut* sp. Camelidae Equidae *Bison* sp. *Megatherium* sp. Tayassuidae *Acinonyx* sp. *Panthera* sp. *Smilodon* sp. *Hydrochoerus* sp. *Canis dirus* Rodentia	mammoth mastodon camel horse bison giant ground sloth peccary cheetah lion saber-toothed cat capybara dire wolf rodent	Southern California
Not reported	Saugus Formation (Pleistocene to Pliocene)	Chelonia *Gerrhonotus* sp. Leporidae *Sylvilagus* sp. *Thomomys* sp. *Perognathus* sp. *Dipodomys* sp. *Reithrodontomys* sp. *Neotoma* sp. *Pitymys meadensis* Proboscidea *Pliohippus* sp. *Equus* sp. *Equus occidentalis* Tayassuidae Camelidae Cervidae *Bison* sp. *Mammuthus* sp. *Mammut* sp.	turtle and tortoise alligator lizard rabbit cottontail pocket gopher pocket mouse kangaroo rat harvest mouse pine mouse woodrat elephant horse horse horse peccary camel deer bison mammoth mastodon llama	Southern California

Locality Number/ Name	Geologic Unit	Taxon	Common Name	Location
		Hemiauchenia macrocephala		
PBDB 214258; PBDB 203253; UCMP V2202	Pico Formation (Pliocene)	*Homeomacrurus fernandensis* *Myliobatis* sp. Aves *Nannocetus eremus*	deep sea fish eagle ray bird baleen whale	Los Angeles County
PBDB 45499; PBDB 97210; PBDB 97230; PBDB 97234; UCMP V3585	Towsley Formation (Pliocene to late Miocene)	*Nannocetus eremus* *Dusisiren jordani* *Imagotaria downs* *Carcharodon hastalis* *Carcharodon carcharias* *Otodus megalodon*	baleen whale dugong walrus white shark white shark megatoothed shark	Los Angeles County

SOURCE: AVL, *Paleontological Resources Technical Report*, 2021.

3.7.3.2 Methodology

The methodology used to evaluate the potential environmental impacts associated with geology, soils, and seismicity included a review of published maps, professional publications, and technical reports pertaining to the geology, soils, and seismicity of the Project Area. The analysis focuses on the potential of the Project to increase the risk of personal injury, loss of life, and damage to property as a result of existing geologic conditions in the Project Area. The information was researched from State and federal agencies as well as information compiled and evaluated by the Cities of Los Angeles, Burbank, Glendale, Santa Clarita, Palmdale, Lancaster, and unincorporated Los Angeles County.

The methodology used to evaluate the potential environmental impacts associated with paleontological resources included an analysis of existing data consisting of a geologic map review, a review of literature, a museum records search, and a pedestrian field survey. The literature review included published and unpublished scientific papers and database searches. Paleontological museum records search results from the NHMLA were analyzed and incorporated into this paleontological investigation. The paleontological survey was conducted to check for any exposures of native, previously undisturbed rock or sediments of the underlying geologic units, and if present, assess the potential for fossils. The Project Area and surrounding areas were documented and photographed, with photographed areas spatially referenced with a GPS unit.

3.7.4 Impact Analysis

This section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation (if applicable). The potential for the Project to result in an impact to Geology, Soils, and Paleontological Resources is independent of the various design options unless otherwise stated..

Impact 3.7-1) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to division of Mines and Geology Special Publication 42.

ii. Strong seismic ground shaking?

iii. Seismic-related ground failure, including liquefaction?

iv. Landslides?

All three of the capital improvement areas lie within an Alquist-Priolo Earthquake Zone and cross multiple major earthquake fault zones. The Balboa Double Track Extension is intersected by the San Fernando and Santa Susana faults within the Sierra Madre Fault Zone; to the south of the Balboa Double Track Extension lies the Mission Hills Fault Zone and Northridge Fault. The Canyon Siding is intersected by the Honor Rancho section of the San Gabriel Fault Zone. Major earthquake fault zones underlay other portions of the AVL outside of the capital improvement

areas, including the Soledad Fault and the Mojave Section of the San Andreas Fault Zone. The Balboa Double Track Extension and the Canyon Siding Extension are both within areas that are susceptible to landslides and debris flows. The portion of the AVL Corridor in the Canyon country, including the Balboa Double Track Extension site and the Canyon Siding Extension site overlays or runs parallel to multiple liquefaction zones. The Southern California region is a seismically active region that has experienced moderate to strong ground shaking in recent decades that has directly and indirectly resulted in loss of life and property.

The Project would incorporate mitigation measures during construction and operation to reduce the significance of impacts to less-than-significant levels. Construction and operational impacts are summarized below.

Construction

Surface Fault Rupture

Less-Than-Significant Impact with Mitigation. Construction of the Balboa Double Track Extension would require the re-alignment of both the existing Main Line track and existing Sylmar Siding, the existing rail track would be re-aligned under the I-5 to balance side clearances for both tracks. The I-5 bridge piers would be protected through the installation of pier protection infrastructure. The proposed realigned rail track and second track would be supported by an approximately 475-foot retaining wall along the west side of the corridor.

Construction of the Canyon Siding Extension would require substantial grading to accommodate the second track. In addition, the Platform to Platform Pedestrian Undercrossing, Island Platform with Platform to Parking Lot Pedestrian Undercrossing, and Island Platform with Pedestrian Undercrossing Design Options would require additional excavation to construct grade separated pedestrian undercrossings. Due to the location of the Canyon Siding Segment within a liquefaction zone that is prone to landslides and debris flow, grading and excavation activities may directly or indirectly result in impacts involving landslides. However, the areas requiring grading would be located within the existing ROW and retaining walls would be applied to areas to avoid encroachments outside of the ROW.

Much of the soil underneath the capital improvement areas includes moderately to loosely consolidated sedimentary deposits, including alluvial fan deposits. Construction of the Project on soft or loose soils could result in on- or off-site slumps, small landslides at river or stream crossings, or instability of cut-and-fill slopes necessary for the AVL tracks, which could endanger people or on-site or off-site properties if not addressed. However, the likelihood of a large earthquake during construction is considered low because of the comparatively short duration of construction relative to the frequency of large earthquakes in the region.

Potential impacts due to construction of the capital improvement areas would be similar to those that would occur as result of a typical rail construction project and would require avoiding damage to the existing rail track alignment, grading, and earth stabilization by taking measures to prevent undermining existing structures and reducing potential geologic/soils hazards to construction workers. Project design would include Mitigation Measure **GEO-1**, which requires the Project to comply with the latest versions of local and State building codes and regulations in order to

construct seismically-resistant structures that help counteract the adverse effects of surface rupture. Compliance with best construction practices and design criteria outlined in the Metro Design Criteria and adherence to regulatory requirements would reduce potential impacts related to construction activities to less-than-significant levels.

Operations

Surface Fault Rupture

Less-Than-Significant Impact. All three of the capital improvement areas for the Project are intersected by designated Alquist-Priolo Earthquake Fault Zones and, in the unlikely event of surface rupture, damage would be expected to occur to the Project rail track. In addition, the AVL alignment intersects with multiple Fault Zones, including the San Andreas Fault Zone. Potential surface fault rupture along any segment of the AVL would result in significant impacts to the operations of the Project. However, as the AVL is an existing active rail line within a seismically active region, operational risks to the track are already presumed and incorporated into current Metro and Metrolink maintenance policies and State of Good Repair Initiative. Compliance with Metro's Resilience Indicators Framework and adhering to regularly scheduled maintenance and repair of the AVL track would minimize and potential operational surface fault rupture impacts to the fullest extent possible given the seismically active nature of the region. Additionally, the State of California, under Governor Newsom, announced the launch of the California Earthquake Early Warning System, a statewide initiative that will broadcast automatic early earthquake warnings across mass transit and rail systems in an effort to halt/recalibrate operations during seismic activity.[13] In August 2020, the Governor's Office of Emergency Services (Cal OES) launched the Earthquake Warning California program, which is the country's first publicly available, statewide earthquake warning system. The program's resources include information for transportation sectors on actions in the event of an earthquake alert, such as safely slowing down mass transit systems, powering down equipment, or bringing elevators to an emergency stop. While not considered part of the Project, this system is currently in use for all present and planned California mass transit operations, including the Project. Implementation of this System during operational activities of the Project will further reduce the risk of injury, loss of life, or catastrophic infrastructure failure in the event of seismic activity. Therefore, the Project would result in a less-than-significant impact related to operational activities.

Construction

Strong Seismic Ground Shaking

Less-Than-Significant Impact with Mitigation. As stated above, while the Project is intersected by multiple Earthquake Fault Zones, given the intermittent and temporary nature of construction work and the relative rarity of seismic events, the occurrence of strong seismic ground shaking during construction of the Project is unlikely to occur and impossible to predict. Project design would include Mitigation Measure **GEO-1**, which requires the Proposed Project to comply with the latest versions of local and State building codes and regulations in order to construct seismically-resistant structures that help counteract the adverse effects of ground shaking. Therefore, with

[13] Governor's Office of Emergency Services. *California Earthquake Early Warning Program.* https://caloes.ca.gov/cal-oes-divisions/earthquake-tsunami-volcano-programs/california-earthquake-early-warning-program. Accessed March 1, 2020.

mitigation, construction of the Project would have a less-than-significant impact related to ground shaking.

Operations

Strong Seismic Ground Shaking

Less-Than-Significant Impact. The Proposed Project is located within the seismically active Southern California region. Hence, ground shaking as a result of earthquake generated from nearby and intersecting faults is anticipated. However, as previously stated, the Proposed Project would construct capital improvements to an existing rail line which is already subjected to the Resiliency Indicators Framework as well as the State of Good Repair Initiative. Compliance with these Metro policies and plans would mitigate the potential operational impacts of ground shaking to the Project to the fullest extent possible. Therefore, the operation of the Project would have a less-than-significant impact related to ground shaking.

Construction

Liquefaction

Less-Than-Significant Impact with Mitigation. Excavation activities to construct the Platform to Platform Pedestrian Undercrossing, Island Platform with Platform to Parking Lot Pedestrian Undercrossing, and Island Platform with Pedestrian Undercrossing Design Options may increase the risk of soil instability leading to increased risk of liquefaction in the Project Area. However, given intermittent nature of construction work and the relative rarity of seismic events, the occurrence of seismic shaking resulting in liquefaction during construction of the Project is unlikely. Additionally, Project design requirements as part of Mitigation Measure **GEO-1** would include site-specific geotechnical investigations to assess the current groundwater depth and determine liquefaction risk, as well as seismic risk solutions incorporated into final design (e.g., deep foundations, ground improvement, remove and replace, among others) in liquefaction prone areas of the AVL. Therefore, with mitigation, construction of the Project would have a less-than-significant impact related to liquefaction.

Operations

Liquefaction

Less-Than-Significant Impact. Risk of liquefaction varies by depth of the groundwater. Liquefaction is unlikely to happen in the Project Area due to the deep groundwater (average greater than 50 feet below ground surface (bgs) and deeper). However, seismically-induced settlements (dry settlements) are a potential hazard due to mostly granular soil deposits, deep groundwater, and expected high peak ground acceleration in the Project Area. However, compliance with the policies of Metro's Resiliency Indicators Framework and State of Good Repair Initiative would reduce the potential operational impacts of liquefaction to the fullest extent possible. Therefore, operation of the Project would have a less-than-significant impact related to liquefaction.

Construction

Seismically-Induced Slope Failure and Landslides

Less-Than-Significant Impact with Mitigation. Construction of the Canyon Siding Extension would require significant grading activities which may destabilize the soils surrounding the construction footprint for the Canyon Siding Extension site. Both Design Options for the Canyon Siding Extension and the Island to Pedestrian Undercrossing Design Option for the Lancaster Terminal Improvements would require additional excavation activities that may increase the risk of seismically-induced slope failure and landslides. The presence of a liquefaction zone underneath the Canyon Siding Extension site further increases the risk of landslide and debris flow during grading and excavation activities. However, given intermittent nature of construction work and the relative rarity of seismic events, the occurrence of seismic shaking resulting in slope failure and landslides during construction of the Project is unlikely. Additionally, the areas requiring grading will be located within the existing ROW and retaining walls would be applied, which would reduce the risk of slope failure during construction. To reduce the potential but unlikely impacts of slope failure and landslides during construction, Project design would include Mitigation Measure **GEO-1**, which requires preparation of a geotechnical report to address geological constraints, including those related to unstable soils. Therefore, with mitigation, construction of the Project would have a less-than-significant impact related to slope failure and landslides.

Operations

Seismically-Induced Slope Failure and Landslides

Less-Than-Significant Impact. The AVL alignment and ROW crosses and runs parallel to multiple earthquake-induced landslide areas. Slope failure could affect the rail track and surface streets adjacent to the Project, affecting the operational activities of the entire AVL. However, as previously stated, retaining walls along slopes affected by the Balboa Double Track Extension or the Canyon Siding Extension would be employed to stabilize slopes. For the remainder of the AVL Corridor, compliance with the Resiliency Indicator's Framework's policies to mitigate landslide hazards and Metro's State of Good Repair Initiative would ensure that potential operational impacts related to slope failure and landslides would be reduced the fullest extent possible. Therefore, operations of the Project would have a less-than-significant impact related to slope failure and landslides.

Mitigation Measures

GEO-1 Prior to the construction of the Proposed Project, Metro shall develop a geotechnical design report to address geological, seismic, and soil-related constraints encountered by the Project. The Proposed Project shall be designed based on the latest versions of local and State building codes and regulations in order to construct seismically-resistant structures that help counteract the adverse effects of ground shaking. During final design, site-specific geotechnical investigations shall be performed at the sites where structures are proposed within liquefaction-prone designated areas. The investigations shall include exploratory soil borings with groundwater measurements. The exploratory soil borings shall be advanced, as a minimum, to the depths required by local and State jurisdictions to conduct

liquefaction analyses. Similarly, the investigations shall include earthquake-induced settlement analyses of the dry substrata (i.e., above the groundwater table). The investigations shall also include seismic risk solutions to be incorporated into final design (e.g., deep foundations, ground improvement, remove and replace, among others) for those areas where liquefaction potential may be experienced. The investigation shall include stability analyses of slopes located within earthquake-induced landslide areas and provide appropriate slope stabilization measures (e.g., retaining walls, slopes with shotcrete faces, slopes re-grading, among others). The geotechnical investigations and design solutions shall follow the "Guidelines for Evaluating and Mitigating Seismic Hazards in California" Special Publication 117A of the California Geologic Service, as well as Metro's Design Criteria and the latest federal and State seismic and environmental requirements.

Significance of Impacts after Mitigation

With implementation of Mitigation Measure **GEO-1** potential impacts related to seismic hazards would be less than significant as design of the three capital improvements would address geological constraints.

Impact 3.7-2) Would the Proposed Project result in substantial soil erosion or the loss of topsoil?

Construction

Less-Than-Significant Impact with Mitigation. The Project Area is underlain by coarse-grained cohesionless soils (sand, silty sand, gravel) with cobbles and boulders, which can be susceptible to erosion. The capital improvements within the Balboa and Lancaster Terminal Segments would occur along previously graded areas and would construct retaining walls along the capital improvement site boundary. As discussed above, construction of the Canyon Siding Extension would require significant grading activities which may result in substantial soil erosion or the loss of topsoil surrounding the construction Project ROW. Additionally, as previously discussed, additional excavation activities would be required for the Design Options for the Canyon Siding Extension and the Island to Pedestrian Undercrossing Design Option for the Lancaster Terminal Improvements. Implementation of these Design Options, as part of the Proposed Project, would result in additional loss of topsoil compared to the Proposed Project without these Design Options, which would require much less excavation as pedestrian crossings at the Santa Clarita Station would be at-grade and no improvements to the Lancaster Terminal platform would be constructed. Construction activities shall implement Best Management Practices (BMPs) designated for soil stabilization and sediment control, including but not limited to, temporary measures like construction entrances, a move-in/move-out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures. Impacts related to soil erosion would be further addressed through the implementation of Mitigation Measure **GEO-1**, which would ensure that the Proposed Project is designed based on the latest versions of local and State building codes and regulations in order to counteract erosion. During construction, earthwork activities for rail track bed, bridge, station platforms, and utility trenches would be conducted based on local and State regulations and appropriate permits, and during the period of the year designated for those activities to be undertaken. Therefore, with the incorporation of Mitigation Measure **GEO-1**,

construction impacts related to soil erosion or the loss of topsoil would be reduced to less than significant levels.

Operations

No Impact. Operation of the Proposed Project would run on the AVL and completed Capital improvements and would require no activities which further result in soil erosion or the loss of topsoil. There is no potential for operations to result in substantial soil erosion or loss of topsoil. Therefore, the Proposed Project would not result in no impact related to operational activities.

Mitigation Measures

Refer to Mitigation Measure **GEO-1**.

Significance of Impacts after Mitigation

With implementation of Mitigation Measure **GEO-1** potential impacts related to loss of top soil and soil erosion would be less than significant as design of the three Capital improvements would address soil conditions.

Impact 3.7-3) Would the Proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Construction

Less-Than-Significant Impact with Mitigation. As previously discussed, the Project Area is underlain with potentially unstable geological conditions and soil types. The Balboa Double Track Extension and the Canyon Siding Extension sites are susceptible to shallow landslides due to their proximity to hilly topography. The potential for significant lateral spreading impacts is further heightened by the numerous faults that also run throughout the Project Area, including the Sierra Madre Fault zone, which underlays the Balboa Double Track Extension site, and the San Gabriel Fault Zone, which underlays the Canyon Siding Extension site. The alignment portion within the City of Lancaster is susceptible to subsidence due to groundwater pumping activities in the City of Lancaster. Due to its proximity to the Santa Clara River channel, the Canyon Siding Extension would be at particular risk of impacts from natural slope instability and liquefaction. As previously discussed, the Project Area is underlain by coarser-grained and rapidly deposited alluvial soils, which may be susceptible to collapse.

Construction activities for each capital improvement site would include site clearing, grading and retaining wall installation, utility relocation and installation, and track and systems installation, which could potentially destabilize soils and result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Construction activities would not involve any groundwater pumping activities. Additionally, construction of the Design Options for the Canyon Siding Extension and the Island to Pedestrian Undercrossing Design Option for the Lancaster Terminal Improvements would require additional excavation activities that may further increase the risk of soil instability or displacement.

To address these risks, construction activities would include standard BMPs designated for soil stabilization and sediment control, including the removal and replacement of collapsible soils. Additionally, implementation of ground improvement methods and structural support systems would minimize the potential for impacts related to collapse or settlement. Furthermore, implementation of Mitigation Measure **GEO-1** would ensure that the Proposed Project is designed and constructed according to all applicable local, State, and Federal, and Metro seismic and environmental requirements. Therefore, with mitigation, construction impacts would be less than significant.

Operations

Less-Than-Significant Impact. The Project Area is at risk of landslides, lateral spreading, subsidence, liquefaction, and soil collapse occurrence, any which event would impact the operations of the Proposed Project and the entirety of the AVL rail corridor. Shallow groundwater (i.e., less than 10 feet bgs) is not expected to be encountered within the Project Area, and therefore it is unlikely for groundwater levels to impact the existing and proposed structures within the rail ROW during operations. Liquefaction is unlikely to occur in the Project Area due to the deep groundwater (average greater than 50 feet below ground surface (bgs) and deeper). Furthermore, operational activities of the Proposed Project would not include any groundwater pumping elements. The Proposed capital improvements would be located on or adjacent to existing rail ROW and surrounding areas, which includes coarser-grained, rapidly deposited alluvial soils, and other potentially collapsible soils. However, the relatively deep groundwater conditions substantially reduce the potential for collapse, and any collapsible soil encountered during construction would be removed and replaced according to construction BMPs.

Metro's Resiliency Indicator Framework includes technical indicators which Metro uses to assess the resilience of its infrastructure and operational activities, measured by technological and organizational robustness, redundancy, and safe-to-fail principles. Additionally, operational risks to the track are already presumed and incorporated into current Metro and Metrolink maintenance policies and the State of Good Repair Initiative, which would ensure that potential operational impacts would be reduced to the fullest extent possible by requiring the Proposed Project to maintain its assets in good working order. Compliance with the Resiliency Indicator's Framework's and State of Good Repair Initiative's policies to mitigate hazards related to landslides, lateral spreading, subsidence, liquefaction, or collapse would ensure that potential operational impacts related to landslides would be reduced the fullest extent possible. Therefore, operational impacts would be less-than-significant.

Mitigation Measures

With implementation of Mitigation Measure **GEO-1** potential impacts related to landslides and lateral spreading would be less than significant as design of the three Capital improvements would address soil conditions.

Significance of Impacts after Mitigation

With implementation of Mitigation Measure **GEO-1** potential impacts related to seismic hazards would be less than significant as design of the three capital improvements would address geotechnical and soil-related constraints.

Impact 3.7-4) Would the Proposed Project be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Construction

Less-Than-Significant Impact with Mitigation. Most of the Project Area is underlain within low expansion prone soils, with the exception being the area west of the LAUS, which contains Altamont clay loam, a moderately expansive form of clay. However, no construction activities would occur in this area. Construction activities shall include BMPs designated for soil stabilization and sediment control, including the removal and replacement of any expansive soils encountered during construction. Furthermore, implementation of Mitigation Measure **GEO-1** would further ensure soil stability by requiring that the Proposed Project be designed and constructed according to all applicable local, State, Federal, and Metro seismic and environmental requirements. Therefore, with mitigation, construction impacts would be less than significant.

Operations

Less-Than-Significant Impact. Most of the AVL Corridor lies within low expansion prone areas, with the exception being an area west of the LAUS, which contains Altamont clay loam, a moderately expansive form of clay. The AVL track and associated capital improvements would operate on or adjacent to existing rail track. Soils in the Project Area are mostly granular and alluvial in nature and lay within “low expansion” and “low to moderate expansion” prone areas. The Project rail alignment ROW is not prone to expansive soil. In addition, the final design would be performed in accordance with Metro’s Design Criteria, the latest federal and state seismic and environmental requirements, and State and local building codes. Therefore, the Proposed Project would result in less-than-significant impacts related to operational activities.

Mitigation Measures

With implementation of Mitigation Measure **GEO-1** potential impacts related to landslides and lateral spreading would be less than significant as design of the three Capital improvements would address soil conditions.

Significance of Impacts after Mitigation

Less-than-significant impact.

Impact 3.7-5) Would the Proposed Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Neither construction of nor operation along the Project would require the use of a septic tank or alternative wastewater disposal systems. Therefore, the Proposed Project would not result in a significant impact related to construction or operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

Impact 3.7-6) Would the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Excavations into areas containing Pleistocene- to Pliocene-age Saugus Formation, conglomerate and sandstone (QTs) (PFYC 4), Pleistocene- to Pliocene-age Saugus Formation, Sunshine Ranch Member (Tsr) (PFYC 4), Pliocene-age Pico Formation, sandstone (Tps) (PFYC 4), Pliocene-age Pico Formation, micaceous siltstone-claystone (Tp) (PFYC 4), early Pliocene- to late Miocene-age Towsley Formation, sandstone (Ttos) (PFYC 4), and Pleistocene-age older sedimentary deposits (Qog, Qoa) may encounter significant paleontological resources.

Construction

Less-Than-Significant Impact with Mitigation. Paleontological resources are typically found within sedimentary deposits, which are found throughout the Project Area. The Design Options for the Canyon Siding Extension and the Island to Pedestrian Undercrossing Design Option for the Lancaster Terminal Improvements require additional excavation which would increase the risk of construction activities uncovering or damaging resources. Widening of the track bed and the addition of drainage ditches at the Balboa Double Track Extension and Canyon Siding Extension locations would require excavation of the existing cut slopes and retaining walls. Construction of the Lancaster Terminal Improvements Segment would require excavation for building and platform foundations, utility relocations and base for new tracks. Therefore, there is the possibility that construction of the Proposed Project would unearth or destroy unique paleontological or geologic features. Disturbance of undocumented resources would be a potentially significant impact under CEQA without implementation of mitigation measures. Implementation of Mitigation Measures **PAL-1** and **PAL-2**, as presented below, would avoid or reduce potential impacts to paleontological resources to a level that is less than significant.

Operations

No Impact. The surface-running AVL would operate on existing and newly construction rail track. There is no potential for operations to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Therefore, the Proposed Project would not result in a significant impact related to operational activities.

Mitigation Measures

PAL-1 Full-time paleontological monitoring shall be implemented when Saugus Formation (QTs, Tsr), Pico Formation (Tps, Tp), Towsley Formation (Ttos), or older sedimentary deposits (Qog, Qoa) are impacted. Excavations into artificial fill (af) and younger sedimentary deposits (Qf, Qyfc, Qa, Qg) shall be initially spot-checked during excavations that exceed depths of 5 feet to check for underlying, paleontologically sensitive older sedimentary deposits. If it is determined that only artificial fill (af), modern alluvial fan deposits (Qf), younger alluvial fan deposits (Qyfc), alluvial gravel, and clay of valley areas (Qa), or stream channel deposits (Qg) are impacted, the monitoring program may be reduced or suspended.

PAL-2 Prior to construction, a Paleontological Resources Impact Mitigation Program (PRIMP) shall be prepared that provides detailed recommended monitoring locations; a description of a paleontological resources worker environmental awareness program to inform construction personnel of the potential for fossil discoveries and of the types of fossils that may be encountered; detailed procedures for monitoring, fossil recovery, laboratory analysis, and museum curation; and notification procedures in the event of a fossil discovery by a paleontological monitor or other project personnel. A curation agreement from the NHMLA, or another accredited repository, shall also be obtained prior to excavation in the event that paleontological resources are discovered during the construction phase of the Project.

Significance of Impacts after Mitigation

With implementation of Mitigation Measures **PAL-1** and **PAL-2** potential impacts to unknown paleontological resources would be less than significant as paleontological monitoring and a resource recovery plan would be implemented.

3.8 GREENHOUSE GAS EMISSIONS

The following summarizes the applicable regulations and the existing setting and provides a detailed impact assessment related to greenhouse gas (GHG) emissions. The Project Area for the greenhouse gas emissions analysis is the Southern California Association of Governments (SCAG) region.

The subject of GHG emissions and climate change resiliency adaptation has garnered substantial regulatory attention in recent years. Climate change refers to variations in average long-term meteorological conditions on Earth as a whole, including changes in temperature, wind patterns, precipitation, and frequency and severity of extreme weather events. Historical records indicate that global climate fluctuations have occurred in the past due to natural phenomena; however, recent data increasingly suggests that the current global conditions are distinct from previous patterns and are influenced by anthropogenic (human sourced) GHG emissions.[1]

GHGs are a class of pollutants that are generally understood to play a critical role in controlling atmospheric temperature near the Earth's surface by allowing high frequency shortwave solar radiation to enter the planet's atmosphere and then subsequently trapping low frequency infrared radiative energy that would otherwise emanate back out into space. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes; the glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. The levels of GHGs in the atmosphere affect how much heat energy can be absorbed.

Radiative forcing is an expression of the net difference in energy entering Earth's atmosphere versus leaving it. Each GHG possesses its own degree of climate forcing ability to absorb low frequency infrared energy, meaning that some GHGs are more effective in trapping heat in the atmosphere than others. Water vapor is the most environmentally prevalent GHG, however, definitive methods are not established to regulate emissions and concentrations of water vapor in the atmosphere. After water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) are the most ubiquitous GHGs. CO_2 is commonly used as the standard reference for characterizing the relative global warming potential (GWP) of other GHGs. The GWP value describes the relative magnitude of climate forcing effects of GHGs and is used to convert emissions into CO_2-equivalents (CO_2e). For example, CH_4 is 20 times more potent than CO_2 over a 20-year period.

3.8.1 Regulatory Framework

3.8.1.1 Federal Regulations

Clean Air Act. In *Massachusetts v. Environmental Protection Agency* (2007) 549 United States 497, the United States Supreme Court held in April 2007 that the United States Environmental Protection Agency (USEPA) has statutory authority under Section 202 of the federal Clean Air

[1]IPCC, *Climate Change 2013: The Physical Science Basis, Fifth Assessment Report*, ISBN 978 1 107 05799-1 Hardback; 978 1 66182-0 Paperback. 2013.

Act (CAA) to regulate GHG emissions. The court did not hold that the USEPA was required to regulate GHG emissions; however, it indicated that the agency must decide whether GHG emissions cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHG emissions under Section 202(a) of the CAA (42 United States Code Section 7521). These findings included that GHG emissions threaten the public health and welfare of future generations and motor vehicle engines contribute to air pollution, which poses an ongoing threat to public health and welfare. On June 23, 2014, the U.S. Supreme Court ruled in *Utility Air Regulatory Group. vs. Environmental Protection Agency* that the USEPA exceeded its statutory authority under the CAA.

Energy Independence and Security Act. The Energy Independence and Security Act (EISA) of 2007 includes several key provisions that will increase energy efficiency and the availability of renewable energy, which will reduce GHG emissions as a result.

The Act facilitates the reduction of GHG emissions by requiring the following:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard that requires fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Prescribing or revising standards affecting regional efficiency for heating and cooling products, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances; and
- Achieving greater efficiency for light bulbs by phasing out old incandescent light bulbs.

Additional provisions of EISA promote energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of green jobs.

Heavy Duty Vehicle Program. The Heavy-Duty Vehicle Program was adopted on August 9, 2011, to establish the first fuel efficiency requirements for medium- and heavy-duty vehicles beginning with the model year 2014.

American Public Transportation Association. The American Public Transportation Association (APTA) prepared a report in 2009 titled *Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit*. The report provides guidance to transit agencies for quantifying GHG emissions, including both emissions generated by transit and the potential reduction of emissions through efficiency by laying out a standard methodology for transit agencies to report their GHG emissions in a transparent, consistent and cost-effective manner.[2]

Federal Transit Administration Climate Change Adaptation Initiative. The Federal Transit Administration (FTA) has implemented a Climate Change Adaptation Initiative program to investigate potential strategies for reducing climate impacts from transit. The program conducted seven climate adaptation pilot studies to increase knowledge of how transit agencies can adapt to climate change, advance the state of the practice in adapting transit assets and operations to

[2]APTA, *Recommended Practice for Quantifying Greenhouse Gas Emissions from Transit*, 2009.

the impacts of climate change, and build strategic partnerships between transit agencies and climate adaptation experts. The approach of the pilot projects involved identification of climate hazards and potential climatic events, characterization of risks on transit projects and operations, development of initial adaptation strategies and linking strategies to organizational structures.

3.8.1.2 State Regulations

California has adopted a variety of statewide legislation to address various aspects of climate change and GHG emissions. The legislation is not directed at citizens or jurisdictions specifically; rather, it establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The Governor's office has also issued several executive orders related to the state's evolving climate change policy. Below is a summary of GHG legislation applicable to the proposed Projects of Balboa Double Track Extension, Canyon Siding Extension, and Lancaster Terminal Improvements.

California Greenhouse Gas Reduction Targets

Executive Order S-3-05. On June 1, 2005, Executive Order (E.O.) S-3-05 set the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. E.O. S-3-05 calls for the Secretary of California Environmental Protection Agency (Cal/EPA) to be responsible for coordination of state agencies and progress reporting.

In response to the E.O. S-3-05, the Secretary of the Cal/EPA created the Climate Action Team (CAT). The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in E.O. S-3-05. The CAT is responsible for preparing reports that summarize the State's progress in reducing GHG emissions. The most recent CAT Report was published in December 2010. The CAT Report discusses mitigation and adaptation strategies, State research programs, policy development, and future efforts.[3]

Assembly Bill 32. In 2006, the California State Legislature adopted Assembly Bill (AB) 32—codified in the California Health and Safety Code [HSC], Division 25.5 – California Global Warming Solutions Act of 2006—which focuses on reducing GHG emissions in California to 1990 levels by 2020. AB 32 defines regulated GHGs as CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6) and represents the first enforceable statewide program to limit emissions of these GHGs from all major industries with penalties for noncompliance. The law further requires that reduction measures be technologically feasible and cost effective. Under AB 32, the California Air Resources Board (CARB) has the primary responsibility for reducing GHG emissions. AB 32 required CARB to adopt rules and regulations directing State actions that would achieve GHG emissions reductions equivalent to 1990 Statewide levels by 2020.

[3]California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature*, 2006.

A specific requirement of AB 32 was to prepare a Climate Change Scoping Plan for achieving the maximum technologically feasible and cost-effective GHG emission reduction by 2020 (Health and Safety Code Section 38561 (h)). CARB developed an AB 32 Climate Change Scoping Plan (2008 Scoping Plan) that contained strategies to achieve the 2020 emissions cap.[4] The 2008 Scoping Plan was approved in 2008 and contains a mix of recommended strategies that combined direct regulations, market-based approaches, voluntary measures, policies, and other emission reduction programs calculated to meet the 2020 Statewide GHG emission limit and initiate the transformations needed to achieve the State's long-range climate objectives.

As required by AB 32, CARB approved the 1990 GHG emissions inventory, thereby establishing the emissions limit for 2020. The 2020 emissions limit was originally set at 427 million metric tons of carbon dioxide equivalents ($MMTCO_2e$) using the GWP values from the Intergovernmental Panel on Climate Change (IPCC) Second Assessment Report (SAR). CARB also projected the State's 2020 GHG emissions under No-Action-Taken (NAT) conditions – that is, emissions that would occur without any plans, policies, or regulations to reduce GHG emissions. CARB originally used an average of the State's GHG emissions from 2002 through 2004 and projected the 2020 levels at approximately 596 $MMTCO_2e$ (using GWP values from the IPCC SAR).

The First Update to the Climate Change Scoping Plan (2014 Scoping Plan) was approved by CARB in May 2014 and built upon the 2008 Scoping Plan with new strategies and recommendations. In 2014, CARB revised the target using the GWP values from the IPCC AR4 and determined that the 1990 GHG emissions inventory and 2020 GHG emissions limit was 431 $MMTCO_2e$. CARB also updated the State's 2020 NAT emissions estimate to account for the effect of the 2007–2009 economic recession, new estimates for future fuel and energy demand, and the reductions required by regulation that were adopted for motor vehicles and renewable energy. CARB's projected Statewide 2020 emissions estimate using the GWP values from the IPCC AR4 is 509.4 $MMTCO_2e$.

Senate Bill 32. In 2016, the California State Legislature adopted SB 32—which adds Section 38566 to the Health and Safety Code and requires a commitment to reducing statewide GHG emissions by 2020 to 1990 levels and by 2030 to 40 percent less than 1990 levels—and its companion bill AB 197, which provides additional direction for developing the Scoping Plan. Both were signed by Governor Brown to update AB 32 and include an emissions reduction goal for the year 2030. SB 32 and AB 197 amend AB 32 and establish a new climate pollution reduction target of 40 percent below 1990 levels by 2030 and include provisions to ensure the benefits of State climate policies reach into disadvantaged communities.

In response to the 2030 GHG reduction target, CARB adopted the 2017 Climate Change Scoping Plan (2017 Scoping Plan) at a public meeting held in December 2017.[5] The 2017 Scoping Plan outlines the strategies that the State will implement to achieve the 2030 GHG reduction target. The strategies build on the existing Cap-and-Trade Regulation, the low-carbon fuel standard

[4]CARB, *Climate Change Scoping Plan – A Framework for Change Pursuant to AB 32 The California Global Warming Solutions Act of 2006*, December 2008.
[5]CARB, *California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target*, November 2017.

(LCFS), improved emissions standards, and increasing renewable energy. the strategies also include reducing methane emissions from agricultural and other wastes by using it to meet California's energy needs. The 2017 Scoping Plan also comprehensively addresses GHG emissions from natural and working lands of California, including the agriculture and forestry sectors. CARB's projected Statewide 2030 emissions take into account 2020 GHG reduction policies and programs. The 2017 Scoping Plan includes ongoing and statutorily required programs from earlier legislation and continues the Cap-and-Trade program. This Scoping Plan Scenario was modified from the January 2017 Proposed Scoping Plan to reflect AB 398, including removal of the 20 percent refinery measure.

CARB states that the Scoping Plan Scenario "is the best choice to achieve the State's climate and clean air goals". Most of the reductions would result from the continuation of the Cap-and-Trade regulation. Additional reductions are achieved from:

- Electricity sector standards (i.e., utility providers to supply at least 50 percent renewable electricity by 2030);
- Doubling the energy efficiency savings at end uses;
- Additional reductions from the LCFS, implementing the short-lived GHG strategy (e.g., hydrofluorocarbons); and
- Implementing the mobile source strategy and sustainable freight action plan. The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030.

The alternatives were designed to consider various combinations of these programs, as well as consideration of a carbon tax in the event the Cap-and-Trade regulation is not continued. However, in July 2017, the California Legislature voted to extend the Cap-and-Trade regulation to 2030.

The 2017 Scoping Plan discusses the role of local governments in meeting the State's GHG reductions goals because local governments have jurisdiction and land use authority related to: community-scale planning and permitting processes, local codes and actions, outreach and education programs, and municipal operations. Furthermore, local governments may have the ability to incentivize renewable energy, energy efficiency, and water efficiency measures.

Executive Order B-16-2012. E.O. B-16-2012 establishes benchmarks for reducing transportation-related GHG emissions. It requires agencies to implement the Plug-in Electric Vehicle Collaborative and California Fuel Cell Partnership by 2015 and sets forth targets specific to the transportation section, including the goal of reducing transportation related GHG emissions to 80 percent less than 1990 levels.

Executive Order B-30-15. E.O. B-30-15 established a medium-term goal for 2030 of reducing GHG emissions by 40 percent below 1990 levels and requires CARB to update its current AB 32 Scoping Plan to identify measures to meet the 2030 target. The executive order supports E.O. S-

03-05, described above, but is currently only binding on State agencies. However, there are current (2015/2016) proposals (i.e., SB 32) at the State legislature to adopt a legislative target for 2030.

Executive Order B-55-18. E.O. B-55-18 established a statewide goal to "achieve carbon neutrality as soon as possible, and no later than 2045, and maintain and achieve negative emissions thereafter." The order directs the CARB to work with other relevant State agencies to identify measures to achieve those goals.

Renewable Energy Standards/Renewable Portfolios Standard

Senate Bill 1078 and Senate Bill 107. SB 1078 (2002) and SB 107 (2006) created the Renewable Energy Standard, which required electric utility companies to increase procurements from eligible renewable energy resources by at least 1 percent of their retail sales annually until reaching 20 percent by 2010. SB 2X 1 (2011) requires a Renewables Portfolio Standard, functionally the same thing as the Renewable Energy Standard, of 33 percent by 2020. In 2013, the statewide average for the three largest electrical suppliers (Pacific Gas and Electric, Southern California Edison, and San Diego Gas & Electric) was 22.7 percent. As noted below, SB 350 increased the renewable requirement to 50 percent for 2030.

Senate Bill 350. SB 350, also known as the Clean Energy and Pollution Reduction Act of 2015, was approved in 2015 and includes key provisions to require the following by 2030: (1) a renewables portfolio standard of 50 percent and (2) a doubling of energy efficiency for existing buildings.

Senate Bill 1 and Senate Bill 1017 (Million Solar Roofs). SB 1 and SB 1017, enacted in August 2006, set a goal to install 3,000 megawatts of new solar capacity by 2017 - moving the State toward a cleaner energy future and helping lower the cost of solar systems for consumers. The Million Solar Roofs Program is a ratepayer-financed incentive program aimed at transforming the market for rooftop solar systems by driving down costs over time. It provides up to $3.3 billion in financial incentives that decline over time.

Assembly Bill 811. AB 811, enacted July 21, 2008, authorizes California cities and counties to designate districts within which willing property owners may enter into contractual assessments to finance the installation of renewable energy generation and energy efficiency improvements that are permanently fixed to the property.

Advanced Clean Cars

Assembly Bill 1493 (Pavley I and Pavley II). AB 1493 amended the Clean Car Standards (Chapter 200, Statutes of 2002), also known as the "Pavley I" regulations which require reductions in GHG emissions in new passenger vehicles from 2009 through 2016. The amendments are part of California's commitment toward a nation-wide program to reduce new passenger vehicle GHGs from 2012 through 2016. The Clean Car Standards required CARB to develop and adopt standards for vehicle manufacturers to reduce GHG emissions coming from passenger vehicles and light duty trucks at a "maximum feasible and cost-effective reduction" by January 1, 2005. Fleet average emission standards would reach 22 percent reduction by 2012 and 30 percent by 2016.

In January 2012, CARB adopted the Advanced Clean Cars program to extend AB 1493 through model years 2017 to 2025 (also known as "Pavley II"). This program will promote all types of clean fuel technologies such as plugin hybrids, battery electric vehicles, compressed natural gas vehicles, and hydrogen powered vehicles while reducing smog and saving consumers' money in fuel costs. Fuel savings may be up to 25 percent by 2025.

Executive Order S-1-07, the Low Carbon Fuel Standard. On January 18, 2007, E.O. S-1-07 was issued requiring a reduction of at least ten percent in the carbon intensity of California's transportation fuels by 2020. Regulatory proceedings and implementation of the Low Carbon Fuel Standard are CARB's responsibility. The Low Carbon Fuel Standard has been identified by CARB as a discrete early action item in the CARB Scoping Plan. CARB expects the Low Carbon Fuel Standard to achieve the minimum ten percent reduction goal. To avoid the potential for double-counting emission reductions associated with AB 1493 (see previous discussion), the Scoping Plan has modified the aggregate reduction expected from the Low Carbon Fuel Standard to 9.1 percent.

Land Use and Transportation Planning

Senate Bill 375. Adopted on September 30, 2008, SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG. SB 375 requires CARB to consult with the State's Metropolitan Planning Organizations (MPOs), to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035. In February 2011, CARB adopted the GHG emissions reduction targets of 8 percent by 2020 and 13 percent by 2035 relative to 2005 GHG emissions for the Southern California Association of Governments (SCAG), which is the MPO for the region in which the City is located. Of note, the proposed reduction targets explicitly exclude emission reductions expected from the AB 1493 and the Low Carbon Fuel Standard regulations.

Under SB 375, the reduction target must be incorporated within that region's Regional Transportation Plan (RTP), which is used for long-term transportation planning, in a Sustainable Communities Strategy (SCS). Certain transportation planning and programming activities would then need to be consistent with the SCS; however, SB 375 expressly provides that the SCS does not regulate the use of land, and further provides that local land use plans and policies (e.g., general plan) are not required to be consistent with either the RTP or SCS. Under the law, MPOs are tasked with incorporating the SCS as an element of the RTP through the following approach:

- Identify the general location of uses, residential densities, and building intensities within the region;
- Identify areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the RTP taking into account net migration into the region, population growth, household formation and employment growth;
- Identify areas within the region sufficient to house an eight-year projection of the regional housing need for the region;
- Identify a transportation network to service the transportation needs of the region;

- Gather and consider the best practically available scientific information regarding resource areas and farmland in the region;
- Consider the state housing goals;
- Set forth a forecasted development pattern for the region, which, when integrated with the transportation network, and other transportation measures and policies, will reduce the GHG emissions from automobiles and light trucks to achieve, if there is a feasible way to do so, the GHG emission reduction targets approved by the state board; and
- Allow the RTP to comply with the Clean Air Act.

Senate Bill (SB) 743. SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT), which contribute to GHG emissions, as required by AB 32. Key provisions of SB 743 include reforming aesthetics and parking CEQA analysis for urban infill projects and eliminating the measurement of auto delay, including Level of Service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 requires the Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the "…reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses". It also allows OPR to develop alternative metrics outside of transit priority areas.

California Environmental Quality Act (CEQA)

By enacting SB 97 in 2007, California's lawmakers expressly recognized the need to analyze GHG emissions as a part of the CEQA process. SB 97 required the OPR to develop, and the Natural Resources Agency to adopt, amendments to the CEQA Guidelines addressing the analysis and mitigation of GHG emissions. The CEQA Guidelines amendments clarified several points, including the following CEQA Guidelines and Climate Change:

- Lead agencies must analyze the GHG emissions of proposed projects and must reach a conclusion regarding the significance of those emissions (CEQA Guidelines Section 15064.4);
- When a project's GHG emissions may be significant, lead agencies must consider a range of potential mitigation measures to reduce those emissions (CEQA Guidelines Section 15126.4(c));
- Lead agencies must analyze potentially significant impacts associated with placing projects in hazardous locations, including locations potentially affected by climate change (CEQA Guidelines Section 15126.2(a));
- Lead agencies may significantly streamline the analysis of GHG on a project level by using a programmatic GHG emissions reduction plan meeting certain criteria (CEQA Guidelines Section 15183.5(b)); and
- CEQA mandates analysis of a proposed project's potential energy use (including -transportation related energy), sources of energy supply, and ways to reduce energy demand, including through the use of efficient transportation alternatives (CEQA Guidelines, Appendix F).

3.8.1.3 Regional Regulations

Metrolink

Metrolink published a Climate Action Plan on March 30, 2021. The plan, Metrolink's first formal environmentally focused initiative, addresses climate change, air quality, and other pressing sustainability issues to help advance the regional railway's aggressive goal for zero emissions by 2028. While the plan sets a framework for improvements over the next decade, Metrolink is embarking on more immediate measures to reduce its carbon footprint. Currently, a pilot program is underway utilizing a single Tier 2 locomotive to test renewable plant-based diesel fuel—the latest, greenest alternative fuel on the market that is chemically similar to petroleum diesel, but 100 percent renewable and sustainable. Metrolink hopes to see a reduction in pollutant emissions during the pilot period. If the Tier 2 pilot proves successful, testing will begin on a single new Tier 4 locomotive. If all goes well with the Tier 4 locomotive, then Metrolink can transition its entire fleet to renewable diesel fuel.

Over the past decade, Metrolink has reduced its carbon footprint in its 250,000 square-feet of maintenance yards, dispatch centers and administrative offices. Metrolink's administrative and dispatching offices uphold stringent green standards for building energy and resource conservation. The agency has made significant strides forward with such sustainability efforts as storm drain upgrades, recycling and composting, and lighting system retrofitting. In recent years, Metrolink facilities have been certified with United States Green Building Council Leadership in Energy and Environmental Design (LEED) rating designations, a globally recognized symbol of sustainability achievement. In 2017, the agency's Los Angeles Headquarters received a LEED Gold certification for sustainability and is equipped with thermal energy storage, backup generator pads, and technology to optimize oxygen, light and acoustic levels. Meanwhile, Metrolink's Dispatch & Operations Center Building in Pomona is Silver LEED certified and equipped with highly efficient, and cost-saving green design technology.

Another key program is Metrolink's $10 billion capital improvement program, Southern California Optimized Rail Expansion (SCORE), a series of projects on, and improvements to, the 538-mile Metrolink system—scheduled to be completed in time for the Olympic and Paralympic Games in 2028. According to a study by the Los Angeles Economic Development Council, the five-county Southern California region will see many environmental benefits from SCORE, which is projected to eliminate 3.4 billion vehicle miles-traveled and reduce 51.7 million $MTCO_2e$ from 2023 to 2078.

Additionally, Metrolink participates in a Fuel Conservation Program to prevent excessive idling during train maintenance to help reduce fuel use and emissions, uses electric forklifts and rail car movers to perform actions that would normally require diesel fuel and follows a Plug-In Program where rail cars use electricity for their daily service as opposed to locomotive power. The Program also allows maintenance crews to temporarily shut down the Head End Power engines that power the car lights and internal circulation systems to conserve fuel in storage.

Southern California Association of Governments

SCAG is the MPO for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial counties. SCAG addresses regional issues related to transportation, the economy, community development, and the environment. SCAG develops plans pertaining to transportation, growth management, hazardous waste management, housing, and air quality. SCAG prepares the RTP/SCS every four years to support the land use and transportation conformity components of the Air Quality Management Plans, which provide some GHG-reduction co-benefits.

The SCAG Regional Council formally adopted the *Connect SoCal 2020–2045 RTP/SCS* (Connect SoCal) on September 3, 2020. Rooted in the 2008 and 2012 RTP/SCS plans, Connect SoCal's "Core Vision" focuses on maintaining and enhancing management of the transportation network while also expanding mobility choices by creating hubs that connect housing, jobs, and transit accessibility. The "Core Vision" of Connect SoCal is organized into six key focus areas that expand upon progress made in the 2016 RTP/SCS:

- Sustainable Development
- System Preservation and Resilience
- Demand & System Management
- Transit Backbone
- Complete Streets
- Goods Movement

Connect SoCal incorporates a range of best practices for increasing transportation choices, reducing dependence on personal automobiles, further improving air quality and reducing GHG emissions, and encouraging growth in walkable, mixed-use communities.

A new component of the Connect SoCal plan is the Regional Growth Forecast, which was developed to project expected population, households, and jobs at the jurisdictional level throughout the 191 cities and unincorporated SCAG areas through 2045. Strategies to guide integrated land use development decisions and transportation investments to achieve regional goals are provided in the Connect SoCal Growth Vision, which informed SCAG's Forecasted Development Pattern. Each of the six key focus areas in Connect SoCal contains strategies to achieve the intended holistic objectives of the Connect SoCal Growth Vision. The Sustainable Development focus area is the portion of the planning document dedicated to the SCS, which is the most directly applicable element to GHG emissions.

Connect SoCal optimizes opportunities for shorter trip distances and drivers to switch to electric vehicles by directing growth to areas with high quality transit. Development in these areas will be guided by strategies to reduce GHG emissions by focusing growth near destinations and mobility options, promoting diverse housing choice, leveraging technology innovations, supporting implementation of sustainability policies, and promoting a green region. SCAG, in conjunction with CARB, determined that implementation of Connect SoCal would achieve regional GHG reductions relative to 2005 SCAG areawide levels of approximately eight percent in 2020 and

approximately 19 percent by 2045.[6] The regional GHG emissions reductions achieved through the Connect SoCal Growth Vision are consistent with the regional targets set forth by CARB through SB 375 which is the State law that requires GHG reduction targets to be incorporated into the RTP.

South Coast Air Quality Management District

SCAQMD published its first formal action to address GHG emissions in 1991, titled "Policy on Global Warming and Stratospheric Ozone Depletion."[7] The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy. Years later in 2008, the *SCAQMD Climate Change Policy* was issued, which outlined various approaches the agency would explore to pursue opportunities to 1) reduce pollutant emissions and 2) maximize synergistic effects of strategies that reduce emissions across multiple categories of pollutants.[8]

Subsequently, SCAQMD's 2011 *Air Quality-Related Energy Policy* addressed the correlated intersection of control strategies related to improving air quality, reducing GHG emissions, and enhancing energy efficiency. The 2011 policy advocated for concurrent benefits of GHG strategies that reduce criteria pollutant and air toxic emissions while recognizing that climate change can in itself exacerbate ozone and particulate matter (PM) pollution.

SCAQMD released a draft guidance regarding interim CEQA GHG significance thresholds. In its October 2008 document, the SCAQMD proposed the use of a percent emission reduction target (e.g., 30 percent) to determine significance for commercial/residential projects that emit greater than 3,000 metric tons of carbon dioxide equivalents ($MTCO_2e$) per year. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold for stationary source/industrial projects where the SCAQMD is the lead agency. However, SCAQMD has yet to adopt a GHG significance threshold for land use development or transportation projects and has formed a GHG CEQA Significance Threshold Working Group to further evaluate potential GHG significance thresholds.

The GHG CEQA Significance Threshold Working Group is tasked with providing guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group included government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing CEQA GHG significance thresholds. The working group discussed multiple methodologies for determining project significance. These methodologies included categorical exemptions, consistency with regional GHG budgets in approved plans, a numerical threshold, performance standards, and emissions offsets. The GHG CEQA Significance Threshold Working

[6]SCAG, *Connect SoCal 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy*, May 2020.
[7]SCAQMD, *Climate Change*, http://www.aqmd.gov/nav/about/initiatives/climate-change, accessed March 10, 2021.
[8]SCAQMD, *SCAQMD Climate Change Policy*, September 5, 2008.

Group has not convened since 2008, and no quantitative thresholds were ever officially adopted for projects that are not under the purview of SCAQMD as the Lead Agency.

Los Angeles County Metropolitan Transportation Authority

Construction activities to complete the Proposed Project will be contracted by Metro. Therefore, construction contractors will be required to comply with the provisions of the Metro Green Construction Policy, which was adopted in 2011 to reduce harmful air pollutant emissions (particularly particulate matter and nitrogen oxides) during Metro construction projects.[9] Provisions of the Green Construction Policy also contribute to minimizing GHG emissions during construction activities. Through adopting the Green Construction Policy, Metro committed to the following construction equipment requirements, construction best management practices (BMPs), and implementation strategies for all construction projects performed on Metro properties or within Metro right-of-way (ROW):

- All off-road diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 4 off-road emission standards at a minimum. In addition, if not already supplied with a factor-equipped diesel particulate filter, all construction equipment shall be outfitted with Best Available Control Technology (BACT) devices certified by CARB achieving no less than the equivalent of a Level 3 diesel emission control strategy.
- All on-road heavy-duty diesel trucks or equipment with a Gross Vehicle Weight Rating (GVWR) of 19,500 pounds or greater shall comply with USEPA 2007 on-road emission standards for PM and NO_X (0.01 g/bhp-hr. and 1.2 g/bhp-hr., respectively).
- Every effort shall be made to utilize grid-based electric power at any construction site, where feasible. Where access to the power grid is not available, onsite generators must:
    - Meet a 0.01 gram per brake-horsepower-hour standard for PM, or
    - Be equipped with BACT for PM emissions reductions.
- BMPs shall include, at a minimum:
    - Use of diesel particulate traps or BACT, as feasible;
    - Maintain equipment according to manufacturer's specifications;
    - Restrict idling of construction equipment and on-road heavy-duty trucks to a maximum of five minutes when not in use (CARB exceptions apply);
    - Maintain a buffer zone that is a minimum of 1,000 feet between truck traffic and sensitive receptors, where feasible;
    - Work with local jurisdictions to improve traffic flow by signal synchronization during construction hours, where feasible;
    - Configure construction parking to minimize traffic interference, where feasible;
    - Enforce truck parking restrictions, where applicable;
    - Prepare haul routes that conform to local requirements to minimize traversing through congested streets or near sensitive receptor areas;
    - Provide dedicated turn lanes for movement of construction trucks and equipment on- and off-site, as feasible;

[9]Metro, *LACMTA Green Construction Policy*, Adopted July 2011.

- Schedule construction activities that affect traffic flow on the arterial system to off-peak hours to the extent practicable;
- Use electric power in lieu of diesel power where available; and
- Maintain traffic speeds on all unpaved areas at or below 15 miles per hour.

All Metro construction project solicitations shall include provisions authorizing enforcement of the requirements of the Green Construction Policy. Contractors operating under Metro agreements shall provide certified statements and documentation ensuring that equipment and vehicles employed to complete construction activities conform to the requirements listed above.

3.8.1.4 Local Regulations

City of Los Angeles

GreenLA Climate Action Plan (CAP). The City of Los Angeles has issued guidance promoting sustainable development to reduce GHG emissions citywide in the form of a CAP.[10,11] The objective of GreenLA is to reduce GHG emissions 35 percent below 1990 levels by 2030. GreenLA identifies goals and actions designed to make the City a leader in confronting global climate change. The measures would reduce emissions directly from municipal facilities and operations and create a framework to address citywide GHG emissions. GreenLA lists various focus areas in which to implement GHG reduction strategies. Focus areas include energy, water, transportation, land use, waste, port, airport, and smart planning practices.

In order to provide detailed information on action items discussed in GreenLA, the City published an implementation document titled ClimateLA. ClimateLA presents the existing GHG inventory for the City, describes enforceable GHG reduction requirements, provides mechanisms to monitor and evaluate progress, and includes mechanisms that allow the plan to be revised in order to meet targets. By 2030, the plan aims to reduce GHG emissions by 35 percent from 1990 levels, which were estimated to be approximately 54.1 $MMTCO_2e$. Therefore, the City will need to lower annual GHG emissions to approximately 35.1 million metric tons per year by 2030.

Sustainable City pLAn. The *Sustainable City pLAn* (the "pLAn," City of Los Angeles 2015), adopted in April 2015, is a roadmap to achieving short-term results and sets a path to strengthen and transform the City of Los Angeles in future decades.[12,13] Recognizing the risks posed by climate change, Mayor Garcetti set timebound outcomes on climate action, most notably to reduce GHG emissions by 45 percent by 2025, 60 percent by 2035, and 80 percent by 2050, compared to a 1990 baseline.[14] Through the completion and verification of the GHG inventory update, the City concluded that:

- The City accounted for approximately 36.2 million metric tons of CO_2e in 1990;

[10]City of Los Angeles, *GreenLA: An Action Plan to Lead the Nation in Fighting Global Warming*, May 2007.
[11]City of Los Angeles, *ClimateLA: Municipal Program Implementing the GreenLA Climate Action Plan*, 2008.
[12]City of Los Angeles, Mayor's Office of Sustainability, *Sustainable City pLAn*, April 8, 2015.
[13]City of Los Angeles, *L.A.'s Green New Deal – Sustainable City pLAn 2019*, April 2019.
[14]City of Los Angeles, *Los Angeles Climate Action Report: Updated 1990 Baseline and 2013 Emissions Inventory Summary*, 2015.

- The most recent inventory shows that emissions fell to 29 million metric tons of CO2e in 2013;
- Emissions are 20 percent below the 1990 baseline as of 2013, putting the City nearly halfway to the 2025 Sustainable City pLAn reduction target of 45 percent. In addition, the 20 percent reduction exceeds the 15 percent statewide goal listed in the First Update to the AB 32 Scoping Plan.[15]

Mobility Plan 2035. An element of the City's General Plan adopted in 2016, the Mobility Plan 2035 provides a policy foundation for achieving a transportation system that balances the needs of all road users by incorporating "complete streets" principles to guide future modifications to the regional network.[16] Key policy initiatives related to GHG emissions include establishing new complete street standards that provide safe and efficient active transportation opportunities and targeting GHG emissions through a more sustainable transportation system. Mobility Plan 2035 emphasizes the efficacy of multi-modal street design in reducing GHG emissions through encouraging the use of transit and active transportation, which decreases regional dependence on passenger vehicles. The Clean Environments and Healthy Communities chapter of Mobility Plan 2035 specifically focuses on GHG emissions reductions. Objectives of Mobility Plan 2035 include:

- Decrease VMT per capita by five percent every five years, to 20 percent reduction by 2035.
- Meet a nine percent per capita GHG reduction for 2020 and a 16 percent per capita reduction for 2035.
- Convert 100 percent of City General Services Division vehicle fleet to alternative fuels and/or zero emission vehicles by 2035.
- Convert 100 percent of City refuse collection trucks and street sweepers to alternative fuels by 2020.
- Reduce transportation-related energy use by 95 percent and reduce maintenance requirements of City vehicle fleet.
- Reduce port-related diesel PM emissions by 77 percent, nitrogen oxides emissions by 59 percent, and sulfur oxides emissions by 93 percent by 2023, relative to 2005 levels.
- Install more than 1,000 new publicly available electric vehicle (EV) charging stations throughout the City.

Mobility Plan 2035 outlines five policies to achieve these objectives:

- Policy 5.1: Encourage the development of a sustainable transportation system that promotes environmental and public health.
- Policy 5.2: Support ways to reduce VMT per capita, including:
    - land use policies aimed at shortening the distance between housing, jobs, and services that reduce the need to travel long distances on a daily basis;

[15]City of Los Angeles, *Los Angeles Climate Action Report: Updated 1990 Baseline and 2013 Emissions Inventory Summary*, 2015.
[16]City of Los Angeles, *Mobility Plan 2035 – An Element of the General Plan*, Adopted September 2016.

    - increasing the availability of housing options with proximity to transit stations and major bus stops;
    - offering more attractive non-vehicle alternatives such as transit, walking, and biking;
    - Transportation Demand Management (TDM) programs that encourage ride-sharing;
    - and pricing mechanisms that encourage commuters to switch to alternative modes of transit.
- Policy 5.3: Support a range of transportation metrics to evaluate the multiple purposes that streets serve (VMT has since been adopted as the preferred transportation impacts metric).
- Policy 5.4: Continue to encourage the adoption of low and zero emission fuel sources, new mobility technologies, and supporting infrastructure.
- Policy 5.5: Maximize opportunities to capture and infiltrate stormwater within the City's public rights-of-way.

L.A.'s Green New Deal. In April 2019, Mayor Eric Garcetti released L.A.'s Green New Deal (Sustainable City pLAn 2019). Rather than an adopted plan, the Green New Deal is a mayoral initiative that consists of a program of actions designed to create sustainability-based performance targets through 2050 that advance economic, environmental, and equity objectives. L.A.'s Green New Deal (Sustainable City pLAn 2019) is the first four-year update to the City's first Sustainable City pLAn that was released in 2015. It augments, expands, and elaborates in even more detail L.A.'s vision for a sustainable future and it addresses climate change with accelerated targets and new aggressive goals. While not a plan adopted solely to reduce GHG emissions, climate mitigation is one of eight explicit benefits within L.A.'s Green New Deal that help define its strategies and goals. The goals and targets of L.A.'s Green New Deal include:

- Building a zero-carbon electricity grid – reaching an accelerated goal of 80 percent renewable energy supply by 2036 as Los Angeles leads California toward 100 percent renewable by 2045.
- Creating a Jobs Cabinet to bring city, labor, education, and business leaders together to support the effort to create 300,000 green jobs by 2035 and 400,000 by 2050.
- Mandating that all new municipally owned building and major renovations be all-electric, effective immediately, and that every building in Los Angeles – from skyscrapers to single-family homes – become emissions free by 2050.
- Achieving a zero-waste future by phasing out Styrofoam by 2021, ending the use of plastic straws and single-use takeout containers by 2028, and no longer sending any trash to landfills by 2050.
- Recycling 100 percent of wastewater by 2035; sourcing 70 percent of our water locally – a significant increase from our existing pathway; and nearly tripling the maximum amount of stormwater captured.
- Planting and maintaining at least 90,000 trees – which will provide 61 million square feet of shade – citywide by 2021 and increasing tree canopy in low-income, severely heat impacted areas by at least 50 percent by 2028.

The Green New Deal aims to reach a 50 percent reduction in GHG emissions by 2025 and reach net carbon neutrality citywide by 2050.

City of Santa Clarita

In January 2011, the City of Santa Clarita began the process of completing a CAP as part of its general plan process to comply with AB 32 requirements. The CAP process comprised five main components: a GHG emissions inventory, GHG emissions forecasts, public outreach, a mitigation plan, and a monitoring plan. The project involved preparing a citywide GHG emissions inventory and developing strategies to reduce those emissions in the future. As part of the public outreach element, the City of Santa Clarita established the Green Santa Clarita program as a resource for residents and businesses to engage in the CAP initiatives. The CAP determined that total GHG emissions throughout the City in 2005 were approximately 1,717,648 $MTCO_2e$, of which the main sources were on-road vehicles (60 percent), followed by residential energy use (18 percent), and commercial/industrial energy use (13 percent).[17] Municipal source emissions make up only approximately two percent of citywide emissions.

A large portion of the GHG reductions identified in the CAP would be achieved by the decrease in VMT in the City via changes in land use patterns and greater emphasis on transit and alternative transportation programs. Other significant reductions identified are due to the creation or acquisition of new vegetated space in line with goals of the City's Open Space Preservation District and water use measures.[18] Applying estimated reductions from CAP measures demonstrated that the plan would achieve emissions in 2020 that would be approximately four percent below the AB 32 2005 baseline level, and this reduction level is consistent with statewide goals.

City of Lancaster

The City of Lancaster published a Municipal Operations Climate Action Plan in 2019 to guide equitable, innovative, and collaborative strategies to reduce GHG emissions and build resilience to the impacts of climate change.[19] The Plan details 25 strategies in six key areas to progressively reduce citywide emissions against the 2017 municipal operations baseline of 17,012 $MTCO_2e$. Those focus areas are Energy, Vehicle Fleet, Water Resources Management (including Wastewater and Stormwater), Waste, Carbon Offsets, and Building a Culture of Sustainability. When fully implemented, the strategies will result in carbon neutrality for all municipal operations by 2040. The City has committed to 100 percent renewable energy sources for all municipal electricity consumption by 2025. The mitigation strategies within the CAP aim to conserve resources and increase prosperity, and the adaptation strategies focus on creating smarter, more efficient and resilient infrastructure.

[17]City of Santa Clarita, *Climate Action Plan Final Report*, August 2012.
[18]Los Angeles County Department of Regional Planning and City of Santa Clarita, *Santa Clarita Valley Area Plan – One Valley One Vision*, 2012.
[19]City of Lancaster, *Municipal Climate Action Plan*, September 2019.

3.8.2 Existing Setting

GHG emissions are the result of both natural and human-influenced activities. Volcanic activity, forest fires, decomposition, industrial processes, landfills, consumption of fossil fuels for power generation, transportation, heating, and cooling are the primary sources of GHG emissions. Without human activity, the Earth would maintain an approximate, but varied, balance between the emission of GHGs into the atmosphere and the storage of GHG in oceans and terrestrial ecosystems. Increased combustion of fossil fuels (e.g., gasoline, diesel, coal, etc.) has contributed to a rapid increase in atmospheric levels of GHGs over the last 150 years.[20] The most environmentally prevalent GHGs that are the subject of regulatory purview include CO_2, CH_4, nitrous oxide (N_2O), and fluorinated gases. Brief descriptions of the common GHGs are provided below with sources of atmospheric emissions.[21]

- **Carbon Dioxide (CO_2)**. Enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, respiration, and as a result of other chemical reactions. Carbon dioxide can also be removed from the atmosphere when it is absorbed by plants in the carbon cycle.
- **Methane (CH_4)**. Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock, agricultural practices, and by the decay of organic waste in municipal solid waste landfills.
- **Nitrous Oxide (N_2O)**. Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
- **Fluorinated Gases**. Synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but due to their potency, are known as High Global Warming Potential gases. These include:
    - Chlorofluorocarbons (CFCs). GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulations, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down ozone. These gases are being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
    - Perfluorocarbons (PFCs). Group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF4] and perfluoroethane [C_2F_4]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to the ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are also used in manufacturing. PFCs do not harm the stratosphere ozone layer, but they have a high global warming potential.

[20] IPCC, *AR4 Climate Change 2007: Synthesis Report*, 2007.
[21] IPCC, *Climate Change 2013: The Physical Science Basis, Fifth Assessment Report*, ISBN 978 1 107 05799-1 Hardback; 978 1 66182-0 Paperback. 2013.

- Sulfur Hexafluoride (SF_6). Colorless gas soluble in alcohol and ether, slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmissions and distribution systems as a dielectric.
- Hydrochlorofluorocarbons (HCFCs). HCFCs contain hydrogen, fluorine, chlorine, and carbon atoms. Although ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

The primary effect of rising global concentrations of atmospheric GHG levels is a rise in the average global temperature of approximately 0.2 degrees Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using 2000 emission rates shows that further warming is likely to occur given the expected rise in global atmospheric GHG concentrations from innumerable sources of GHG emissions worldwide (including from economically developed and developing countries and deforestation), which would induce further changes in the global climate system during the current century.[22] Adverse impacts from global climate change worldwide and in California could include:

- Declining sea ice and mountain snowpack levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in atmospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;[23]
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets;[24]
- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[25]
- Declining Sierra Mountains snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;[26]
- Increasing the number of days conducive to ozone formation (e.g., clear days with intense sun light) by 25 percent to 85 percent (depending on the future temperature scenario) in high ozone areas located in the Southern California area and the San Joaquin Valley by the end of the 21st Century;[27] and,
- Increasing the potential for erosion of California's coastlines and seawater intrusion into the Sacramento Delta and associated levee systems due to the rise in sea level.[28]

[22]USEPA, *Draft Endangerment Finding*, 74 Fed. Reg. 18886, 18904, April 24, 2009.
[23]*Ibid*.
[24]Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis, Fifth Assessment Report*, ISBN 978 1 107 05799-1 Hardback; 978 1 66182-0 Paperback. 2013.
[25]*Ibid.*
[26]Cal/EPA, *Climate Action Team* Report *to Governor Schwarzenegger and the California Legislature*, 2006.
[27]*Ibid*.
[28]*Ibid*.

3.8.2.1 Statewide Greenhouse Gas Emissions Inventory

CARB maintains the statewide GHG emission inventory, and **Table 3.8-** displays GHG emissions from 2009 to 2018 in California by economic sector as defined in the 2008 Scoping Plan. California's GHG emissions have followed a declining trend over the past decade. In 2018, emissions from routine emitting activities statewide were approximately 29.3 $MMTCO_2e$ (six percent) lower than lower than 2009 levels.

Table 3.8-1: California GHG Emissions Inventory (2009-2018)

	Annual MMTCO2e Emissions									
Sector	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Transportation	168.0	165.1	161.8	161.4	161.2	162.6	166.2	169.8	171.0	169.5
Electric Power	101.3	90.3	89.2	98.2	91.4	88.9	84.8	68.6	62.1	63.1
Industrial	87.2	91.0	89.3	88.9	91.6	92.4	90.1	88.9	88.7	89.2
Commercial/Residential	44.5	45.9	46.0	43.5	44.2	38.2	38.8	40.6	41.3	41.4
Agriculture	32.9	33.7	34.4	35.5	33.8	34.8	33.4	33.2	32.3	32.6
High GWP Sources	12.3	13.5	14.5	15.5	16.8	17.7	18.6	19.3	20.0	20.5
Recycling and waste	8.5	8.7	8.7	8.7	8.7	8.8	8.8	8.9	9.0	9.1
Emissions total	**454.7**	**448.2**	**443.9**	**451.7**	**447.7**	**443.4**	**440.7**	**429.3**	**424.4**	**425.4**

SOURCE: CARB, *California Greenhouse Gas Emissions for 2000 to 2018 – Trends of Emissions and Other Indicators*, 2020.
Notes: The emission total may slightly vary within the years due to rounding of the CARB emissions inventory, which is presented to the hundredths of a decimal point.
GHG = greenhouse gas; $MTCO_2e$ = million metric tons of CO_2e

The plurality of California GHG emissions is attributed to automobile exhaust associated with the transportation sector, including public and private vehicles, comprising approximately 40 percent of the total statewide emission inventory. Despite considerable statewide population growth, annual GHG emissions attributed to the transportation sector have remained relatively constant over the last decade.

Between October 2015 and February 2016, an exceptional natural gas leak event occurred at the Aliso Canyon natural gas storage facility near Porter Ranch in north Los Angeles County that resulted in unexpected GHG emissions of considerable magnitude. The exceptional incident released approximately 109,000 metric tons of methane, which equated to approximately 1.96 $MMTCO_2e$ of unanticipated emissions in 2015 and an additional 0.52 $MMTCO_2e$ in 2016[29]. The occurrence of unexpected incidents such as the Aliso Canyon natural gas leak and the exacerbated severity of drought and wildfires throughout the state are impossible to predict and present additional challenges in reducing statewide GHG emissions. According to the CARB, the emissions associated with the unexpected gas leak will be mitigated in the future through projects funded by the Southern California Gas Company based on legal settlement. The emissions are presented alongside but tracked separately from routine inventory emissions.

[29]CARB, *Determination of Total Methane Emissions from the Aliso Canyon Natural Gas Leak Incident*, October 21, 2016.

3.8.2.2 SCAG Regional GHG Emissions

An element of the SCAG Connect SoCal plan is a regional GHG emissions inventory and emissions forecast based on the growth projections and control strategies incorporated into its development. SCAG provides estimates of the regional GHG emissions through the RTP/SCS horizon year accounting for programmed transportation projects, population, employment, and housing growth, and other regional factors. Connect SoCal has a horizon year of 2045, and

Table 3.8-2 presents modeled emissions from on-road mobile sources in 2019 and 2045. The data demonstrate that from 2019 to 2045, the regional on-road emissions are anticipated to decrease by 17.4 percent from 77.4 $MMTCO_2e$ to 64.0 $MMTCO_2e$ by 2045 with plan implementation.

Table 3.8-2: GHG Emissions from On-Road Emissions in the SCAG Region

On-Road Vehicles	2019 (MMT/year)			2045 (MMT/year)		
	CO_2	CH_4	NO_2	CO_2	CH_4	NO_2
Light and Medium Duty Vehicles	59.43	0.002	0.0009	38.08	0.001	0.0002
Heavy Duty Vehicles	15.46	0.000	0.002	24.16	0.001	0.0009
Buses	1.50	0.001	0.0002	1.38	0.0003	0.00004
On-Road Vehicles (Subtotal) in CO_2	76.4	0.004	0.003	63.6	0.002	0.001
On-Road Vehicles (Subtotal) in CO_2e	76.4	0.078	0.9	63.6	0.04	0.4
Total GHG Emissions from On-Road Vehicles in CO_2e	**77.4**			**64.0**		

SOURCE: SCAG, RTP/SCS *Final PEIR and SCAG Modeling*, 2019.

In addition, SCAG provides the total regional GHG emissions from the three primary sources of GHG emissions within the region: transportation, building energy, and water related energy. **Table 3.8-3** shows that total GHG emissions across the SCAG region are anticipated to decrease by approximately 15.9 percent from 2019 to 2045, and transportation emissions are projected to decrease by 17.3 percent. Expansion of public transportation systems spurring mode shift away from passenger vehicles is a fundamental pillar of regional efforts to reduce GHG emissions and meet regional and statewide GHG emissions reduction targets.

Table 3.8-3: Annual GHG Emissions for the SCAG Region from Three Primary Sectors

Area	2019 ($MMTCO_2e$)	2030 ($MMTCO_2e$)	2035 ($MMTCO_2e$)	2045 ($MMTCO_2e$)	2019 vs 2045
Transportation	77.4	61.3	60.0	64.0	-17.3%
Building Energy	35.8	34.6	35.5	31.3	-12.6%
Water-related energy	3.1	2.8	2.8	2.5	-19.4%
Total	116.3	98.7	98.3	97.8	-15.9%

SOURCE: SCAG, *RTP/SCS Final PEIR and SCAG Modeling*, 2020.

3.8.2.3 Metrolink System

Metrolink plays a significant role in the SCAG region's sustainability and transportation mode shift to reduce mobile source GHG emissions. According to Metrolink data, systemwide operations contribute to GHG emissions reductions and decreased reliance on non-renewable energy by removing approximately 9,300,000 weekday automobile trips from regional roadways each year.[30] Ridership on the Metrolink system eliminates approximately 130,000 metric tons of CO_2 emissions annually, the equivalent of the carbon sequestered by 169,775 acres of United States forests. Additionally, Metrolink is in the process of upgrading its rolling stock through the purchase and gradual implementation of 40 Tier 4 locomotives, that use up to eight percent less fuel than Tier 0 engines of previous generations. As the Tier 4 locomotives are phased in, Metrolink is phasing out its old Tier 0 engines, and eventually will phase out its Tier 2 engines as well. As of the end of 2019, Metrolink locomotives were approximately 73 percent Tier 4 and 27 percent Tier 2.[31] Therefore, it was assumed that the existing AVL rail operations comprised 75 percent Tier 4 locomotives and 25 percent Tier 2 locomotives. By 2028, it was assumed that 90 percent of the Metrolink stock will meet the Tier 4 standards, with the remaining locomotives meeting Tier 2 standards.

3.8.3 Significance Thresholds and Methodology

3.8.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to climate change and greenhouse gases if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Section 15064.4 of the State CEQA Guidelines states that a lead agency shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A lead agency has the discretion to determine whether to rely on a quantitative or qualitative analysis, or performance-based standards in its assessment of potentially significant impacts. The State CEQA Guidelines provides that a lead agency should consider: the extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting; whether project emissions exceed a discretionary threshold of significance determined by the lead agency; and the extent to which a project complies with regulations or requirements adopted to implement statewide, regional, and local plans for reducing or mitigating GHG emissions.

In December 2018, the OPR published a Technical Advisory on Evaluating Transportation Impacts in CEQA to provide advice and recommendations to agencies regarding assessment of VMT, thresholds of significance, and mitigation measures.[32] OPR acknowledged that the transportation sector has three major means of reducing GHG emissions: increasing vehicle

[30]SCAG, *Connect SoCal Passenger Rail Transportation System Technical Report*, adopted May 2020.
[31]HDR, *Hybrid Rail Study Operational Cost Estimate Memo*, May 2018.
[32]CA OPR, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018.

efficiency, reducing fuel carbon content, and reducing the amount of vehicle travel. Although the Proposed Project would reduce VMT, that reduction in VMT would not necessarily fully offset the GHG emissions generated by the Proposed Project's construction and operation. Therefore, direct and indirect emissions are conservatively compared to a net-zero emissions threshold. Any increase in emissions would be a significant impact. In addition, the impact analysis qualitatively assesses consistency with GHG reduction plans.

3.8.3.2 Methodology

To satisfy the requirements of the State CEQA Guidelines and in accordance with the recommendations promulgated by OPR, CARB, and the local air districts, GHG emissions that would be generated by construction of the Proposed Projects of Balboa Double Track Extension, Canyon Siding Extension, and Lancaster Terminal Improvements are quantified in totality and amortized across a 30-year operational lifetime. The operational analysis quantifies the annual GHG emissions associated with the displaced VMT resulting from increased transit ridership.

Construction

Construction of the Proposed Project would occur at three proposed capital improvement sites: Balboa Double Track Extension, Canyon Siding Extension, and Lancaster Terminal Improvements All construction activities would be completed within the years 2024–2028. More specifically, construction of the Balboa Double Track Extension is anticipated to commence in 2024 and be completed in 2026 and construction of the Canyon Siding Extension and the Lancaster Terminal Improvements is anticipated to commence in 2026 and be completed in 2028.It is anticipated that construction of each improvement site would require approximately 18 months of continuous activity, and the individual schedules may be extended based on periods of lighter daily activity throughout the schedule duration. The Constructability Review for the Proposed Project identified five major construction activities comprising the improvements: track and systems installation; retaining walls; station platforms; bridges and undercrossing; and utilities.[33]

Improvements at all three sites would involve track and systems installation, retaining walls, and utilities. The Balboa Double Track Extension includes new pier protection with drilled piles under the Caltrans I-5 undercrossing, and the Canyon Siding Extension includes a new railroad bridge and a pedestrian undercrossing. The Canyon Siding Extension involves a new station platform, and the Lancaster Terminal Improvements site includes a new layover facility under the base option. The Lancaster Terminal Improvements base design would not include an additional station platform; however, both design options would replace the existing Lancaster station platform with a new island platform. The construction activities modeled for the Lancaster Terminal Improvements accounted for the maximal amount of ground disturbance, excavation and fill volumes, and haul truck activity that could occur under any of the base and design options to capture all possible air pollutant emissions regardless of which is ultimately selected.

Estimates of GHG emissions that would be generated by sources involved in Proposed Project construction activities were quantified using the California Emissions Estimator Model

[33]Mott MacDonald, *Antelope Valley Line (AVL) Double Track Improvements Constructability Review*, October 5, 2020.

(CalEEMod, Version 2016.3.2), which is the regulatory standard model for estimating GHG emissions for CEQA projects.[34,35] CalEEMod relies on a database of emissions factors compiled from the CARB OFFROAD and Emission Factor (EMFAC) emission inventories to quantify estimates of GHG emissions from off-road equipment and on-road vehicles during construction. Construction phasing in CalEEMod was characterized by the following activities, for which equipment and personnel inventories were populated based on the Constructability Review and conservative assumptions regarding daily hours of use:

- site clearing and tree/shrub removal;
- cut, fill, and slope and underpass stabilization requiring excavation, grading, piling, and shoring, as well as grade separation for the railway bridge;
- installation of retaining walls, platforms, bridge and pedestrian underpass construction;
- relocation and installation of track facilities, paving of hardscape features and layover;
- utilities, signals, and other systems features.

Table 3.8-4 presents an overview of the parameters input to CalEEMod to characterize project construction activities. The preliminary construction schedules were developed based on site feasibility constraints, anticipated rate of track installation, total duration to complete activities at each improvement site, and the quantities of material movement and structure installation. The emissions modeling was developed based on consistent levels of activity occurring on a daily and weekly basis to complete the improvements at each site. During cut and fill activities that will produce substantial material import and export, daily hauling activity is anticipated to be approximately 40-50 trips per day on average. Refer to the **Appendix G** for the CalEEMod output modeling files.

Regarding the schedule, construction of the Balboa Double Track Extension is expected to begin in 2024 and be completed at latest sometime in 2026. The Canyon Siding Extension and Lancaster Terminal Improvements would commence subsequently and be completed sometime in 2028. The emissions modeling exercise assumed 18 months of continuous construction activity occurring five days per week for each capital improvement. During site preparation and grading activities at each site, water trucks were accounted for in the GHG emissions modeling. It was assumed that the daily crew size required would comprise up to 30 workers and supervisors on-site during site preparation, track installation and paving, and utilities and systems installations, and that up to 60 workers and supervisors could be needed during heavy activity intensity involved in grading slopes, installing retaining and pier protection walls, and underpass and rail bridge construction. As a conservative approach, maximum daily crew size was assumed daily during each phase of construction, and 50 daily hauling round trips were programmed into the model during cut and fill at each site. GHG emissions associated with exhaust from off-road equipment and on-road vehicles were estimated and summed for each phase and for total Project construction. To account for the annual emissions over the operational lifetime of the Proposed Project, total construction GHG emissions are amortized over 30 years.

[34]California Air Pollution Control Officers Association (CAPCOA), *California Emissions Estimator Model (Version 2016.3.2)*. September 2016.
[35]California Air Pollution Control Officers Association (CAPCOA), *California Emissions Estimator Model (Version 2016.3.2) User's Guide*, October 2017.

Table 3.8-4: Proposed Project Construction CalEEMod Parameters

Parameter	Balboa Double Track Extension	Canyon Siding Extension	Lancaster Terminal Improvements
Start Date	2024	2026	2026
End Date	2026	2028	2028
Length of Track Installation	9,615 Linear Ft.	9,220 Linear Ft.	3,985 Linear Ft.
Total Site Acreage	11.39	8.53	3.22
Max. Daily Site Disturbance	2 acres	2 acres	1 acre
Approx. Material Export	65,675 CY	61,680 CY	7,470 CY
Approx. Material Import	5,725 CY	12,935	12,970
Average Daily Haul Loads	40-50	40-50	40-50
Daily Off-Road Equipment	10-12	10-12	10-12
PRELIMINARY SCHEDULE (APPROX. DURATION IN MONTHS)			
Site Clearing & Tree Removal	3	3	1
Cut/Fill/Piling/Shoring	6	6	3
Retaining Walls/Platforms	4	6	6
Track Install/Layover Facilities	3	2	6
Utilities, Signals, and Systems	2	1	2
Total Duration	**18**	**18**	**18**

Operations

Implementation of the Proposed Project would influence the regional GHG emissions inventory through direct emissions associated with diesel fuel consumption from rail propulsion and indirect emissions offsets from displaced vehicle trips and regional on-road VMT. A preliminary transportation screening analysis determined that the increased ridership along the AVL corridor spurred by Proposed Project improvements would reduce weekday on-road VMT on the regional roadway network by approximately 39,089 vehicle miles. Based on Metrolink ridership data from fiscal year 2018–19, Saturday and Sunday/Holiday ridership correlate to approximately 40 percent and 30 percent of weekday ridership on average, respectively. These ratios are roughly consistent with the existing train service provided along the AVL corridor on weekdays and weekends/holidays. **Table 3.8-5** presents a summary of the existing and Proposed Project weekly rail service, as well as the corresponding on-road VMT reductions from displaced and shortened vehicle trips. At the bottom of the table is an estimate of the annual values based on 50 weeks per year of standard vehicle service and two weeks of reduced holiday service levels.

Table 3.8-5: AVL Corridor Rail Miles and Displaced Vehicle Miles Traveled

Day of Week	Existing AVL Rail Miles	Proposed Project AVL Rail Miles	On-Road VMT Reduction
Weekday	1,936	3,872	-39,089
Saturday	919	2,145	-15,636
Sunday/Holiday	919	1,072	-11,727
Total Annual	**588,787**	**1,143,870**	**-11,445,259**

The Proposed Project is anticipated to begin fully operating at expanded capacity in 2028. Rail propulsion GHG emissions were estimated using Metrolink fleet average fuel consumption rates and USEPA diesel fuel combustion factors for GHG emissions inventories. During the fiscal year 2016–2017, Metrolink fleet operations averaged approximately 2.75 gallons of diesel fuel per mile of rail travel.[36] 2016 was the first year that Metrolink began implementing Tier 4 locomotives into the rolling stock. By the end of 2019, the active Metrolink locomotive fleet comprised 73 percent Tier 4 locomotives and 27 percent Tier 2 locomotives. For the purposes of this analysis, it was assumed that the Metrolink locomotive fleet under existing conditions comprised 75 percent Tier 4 and 25 percent Tier 2 locomotives with a fleet average fuel consumption rate of 2.695 gallons of diesel fuel per mile traveled (gal_D/mi). Metrolink plans to continue phasing out Tier 2 locomotives over time, or retrofitting them to upgrade to Tier 4 standards, as feasible. By 2028, the analysis assumed that the Metrolink rail operations would comprise 90 percent Tier 4 locomotives supplemented by 10 percent Tier 2 locomotives, with a fleet average diesel fuel consumption rate of 2.6125 gal_D/mi. The assessment of GHG emissions from rail propulsion involved estimating the annual diesel fuel consumption under existing conditions and for the Proposed Project and multiplying the incremental increase by the USEPA diesel combustion GHG emissions factor of 10,303.5 grams of CO_2e per gallon (gCO_2e/gal).[37]

To estimate the change in annual GHG emissions from on-road mobile sources within Los Angeles County, emission rates corresponding to an operational year of 2028 were obtained from CARB mobile source emissions inventory EMFAC2017 (v1.0.3) for the Non-Truck vehicle category for CO_2, CH_4, and N_2O in rates of grams emitted per VMT (g/mi). The EMFAC2017 emission rates for Los Angeles County that were used to estimate changes in regional on-road GHG emissions in the Proposed Project opening year of 2028 are presented in **Table 3.8-6** with the GWP values, as well as the aggregate average per-mile GHG emission rate in terms of gCO_2e. The annual offset in GHG emissions associated with regional on-road VMT was estimated multiplying the annual VMT reduction presented in **Table 3.8-5** by the emission rate 299.3 gCO_2e/gal and converting to metric tons. The impact analysis then evaluated the net GHG emissions that would result from amortized construction, expanded rail operations, and indirect VMT displacement.

Table 3.8-6: Emission Rate for Displaced On-Road Vehicle Miles

Parameter	CO_2	CH_4	N_2O
EMFAC Emission Rate (g/mi)	297.4	0.0085	0.0055
GWP Value	1	25	298
GHG Emission Rate (gCO_2e/mi)	**299.3**		

[36]HDR, *Hybrid Rail Study Operational Cost Estimate Memo*, May 2018.
[37]USEPA, *Emission Factors for Greenhouse Gas Inventories*, March 2020.

3.8.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation (if applicable).

Impact 3.8-1) Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction

Less Than Significant Impact. Construction of the Proposed Project would comprise three capital improvements located along the AVL corridor. Construction activities would generate GHG emissions through the exhaust of off-road equipment and on-road vehicles that would be used to complete the work. **Table 3.8-7** presents the GHG emissions that would be generated at each improvement site by source, as well as the total emissions amortized over a 30-year operational lifetime.

Table 3.8-7: Construction Greenhouse Gas Emissions

Source	Greenhouse Gas Emissions by Site ($MTCO_2e$)		
	Balboa Double Track Extension	**Canyon Siding Extension**	**Lancaster Terminal Improvements**
Crew Vehicles	162.3	156.6	104.6
Water & Concrete Trucks	165.5	179.9	227.3
Material Hauling Trucks	561.5	553.5	249.1
Off-Road Equipment	786.8	793.8	668.9
Total Site Emissions	**1,676.1**	**1,683.8**	**1,249.9**
Total Project Construction Emissions		**4,609.8**	
30-Year Amortized Rate		***153.7***	

Construction of the Balboa site improvements would generate approximately 1,676.1 $MTCO_2e$ of GHG emissions, construction of the Canyon site improvements would generate approximately 1,683.8 $MTCO_2e$ of GHG emissions, and construction of the Lancaster Terminal Improvements would generate approximately 1,249.9 $MTCO_2e$ of GHG emissions. As shown in **Table 3.8-7**, total GHG emissions to complete Proposed Project construction would be approximately 4,609.8 $MTCO_2e$, which equates to 153.7 $MTCO_2e$ per year when amortized over a 30-year operational lifetime. In accordance with SCAQMD guidance, the amortized GHG emissions are added to operational emissions to assess significance.

The GHG emissions generated by sources involved in Proposed Project construction would be temporary and would not persist beyond the completion of the capital improvements. Construction activities would be conducted in accordance with the provisions of the Metro Green Construction Policy that incorporates elements of CARB Airborne Toxics Control Measures related to heavy-duty off-road equipment and on-road diesel-fueled haul trucks. Compliance with the Green Construction Policy would minimize GHG emissions to the extent feasible.

Operations

Significant and Unavoidable Impact. The Proposed Project would change long-term GHG emissions by increasing locomotive emissions in the AVL corridor and removing passenger vehicles from the roadway network. Regarding passenger vehicles, as shown in **Table 3.8-5**, implementation of the Proposed Project would displace approximately 11,445,259 on-road VMT annually from the regional roadway network in 2028 through increased ridership attracted and accommodated by the expanded transit service. AVL corridor rail service would increase by approximately 555,083 miles, meaning that each additional commuter rail mile would displace approximately 21 on-road vehicle miles on an annual average basis. Using the regional aggregate average GHG emission factor (299.3 gCO_2e/mi) obtained from the CARB mobile source emissions inventory for Los Angeles County in 2028 presented in **Table 3.8-6**, implementation of the Proposed Project would eliminate approximately 3,425.3 $MTCO_2e$ of transportation-related passenger vehicle GHG emissions, based on an annual reduction of 11,445,259 on-road VMT.

Annual GHG emissions from locomotive operations were estimated for existing conditions and the Proposed Project using the approach described in Section 3.3.3.2 (Methodology) of Section 3.3, Air Quality, of this EIR. As described therein, the USEPA locomotive source diesel fuel combustion GHG emission factor is approximately 0.0103 $MTCO_2e$ per gallon of diesel fuel. As discussed in Section 3.6, Energy Resources, the Proposed Project would result in an annual diesel fuel consumption increase of approximately 1,401,579 gallons (from 1,586,780.3 gallons under existing conditions to 2,988,359.0 gallons with the Proposed Project). The resulting increase in rail propulsion emissions would be approximately 14,441.1 $MTCO_2e$ annually, as summarized in **Table 3.8-8**, below. The total net annual GHG emissions increase resulting from the Proposed Project relative to existing conditions would be approximately 11,169.5 $MTCO_2e$ after accounting for the VMT reductions and the amortized construction emissions. This estimated annual increase represents a conservative approximation as it does not account for any future enhancements to Metrolink's operations that could substantially reduce CO_2 emissions from rail propulsion. As an example, Metrolink is exploring the potential to rely on renewable diesel fuel for its rail operations, which can achieve up to 80 percent reductions in CO_2 emissions depending on the fuel feedstock. However, implementation of future enhancements is uncertain at this time.

Table 3.8-8: Proposed Project Annual Greenhouse Gas Emissions

Source	Annual Greenhouse Gas Emissions ($MTCO_2e$/year)		
	Existing Conditions	**Proposed Project**	**Net Change**
Amortized Construction	-	153.7	153.7
AVL Corridor Rail Propulsion	16,349.4	30,790.5	14,441.1
Regional VMT Offset	-	-3,425.3	-3,425.3
Total Net Proposed Project Emissions			**11,169.5**

In March 2021, Metrolink unveiled a new Climate Action Plan (CAP) that charts a course toward a greener future for the agency. The plan addresses climate change, air quality, and other pressing sustainability issues to help advance the regional railway's ambitious "moon shot" goal for zero emissions by 2028. As of 2019, technical analysis supporting the CAP determined that

Metrolink systemwide operations generated approximately 87,000 $MTCO_2$ emissions annually and offset approximately 130,000 $MTCO_2$, for a net reduction of approximately 43,000 $MTCO_2$. Therefore, implementation of the Proposed Project would lower the net GHG emissions reduction to approximately 31,830 $MTCO_2e$; however, Metrolink operations would continue to offset substantially more emissions than they generate; this for the EIR analysis did not consider future improvements in system operations being explored through CAP programs.

The CAP provides an overview of Metrolink accomplishments to date that enhance its GHG emissions reduction efforts and lays out targets for future initiatives. As an example, the Fuel Conservation Program established in 2010 conserves approximately 860,000 gallons of fuel per year and has reduced train idling at the Central Maintenance Facility by approximately 50 percent. Metrolink is currently investing in several types of emerging technologies that could further reduce systemwide GHG emissions, such as pilot tests on their Tier 4 and Tier 2 locomotives, using renewable diesel fuel and possible eventual implementation of zero-emission multiple units (ZEMUs) that rely on alternative sources for energy like hydrogen fuel-cells and electric batteries. If the renewable diesel pilot tests on the Tier 4 and Tier 2 locomotives prove successful, Metrolink could reduce fuel combustion emissions by as much as 80 percent depending on the fuel feedstock source. For informational purposes, if Metrolink trains operating on the AVL corridor were able to achieve a 50 percent reduction in fuel combustion CO_2 emissions from using renewable diesel by 2028, Proposed Project operations would decrease to less than existing conditions, as shown in **Table 3.3-9**.

Table 3.8-9: Annual Greenhouse Gas Emissions with Renewable Diesel Reduction

Source	Annual Greenhouse Gas Emissions ($MTCO_2e$/year)		
	Existing Conditions	Proposed Project	Net Change
Amortized Construction	-	153.7	153.7
AVL Corridor Rail Propulsion	16,349.4	15,540.9	-808.5
Regional VMT Offset	-	-3,425.3	-3,425.3
Total Net Proposed Project Emissions			**-4,080.1**

Broader targets identified in the Metrolink CAP include reducing total systemwide operational GHG emissions by 50 percent by 2030 from the 2019 baseline of 87,000 $MTCO_2$ by 2030, displacing 55 percent additional $MTCO_2e$ relative to the 2020 baseline through expanding ridership, and being 100 percent petroleum fuel free by 2022. As shown above, GHG emissions from Proposed Project rail propulsion would be drastically reduced by implementing renewable diesel fuel technology and the Proposed Project would contribute to the displaced regional on-road VMT target. Additionally, Metrolink is exploring opportunities to reduce emission from its non-revenue fleet, which includes 33 unique heavy-duty utility and hy-rail trucks used for rail maintenance activities and approximately 152 light duty gasoline-powered, hybrid, and electric vehicles. Metrolink is committed to purchasing zero emission vehicles, and the 2021 CAP includes a short-term target of transitioning seven percent of the non-revenue fleet to electric vehicles and a medium-term target of 14 percent of the non-revenue fleet being transitioned to electric vehicles.

In the absence of any emissions reduction technologies currently under study by Metrolink, the total net annual GHG emissions increase resulting from the Proposed Project relative to existing conditions would be approximately 11,169.5 $MTCO_2e$ after accounting for the VMT reductions and the amortized construction emissions. As the significance threshold has been established as net-zero emissions, without mitigation, the Proposed Project would result in a significant impact related to direct and indirect GHG emissions.

Mitigation Measures

GHG-1 The following control techniques shall be included in project specifications and shall be implemented by the construction contractor.

- Prepare a comprehensive inventory list of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) (i.e., make, model, engine year, horsepower, emission rates) that could be used an aggregate of 40 or more hours throughout the duration of construction to demonstrate how the construction fleet is consistent with the requirements of Metro's Green Construction Policy
- Ensure that all construction equipment is properly tuned and maintained
- Minimize idling time to 5 minutes, whenever feasible, which saves fuel and reduces emissions
- Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary diesel power generators.
- Arrange for appropriate consultations with CARB or SCAQMD to determine registration and permitting requirements prior to equipment operation at the site and obtain CARB Portable Equipment Registration with the state or a local district permit for portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, as applicable

GHG-2 In compliance with Metro's Green Construction Policy, all off-road diesel powered construction equipment greater than 50 horsepower shall comply with USEPA Tier 4 final exhaust emission standards (40 CFR Part 1039). In addition, if not already supplied with a factory-equipped diesel particulate filter, all construction equipment shall be outfitted with best available control technology devices certified by the CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine, as defined by CARB regulations. In addition to the use of Tier 4 equipment, all off-road construction equipment shall be fueled using 100 percent renewable diesel.

Regarding operational activities, no mitigation measures were identified to reduce AVL corridor rail propulsion GHG emissions. The application of emerging technologies such as renewable diesel fuel could substantially reduce future emissions, as shown in **Table 3.8-9**. Metro will

continue to cooperate with and encourage Metrolink to implement strategies identified in the Metrolink CAP to reduce GHG emissions, including those associated with rail propulsion, to meet the CAP's stated targets and goals. However, Metro cannot guarantee Metrolink will successfully attain the emission reductions necessary to reduce the Proposed Project's GHG emissions to net zero.

Significance of Impacts after Mitigation

Mitigation Measures **GHG-1** and **GHG-2** would contribute to reductions in GHG construction emissions. No mitigation measures have been identified to significantly reduce operational emissions, which would be the primary source of impactful emissions. Therefore, impacts associated with the Proposed Project's direct and indirect increase in GHG emissions would remain significant and unavoidable.

Impact 3.8-2) Would the Proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Construction

Less-Than-Significant Impact. As shown in **Table 3.8-7**, construction of the Proposed Project would generate temporary GHG emissions totaling approximately 4,609.8 $MTCO_2e$ over a schedule of three to four years, which equates to approximately 153.7 $MTCO_2e$ of GHG emissions annually when amortized over a 30-year operational lifetime. This mass quantity of emissions is not sufficient to present any conflicts with statewide, regional, or local plans and regulations that have been adopted to reduce GHG emissions. Emissions from construction activities are accounted for in the regional inventory that is developed to support the Connect SoCal RTP/SCS, which was determined by CARB to meet the regional GHG emissions reduction targets to comply with SB 375. Additionally, adherence to the provisions of the Metro Green Construction Policy would minimize excess GHG emissions to the extent feasible. Therefore, construction of the Proposed Project would result in a less than significant impact related to GHG emissions reduction plans and regulations.

Operations

Less-Than-Significant Impact. Reducing passenger vehicle VMT is a fundamental pillar of regional transportation planning initiatives and GHG emission control strategies at the state, regional, and local levels. The Proposed Project is programed in the SCAG 2020–2045 Connect SoCal RTP/SCS, which was found to achieve the regional SB 375 target for 2035 established by the CARB staff. Implementation of the Proposed Project would contribute to the expansion of public transit infrastructure that is necessary to achieve regional GHG emission reduction objectives and would displace on-road passenger vehicle and light duty truck trips. CARB acknowledged that the statewide emission reduction targets cannot be met without slowing growth in on-road VMT and displacing vehicle trips.

Furthermore, Metrolink will be gradually upgrading its fleet between existing conditions and the full operating year of 2028, incorporating new Tier 4 locomotives and phasing out its older Tier 0 and eventually Tier 2 engines. Metrolink will also continue its commitment to the Fuel

Conservation Program, which allows maintenance crews to temporarily shut down the Head End Power engines that power the car lights and internal circulation systems to conserve fuel in storage. The program reduces locomotive idling and reduces annual diesel fuel consumption by approximately 13 percent (853,000 gallons). Although the Proposed Project would generate direct and indirect GHG emissions, implementation of the Proposed Project would contribute to the Metrolink systemwide VMT reductions. The Proposed Project would not interfere with Metrolink's sustainability efforts and would contribute to the displacement of on-road VMT and associated reduction in GHG emissions consistent with applicable plans and regulations. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

3.9 HAZARDS AND HAZARDOUS MATERIALS

The following summarizes the applicable regulations, the existing setting, and provides a detailed impact assessment related to hazards and hazardous materials. The Project Area for hazards and hazardous materials consists of the AVL rail right-of-way (ROW) and the three capital improvement sites.

3.9.1 Regulatory Framework

3.9.1.1 Federal Regulations

Resource Conservation and Recovery Act. The Resource Conservation and Recovery Act (RCRA) (42 United States Code (U.S.C.) Section 6901 et seq.) regulates the identification, generation, transportation, storage, treatment, and disposal of solid and hazardous materials and hazardous wastes.

Comprehensive Environmental Response, Compensation, and Liability Act. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. Section 9601 et seq.) provides broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. This act established the National Priorities List of contaminated sites and the "Superfund" cleanup program.

Clean Air Act. The Clean Air Act (42 U.S.C. Section 7401 et seq.) protects the public from exposure to airborne contaminants that are known to be hazardous to human health. Under the Clean Air Act, the United States Environmental Protection Agency (USEPA) established National Emissions Standards for Hazardous Air Pollutants, which are emissions standards for air pollutants, including asbestos.

Clean Water Act—National Pollutant Discharge Elimination System. The Clean Water Act (Section 402[p]) (33 U.S.C. Section 1342[p]) regulates discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.

Safe Drinking Water Act. The Safe Drinking Water Act (42 U.S.C. Section 300[f] et seq.) regulates discharges of pollutants to underground aquifers and establishes standards for drinking water quality.

Toxic Substances Control Act. The Toxic Substances Control Act (15 U.S.C. Section 2601 et seq.) regulates manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials. It addresses the production, importation, use, and disposal of specific chemicals including polychlorinated biphenyls (PCB), asbestos-containing materials (ACMs), and lead-based paint (LBP).

Occupational Safety and Health Act of 1970. This act requires training handlers of hazardous materials, notifying employees who work in the vicinity of hazardous materials, acquiring material safety data sheets that describe the proper use of hazardous materials, and training employees

to remediate any accidental releases of hazardous material. It also regulates lead and asbestos as it relates to employee safety to reduce potential exposure. Additionally, it requires contractors conducting LBP and ACM surveys and removal to be certified by the California Occupational Safety and Health Administration.

Hazardous Materials Transportation Act. The Hazardous Materials Transportation Act (49 U.S.C. Section 5101 et seq. 49 Code of Federal Regulations (CFR) Parts 101, 106, 107, and 171-180) regulates the transport of hazardous materials by motor vehicles, rail, marine vessels, and aircraft.

Hazardous Materials Transportation Uniform Safety Act of 1990 (Public Law 101–615). The Hazardous Materials Transportation Uniform Safety Act regulates the safe transport of hazardous material in intrastate, interstate, and foreign commerce. The statute includes provisions to encourage uniformity between different state and local highway routing regulations, to develop criteria for the issuance of federal permits to motor carriers of hazardous materials, and to regulate the transport of radioactive materials.

Emergency Planning and Community Right to Know Act. The Emergency Planning and Community Right to Know Act (42 U.S.C. Section 11001 et seq. and 40 C.F.R. Part 350.1 et seq.) regulates facilities that use hazardous materials in quantities that mandate reporting to emergency response officials.

3.9.1.2 State Regulations

At the State level, California has developed hazardous waste regulations that are similar to the federal laws, but that are more stringent in their application. The basic law established in California, similar to RCRA, is the Hazardous Waste Control Law (HWCL). More detailed information concerning the implementation of these requirements is given in Title 22 of California Code of Regulations (CCR), Chapter 30. The HWCL empowers the California Department of Toxic Substances Control (DTSC), a division of the California Environmental Protection Agency (Cal/EPA) (formerly part of the Department of Health Services), to administer the State's hazardous waste program and implement the federal program in California. This law includes underground storage tank (UST) regulations.

Other relevant state laws are described in the following sections.

California Environmental Quality Act (CEQA) (Section 21000 et seq.) and CEQA Guidelines (Section 15000 et seq.). CEQA requires state and local agencies to identify the significant environmental impacts of their actions, including potential significant impacts associated with hazardous wastes and materials, and to avoid or mitigate those impacts when feasible.

Well Safety Devices for Critical Wells Code of California Regulations (CCR) Title 14, Section 1724.3). This regulation governs safety devices required on wells located within 100 feet of an operating railway.

Gas Monitoring and Control at Active and Closed Disposal Sites (CCR Title 27, Subchapter 3, Section 20917 et seq.). The requirements set forth in Article 6 of this regulation determine the performance standards and the minimum substantive requirements for landfill gas monitoring and

control as they relate to active solid waste disposal sites and to proper closure, post-closure maintenance, and ultimate reuse of solid waste disposal sites. These ensure that public health, safety, and the environment are protected from pollution due to the disposal of solid waste.

California Public Resources Code (PRC) Section 21151.4. This code requires the lead agency to consult with any school district with jurisdiction over a school within 0.25 mile of the project about potential impacts on the school if the project might reasonably be anticipated to emit hazardous air emissions, or to handle an extremely hazardous substance or a mixture containing an extremely hazardous substance.

Porter-Cologne Water Quality Control Act (California Water Code, Section 13000 et seq.). The Porter-Cologne Water Quality Control Act regulates water quality through the SWRCB and RWQCB, including oversight of water monitoring and contamination cleanup and abatement.

Hazardous Materials Release Response Plans and Inventory Law (California Health and Safety Code Section 25500 et seq.). This section of the California Health and Safety Code requires facilities using hazardous materials to prepare hazardous materials business plans.

Hazardous Waste Control Act (California Health and Safety Code Section 25100 et seq.). This act is similar to the federal RCRA in that it regulates the identification, generation, transportation, storage, and disposal of materials deemed hazardous by the State of California.

Safe Drinking Water and Toxic Enforcement Act (Proposition 65, California Health and Safety Code Section 25249.5 et seq.). The Safe Drinking Water and Toxic Enforcement Act is similar to the federal Safe Drinking Water Act and the Clean Water Act in that it regulates the discharge of contaminants to groundwater.

Cortese List Statute (California Government Code Section 65962.5). This regulation requires the DTSC to compile and maintain lists of potentially contaminated sites located throughout the State, and includes the Hazardous Waste and Substances Sites List. The overall list is called the Cortese list.

California Occupational Safety and Health Act. This act regulates worker safety in a manner similar to that used by federal administration. It also requires preparation of an Injury and Illness Prevention Program, which is an employee safety program that includes inspections, procedures to correct unsafe conditions, employee training, and occupational safety communication. In addition, the regulations associated with this act indirectly protect the public by requiring construction managers to post warnings signs, limit public access to construction areas, and obtain permits for work considered to present a significant risk of injury, such as excavations five feet deep or greater.

3.9.1.3 Local Regulations

City of Los Angeles

City of Los Angeles Methane Ordinance. In 2004, the City of Los Angeles adopted the City of Los Angeles Methane Ordinance (No. 175790), which requires compliance with the Methane Mitigation Standards outlined in the Methane Seepage Regulations (Division 71, Section 91-7101

to 91-7109), and as directed and approved by the Los Angeles Department of Building and Safety (LADBS) and Los Angeles Fire Department. The ordinance outlines the general methane requirements for mitigation; testing, maintenance and service of gas - detection and mechanical ventilation systems; emergency procedures; application of methane seepage regulations to locations or areas outside the methane zone and methane buffer zone boundaries; and additional remedial measures (General, Abandoned Oil Wells).

Additionally, the City of Los Angeles Department of Public Work's Bureau of Engineering has mapped potential Methane Zones and Methane Buffer Zones where additional assessment is required. Specifically, the City of Los Angeles Municipal Code requires projects located within a Methane Zone or Methane Buffer Zone to comply with the City's Methane Mitigation Standards as amended by Ordinance 175790 (LADBS 2004).

City of Los Angeles Department of Building and Safety (LADBS). The Methane Mitigation Standards require that an initial assessment for methane and hydrogen sulfide be completed in accordance with LADBS guidelines for oil fields, methane zones and/or methane buffer zones. The initial assessment shall be conducted in accordance with LADBS Site Testing Standards for Methane.

City of Los Angeles Emergency Management Department (EMD). The City of Los Angeles EMD works with City departments, municipalities, and community-based organizations to ensure that the City and its residents have the resources and information they need to prepare, respond, and recover from emergencies, disasters, and significant events.

The Emergency Operations Organization (EOO) is the operational department responsible for the City's emergency preparations (planning, training and mitigation), response and recovery operations. The EOO centralizes command and information coordination to enable its unified chain-of-command to operate efficiently and effectively in managing the City's resources.

The Emergency Operation Center (EOC) is the focal point for coordination of the City's emergency planning, training, response and recovery efforts. EOC processes follow the National All-Hazards approach to major disasters such as fires, floods, earthquakes, acts of terrorism and large-scale events in the City that require involvement by multiple City departments.

City of Los Angeles Industrial Waste Permit. Industrial facilities and certain commercial facilities that discharge industrial wastewater to the City's sewage collection and treatment system are required to get an industrial wastewater discharge permit.

The City of Los Angeles General Plan Safety Element. The Safety Element identifies hazardous materials within the City of Los Angeles and describes objectives, policies, and programs for their regulation, management, and mitigation. **Table 3.9-1** presents the applicable goals, objectives, and policies of the City's General Plan Safety Element.

Table 3.9-1: City of Los Angeles General Plan Safety Element Goals, Objectives, and Policies

Goal/Objective/Policy	Description
Hazard Mitigation Goal 1	A city where potential injury, loss of life, property damage and disruption of the social and economic life of the City due to fire, water related hazard, seismic event, geologic conditions or release of hazardous materials disasters is minimized.
Objective 1.1	Implement comprehensive hazard mitigation plans and programs that are integrated with each other and with the City's comprehensive emergency response and recovery plans and programs.
Policy 1.1.1	Coordination. Coordinate information gathering, program formulation and program implementation between City agencies, other jurisdictions and appropriate public and private entities to achieve the maximum mutual benefit with the greatest efficiency of funds and staff. [All EOO hazard mitigation programs involving cooperative efforts between entities implement this policy.]
Policy 1.1.4	Health/environmental protection. Protect the public and workers from the release of hazardous materials and protect City water supplies and resources from contamination resulting from accidental release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation. [All EOO hazardous materials hazard and water pollution mitigation programs implement this policy.]

SOURCE: City of Los Angeles, *Safety Element: An Element of the General Plan*, 1996.

City of Glendale

The City of Glendale General Plan Safety Element. The City of Glendale's Safety Element provides the Goals, Policies, and Programs related to regulating hazardous materials and wastes within the City with the overall goal (Goal 5) of reducing threats to the public health and safety posed by hazardous materials. Program 5-1.1 of the Safety Element requires the City to disclose laws that require all users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they store, use or transport, and to notify the appropriate City, County, State and Federal agencies in the event of a violation.

City of Burbank

The City of Burbank does not have local regulations related to hazards or hazardous materials that are applicable to the Proposed Project.

City of San Fernando

The City of San Fernando General Plan Safety Element. The Safety Element does not identify any goals or policies specific to hazardous materials; however, the element identifies Action Program 6 which requires the City to respond to hazardous spills consistent with the Hazardous Materials Operational Response Plan. The current applicable plan is the City's 2020 Multi-Hazard Mitigation Plan.

City of Santa Clarita

The Safety Element of the City of Santa Clarita's General Plan identifies hazardous materials within the City of Santa Clarita and describes objectives, policies, and programs for their regulation, management, and mitigation. Of most relevance to the Proposed Project is the City's Policy S 4.1.1 which states a support for continued clean-up efforts and re-use plans for the Whittaker-Bermite property. **Table 3.9-2** presents the goals, objectives, and policies of the City's General Plan Safety Element applicable to the Proposed Project.

Table 3.9-2: City of Santa Clarita General Plan Safety Element Goals, Objectives, and Policies

Goal/Objective/Policy	Description
Goal S 4	Protection of public safety and property from hazardous materials.
Objective S 4.1	Identify sites that are contaminated with chemicals and other hazardous materials, and promote clean-up efforts.
Policy S 4.1.1	Continue to support clean-up efforts and re-use plans for the Whittaker-Bermite property.
Policy S 4.1.2	Coordinate with other agencies to address contamination of soil and groundwater from hazardous materials on various sites, and require that contamination be cleaned up to the satisfaction of the City and other responsible agencies prior to issuance of any permits for new development.
Objective S 4.2	Cooperate with other agencies to ensure proper handling, storage, and disposal of hazardous materials.
Policy S 4.2.1	On the Land Use Map, restrict the areas in which activities that use or generate large amounts of hazardous materials may locate, to minimize impacts to residents and other sensitive receptors in the event of a hazardous materials incident.
Policy S 4.2.2	Through the development review process, ensure that any new development proposed in the vicinity of a use that stores or generates large amounts of hazardous materials provides adequate design features, setbacks, and buffers to mitigate impacts to sensitive receptors in the event of a hazardous materials incident.

SOURCE: City of Santa Clarita, *Safety Element of the City of Santa Clarita General Plan*, 2011.

County of Los Angeles

Los Angeles County Department of Public Works. The Los Angeles County Department of Public Works is a Certified Unified Program Agency (CUPA) and a participating agency to the Los Angeles County CUPA, which is managed by the Los Angeles County Fire Department, Health Hazardous Materials Division (HHMD).

The HHMD administers the following programs within Los Angeles County:

- Hazardous Waste Generator Program
- Hazardous Materials Release Response Plans and Inventory Program
- California Accidental Release Prevention Program (Cal/ARP)
- Aboveground Storage Tank (AST) Program
- Underground Storage Tank (UST) Program

- The Environmental Programs Division permits and inspects USTs in the unincorporated areas of Los Angeles County and 77 cities. City of Los Angeles Fire Department (LAFD) manages its own CUPAs for USTs in their jurisdiction.

Los Angeles County Department of Public Health. The Los Angeles County Department of Public Health provides soil boring and groundwater monitoring well permitting services to the County of Los Angeles.

County of Los Angeles Operation Area Emergency Response Plan. The 2012 County of Los Angeles Operation Area Emergency Response Plan addresses a coordinated response to emergency situations associated with natural, man-made, and technological situations.

City of Palmdale

The City of Palmdale General Plan. The City of Palmdale General Plan Safety Element provides the City's goals, objectives, and policies related to hazardous materials and other hazards. Objective S2.3 of the Safety Element and the associated policies, seek to protect the public from hazardous materials and the hazards associated with the transport, storage or disposal of such materials.

City of Lancaster

The City of Lancaster General Plan. The Lancaster General Plan includes specific actions to address hazardous materials within the City. Notably, the General Plan Policy 4.5.1 seeks to ensure that any activities within the City transport, use, store, and dispose of hazardous materials in a responsible manner to protect public health and safety. Table 3.9-3 provides applicable objectives, policies, and actions from the City's General Plan.

Table 3.9-3: City of Lancaster General Plan Objectives, Policies, and Actions

Objective/Policy/Action	Description
Objective 4.5	Protect life and property from the potential detrimental effects (short and long term) of the creation, transportation, storage, treatment, and disposal of hazardous materials and wastes within the City of Lancaster
Policy 4.5.1	Ensure that activities within the City of Lancaster transport, use, store, and dispose of hazardous materials in a responsible manner which protects the public health and safety.
Action 4.5.1(a)	Implement the goals and policies of the Los Angeles County Certified Unified Program Agency; Health Hazardous Materials Division by: • ensuring the availability of safe and legal options for the management of hazardous waste generated within the City; • reviewing all proposals for hazardous waste facility projects within the City for consistency with the adopted Los Angeles County Hazardous Waste Management Plan. • ensuring that the requirements of the California Environmental Quality Act, as amended, are enforced for siting, operating and closing a hazardous waste facility, as set forth in state law. • ensuring that sites for specified hazardous waste facilities are located as close to the areas of generation as possible and that residual repository facilities are located in more distant areas as far as possible from urbanized, populated, and congested areas.

Objective/Policy/Action	Description
	• reviewing annually and updating accordingly the City of Lancaster Hazardous Waste Facilities Ordinance No. 560 for compliance with Assembly Bill 2948 (Tanner), and any subsequent pertinent legislation. • reviewing legislation as approved by the legislature for its application to the City and implementing it as required by law.

SOURCE: City of Lancaster, *General Plan 2030,* July 2009.

3.9.2. Existing Setting

3.9.2.1 General Corridor-wide Conditions

The AVL corridor consists of an active rail alignment with rail-associated structures and uses. In addition, there are industrial, commercial, and other transportation-related uses (i.e., roads) bounding and crossing the AVL corridor. The Affected Area for identifying hazardous materials conditions includes the three capital improvement sites, the areas within 1/8-mile of the capital improvement sites, and the 76.6-mile long AVL corridor ROW. Below is a description of hazardous materials common to rail and transportation corridors that are likely to be encountered in one or more locations along the AVL corridor.

Lead Based Paint

While there is limited demolition of structures proposed as part of the Project, traffic striping and pavement marking paint in the areas surrounding the construction footprint of the three capital improvement sites may have caused lead contamination in nearby soils.

Aerial-Deposited Lead

Soil and grade crossings in the immediate vicinity of the Affected Area are likely to be contaminated with Aerial-Deposited Lead (ADL) due to the proximity of several highways and major throughfares. These include, but are not limited to, the following:

- I-5
- San Fernando Road
- Soledad Canyon Road
- Sierra Highway

Asbestos Containing Materials

Depending on the date of construction, many of the structures in the vicinity of the Project, including concrete bridge abutments, may have been built with structural and building materials that contain asbestos. Although structures were not assessed as part of this study, the following ACM may be present:

- Interior building materials could contain ACM in floor tiles and mastic; including wallboard and joint compound; wall, ceiling, and pipe insulation; and acoustic ceiling panels.
- Exterior asbestos-containing building materials could include stucco, Transite siding, roofing materials, window sealants, patching material, concrete bridge construction materials, and Transite pipe.

Multiple roadway and railroad overcrossing structures built prior to the 1980s exist in the Project Area. These structures may also contain ACMs.

Common Railroad Corridor Contaminants

Various chemicals were historically used to preserve railroad ties and for weed abatement along railroad tracks. In addition, leaks, spills, and drips of various hazardous substances and petroleum products (including freight, fuels, and lubricants) may have occurred along the railroad tracks. Contaminants common in railway corridors include petroleum hydrocarbons, pesticides/ herbicides, polycyclic aromatic hydrocarbons (PAHs), and heavy metals, including arsenic and lead. Unused/abandoned railroad ties may also remain onsite and would require special handling and disposal.

Methane Gas

The Balboa Double Track Extension Improvement site is located approximately 1,000 feet east of the Sunshine Canyon Landfill. Both methane and hydrogen sulfide gas are commonly present in landfills and oil and gas fields. Methane is lighter than air and therefore may spread easily within work areas associated with the Build Alternatives.

Following a 1985 methane explosion due to gas accumulation under a store in Los Angeles' Fairfax District, the City of Los Angeles Department of Public Works' Bureau of Engineering began mapping where subsurface methane gas could be a hazard. These areas were labeled, and updated in 2004, as Methane Zones and Methane Buffer Zones. According to the Bureau of Engineering, a portion of the Balboa Double Track Extension site is located within a Methane Zone. [1]

The City of Los Angeles Municipal Code Chapter IX, Building Regulations, Article 1, Division 71, Methane Seepage Regulations, requires new buildings and paved areas located within a Methane Zone or Methane Buffer Zone to follow Methane Mitigation Standard (as amended by Ordinance No. 175790) to control methane intrusion emanating from geologic formations. The standards include requirements for site testing, methane mitigation systems, detection and ventilation systems, emergency procedures, potential application of the regulations outside the Methane Zone and Methane Buffer Zone, and other remedial measures, such as additional investigations and oil well abandonment.[2]

A project's specific mitigation requirements are determined based on the actual methane concentration and pressures detected in the subsurface at a project site. Measures may include both active and passive ventilation systems to provide an exchange of air, in conjunction with gas barriers (membranes under foundations), and sensors to monitor methane gas concentrations and pressure.

[1] Airgas, *Safety Data Sheet*, https://www.airgas.com/msds/001033.pdf.
[2] City of Los Angeles Department of Public Works, *Methane and Methane Buffer Zones City of Los Angeles*, 2004.

3.9.2.2 Regulatory Database Search

Environmental Data Resources (EDR) prepares database reports of available federal, State, and County agency databases that identify the presence of any government regulated properties, either on site or adjacent to a project site, with potentially on-site hazardous conditions. The EDR reports identify mapped and unmapped sites listed in federal, state, and local government databases within the search areas prescribed by ASTM Standard E 1527-05.

A database search was conducted by EDR which identified mapped and unmapped sites listed in federal, state, and local government databases within the Project area. The EDR database search indicates that there are 928 listings within 1/8 mile of the proposed capital improvement sites. This section provides description of the EDR database search results as well as general site conditions for each of the capital improvement sites. Complete copies of the EDR reports are provided in Appendix H.

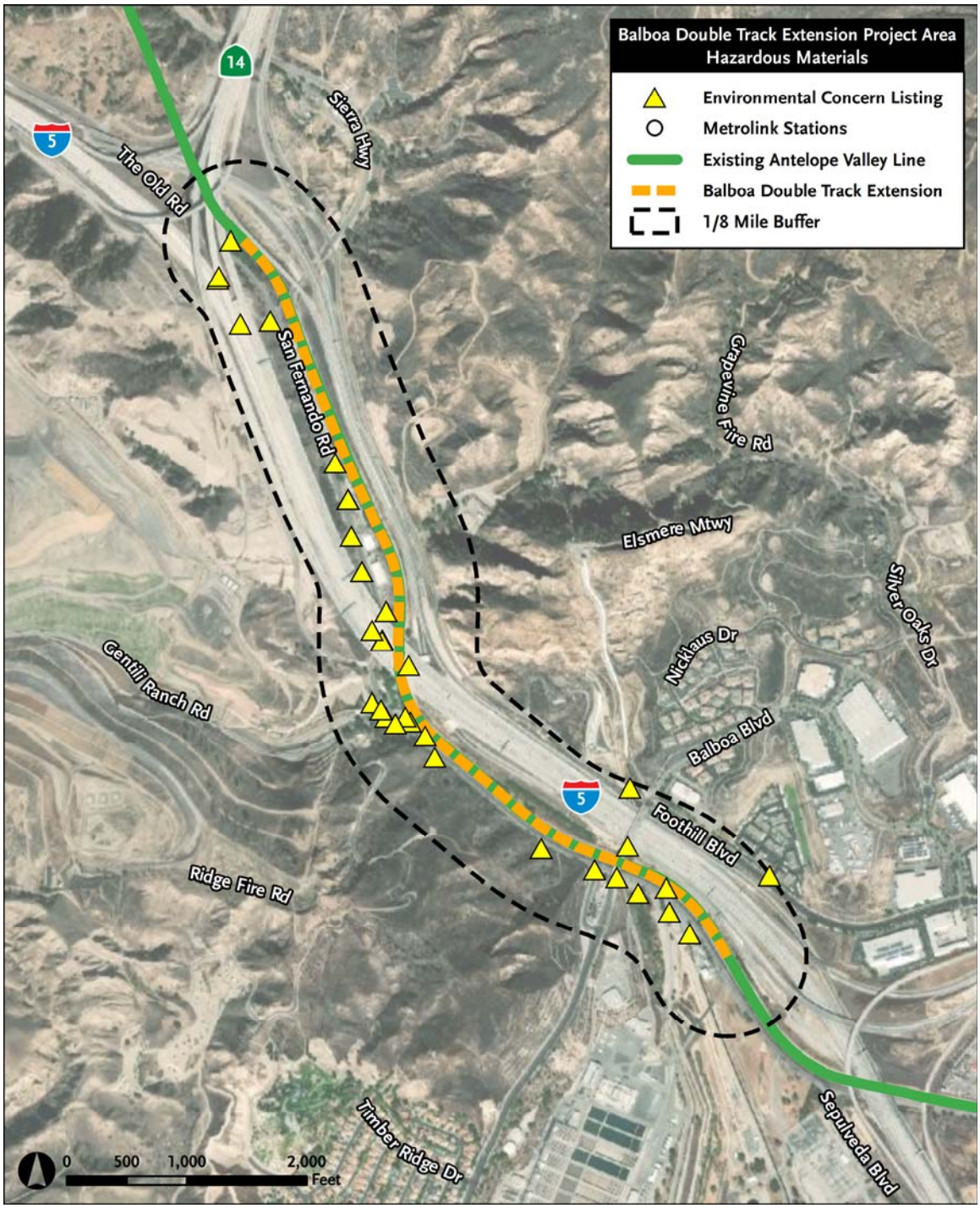
Balboa Double Track Extension

The Balboa Double Track Extension site is located at the northernmost boundary of the City of Los Angeles and is situated adjacent to I-5 and San Fernando Road with a portion of the site surrounded by I-5 to the west and the I-5 Truck Route to the east. Adjacent land uses consist mainly of light industrial uses including a wood supply company, a sheet metal supplier, a trucking company, and a small tree nursery. Additionally, the Sunshine Canyon Landfill is located approximately 1,000 feet west of the site and is situated at a higher elevation from the Balboa Double Track Extension site. Due to the proximity of the landfill, subsurface methane accumulation may be a concern, though the elevation difference makes it unlikely that methane related to the landfill underlies the Project Site. Due to the surrounding uses including major highway activity and light industrial operations, as well as the active rail operations along the AVL, it is likely that hazardous materials are present within Project Site.

The EDR database search identified 145 individual listings within the search radius (up to 2 miles), of which 108 listings were identified within 1/8 mile of the Balboa Double Track Extension site. The EDR database search identified two listings within the Project site consisting of an UST and a contaminated soil cleanup site that appears to be associated with one of the adjacent land uses. **Figure 3.9-1** shows the locations of the various listings within 1/8 mile of the Project site. It should be noted that there are multiple listings for each of the points shown in **Figure 3.9-1**. The full database search report is provided Appendix H.

The EDR database search identified a number of listings related to accidents and spills along I-5, several oil and gas related listings including above ground storage tanks and pipeline-related water contamination, and various listings related to adjacent land uses including but not limited to presence of USTs, on-site generators, storage of chemicals, and various chemical spills or other accidental releases.

Figure 3.9-1: Balboa Double Track Extension Improvement EDR Listings



Canyon Siding Extension

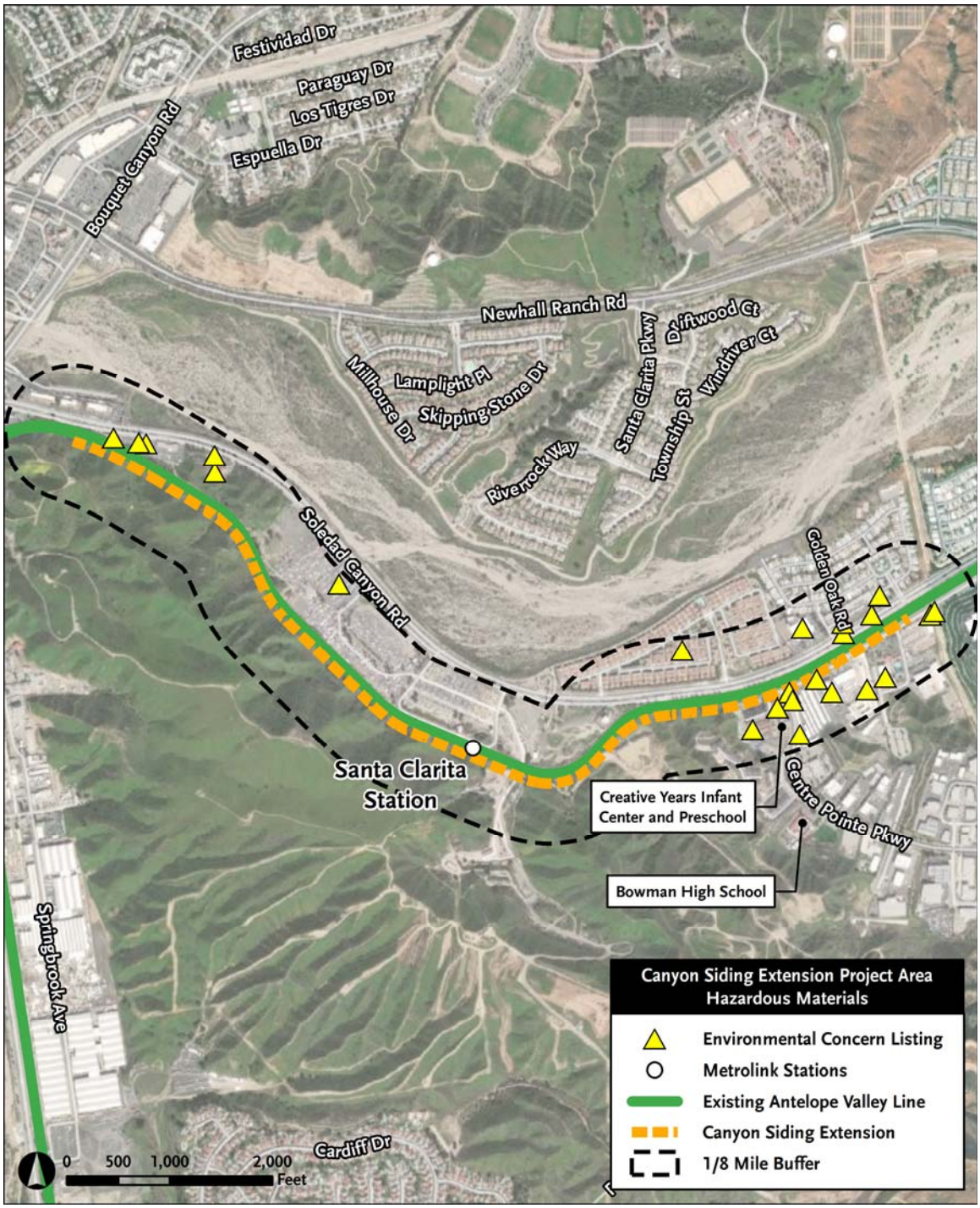
The Canyon Siding Extension Improvement site is located in Northern Santa Clarita near the Santa Clara River. The Canyon Siding Extension site is characterized by little to no development along the south side of the Project Site which is a steep hillside along much of the site. To the north of the Canyon Siding Extension site, limited development is situated adjacent to the rail corridor with land uses consisting of commercial structures on the west end of the site, the Santa Clarita Swap Meet and the existing Santa Clarita Metrolink Station along the central portion of the site, and commercial development along the eastern end of the site. East of the Santa Clarita Metrolink Station, the AVL corridor curves northward slightly and runs parallel and between Soledad Canyon Road, a major throughfare, and Golden Triangle Road. In addition, the Santa Clarita Metrolink Station, and the hillside to the south of it is located on the former Bermite-Whitaker site which was a major manufacturing facility that manufactured and tested explosives between 1934 and 1987. Numerous hazardous materials have historically been present on the site and it is currently listed on the Department of Toxic Substances Controls Hazardous Waste and Substances Site List (CORTESE List). Active soil remediation has been underway on the site since 2006 and continues at various locations throughout the site.[3]

The EDR database search identified 250 individual listings within the search radius (up to 2 miles), of which 136 were identified within 1/8 mile of the Canyon Siding Extension site. The EDR database search did not identify any listings or other environmental concerns within the Project Site. **Figure 3.9-2** shows the locations of the various listings within 1/8 mile of the Canyon Siding Extension site. It should be noted that there are multiple listings for each of the points shown in **Figure 3.9-2**. The full database search report is provided in Appendix H.

A majority of the EDR listings are located along the eastern end of Canyon Siding Extension site and are generally related to the land uses Golden Triangle Road which include a storge facility, a dental office, a motorcycle dealer, and various small commercial businesses. Generally, environmental concerns identified in the EDR database search consisted of the handling, storage, and disposal of chemicals and fuels. Other potential environmental concerns include the Saugus Swap Meet Property, known as the Santa Clarita Swap Meet at The Saugus Speedway and located adjacent to the existing Santa Clarita Metrolink Station. The swap meet site is listed as a voluntary cleanup site due to historic agricultural and vehicle maintenance activities on the site.

[3] Department of Toxic Substances, *Hazardous Waste and Substances Site List, Envirostor Webpage,* https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=19281087

Figure 3.9-2: Canyon Siding Extension EDR Listings



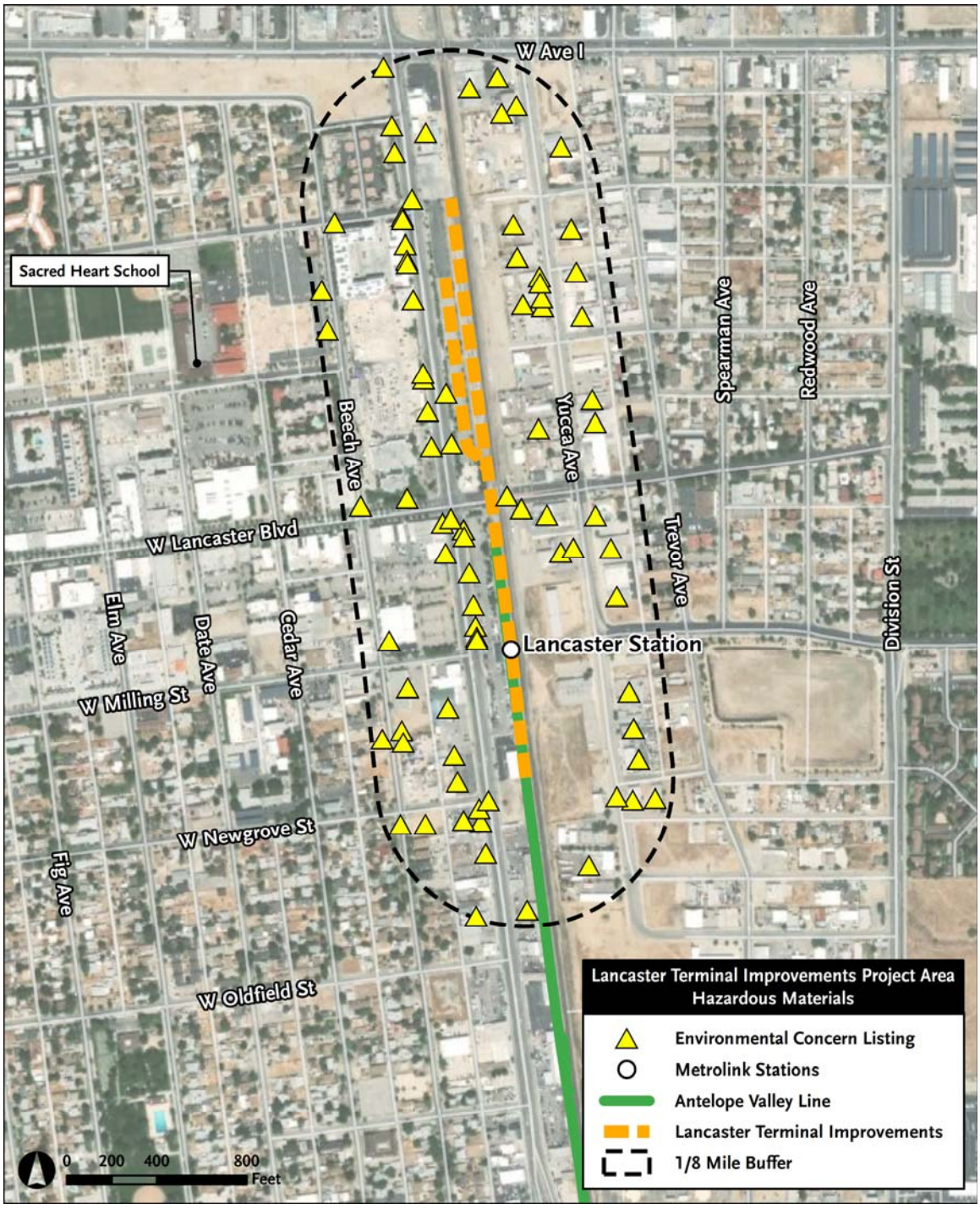
Lancaster Terminal Improvements

The Lancaster Terminal Improvements site is located in central Lancaster and consists of the Lancaster Metrolink Station and multiple storage tracks associated with Metrolink operations. The Lancaster Terminal Improvements site consists of typical railroad facilities including several rows of track. Development along the west side of the AVL corridor consists of various automotive businesses including car dealers, body/paint shops, auto parts stores, and mechanic shops with frontages along Sierra Highway which parallels the AVL corridor throughout the length of the Lancaster Terminal Improvements site. The Lancaster Metrolink Station parking area and a City-owned parking lot comprise the northern half of the Lancaster Terminal Improvements site's surroundings. East of the AVL corridor, development is less dense with commercial and light industrial uses lining Yucca Avenue.

The EDR database search identified 982 individual listings within the search radius (up to 2 miles), of which 684 were identified within 1/8 mile of the Project Site. The EDR database search identified nine listings within the Lancaster Terminal Improvements site, all of which consist of rail operations-related storage and handling of chemicals and fuels, and no spills or cleanup sites within the ROW were identified. **Figure 3.9-3** shows the locations of the various listings within 1/8 mile of the Lancaster Terminal Improvements site. It should be noted that there are multiple listings for each of the points shown in **Figure 3.9-3**. The full database search report is provided in the Appendix H.

A majority of the EDR listings within 1/8 mile of the Project Site are located along Sierra Highway and Avenue J, generally related to the automotive businesses that line both roadways. Typical listings include presence of leaking underground storage tanks (LUSTs), storage and disposal of hazardous wastes (typically oil waste), and historic use hazard conditions from dry cleaning businesses. Cleanup sites within 1/8 mile of the Project Site were all related to LUSTs and one historic dry cleaner business.

Figure 3.9-3: Lancaster Terminal Improvements EDR Listings



3.9.2.4 Proximity of Educational Facilities

Three education facilities have been identified within 0.25-mile of the proposed capital improvement construction footprint areas. There are additional protective regulations for projects that utilize hazardous materials within a 0.25-mile of an educational facility. As shown in **Table 3.9-4**, there are two educational facilities within 0.25-mile of the proposed Canyon Siding Extension and one private school facility within 0.25-mile of the Lancaster Terminal Improvement site.

Table 3.9-4: School Facilities within 0.25-Mile of the Proposed Capital Improvement Sites

Facility Name	Address	Distance to Capital Improvement Area	Distance to Construction Footprint
CANYON SIDING EXTENSION			
Creative Years Infant Center and Preschool	21710 Golden Triangle Road Santa Clarita, CA 91350	Preschool/Early Education	500 feet
Bowman High School	21508 Centre Pointe Pkwy Santa Clarita, CA 91350	High School	1,250 feet
LANCASTER TERMINAL IMPROVEMENTS			
Sacred Heart School	625 W. Kettering St Lancaster, CA 93534	Private School	1,000 feet

SOURCE: Google Maps website and Google Earth, 2021.

3.9.2.5 Proximity of Airports

No airports have been identified within two miles of any of the proposed capital improvement areas. **Table 3.9-5** shows the location of the nearest airports and air strips to the AVL corridor.

Table 3.9-5: Airports within Five Mile of AVL Corridor

Airport Name	Address	Distance (Miles)
Bob Hope Airport	2627 N Hollywood Way Burbank, CA 91505	Adjacent to AVL Corridor
Whiteman Airport	12653 Osborne St Pacoima, CA 91331	3.4 Miles Northeast of AVL Corridor
Agua Dulce Airpark	33638 Agua Dulce Canyon Road, Santa Clarita, CA 91390	4.2 Miles Northwest of AVL Corridor
Palmdale Airport	2501 E Avenue P Palmdale, CA 93550	0.75 Mile East of AVL Corridor
General William J. Fox Airfield - Airport	4725 William J Barnes Ave Lancaster, CA 93536	4.8 Miles Northwest of Lancaster Terminal Improvements

SOURCE: Caltrans Aviation Database, 2021.

3.9.3 Significance Thresholds and Methodology

3.9.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to hazardous waste and materials if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- 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;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area; and/or
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

3.9.3.2 Methodology

The assessment of impacts is based on environmental conditions within the Affected Area, as well as other applicable laws and regulations related to hazards and hazardous materials issues, as described in the following sections. Generally, construction activities that disturb soils or hazardous land uses pose the greatest risk of upset in areas where contamination conditions are present. The assessment of impacts reviews records of known and potential contamination and discusses how Project-related construction may present risks of upsetting such conditions. In addition, operation of the Project will be assessed to determine if the use or transport of hazardous materials pose a risk of emitting hazardous materials or substances.

3.9.4 Impact Analysis

Impact 3.9-1) Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Construction

Less-Than-Significant Impact with Mitigation. Construction activities would involve the temporary use of potentially hazardous materials, including vehicle fuels, oils, and transmission fluids for on-site construction equipment.

Soil and/or groundwater in the capital improvement sites may be affected by common railroad corridor contaminants and chemically treated railroad ties. Active railroad corridors generally may contain hazardous materials such as petroleum hydrocarbons, pesticides and herbicides, PAHs, and heavy metals, including lead and arsenic. During construction these materials would be disturbed and handled onsite or loaded into trucks for offsite disposal or recycling, which would cause temporary, routine transport, use, or disposal of hazardous materials. During construction, these materials would be excavated or otherwise disturbed, which could create a health risk to construction workers and nearby residents and/or the public. The following hazardous materials could be disturbed, excavated or removed, and transported on public roads and highways:

- Lead Based Paint/Yellow Paint Striping
- Aerially Deposited Lead in Soil
- Asbestos Containing Materials (ACMs)
- Herbicides
- Petroleum hydrocarbons associated with gas stations
- Polychlorinated Biphenyls
- Known, Potential, and Historical Concern Sites (impacted soil and/or groundwater)
- Residual soil impacts associated with historical gas station contamination

The handling, transport, and disposal of all hazardous materials encountered during construction would be done according to federal, State, and local regulations. For example, the South Coast Air Quality Management District (SCAQMD) regulates asbestos through Rule 1403, Asbestos Emissions from Renovation/Demolition Activities. The SCAQMD also regulates volatile organic compound emissions from contaminated soil through Rule 1166. Therefore, the Proposed Project would result in a less-than-significant impact related to construction activities.

During construction, the use of hazardous materials and substances would be required and hazardous wastes would be generated during operation of construction equipment. Hazardous materials would include, but are not limited to vehicle fuels, asphalt/concrete, lubricants, epoxy resins, drilling fluids, and paints. The use of these materials, including their routine transport and disposal, carries the potential for an accidental release into the local environment. Equipment fueling would likely occur using temporary aboveground storage tanks at specified staging and laydown areas. Other potentially hazardous materials used in smaller quantities (e.g., paints, asphalt, etc.) would be stored using specialized containment, such as sheds or trailers. If a spill

of these materials were to occur, the accidental release could pose a hazard to construction employees, the public, and the environment, depending on the magnitude of the spill and relative hazard of the material released.

Although typical construction management practices limit and often eliminate the risk of such accidental releases, the extent and duration of project construction presents a possible risk to the environment, through the routine transport of hazardous materials. Therefore, without mitigation, the Project would result in a potentially significant impact related to the transport, use and disposal of hazardous materials during construction.

Operations

Less-Than-Significant Impact. The AVL is an existing commuter rail line that routinely operates heavy rail along the existing 76.6 mile AVL corridor. The project would involve an increase in the number of trains traversing the AVL corridor, although operational activities and practices involving routine transport, use, and storage of potentially hazardous materials would remain similar to existing conditions. Future operations would involve routine transport of hazardous materials and wastes, such as gasoline, brake fluids, and coolants, and heavy maintenance activities would continue at existing maintenance facilities, such as Metrolink's CMF (or Taylor Facility) located north of LAUS. These facilities already in operation would continue to provide for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials.

In addition to existing maintenance facilities, the Proposed Project would provide new storage tracks north of the existing Lancaster Terminal. Light maintenance activities such as passenger car interior cleaning and fueling would take place at the proposed storage tracks. Existing operations involve fueling Metrolink trains via fuel trucks. The Proposed Project has designed the proposed storage tracks with a designated area for fuel truck access, fueling activities include overhead fuel delivery and an underground tank for fuel storage. Hazardous materials associated with the existing operations include detergents and cleansers associated with vehicle maintenance activities as well as diesel fuel, engine lubricants, coolants, and brake fluids. Operations associated with the Proposed Project would require similar routine use of detergents and cleansers as well as routine fueling activities. The potential for exposure to these hazards and hazardous materials would be limited to the existing Metrolink facilities and the proposed storage tracks at the Lancaster Terminal.

Metrolink facilities are staffed with personnel trained in hazardous materials emergencies. Metrolink staff is available 24-hours a day through the Quality Assurance Department to respond to hazardous materials releases, and Metro sites frequently undergo emergency response drills. There would be no hazardous emissions associated with operations of the Proposed Project. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

Mitigation Measures

HAZ-1 Prior to the start of construction, the contractor shall provide Metro with an industrial waste management plan and/or a waste and hazardous materials management plan, such as a plan defined in Title 19 California Code of Regulations or a Spill Prevention, Control, and Countermeasure Plan. These plans shall be completed to Metro contractor specifications and will identify the responsible parties and outline procedures for hazardous waste and hazardous materials worker training, certifications, handling, storage, and transport during construction of the Project. The plan shall specify how the contractor will handle and manage wastes onsite, including:

- Prescribe BMPs to follow to prevent hazardous material releases and cleanup of any hazardous material releases that may occur
- Comply with the SWRCB Construction CWA Section 402 General Permit conditions and requirements for transport, labeling, containment, cover, and other BMPs for storage of hazardous materials during construction

During construction, the contractor shall comply with applicable federal and state regulations that consider hazardous material handling and storage practices, such as RCRA, CERCLA, the Hazardous Materials Release Response Plans and Inventory Law, and the Hazardous Waste Control Act.

HAZ-2 Prior to the start of construction, the construction contractor shall retain a qualified environmental consultant to prepare a Soil Management Plan, Soil Reuse Management Plan, Groundwater Management Plan, and/or Soil, Soil Vapor, and Groundwater Management Plan. These plans shall be completed to Metro's contractor specifications and submitted to Metro prior to any ground-disturbing activities for the project. Alternatively, soil, soil vapor, and/or groundwater plans shall be prepared separately and then compiled together as a Soil, Soil Vapor, and Groundwater Management Plan.

Significance of Impacts after Mitigation

Implementation of Mitigation Measures **HAZ-1** and **HAZ-2** would ensure that any accidental spills or releases of hazardous materials during construction would be managed properly and any hazardous wastes or known contaminated materials are disposed of properly. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to construction activities.

Impact 3.9-2) Would the Proposed Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Construction

Less-Than-Significant Impact with Mitigation. Based upon the conditions of the three capital improvement sites and database records, there is potential for contaminated soil and groundwater, ADL, presence of LBPs, presence of ACM, and various historic uses that handled or stored hazardous materials within the vicinity of the capital improvement sites.

Disturbances of soil, soil vapor, or groundwater during construction at known, potential, or historical concern sites would potentially result in the upset of hazardous materials into the environment presenting potential for significant impacts. Disturbance of these concern sites could create a health risk to construction workers and nearby residents or the public during construction.

Typical hazardous material impacts that could be encountered at the environmental concern sites include the following:

- Residual gasoline or fuel-related chemical constituents in the soil or groundwater;
- Soil, soil vapor, or groundwater volatile organic compound (VOC) impacts from known or unknown dry-cleaning facility releases and landfill operations; and
- Metals and various common railroad contaminants in soil from current and past railroad operations.

In addition, the Balboa Double Track Extension site is located within a known Methane Zone and Methane Buffer Zone. Accordingly, there is potential for ground disturbing activities such as track removal and grading to result in the release of methane vapor presenting potential risks of explosion. Similarly, the Canyon Siding Extension site is located within the former Whitaker-Bermite Facility site which has undergone remediation since 2006. While any potential hazards presented by the Whitaker-Bermite site have likely been remediated, contaminated groundwater and potential unknown buried hazards may still be present.

Mitigation Measures **HAZ-1** and **HAZ-2** would ensure that construction activities are carried out in a way that protects construction workers and the public from the accidental release of hazardous materials; however, there is still potential to encounter unknown hazardous conditions including potential explosives associated with the Whitaker-Bermite Facility, methane vapors, and other concerns. Therefore, without mitigation, the Proposed Project has the potential to result in a significant impact related to the upset and accidental release of hazardous materials into the environment during construction.

Operations

Less-Than-Significant Impact. Operation of the AVL would involve the use of hazardous materials and wastes, such as gasoline, brake fluids, and coolants that could be subject to accidental releases. The handling of such materials would be subject to federal (40 CFR 239-282), state (22 CCR 4.5), and local health and safety requirements specified by Metro, railroad

operators, or property owners on a case-by-case basis. In general, regulatory requirements dictate that these materials not be released to the environment or disposed of as general refuse. Collection in proper containers and disposal at approved facilities are required.

As operator on the AVL, Metrolink would be required to comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. Permits would require preparation of a Hazardous Materials Business Plan (HMBP), per California's Health and Safety Code, that would include provisions for safe storage, containment, and disposal of chemicals and hazardous materials during operations, including waste materials. Given that the operations would be similar to existing conditions and the HMBP would be subject to approval by the applicable regulatory agency, impacts are considered less than significant.

Mitigation Measures

HAZ-3 Consistent with Metro's standard practice, prior to the start of construction, the contractor shall provide Phase I Environmental Site Assessments (ESAs) in accordance with standard American Society for Testing and Materials (ASTM) methodologies, to assess the land use history of each parcel that would be acquired for the Project. The determination of parcels that require a Phase II ESA (i.e., soil, groundwater, soil vapor subsurface investigations) shall be evaluated after the Phase I ESAs have been completed and would be based on the results of the Phase I ESAs. Specifically, if the Phase I ESAs identify suspected contamination in the soil, soil vapor, or groundwater; a Phase II ESA shall be conducted to determine whether the suspect contamination had resulted in soil, groundwater, or soil vapor contamination exceeding regulatory action levels.

If the Phase II ESA concludes that the site is impacted, remediation or corrective action (e.g., removal of contamination, in-situ treatment, capping) shall be conducted prior to or during construction under the oversight of federal, state, and/or local agencies (e.g., United States Environmental Protection Agency (USEPA), Department of Toxic Substances Control (DTSC), Regional Water Quality Control Board (RWQCB), Los Angeles County) and in full compliance with current and applicable federal and state laws and regulations. Additionally, Voluntary Cleanup Agreements shall be used for parcels where remediation or long-term monitoring is necessary.

HAZ-4 The Balboa Double Track Extension shall be designed in accordance with the City of Los Angeles Municipal Code, Chapter IX, Building Regulations, Article 1, Division 71, Methane Seepage Regulations, as amended by the City of Los Angeles Methane Ordinance (No. 175790). Specific requirements shall be determined according to actual methane levels and pressures measured along the Affected Area, and the specific requirements shall be incorporated into the design and construction.

Significance of Impacts after Mitigation

Mitigation Measure **HAZ-3** would be implemented ensure that all unknown environmental concerns are identified prior to ground disturbance activities and identify appropriate remediation or corrective action to address such concerns, if necessary. Mitigation Measure **HAZ-4** would

ensure that any concerns related to the presence of methane gas in the Balboa Double Track Extension site are addressed through design solutions in accordance with City of Los Angeles requirements. With implementation of these Mitigation Measures the potential environmental concerns identified would be negligible because hazardous materials and contaminated groundwater would be managed appropriately, property assessments (Phase I and II ESAs) would be completed prior to construction, and the contractor will be prepared for encountering known or undocumented hazardous materials. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to construction activities.

Impact 3.9-3) Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Construction

Less-Than-Significant Impact. There are two existing schools within 0.25 miles of the Canyon Siding Extension Improvement site and one existing school within 0.25 miles of the Lancaster Terminal Improvement site. During construction, there would be use of commercially available hazardous materials such as gasoline, brake fluids, coolants, and paints. Standard equipment maintenance and good housekeeping practices during construction would minimize the risk of any release; however, if any release of these substances did occur, releases are anticipated to be localized and unlikely to pose a risk to the three educational institutions within a 0.25 mile of the Project construction activities, mainly due to distance from proposed construction areas. Impacts on school facilities would be less than significant.

Operations

No Impact. The AVL corridor is an existing, active commuter rail corridor. While the Proposed Project would enable increased service along the corridor, no change in vehicle type or maintenance activities--such that emissions or use of extremely hazardous substances or mixtures increases within 0.25 mile of educational facilities--are anticipated. No impact on educational institutions within 0.25 mile of the AVL operations is anticipated.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

Impact 3.9-4) Would the Proposed Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Construction

Less-Than-Significant Impact with Mitigation. Portions of the Canyon Siding Extension Improvement site are located within the historic boundaries of the Whitaker-Bermite Facility which is included in the Cortese List of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Portions of the Whitaker-Bermite Facility are undergoing remediation under California State oversight; however, these areas are not within the construction footprint of the Proposed Project. Nonetheless, there are known potential, and/or historical environmental concerns associated with the Whitaker-Bermite Facility as well as other hazardous materials listings at the Canyon Siding Extension site as well as the other capital improvement sites.

Potential impacts from construction of the Proposed Project with regard to Cortese and environmental concern sites include:

- The potential exposure of construction workers or members of the public to chemical compounds in soils, soil gases, and groundwater;
- Exposure of workers, the public, and the environment to airborne chemical compounds migrating from the demolition, grading, or construction areas; and
- Soil disturbance such as trenching, digging, and/or grading in contaminated areas could create situations where exposure could occur.

Construction activities could also encounter contaminants or interfere with the ongoing remediation efforts at some facilities such as the Whitaker-Bermite Facility site. For example, a groundwater monitoring well may need to be relocated prior to construction, this would interfere with ongoing remediation efforts at a Cortese and environmental concern site. Unless construction activities are properly coordinated with those site remediation activities, there could be a temporary increased risk of damage to or interference with ongoing site remediation activities such as soil containment areas, or potential negative influences on the control of impacted groundwater due to construction dewatering activities. Further, construction activities could result in the discovery of unanticipated contamination at known release sites, potential environmental concern sites, or historical environmental concern sites. This would be a potentially significant impact.

Project-related effects of hazardous waste containing chemical compounds would generally be limited to areas where the materials would be excavated, handled, and stored because potential exposure would most likely occur in these areas. The size of these impacted areas would depend upon the volume and nature of the release materials and the general condition of the release site (e.g., paved, unpaved, sloped, flat, bermed). The individuals most at risk would be construction workers, operations personnel, or others in the immediate vicinity during excavation, transportation, or storage of the hazardous wastes, or during demolition and construction. The

exposure pathways through which these individuals could be exposed include inhalation, ingestion, or dermal contact. Without Mitigation, construction of the Proposed Project would result in a potentially significant impact because numerous contaminated sites are located within the capital improvement sites.

However, construction contractors would be required to implement federal and state handling and disposal regulations, which would reduce the risk of exposure of the public and the environment to hazardous materials during transport and disposal of hazardous contaminants encountered during construction. Compliance with existing federal regulations pertaining to hazardous material handling, transport, and disposal, would reduce the risk of exposure of the public and the environment to hazardous materials used during construction of the Proposed Project.

Operations

Less-Than-Significant Impact. After construction is complete, AVL operations are not anticipated to disturb or otherwise affect known sites of contamination or other hazardous sites; therefore, no remediation or coordination with regulatory agencies would be required during operations. Impacts of operations would be less than significant.

Mitigation Measures

See Mitigation Measures **HAZ-1** through **HAZ-4**.

Significance of Impacts after Mitigation

Impacts from construction of the Proposed Project related to known and unknown environmental concerns, including those associated with the Whitaker-Bermite Facility, would be addressed by Mitigation Measures **HAZ-1** through **HAZ-4**. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to construction activities.

Impact 3.9-5) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Proposed Project result in a safety hazard or excessive noise for people residing or working in the project area?

Construction

No Impact. None of the capital improvement sites are located within an airport land use plan area or within two miles of a public airport or public use airport. Therefore, no construction activities would occur within two miles of a public airport or public use airport and there is no potential for impacts from construction of the Proposed Project.

Operations

No Impact. The AVL is an existing commuter rail line with an existing station serving the Bob Hope Airport in the City of Burbank. The Proposed Project would enable increased service throughout the AVL including the portions of the line within two miles of Bob Hope Airport. Since the AVL is a commuter rail line intended to serve the airport and no new residences or infrastructure are proposed within the airport land use plan area of the City of Burbank, there is

no potential for safety hazards or excessive noise for people residing or working in the Project Area. No impact would result from operation of the Proposed Project.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

No impact.

Impact 3.9-6) Would the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Construction

Less-Than-Significant Impact. The Project is located within an urbanized area with numerous roadways and nearby highways. Based on a review of disaster route maps for the Los Angeles County Operational Area[4], the following designated disaster routes are within the vicinity of one or more capital improvement sites:

Balboa Double Track Extension

- I-5 (Primary Route)
- SR-14 (Primary Route)
- San Fernando Road (Secondary Route)
- Sierra Highway (Secondary Route)
- Balboa Boulevard (Secondary Route)

Canyon Siding Extension

- Soledad Canyon Road (Secondary Route)

Lancaster Terminal Improvements

- Sierra Highway
- Avenue J
- Avenue I

No Project-related facilities would be sited within any of these roadways and no heavy construction activities would take place within these roadways. However, minor construction activities such as equipment movement and hauling would occur along these roadways which may result in temporary disruptions to traffic flow. While traffic flow along nearby roads may be affected during periods of construction, no construction activities are anticipated to affect access

[4] County of Los Angeles, *Los Angeles County Operational Area Emergency Response Plan. 2012.*

along any designated disaster routes such that interference with evacuation movements would occur in the event of an emergency.

Consistent with County Operational Area Emergency Response Plan, Metro and Metrolink facilities, including the AVL, could be used for evacuation purposes similar to the AVL's function following the 1994 Northridge earthquake. While construction of the Proposed Project may require service interruptions during periods of construction work on service tracks. These service interruptions would be temporary and the AVL would remain functional throughout the construction phase. In the event of an emergency, construction activities would halt consistent with standard Metro safety procedures and no impediments to implementing the Los Angeles County Operational Area Emergency Response Plan would result. In addition, Mitigation Measure **TR-1** would implement a Traffic Management Plan that would be coordinated with emergency service providers further minimizing potential construction impacts to implementation of emergency response plans. Impacts related to construction would be less than significant.

Operations

Less-Than-Significant Impact. After construction is complete and the project is operational, no changes would be made to the identified evacuation routes. The AVL is an active commuter rail line, and the Proposed Project would enable increased service along the entirety of the corridor. While train frequency would increase along the AVL, the Proposed Project would not affect the ability of emergency routes to serve the region in the event of an emergency or disaster. During major emergencies requiring evacuations, train movements would be coordinated with local and regional emergency responders to enable timely and unimpeded evacuation activities along primary and secondary evacuation routes. Therefore, operational activities would not impede public access to emergency/disaster routes and would not interfere with an adopted emergency response plan or emergency evacuation plan. Therefore, the Proposed Project would result in a less-than-significant impact related to operational activities.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

3.10 NOISE AND VIBRATION

The following summarizes the applicable regulations, existing setting, and provides a detailed impact assessment related to noise and vibrational impacts. Refer to the Noise and Vibration Technical Report (Appendix I) for additional details related to applicable regulations and the existing setting.

3.10.1 Regulatory Framework

3.10.1.1 Federal Regulations

Federal Transit Administration. The Federal Transit Administration (FTA) and Federal Railroad Administration (FRA) of the United States Department of Transportation (USDOT) regulations apply methods and limits found in the FTA Guidance Manual, *Transit Noise and Vibration Impact Assessment Manual*, henceforth referred to as *FTA Guidance Manual*[1]. The FTA/FRA approach is used to discuss vibration impacts for the Proposed Project. See Section 3.10.3.1 for further information on the FTA's noise and vibration impact criteria.

3.10.1.2 State Regulations

California Environmental Quality Act. The State of California does not provide significance thresholds (specific limits) for noise and vibration from transit projects. At the state level, California Environmental Quality Act (CEQA) qualitatively recommends reducing construction vibration but does not provide any specifics or recommendations on limits.

3.10.1.3 Local Regulations

City of Los Angeles

City of Los Angeles' General Plan. The City of Los Angeles' General Plan is a comprehensive, long range declaration of purposes, policies, and programs for the development of the City. The Noise Element of the General Plan discusses rail systems complying with CEQA for noise and vibration. CEQA is covered in the other methods and limits stated.

Los Angeles CEQA Thresholds Guide. The *Los Angeles (L.A.) CEQA Thresholds Guide* defines the local noise limits and hours for construction work in the City of Los Angles per the City of Los Angeles Municipal Code[2]. For construction activities taking place between the hours of 9:00 p.m. and 7:00 a.m., Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, anytime on Sunday, work may be permitted if a written variance is approved by the Board of Police Commissioners through its Executive Director. For construction activities outside of those

[1] Federal Transit Administration, Office of Planning and Environment. *Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123.*
[2] City of Los Angeles Municipal Code, *Chapter 11, Noise Regulations*.

hours that lasts more than 10 days in a three-month period – the limit is 5 dBA above the ambient noise levels. This analysis assumes construction activities will all last more than 10 days per three-month period, so the noise limit for construction in the City of Los Angeles is ambient +5 dBA.[3] No specific noise limits for commercial receivers are included in the *L.A. CEQA Thresholds Guide*. Therefore, the Los Angeles County Code Ordinance for noise limit applies to commercial receivers. Note that many noise and vibration studies do not consider commercial properties, because most are not noise and vibration sensitive. The AVL construction areas include some health-related receivers (dentists and medical facilities) very close to the proposed construction activities. Due to the proximity and construction noise and vibration levels being higher than operational, noise and vibration were evaluated at these facilities and other nearby commercial buildings for consistency.

City of Santa Clarita

City of Santa Clarita Municipal Code. The Santa Clarita Municipal Code identifies hours when construction work may occur but does not define numerical noise limits that must be met.[4] The City of Santa Clarita defines daytime work hours as "seven a.m. to seven p.m., Monday through Friday, and eight a.m. to six p.m. on Saturday. Further, no work shall be performed on the following public holidays: New Year's Day, Independence Day, Thanksgiving, Christmas, Memorial Day and Labor Day." Work may be allowed outside of these defined hours with a permit from the Department of Community Development.

County of Los Angeles

Los Angeles County Code of Ordinances. The Los Angeles County Code of Ordinances defines regional limits for construction noise levels and allowable hours when construction activities may generate noise, however Section 12.08.440(D) of the code states that "in case of a conflict between this chapter and any other ordinance regulating construction activities, provisions of any specific ordinance regulating construction activities shall control."[5] More specific, city codes define the hours when construction work may occur in all three cities where construction will take place, therefore those local work hour definitions are used for this analysis. The City of Los Angeles provides specific noise limits for construction work in that city. However, the noise limits are only qualitatively defined in the City of Santa Clarita and the City of Lancaster codes as causing "loud, unnecessary and unusual noises." Because the City of Lancaster and City of Santa Clarita noise limits are generic, the numerical noise limits defined in the Los Angeles County Code of Ordinances apply to construction noise in those cities. These noise limits vary based on receiver type and whether the construction equipment generating the noise is mobile (dozers, loaders, etc.) or stationary (generators, pumps, etc.). The list of anticipated construction

[3] City of Los Angeles, *L.A CEQA Thresholds Guide*, 2006.
[4] City of Santa Clarita Municipal Code, *Title 11, Public Peace and Welfare, Chapter 11.44, Noise Limits*.
[5] Los Angeles County Code of Ordinances, *Section 12.08, Noise Control*.

equipment provided for this Proposed Project only includes mobile construction equipment. Thus, the mobile noise limits are used in this analysis.

Section 12.08.560 of the Los Angeles County Code of Ordinances regulates construction vibration at the regional level, which states that operating any device that creates vibration which is above the vibration perception threshold of any individual at or beyond the property boundary of the source if on private property, or at 150 feet (46 meters) from the source if on a public space or public right-of-way is prohibited. The perception threshold shall be a motion velocity of 0.01 inches per second over the range of 1 to 100 Hertz.

City of Palmdale

City of Palmdale Municipal Code. The local municipal code for the City of Palmdale identifies hours when construction work may occur but does not define numerical noise limits that must be met.[6] The municipal code states that "no person shall perform any construction or repair work on any Sunday, or any other day after 8:00 p.m. or before 6:30 a.m., in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park."

City of Lancaster

City of Lancaster Noise Ordinance. The local municipal code for the City of Lancaster identifies hours when construction work may occur but does not define numerical noise limits that must be met.[7] The City of Lancaster prohibits construction "at any time on Sunday or any day between the hours of eight p.m. and seven a.m." Work may be permitted during the prohibited hours with express written permission of the city engineer.

3.10.2 Existing Setting

This section of the report provides an overview of the existing noise and vibrational conditions within the Project Area. The Noise and Vibration Study Area (NVSA) includes the entire AVL corridor divided into seven sections, optimized for noise and vibration measurement and assessment, as seen in **Table 3.10-1**.

Table 3.10-1: Noise and Vibration Study Area Sections

Number	Section	Associated City/Jurisdiction
1	LAUS to Highway 2	Los Angeles
2	Highway 2 to Highway 134	Los Angeles - Glendale
3	Highway 134 to I-5	Glendale - Burbank
4	I-5 to 210	Burbank - Sylmar
5	SW mountains: 210 to Capra Rd)	Sylmar - Santa Clarita

[6] City of Palmdale Municipal Code, *Chapter 8.28*, *Building Construction Hours of Operation and Noise Control*.
[7] City of Lancaster Municipal Code, *Title 8*, *Health and Safety*, *Chapter 8.24, Noise Regulations*.

Number	Section	Associated City/Jurisdiction
6	NE mountains: Capra Rd to Pearblossom Hwy)	Santa Clarita - Palmdale
7	Pearblossom Hwy to Lancaster Station)	Palmdale - Lancaster

Noise- and vibration-sensitive receivers were identified using the FTA Guidance Manual's definitions of noise- and vibration-sensitive land uses. To identify the sensitive receivers potentially impacted by the Proposed Project, the following FTA screening distances were applied from the *FTA Guidance Manual*:

- Commuter rail mainline: unobstructed view 750 feet, intervening buildings 375 feet;
- Commuter rail station with horn blowing: unobstructed view 1,600 feet, intervening buildings 1,200 feet;
- Commuter rail station without horn blowing: unobstructed view 250 feet, intervening buildings 200 feet; and
- Commuter railroad crossing with bells and with/without horns: unobstructed view 1,600 feet, intervening buildings 1,200 feet.

Existing noise-sensitive receivers in the project area include single-family residences, multi-family residences, hotels, schools, film/recording studios, theaters, churches, cemeteries, and laboratories. A full list of sensitive receivers can be found in Appendix I. Receivers in each construction area are identified from the operational noise analysis, and additional receivers were added in the City of Santa Clarita and City of Lancaster to reflect the sensitivity of commercial properties to construction noise and residences near the train storage track construction areas. These new receivers have been marked with a footnote in the construction noise prediction tables, and more detailed receiver information is available in Appendix I. Construction noise and vibration was assessed at all first-row receivers in vicinity of construction, even if the first row is beyond screening distances specified in city noise codes.

Sensitive receiver identification is based on alignment direction, the seven sections of the Study Area, and numerical ID (numbered south to north). An example is southbound, Study Area Section 5, receiver number 68: SB-5-068.

Existing noise in the NVSA was established by noise measurements and supplemented with predictions to account for non-pandemic operations. The purpose of the noise measurements was to document the existing noise environment and to develop baseline data for assessing the potential noise impacts resulting from the Proposed Project. To help with understanding noise level discussions, **Table 3.10-2** shows noise metrics applied to this Proposed Project.

Table 3.10-2: Noise Metrics Applied to Project

Metric	Description
dBA	Decibel, unit of sound, A-weighted to account for human sensitivity
$L_{eq}(h)$	Loudest 1-hour average sound level
L_{dn}	24-hour average sound level with 10 dBA penalty applied to nighttime hours (10 pm – 7 am)
CNEL	24-hour average sound level with 10 dBA penalty applied to nighttime hours (10 pm – 7 am) and 5 dBA penalty applied to evening hours (7 – 10 pm)

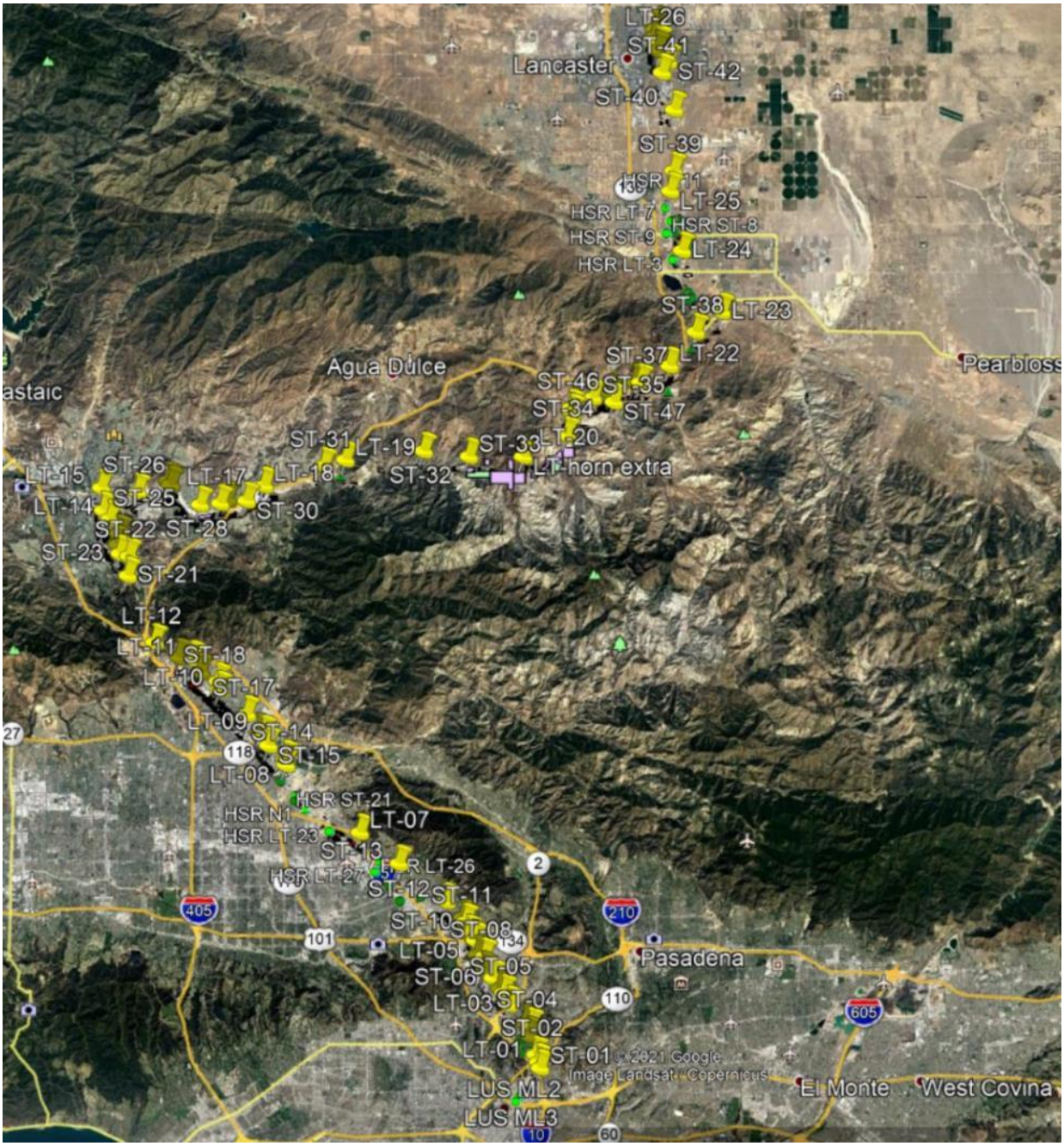
Additionally, existing noise data applied to the Proposed Project was also supplemented with other project data from the following projects:

- Antelope Valley Line (AVL)
- California High Speed Rail (HSR)
- Metrolink Central Maintenance Facility (CMF)
- LA Metro Link Union Station (LAUS)

AVL measurements consisted of 28 long-term measurements (24-hour duration, identified with the prefix “LT”) and 47 short-term measurements (1-hour duration, identified with the prefix “ST”). **Figure 3.10-1** shows a full-project view of the measurement locations. The measurements were conducted at representative locations, allowing establishment of existing noise at all sensitive receivers. In some cases, this requires adjusting for distance from major noise sources (train or highway) and adjusting for differences shielding during sound propagation (e.g., building rows); these parameters were adjustment based on equations from the FTA Guidance Manual. Where future noise levels were close to moderate noise impact thresholds (see Section 5), existing noise levels were refined (e.g., where privacy walls were previously not accounted for, they were added in to get a refined existing noise level) to generate more accurate levels.

A description of the noise environment in the seven sections of the alignment is provided in **Table 3.10-3**. In general, train operations and highway and local road traffic contribute most to the existing noise, with highway/road traffic representing a more continuous or more frequent noise source. Local truck traffic and train horns sounded at crossings represent the loudest noise sources, with freight train noise exceeding that from passenger rail sources. The measured day-night sound level (L_{dn}, 24-hour average with nighttime penalty) is generally about 70 dBA or higher very close to roads and railroad tracks, between 60 and 70 dBA farther away from these sources, and 50 to 60 dBA deep into the neighborhoods. Noise levels in parts of the mountainous region, particularly Section 5, are quieter in between noise events compared to other areas. However, roadway and rail traffic contribute enough noise to follow the same general trends for L_{dn} as in other sections of the alignment.

Figure 3.10-1: Full-AVL-Alignment View of Noise Measurement Locations



SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Table 3.10-3: General Noise Environment by Section

Section Number	Associated City/Jurisdiction	Noise Environment
1	Los Angeles	Train operations (Metrolink AVL and Ventura Line, Amtrak, freight), including horns and bells at crossings; train maintenance yard operations (just north of I-5); freeway and local road traffic; occasional aircraft flyovers
2	Los Angeles - Glendale	Train operations (Metrolink AVL and Ventura Line, Amtrak, freight), including horns and bells at crossings; freeway and local road traffic; occasional aircraft flyovers; local industry
3	Glendale - Burbank	Train operations (Metrolink AVL and Ventura Line, Amtrak, freight), including horns (except in quiet zone crossing involving Flower, Grandview, and Sonora) and bells at crossings; freeway and local road traffic; aircraft to/from Burbank Airport
4	Burbank - Sylmar	Train operations (Metrolink AVL, freight), including horns and bells at crossings; freeway and local road traffic; occasional aircraft flyovers
5	Sylmar - Santa Clarita	Train operations (Metrolink AVL, freight), including horns and bells at crossings; freeway and local road traffic; occasional aircraft flyovers
6	Santa Clarita - Palmdale	Train operations (Metrolink AVL, freight), including horns and bells at crossings; freeway and local road traffic; occasional aircraft flyovers
7	Palmdale - Lancaster	Train operations (Metrolink AVL, freight), including horns and bells at crossings; freeway and local road traffic; occasional aircraft flyovers

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

3.10.3 Significance Thresholds and Methodology

3.10.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to noise and vibration if it would:

a) 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;
b) Generation of excessive groundborne vibration or groundborne noise levels; or
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

L.A. CEQA Thresholds Guide thresholds are shown in **Table 3.10-4**. The L.A. CEQA thresholds are not applied to all projects, since the FTA noise limits are generally more stringent in typical project environments. However, the L.A. CEQA thresholds are more stringent than the FTA noise limits in rural areas that have less background noise than a typical urbanized setting.

Table 3.10-4: L.A. CEQA Significance Thresholds

Land Use	Significance Thresholds (CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Single family, duplex, mobile homes	50 - 60	55 - 70	70 - 75	above 70
Multi-family homes	50 - 65	60 - 70	70 - 75	above 70
Schools, libraries, churches, hospitals, nursing homes	50 - 70	60 - 70	70 - 80	above 80
Playgrounds, neighborhood parks	50 - 70	--	67 - 75	above 72

SOURCE: City of Los Angeles, *L.A CEQA Thresholds Guide*, 2006.

Therefore, for the Proposed Project, the L.A. CEQA thresholds have been applied along the entire AVL corridor to help evaluate noise impacts for areas with generally lower levels of existing noise. For the thresholds, a project would normally have a significant impact with regard to exterior noise levels resulting from rail operations if a project causes noise at a sensitive receptor to increase by 3 dBA in CNEL, to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase. Essentially, this means that for existing noise 70 dBA and greater, a 3 dBA increase is considered to be an impact, and below 70 dBA, a 5 dBA increase is considered to be an impact.

Construction Noise Criteria

Appropriate limits for construction noise are determined through a review of applicable regulations. Noise limits for construction during the AVL Project are shown in **Table 3.10-5**.

Table 3.10-5: Construction Noise Limits for the AVL Project

Land Use	Noise Limit – Daytime [1] L_{eq} (dBA)	Noise Limit – Nighttime L_{eq} (dBA)
Any Residential – City of Los Angeles	Ambient +5 dBA	Ambient +5 dBA [2]
Single-Family Residential – Santa Clarita and Lancaster	75 [2]	60 [2, 3]
Multi-Family Residential – Santa Clarita and Lancaster	80 [2]	64 [2, 3]
Commercial	85 [2]	n/a [4]

SOURCE: Los Angeles County Code of Ordinances, *Section 12.08, Noise Control*.; City of Los Angeles, *CEQA Thresholds Guide*, 2006; City of Santa Clarita Municipal Code, *Title 11, Public Peace and Welfare, Chapter 11.44, Noise Limits*; City of Lancaster Municipal Code, *Title 8*, *Health and Safety*, *Chapter 8.24, Noise Regulations*.

[1] Daytime is defined as follows:

Los Angeles: 7 am – 9 pm (Mon-Fri), 8 am – 6 pm (Sat)
Santa Clarita: 7 am – 7 pm (Mon – Fri), 8 am – 6 pm (Sat)
Lancaster: 7 am – 8 pm (Mon – Sat)

[2] L.A County Code Limit
[3] Recommended limit if written permission is allowed for work outside of the "Daytime" defined hours
[4] Commercial properties are not typically sensitive at night.

Construction Vibration Criteria

Appropriate limits for construction vibration are determined through a review of applicable regulations, and the limits applied to this project are described below. Of primary concern regarding construction vibration is potential damage to structures. The thresholds for potential damage are much higher than the thresholds for evaluating potential annoyance construction vibration.

The County Code regulates construction vibration, which states that operating equipment where the peak particle velocity (PPV) measured at 150 feet exceeds of 0.01 in/sec is prohibited when working in public right-of-way.

The FTA Guidance Manual provides construction vibration limits for various building categories, as shown in **Table 3.10-6**. The table also includes the annoyance criteria for residential structures (72 VdB). The peak particle velocity and root mean square (RMS) amplitude are two separate metrics used to quantify a vibration signal. Lv vibration levels are a decibel representation of the RMS velocity levels, using a reference of 1 micro-inch/second (µin/sec.). More information regarding vibration descriptors is available in Appendix I. Predictions and analysis for the AVL Project will use PPV.

Table 3.10-6: FTA Construction Vibration Criteria

Limit Category	Peak Particle Velocity (inches/second)	Approximate Lv (VdB)
I. Reinforced-concrete, steel or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90
Annoyance at institutional structures	0.022	75
Annoyance at residential structures	0.016	72

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

Operations Noise Criteria

The FTA noise impact criteria apply $L_{eq}(h)$ and L_{dn} and are based on the best available research on community response to noise. This research shows that characterizing the overall noise environment using measures of noise exposure provides the best correlation with human annoyance. Noise exposure characterizes noise levels over a period of time.

FTA provides different thresholds for different land uses. **Table 3.10-7** lists the three FTA land-use categories and the applicable noise metric for each category. For Category 2 land uses (residential areas where people sleep), noise exposure is characterized using L_{dn}, a 24-hour average. In calculating L_{dn}, noise generated during nighttime hours is more heavily weighted than daytime noise to reflect residents' greater sensitivity to noise during those hours.

Table 3.10-7: FTA Land Use Categories and Noise Metrics

Land Use Category	Land Use Type	Noise Metric (dBA)	Description of Land Use Category
1	High Sensitivity	Outdoor $L_{eq}(h)$[1]	Land where quiet is an essential element of its intended purpose. Example land uses include preserved land for serenity and quiet, outdoor amphitheaters and concert pavilions, and national historic landmarks with considerable outdoor use. Recording studios and concert halls are also included in this category.
2	Residential	Outdoor L_{dn}[2]	This category is applicable to all residential land use and buildings were people normally sleep, such as hotels and hospitals.
3	Institutional	Outdoor $L_{eq}(h)$[1]	This category is applicable to institutional land uses with primarily daytime and evening use. Example land uses include schools, libraries, theaters, and churches, where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds, and recreational facilities can also be considered to be in this category.

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.
[1] L_{eq} for the loudest hour of project-related activity during hours of noise sensitivity.
[2] L_{dn} is a measure that counts for full 24 hours of noise, with penalties for noise at night, which is defined as 10 p.m. to 7 a.m.

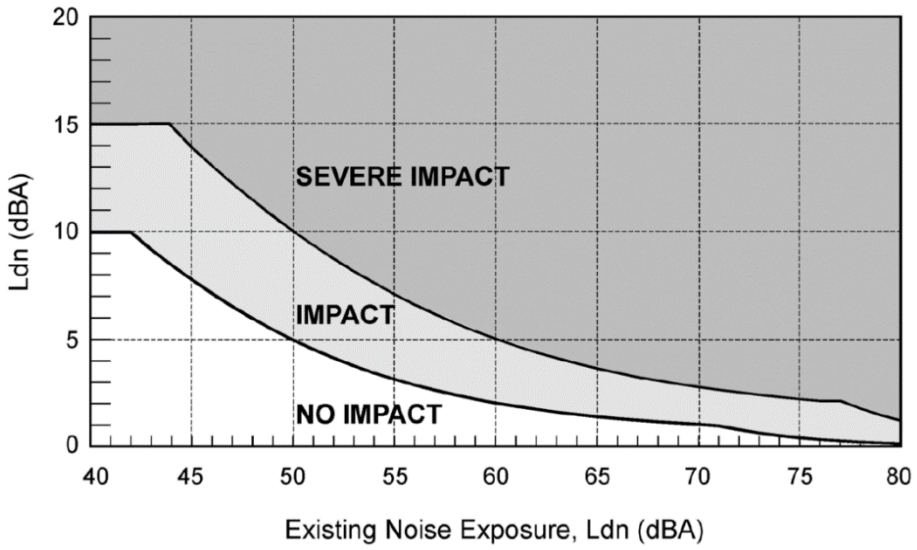
For Category 1 and Category 3 land uses (areas with primarily daytime use), noise exposure is characterized using the peak hour L_{eq}, which is a time-averaged sound level over the noisiest hour of transit-related activity. Appendix I provides more information on the L_{dn} and L_{eq} noise descriptors.

The FTA noise impact threshold is a sliding scale based on existing noise exposure and land use of sensitive receivers. The basic concept of the FTA noise impact criteria is that more project noise is allowed in areas where existing noise is higher. However, in areas where existing noise exposure is higher, the allowable increase above the existing noise exposure decreases.

FTA defines two levels of noise impact: moderate and severe. Severe noise impacts are usually considered significant within the context of CEQA. Severe noise impacts require the evaluation of alternative locations/alignments or other mitigation measures to avoid severe impacts altogether. Mitigation measures must be considered and incorporated into the project to avoid severe impacts unless there are truly extenuating circumstances that prevent it. Moderate noise impacts are not necessarily significant within the context CEQA, but also require consideration. For this project, moderate impacts are not considered to be significant due to the nature of the project and the existing environment.

The FTA noise impact criteria for Category 1 and 2 receivers are shown graphically in **Figure 3.10-2** presented as an increase in cumulative noise level between the existing and post project construction conditions (Category 3 curves are a few decibels higher than those shown in **Figure 3.10-2**). Note that evaluating noise-level increases at sensitive receivers, rather than existing and project sound level comparisons, is appropriate for projects where changes are proposed to an existing transit system, and trains are already in operation. The FTA impact criteria are defined by two curves. Below the lower curve in **Figure 3.10-2**, a proposed project is considered to have no potential noise impact, because the introduction of the project is not predicted to result in a significant increase in the number of people highly annoyed by the new noise. Noise increases above the upper curve are considered to cause a Severe Impact, which correlates to a significant percentage of people highly annoyed by the new noise. Between the two curves, the proposed project is considered to have Moderate Impact.

Figure 3.10-2: FTA Impact Criteria for Noise Based on Cumulative Level Increase



SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, 2018.

To help explain the concept of a sliding scale for noise impact, assume that the existing noise has been measured at 60 dBA L_{dn}. This is the total noise from all existing noise sources over a 24-hour period: current train operations, traffic, aircraft, lawnmowers, children playing, birds chirping, etc. Starting at 60 dBA on the horizontal axis, follow the vertical line up to where it intersects the moderate and severe impact curves. Then refer to the left axis to see the noise increase thresholds for Category 2 receivers (residential). An existing noise of 60 dBA L_{dn} defines an allowable increase of 2 dBA L_{dn} before a moderate impact may occur and 5 dBA L_{dn} before a severe impact may occur. A CEQA analysis would consider an increase greater than 5 dBA (severe) to be significant.

L.A. CEQA Criteria. L.A. CEQA guidance thresholds are shown in **Table 3.10-8**. For the L.A. CEQA thresholds, a project would normally have a significant impact with regard to exterior noise levels resulting from rail operations if a project causes noise at a sensitive receptor to increase by 3 dBA in CNEL, to or within the "normally unacceptable" or "clearly unacceptable" category, or any 5 dBA or greater noise increase. Essentially, this means that for existing noise 70 dBA and greater, a 3 dBA increase is considered to be an impact, and below 70 dBA, a 5 dBA increase is considered to be an impact.

Table 3.10-8: L.A. CEQA Significance Thresholds

Land Use	Significance Thresholds (CNEL, dBA)			
	Normally Acceptable	**Conditionally Acceptable**	**Normally Unacceptable**	**Clearly Unacceptable**
Single family, duplex, mobile homes	50 - 60	55 - 70	70 - 75	above 70
Multi-family homes	50 - 65	60 - 70	70 - 75	above 70
Schools, libraries, churches, hospitals, nursing homes	50 - 70	60 - 70	70 - 80	above 80
Playgrounds, neighborhood parks	50 - 70	--	67 - 75	above 72

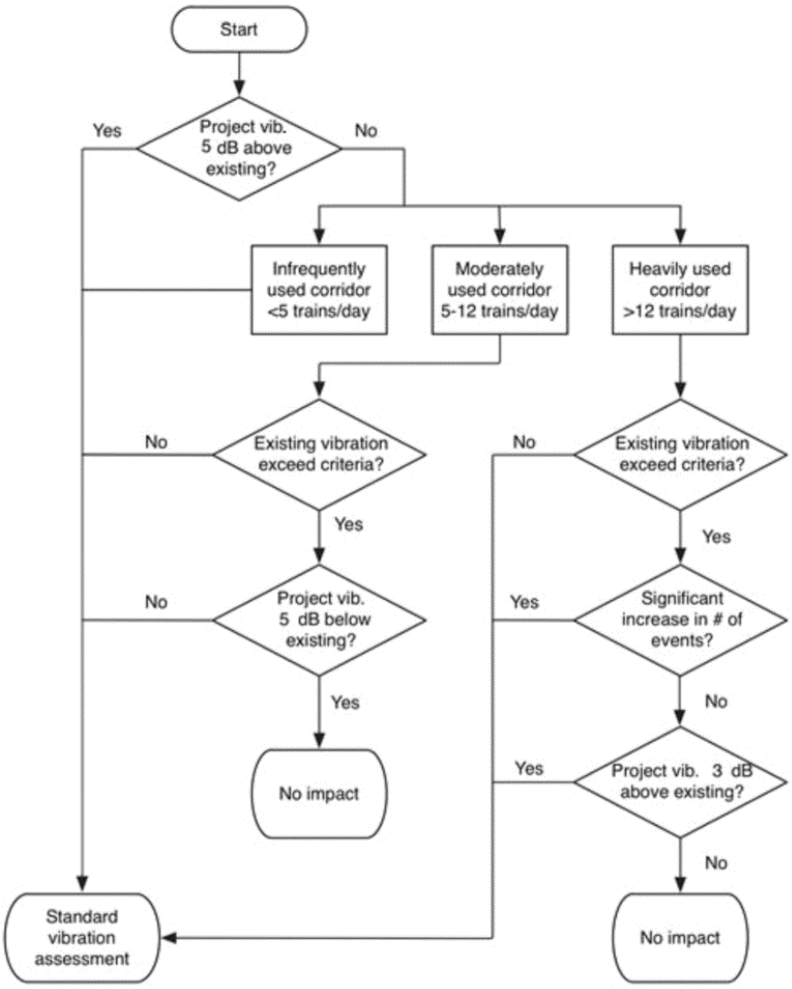
SOURCE: City of Los Angeles, *CEQA Thresholds Guide*, 2006.

Operations Vibration Criteria

The potential adverse effects of rail transit groundborne vibration include perceptible building vibration, rattle noises, reradiated noise (groundborne noise) and cosmetic or structural damage to buildings. The vibration caused by modern rapid transit rail operations is well below what is considered necessary to damage buildings; for this Project, the operational levels are well below the potential damage limits for even the most fragile type of building, which includes historic structures. Therefore, the criteria for building vibration caused by transit operations are only concerned with potential annoyance of building occupants. Damage limits are only discussed in terms of construction-related vibration in Section 3.10.2.

Operational vibration impact for sensitive receivers was assessed using the Existing Vibration Criteria Flow Chart in Figure 6-1 of the FTA guidance manual, shown in **Figure 3.10-3** of this report. This flow chart is applied to projects where there is an existing vibration source in the study area, such as an existing rail corridor. The vibration criteria applied are: 1) first determine if project vibration will be 5 dB above existing vibration; and 2) based on the corridor usage, determine if the existing vibration exceed FTA criteria, and if so, determine if the project vibration will be at least 3 dB above existing. Impact criteria are further defined in this section, and the assessment method is further described in Section 3.10.2.

Figure 3.10-3: Existing Vibration Criteria Flow Chart



SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018

The FTA vibration impact criteria are based on the maximum indoor vibration level as a train passes. There are no impact criteria for outdoor spaces such as parks because outdoor groundborne vibration does not provoke the same adverse human reaction as indoor vibration. The FTA Guidance Manual (FTA 2018) provides two sets of criteria: one based on the overall vibration velocity level for use in General Vibration Impact Assessments, and one based on the maximum vibration level in any 1/3-octave band (the band maximum level) for use with a Detailed Vibration Assessment. This study uses the General Vibration Assessment methodology. The intent of a General Vibration Assessment is to provide a relatively simple method of developing overall levels of groundborne vibration and noise that can be compared to acceptability criteria. The vibration criteria are shown in **Table 3.10-9** and **Table 3.10-10**.

Table 3.10-9: FTA Groundborne Vibration Impact Criteria for General Assessment

Land Use	Groundborne Vibration Impact Levels (VdB)		
	Frequency events (> 70/day)	Occasional events (30-70/day)	Infrequent events (< 30/day)
Highly sensitive (Category 1) – interferes with interior operations	65 VdB	65 VdB	65 VdB
Residential (Category 2)	72 VdB	75 VdB	80 VdB
Institutional (Category 3)	75 VdB	78 VdB	83 VdB

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

Table 3.10-10: FTA Groundborne Noise Impact Criteria for General Assessment

Land Use	Groundborne Vibration Impact Levels (VdB)		
	Frequency events (> 70/day)	Occasional events (30-70/day)	Infrequent events (< 30/day)
Highly sensitive (Category 1) – interferes with interior operations	N/A	N/A	N/A
Residential (Category 2)	35 dBA	38 dBA	43 dBA
Institutional (Category 3)	40 dBA	43 dBA	48 dBA

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

The Category 1 criteria are applied to buildings where vibration would interfere with interior operations. The Category 2 criteria are applied to residential land uses (homes, hotels, etc.), where there is nighttime use; this category is similar to the Category 2 land use defined for noise. The Category 3 criteria are applied to institutional land uses (schools, libraries, churches, etc.), where use is primarily during the daytime; this category is similar to the Category 3 land use defined for noise analysis.

Some buildings, such as concert halls, recording studios and theaters, can be very sensitive to vibration. Given the sensitivity of these buildings, they usually warrant special attention during the environmental evaluation of a transit project. **Table 3.10-11** gives the FTA criteria for acceptable levels of groundborne vibration and groundborne noise for various categories of special buildings. These criteria are for limits on the overall vibration or noise levels, not the 1/3-octave band spectra.

Table 3.10-11: Groundborne Noise and Vibration Impact Criteria for Special Buildings

Type of Building or Room	Groundborne Vibration Impact Levels (VdB re 1 micro-inch/second)		Groundborne Noise Impact Levels (dBA re 20 micro Pascals)	
	Frequent events	Occasional or infrequent events	Frequent events	Occasional or infrequent events
Concert halls	65	65	25	25
TV studios	65	65	25	25
Recording studios	65	65	25	25
Auditoriums	72	80	30	38
Theaters	72	80	35	43

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

Note that historic structures that do not fall into the FTA land use categories are not included in the assessment for vibration impact from rapid transit rail operations. The vibration impact thresholds are based on annoyance, and the primary concern for historic structures is the risk of damage. The recommended limit in the FTA Guidance Manual for buildings extremely susceptible to damage is 90 VdB, which is 18 decibels higher than the limit for Category 2 (residential) land uses. Vibration from rapid transit rail operations will be well below the limit for buildings extremely susceptible to damage.

Groundborne noise criteria are also listed in **Table 3.10-9** and **Table 3.10-10**. Groundborne noise is caused by the vibration of room surfaces radiating sound waves. When audible groundborne noise occurs, it sounds like a low-frequency rumble. When the tracks are above ground, the groundborne noise is usually masked by the normal airborne noise radiated from the rails and it is not necessary to assess impact from groundborne noise. However, for buildings that have no windows facing the rail, or have interior spaces where airborne noise does not penetrate, groundborne noise may be a factor.

3.10.3.2 Methodology

Construction Noise Assessment

Predictions of the noise and vibration levels at nearby sensitive receivers are compared to limits defined in Section 3.10.3.1. Mitigation measures are recommended for areas where levels are expected to exceed the limits.

Construction is planned in three areas along the alignment corridor:

1. Double track addition from Balboa Boulevard to Sierra Highway in the City of Los Angeles,
2. Siding track extension to the north of Golden Oak Road in the City of Santa Clarita, and
3. Terminal improvements between West Avenue J and West Jackman Street in the City of Lancaster.

Construction noise levels depend on the number of active pieces and type of equipment, their general condition, the amount of time each piece operates per day, the presence or lack of noise-attenuating features such as walls and berms and the location of the construction activities relative to the sensitive receivers. The majority of these variables are left to the discretion of the construction contractor selected as the project approaches the construction phase.

Five distinct construction activities are assumed when estimating the noise generated for this Proposed Project. It is also assumed that all five construction activities take place in each of the three areas of construction: City of Los Angeles, City of Santa Clarita, and City of Lancaster. Construction equipment used for each activity are assumed to operate concurrently to present conservative estimates of the noise generated. Construction activities are assumed to not overlap. The construction activities are:

Activity 1. Site Preparation: site preparation and utility relocations
Activity 2. Grading and Retaining: grading and retaining walls
Activity 3. Tracks and Construction: track laying and platform/building construction
Activity 4. Roadway Improvements: paving and quiet zone ready
Activity 5. Trenching: new utility trenching

Specifics on construction equipment that have been assumed to be used during each construction activity are listed in **Table 3.10-12**. Included in the table are the number of equipment pieces used for each activity, the anticipated usage hours (per 8-hour workday), and the load factor (percentage of time equipment runs at full power). Construction equipment was assigned a representative equipment piece from the FTA Guidance Manual. The associated 50-foot L_{eq} noise level for the reference equipment, along with the other information presented in **Table 3.10-12**, are used to generate noise predictions. Distance adjustments to predict noise at sensitive receivers assumes that construction equipment will operate at the track centerline.

Table 3.10-12: Construction Phasing and Equipment Noise Inputs

Activity Number	Activity Name	Off-road Equipment Type	Amount	Usage Hours	Load Factor	Reference Equipment	50-ft Reference L_{eq} Noise Level (dBA)
1	Site Preparation	Excavators	2	4	0.38	Dozer	85
	Site Preparation	Other Material Handling Equipment	2	8	0.4	Truck	84
	Site Preparation	Rough Terrain Forklifts	2	8	0.4	Loader	80
	Site Preparation	Rubber Tired Dozers	1	8	0.4	Dozer	85
	Site Preparation	Skid Steer Loaders	1	8	0.37	Loader	80
	Site Preparation	Tractors/Loaders/Backhoes	2	8	0.37	Backhoe	80
2	Grading and Retaining Walls	Bore/Drill Rigs	1	4	0.5	Rock Drill	95
	Grading and Retaining Walls	Crawler Tractors	2	8	0.43	Truck	84
	Grading and Retaining Walls	Crushing/Proc. Equipment	1	4	0.78	Jack Hammer	88
	Grading and Retaining Walls	Excavators	2	8	0.38	Dozer	85
	Grading and Retaining Walls	Graders	1	8	0.41	Grader	85
	Grading and Retaining Walls	Rough Terrain Forklifts	2	8	0.4	Loader	80
	Grading and Retaining Walls	Rubber Tired Dozers	1	8	0.4	Dozer	85
	Grading and Retaining Walls	Tractors/Loaders/Backhoes	2	8	0.37	Backhoe	80
3	Tracks and Platform Construction	Bore/Drill Rigs	1	4	0.5	Rock Drill	95
	Tracks and Platform Construction	Cement and Mortar Mixers	2	8	0.56	Concrete Mixer	85
	Tracks and Platform Construction	Cranes	1	7	0.29	Crane, Mobile	83
	Tracks and Platform Construction	Excavators	2	6	0.38	Dozer	85
	Tracks and Platform Construction	Other Material Handling Equipment	1	8	0.4	Truck	84
	Tracks and Platform Construction	Rough Terrain Forklifts	2	8	0.4	Loader	80
	Tracks and Platform Construction	Tractors/Loaders/Backhoes	3	7	0.37	Backhoe	80

Activity Number	Activity Name	Off-road Equipment Type	Amount	Usage Hours	Load Factor	Reference Equipment	50-ft Reference L_{eq} Noise Level (dBA)
4	Roadway Improvements	Cement and Mortar Mixers	2	8	0.56	Concrete Mixer	85
	Roadway Improvements	Paving Equipment	2	8	0.36	Paver	85
	Roadway Improvements	Rollers	2	8	0.38	Roller	85
	Roadway Improvements	Rough Terrain Forklifts	2	8	0.4	Loader	80
	Roadway Improvements	Skid Steer Loaders	2	8	0.37	Loader	80
	Roadway Improvements	Tractors/Loaders/Backhoes	2	8	0.37	Backhoe	80
5	Utilities and Trenching	Other Material Handling Equipment	2	8	0.4	Truck	84
	Utilities and Trenching	Rollers	2	4	0.38	Roller	85
	Utilities and Trenching	Rough Terrain Forklifts	2	8	0.4	Loader	80
	Utilities and Trenching	Skid Steer Loaders	2	8	0.37	Loader	80
	Utilities and Trenching	Tractors/Loaders/Backhoes	2	8	0.37	Backhoe	80

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Construction Vibration Assessment

The same construction phases and equipment used when estimating the noise generated have been assumed when estimating the construction vibration. A list of the equipment used in each phase is available in **Table 3.10-12**. The equipment from that list was assigned an applicable reference vibration levels from **Table 3.10-13** to predict the maximum PPV that each receiver will experience during each phase of construction following FTA procedures.

Table 3.10-13: Reference Peak Particle Velocities Used for Construction Vibration Analysis

Equipment	Peak Particle Velocity at 150 ft (inches/second)
Vibratory Roller	0.014
Hoe Ram	0.006
Large Bulldozer	0.006
Caisson Drilling	0.006
Jackhammer	0.002
Small Bulldozer	0.000

SOURCE: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, 2018.

Operational Noise Assessment

The noise assessment methodology follows the Detailed Noise Assessment guidelines outlined in the FTA Guidance Manual. The detailed assessment for noise includes identification of sensitive receivers, determination of existing conditions, application of prediction models, evaluation of receivers for predicted impacts, and evaluation of mitigation options.:

For the purposes of the noise assessment methodology, the additional noise from increased rail operations is combined with the existing noise generated from the AVL corridor to determine future noise levels. The future noise levels are used to determine the expected increase in noise due to the Proposed Project, and those levels are compared to allowable increases as defined by FTA and L.A. CEQA. Existing noise sources are location-dependent; they include Metrolink operations (both the AVL and Ventura Line), Amtrak operations, freight operations, roadway vehicle traffic, aircraft flyovers, and local noise (e.g., warehouse noise, air conditioning noise, etc.). Due to the COVID-19 pandemic, AVL passenger rail services are less frequent than normal (prior to the COVID-19 pandemic). Thus, existing noise due to AVL rail operations is adjusted using the train noise prediction methods described below to establish typical existing noise.

Prediction methods for the various Metrolink train noise sources are detailed below, including train operations and audible warnings. No other noise sources were applied to the predictions. Although storage tracks are part of the Proposed Project and the trains would also need to be maintained at a facility, information regarding the volumes of trains and where they would be stored/maintained is not yet available. If needed, the noise from related activities could be assessed at a later phase in the Proposed Project.

Operational sources of noise were assessed using prediction methods provided by FTA Guidance Manual. The assessment of operational noise from train operations included: train movements and

special trackwork (crossover frogs). Wheel squeal was not observed as part of existing Metrolink operations on AVL sections and was not applied as part of the analysis. The train movements calculations take into account the vehicle type, speed, and length of trains and the frequency of trains per day. Also included in the noise prediction calculations are adjustments for ground type and shielding due to buildings, as described in the FTA Guidance Manual. The analysis also considered noise from audible warnings related to horns mounted on the train and crossing bells at road crossings.

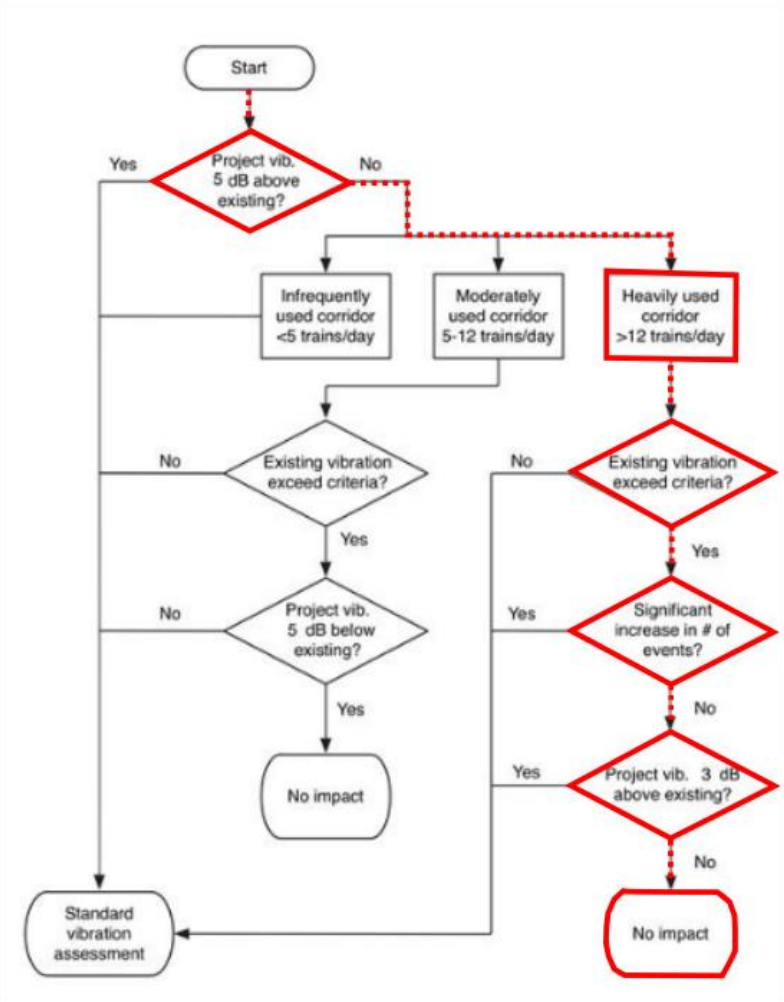
Far-Distance Assessment. A far-distance assessment was also conducted as part of the analysis. For receivers beyond the standard screening distance of 750 feet for rail noise alone, receivers were identified out to a distance of 1,600 feet in the vicinity of grade crossings, to assess the impact of train horn noise. A general examination of noise levels was completed to determine the required existing noise for there to be an increase above the significant thresholds. For each section of the Study Area, noise increases were predicted at distances of 800 feet, 1,200 feet, 1,600 feet, and 2,000 feet. The resulting background noise for impacts was identified and then compared to measured existing noise to determine if impacts were possible at these farther distances.

L.A. CEQA Analysis. The above FTA methodology also applies to the L.A. CEQA analysis. The existing noise and predicted noise were evaluated per the CNEL metric, which penalizes noise in the evening and nighttime. Both existing noise and predicted future noise were converted to CNEL by applying the maximum difference in measured noise levels between L_{dn} and CNEL. That maximum difference is 0.8 dBA, initially applied to all sensitive receivers, as a conservative measure. This is added to the existing noise to see if the existing CNEL (sound level) is less than or greater than 70 dBA (triggers different impact thresholds). The 0.8 dBA adjustment was also added to the predicted future noise resulting in a future CNEL (sound level). If the predicted future CNEL was greater than or equal to the existing CNEL by 3 dBA when existing noise is greater than or equal to 70 dBA, or if the increase was greater than or equal to 5 dBA when the existing noise is less than 70 dBA, results were examined further and refined.

Operational Vibration Assessment

Operational vibration impacts for sensitive receivers was assessed using the FTA existing vibration criteria flow chart (from the FTA Guidance manual and shown in **Figure 3.10-4**). The flow chart was applied in the vicinity of each location to determine if a standard vibration assessment was necessary or if there would be no predicted vibration impacts. This section describes how values referred to in the flowchart are determined, split by vibration level increases and increases in the number of vibration events. The outcome of specific steps in the flowchart are found in the section addressing the CEQA question, “Would the project result in excessive ground-borne vibration or ground-borne noise levels?”

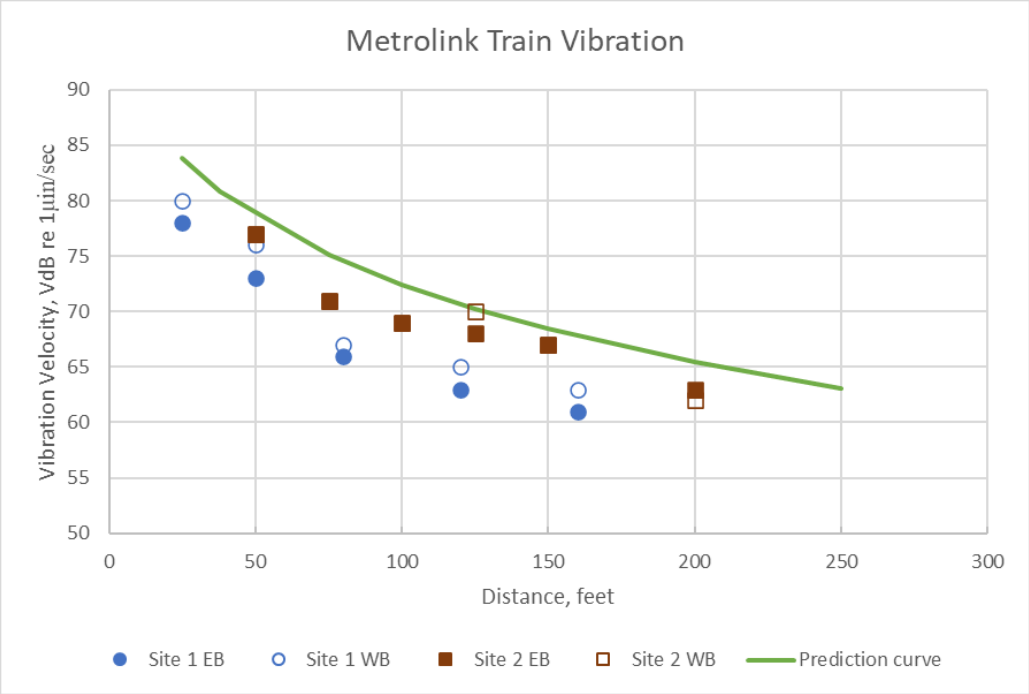
Figure 3.10-4: Existing Vibration Criteria Flow Chart Applied to Antelope Valley Line Improvements Project



SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Vibration level increases: To determine the existing and Proposed Project vibration, two sources were considered: 1) the measured vibration levels as part of the Lone Hill to White Noise and Vibration Technical Study (2017); and 2) the generalized ground surface vibration curves presented in the FTA Guidance Manual (see **Figure 3.10-5**; note the generalized FTA curve for locative powered passenger trains was adjusted lower by 6 decibels to better match the measured Metrolink data). An equation representing the curve was used to predict the existing and Proposed Project vibration. As a conservative assumption for this assessment, no speed adjustment was applied in the prediction model to account for slower speeds in the vicinity of stations.

Figure 3.10-5: Reference Metrolink Train Vibration



SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Increases in the number of vibration events: The flow chart includes path choices by corridor use (current and future). The AVL rail corridor is currently considered a heavily used corridor (more than 12 trains a day) comprised of Metrolink, Amtrak, and freight services, depending on the section of the rail corridor. The significant increase in number of vibration events is based on current and future use and considers the number of events represented by each train type. The FTA Guidance Manual states that approximately doubling the number of vibration events is required for a significant increase (see FTA guidance manual Table 6-5 footnote).

Based on the FTA vibration screening process, the proposed project would not result in an impact. A detailed justification for each FTA vibration screening question is provided under Impact 3.10-2. A separate groundborne vibration and noise assessment was not required.

3.10.4 Impact Analysis

The following section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation measures (if applicable).

Impact 3.10-1) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction

Significant and Unavoidable Impact. Construction noise was assessed for each of the five construction activities, which are shown by jurisdiction in **Table 3.10-14**. Potential impacts are shown graphically in **Figure 3.10-6** through **Figure 3.10-8**. Construction noise predictions for the receiver near construction activities associated with the Balboa Double Track Extension in the City of Los Angeles show there is only one sensitive receiver potentially impacted in the area at 14748 San Fernando Road, but that receiver is located very close to the construction site: with only 61 feet between the receiver and the track centerline. This results in predicted exceedances of the noise limit during all five construction activities, by up to 13 dBA during Activity 2. Mitigation of such significant exceedances may require the contractor to use less conventional measures such as temporarily relocating residents to a hotel during the most loud and intrusive construction activities.

Construction noise predictions for receivers near construction activities associated with the Canyon Siding Extension in the City of Santa Clarita show several sensitive receivers potentially impacted. The commercial building at SB-5-02c (22840 Soledad Canyon Road), near the westernmost edge of the construction area, is the closest sensitive receiver to construction of the Canyon Siding Extension in the City of Santa Clarita. The analysis predicts exceedances of the noise limit during all five construction activities at this location. On the eastern side of the construction area, exceedances are expected at several residential receivers north and one south of Soledad Canyon Road, particularly during Activities 2 – 4. The drill rigs used in Activities 2 & 3 are the loudest equipment identified for use during construction, and are the cause of a majority of the predicted exceedances of the noise limits in the area.

Construction noise predictions for receivers near construction activities associated with the Lancaster Terminal Improvements in the City of Lancaster show two sensitive receivers potentially impacted. The commercial building at SB-7-01c (44738 Sierra Highway) and the homeless shelter at NB-7-047 (44611 Yucca Avenue) are the closest sensitive receivers to construction in the City of Lancaster. These receivers are within 300 feet of each other on opposite sides of the track and are the only receivers in the City of Lancaster where a construction noise impact is predicted. Both receivers are within 100 feet of the near track centerline, which results in predicted exceedances of the noise limit during all five construction activities at both receivers. The predicted exceedances range from 8 dBA to 17 dBA. Therefore, without mitigation, the Proposed Project would result in a significant impact related to construction noise.

Table 3.10-14: Construction Noise Predictions

Receiver ID	Address	Noise Limit[1]	Activity 1 Noise Predictions	Activity 2 Noise Predictions	Activity 3 Noise Predictions	Activity 4 Noise Predictions	Activity 5 Noise Predictions
BALBOA DOUBLE TRACK EXTENSION, CITY OF LOS ANGELES							
SB-5-001	14748 San Fernando Rd	78	**86 (8.4)**	**91 (13.1)**	**90 (12.5)**	**89 (10.5)**	**86 (7.7)**
SIDING TRACK EXTENSION, CITY OF SANTA CLARITA							
NB-5-117	21710 Golden Triangle Rd	75	71	**75 (0.4)**	75	73	70
SB-5-058	22119 Propello Dr	75	70	**75 (0.2)**	75	73	70
SB-5-059	22082 Propello Dr	75	72	**77 (1.9)**	**76 (1.2)**	74	71
SB-5-060	22030 Propello Dr	75	73	**77 (2.4)**	**77 (1.8)**	75	72
SB-5-061	1st row Moveo Dr	75	74	**78 (3.3)**	**78 (2.7)**	**76 (0.7)**	73
SB-5-062	1st row Moveo Dr	75	74	**79 (4.1)**	**79 (3.5)**	**77 (1.5)**	74
SB-5-063	1st row Moveo Dr	75	75	**79 (4.3)**	**79 (3.7)**	**77 (1.7)**	74
SB-5-064	1st row Moveo Dr	75	75	**79 (4.3)**	**79 (3.7)**	**77 (1.7)**	74
SB-5-065	1st row Moveo Dr	75	74	**79 (4)**	**78 (3.3)**	**76 (1.4)**	74
SB-5-066	1st row Moveo Dr	75	74	**79 (4)**	**78 (3.3)**	**76 (1.4)**	74
SB-5-067	1st row Moveo Dr	75	74	**79 (3.9)**	**78 (3.3)**	**76 (1.3)**	74
SB-5-068	1st row Moveo Dr	75	74	**79 (4)**	**78 (3.13)**	**76 (1.4)**	74
SB-5-070	26244 Prima Way	75	71	**76 (1.1)**	**76 (0.5)**	74	71
SB-5-072	1st row Candella Dr	75	75	**80 (4.7)**	**79 (4.1)**	**77 (2.1)**	74
SB-5-074	1st row Candella Dr	75	**75 (0.3)**	**80 (5.1)**	**79 (4.5)**	**78 (2.5)**	75
SB-5-076	1st row Candella Dr	75	**75 (0.4)**	**80 (5.2)**	**80 (4.6)**	**78 (2.6)**	75
SB-5-077	1st row Candella Dr	75	**75 (0.4)**	**80 (5.2)**	**80 (4.6)**	**78 (2.6)**	75
SB-5-078	21425 Soledad Canyon Rd	75	73	**78 (2.9)**	**77 (2.3)**	**75 (0.4)**	73
SB-5-02c[b]	22840 Soledad Canyon Rd	85	**86 (1.5)**	**91 (6.2)**	**91 (5.6)**	**89 (3.6)**	**86 (0.8)**
TERMINAL IMPROVEMENTS, CITY OF LANCASTER							
NB-7-047	44611 Yucca Ave	75	**83 (8.4)**	**88 (13.2)**	**88 (12.6)**	**86 (10.6)**	**83 (7.8)**
SB-7-01c[b]	44738 Sierra Hwy	85	**97 (12.4)**	**102 (17.2)**	**102 (16.6)**	**100 (14.6)**	**97 (11.8)**

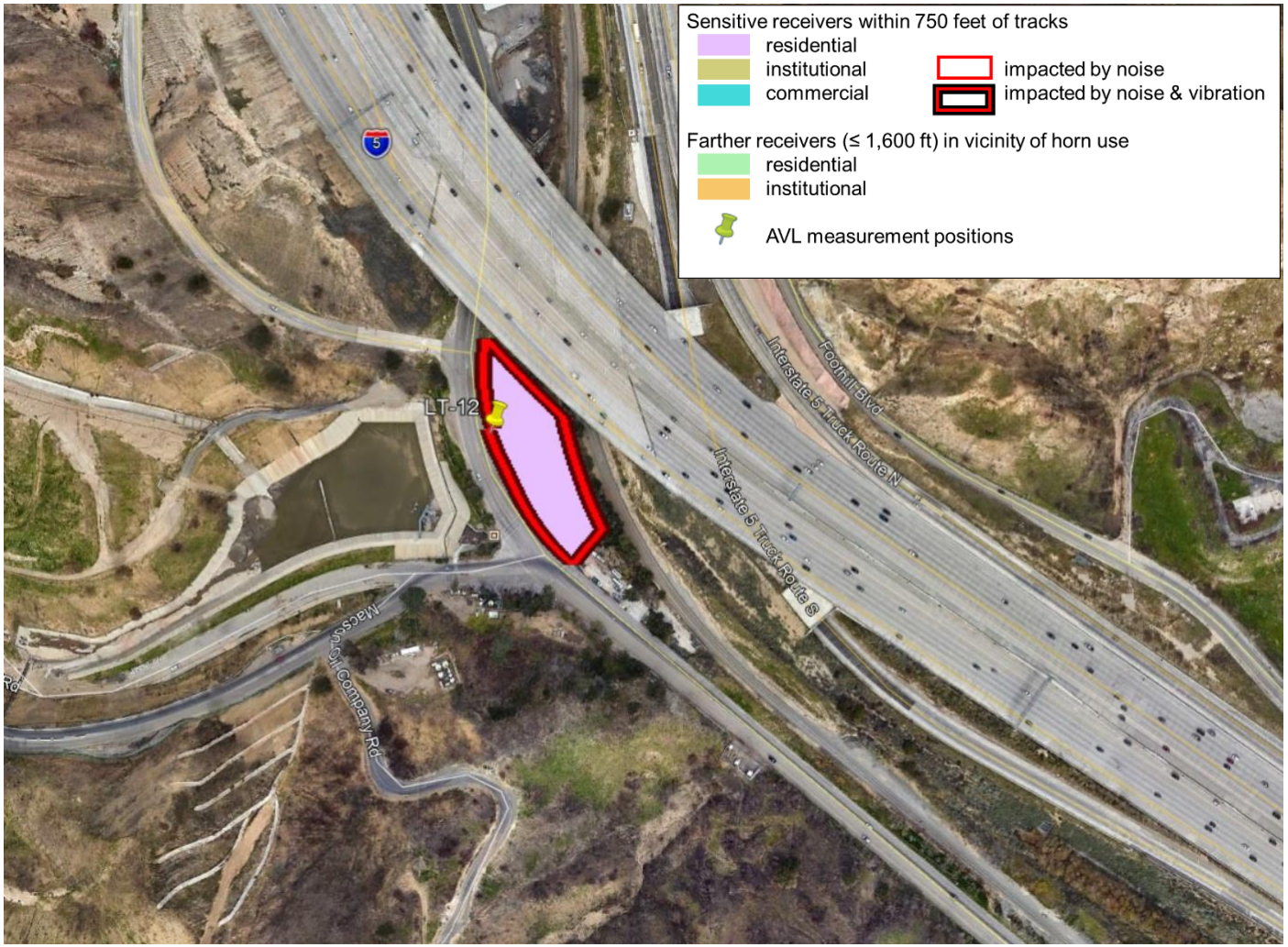
SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

All noise levels are Leq dBA. Predicted impacts are shown in red with the exceedance amount in parentheses.

[1] Residential receiver for Los Angeles uses LT-12 measurement +5 dBA. For Santa Clarita and Lancaster, the single-family residential limit is 75 dBA and multi-family is 80 dBA. The commercial limit is 85 dBA.

[2] Indicates a receiver that has been added for the construction analysis only.

Figure 3.10-6: Construction Noise and Vibration Impacts in Vicinity of Balboa Double Track Extension in the City of Los Angeles

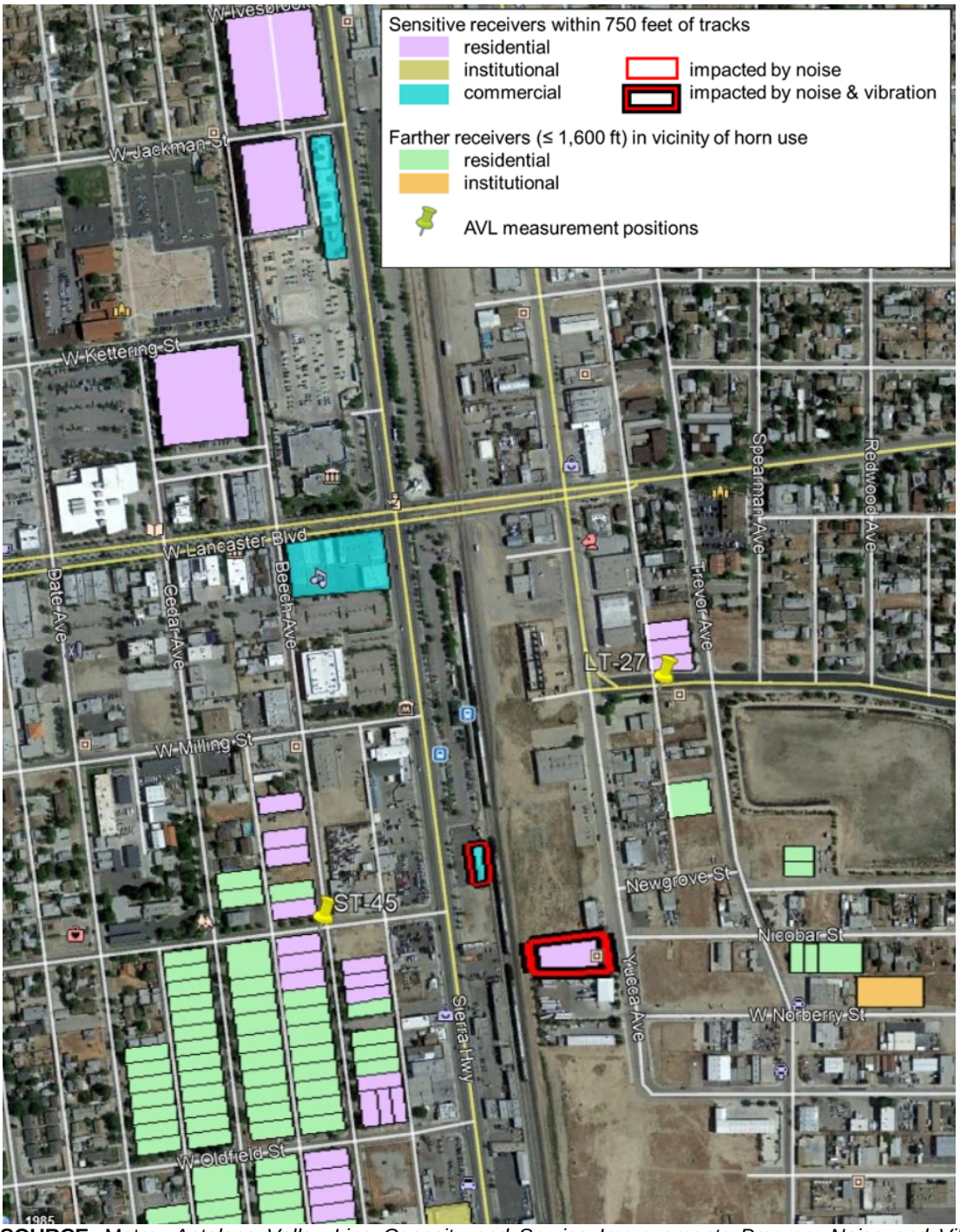


SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Figure 3.10-7: Construction Noise and Vibration Impacts in Vicinity of Canyon Siding Extension in the City of Santa Clarita

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Figure3.10-8: Construction Noise and Vibration Impacts in Vicinity of Lancaster Terminal improvements in the City of Lancaster



SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Operations

Less-Than-Significant Impact. Results for receivers out to 750 feet showed no FTA severe threshold exceedances for operational noise. For receivers out to 1,600 feet and beyond, assessed for the purposes of horn soundings near grade crossings, results also showed no threshold exceedances. **Table 3.10-15** shows the results of the longer distance horn-based analysis. Background noise required for impact at each distance is provided for each section of the alignment. In each section, you can see that the background noise is above that required for a potential impact to occur. Refer to **Table 3.10-2** for section locations.

Table 3.10-15: Long-Distance Noise Impact Analysis

Section	Speed (mph)	Distance (ft)	Background Required for Impact (dBA)		Lowest Measured Background Noise Adjusted by Distance[1] (dBA)	Background Noise Measurement Location
			L_{dn}	CNEL		
1	30	800	42	48	60	LT-01
		1200	40	46	58	LT-01
		1600	38	44	57	LT-01
		2000	37	43	56	LT-01
2-4	79	800	43	48	64	ST-08/LT-05
		1200	40	46	62	ST-08/LT-05
		1600	38	44	61	ST-08/LT-05
		2000	37	43	60	ST-08/LT-05
5	75	800	41	47	61	ST-24/LT-13
		1200	39	45	59	ST-24/LT-13
		1600	37	44	58	ST-24/LT-13
		2000	36	43	57	ST-24/LT-13
6	39	800	41	47	57	ST-24/LT-21
		1200	39	45	55	ST-24/LT-21
		1600	37	44	54	ST-24/LT-21
		2000	36	43	53	ST-24/LT-21
7 (Palmdale)	49	800	42	48	53	HSR-LT-1
		1200	40	46	51	HSR-LT-1
		1600	38	44	50	HSR-LT-1
		2000	37	43	49	HSR-LT-1
7 (Lancaster)	49	800	42	48	61	LT-25
		1200	40	46	59	LT-25
		1600	38	44	58	LT-25
		2000	37	43	57	LT-25

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.
[1]Noise was measured out to ~830-2000 feet, depending on the section. The adjustments were made by applying distance corrections.

For L.A. CEQA thresholds, analysis out to 750 feet also resulted in no threshold exceedances. For the results in **Table 3.10-15**, 0.8 dBA was added to both the existing noise and noise increase to determine: 1) if the existing noise was greater or less than 70 dBA (level at which CNEL criteria changes from +5 to +3 dBA being allowable); and 2) noise increase in CNEL. The addition of 0.8 dBA is conservative, based on the maximum measured difference between L_{dn} and CNEL for all long-term measurements. Note that for Categories 1 and 3 receivers, the analysis was switched from L_{eq} to L_{dn}/CNEL to comply with the L.A. CEQA method. The L.A. CEQA analysis showed no threshold exceedances for any of the receivers. Therefore, the proposed project would result in a less than significant impact related to operational noise.

Mitigation Measures

NV-1 Metro's contractor shall develop a Noise Control Plan demonstrating how noise criteria would be achieved during construction. The Noise Control Plan shall be designed to follow Metro requirements, include construction noise control measures, measurements of existing noise, a list of the major pieces of construction equipment that would be used, and predictions of the noise levels at the closest noise-sensitive receivers (residences, hotels, schools, churches, temples, and similar facilities). The Noise Control Plan shall be approved by Metro prior to initiating construction. Where the construction cannot be performed in accordance with the local noise ordinances construction noise standards, the contractor would investigate alternative construction measures that would result in lower sound levels. The noise limits for each jurisdiction are shown in the following table, NV-1 Noise Limits.

NV-1 - Noise Limits

Land Use	Noise Limit – Daytime [1] L_{eq} (dBA)	Noise Limit – Nighttime L_{eq} (dBA)
Any Residential – City of Los Angeles	Ambient +5 dBA	Ambient +5 dBA [2]
Single-Family Residential – Santa Clarita and Lancaster	75 [2]	60 [2, 3]
Multi-Family Residential – Santa Clarita and Lancaster	80 [2]	64 [2, 3]
Commercial	85 [2]	n/a [4]

[1] Daytime is defined as follows:
Los Angeles: 7 am – 9 pm (Mon-Fri), 8 am – 6 pm (Sat)
Santa Clarita: 7 am – 7 pm (Mon – Fri), 8 am – 6 pm (Sat)
Lancaster: 7 am – 8 pm (Mon – Sat)

[2] L.A County Code Limit
[3] Recommended limit if written permission is allowed for work outside of the "Daytime" defined hours
[4] Commercial properties are not typically sensitive at night.

The contractor would conduct noise monitoring to demonstrate compliance with contract noise limits. Noise-reducing methods that may be implemented by the contractor include:

- If nighttime construction is planned, a noise variance may be prepared by the contractor, if required by the jurisdiction, that demonstrates the implementation of control measures to achieve noise levels as close to the nighttime limits of

the applicable City of Los Angeles, City of Santa Clarita or City of Lancaster standards as possible.

- Use specialty equipment with enclosed engines, acoustically attenuating shields, and/or high-performance mufflers.
- Locate equipment and staging areas away from noise-sensitive receivers.
- Limit unnecessary idling of equipment.
- Install temporary noise barriers, noise control curtains, and/or noise enclosures. This approach can be particularly effective for stationary noise sources such as compressors and generators. These methods may not be effective for elevated receivers; blocking line-of-sight is necessary.
- Reroute construction-related truck traffic away from local residential streets and/or sensitive receivers.
- Avoid impact pile driving where possible. Where geological conditions permit, the use of drilled piles or a vibratory pile driver is generally quieter.
- Use electric instead of diesel-powered equipment and hydraulic instead of pneumatic tools.
- Where possible, minimize the use of impact devices such as jackhammers and hoe rams, using concrete crushers and pavement saws instead.
- If all conventional noise control measures cannot achieve the noise levels of the applicable City of Los Angeles, City of Santa Clarita or City of Lancaster standards and unavoidable excessive exceedances of the noise limits are predicted, Metro shall offer to temporarily relocate residents to a hotel. The Noise Control Plan shall define excessive exceedance of the noise limits and shall be approved by Metro.

Significance of Impacts after Mitigation

Implementation of Mitigation Measure **NV-1** would reduce noise levels through various noise reduction methods such as: use of acoustically attenuating shield. High performance mufflers, temporary noise barriers, and use of electric instead of diesel-powered equipment. It is anticipated that with implementation of Mitigation Measure **NV-1**, impacts at commercial and residential receivers in Santa Clarita would reduce noise levels below the impact thresholds. However, where larger noise exceedances are predicted, mitigation may not reduce noise below impact thresholds, and impacts would be significant and unavoidable. Where unavoidable impacts are predicted, unconventional mitigation measures shall be considered. Unconventional mitigation may be required for the impacted City of Los Angeles residential receivers during construction of the Balboa Double Track Extension and possibly for the impacted Lancaster receivers during construction of the Lancaster Terminal Improvements. For a residential receiver, an unconventional mitigation measure is to relocate the residents to a hotel during construction phases that are loudest and most intrusive. Therefore, the Proposed Project would result in a significant and unavoidable impact related to construction noise.

Impact 3.10-2) Would the project result in excessive ground-borne vibration or ground-borne noise levels?

Construction

Significant and Unavoidable Impact. Construction vibration was assessed for each of the five construction activities, which are shown by jurisdiction in **Table 3.10-16**. For each of the three construction areas, the predicted construction vibration would not exceed the construction vibration damage criteria.

Construction vibration predictions for the receiver near construction activities associated with the Balboa Double Track Extension in the City of Los Angeles show there is only one sensitive receiver potentially impacted in the area at 14748 San Fernando Road, but that receiver is located very close to the construction site: with only 61 feet between the receiver and the track centerline. While the predicted vibration does not reach levels that risk damage to the structure (0.2 inch/sec), the levels do exceed the annoyance threshold during all five phases of construction. In particular – the use of the vibratory roller drives the largest exceedances during Construction Activities 4 and 5.

Construction vibration predictions for receivers near construction activities associated with the Canyon Siding Extension in the City of Santa Clarita show there is only one sensitive receiver potentially impacted in the area. The commercial building at SB-5-02c (22840 Soledad Canyon Road), near the westernmost edge of the construction area, is the closest sensitive receiver to construction in the City of Santa Clarita and the only building in this area potentially affected by construction vibrations. While the predicted vibration does not reach levels that risk damage to the structure (0.2 inch/sec), the levels do exceed the annoyance threshold during all five phases of construction. The analysis predicts exceedances of the vibration annoyance limit during Construction Activities 4 and 5, driven by the use of the vibratory roller.

Construction vibration predictions for receivers near construction activities associated with the Lancaster Terminal Improvements in the City of Lancaster show two sensitive receivers potentially impacted. The commercial building at SB-7-01c (44738 Sierra Highway) and the homeless shelter at NB-7-047 (44611 Yucca Avenue) are the closest sensitive receivers to construction in the City of Lancaster. These receivers are within 300 feet of each other on opposite sides of the track and are the only receivers in the City of Lancaster where a construction vibration impact is predicted. While the predicted vibration does not reach levels that risk damage to the structure (0.2 inch/sec), the levels do exceed the annoyance threshold during all five phases of construction. Both receivers are within 100 ft of the near track centerline, which results in predicted exceedances of the vibration annoyance limits during the use of vibratory rollers during Construction Activities 4 and 5. Annoyance limits are also exceeded during the other 3 phases at SB-7-01c. Therefore, without mitigation, the Proposed Project would result in a potentially significant impact related to construction vibration.

Table 3.10-16: Construction Vibration Predictions

Receiver ID	Address	Damage PPV Limit	Annoyance PPV Limit[1]	Activity 1 Vibration Predictions	Activity 2 Vibration Predictions	Activity 3 Vibration Predictions	Activity 4 Vibration Predictions	Activity 5 Vibration Predictions
BALBOA DOUBLE TRACK ADDITION, CITY OF LOS ANGELES								
SB-5-001	14748 San Fernando Rd	0.2	0.016	**0.023 (0.008)**	**0.023 (0.008)**	**0.023 (0.008)**	**0.055 (0.039)**	**0.055 (0.039)**
SIDING TRACK EXTENSION, CITY OF SANTA CLARITA								
SB-5-02c[b]	22840 Soledad Canyon Rd	0.2	0.022	0.017	0.017	0.017	**0.04 (0.018)**	**0.04 (0.018)**
TERMINAL IMPROVEMENTS, CITY OF LANCASTER								
NB-7-047	44611 Yucca Ave	0.2	0.016	0.014	0.014	0.014	**0.033 (0.018)**	**0.033 (0.018)**
SB-7-01c[2]	44738 Sierra Hwy	0.2	0.022	**0.159 (0.136)**	**0.159 (0.136)**	**0.159 (0.136)**	**0.375 (0.352)**	**0.375 (0.352)**

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

All vibration levels are PPV in inches/second. Predicted impacts are shown in red with the exceedance amount in parentheses.

[1] For Los Angeles, FTA Manual annoyance criteria (72 VdB residential) converted to PPV using a crest factor of 4. For Santa Clarita and Lancaster, FTA Manual annoyance criteria (72 VdB residential/75 VdB institutional) converted to PPV using a crest factor of 4.

[2] Indicates a receiver that has been added for the construction analysis only.

Operations

Less Than Significant Impact. The project will implement infrastructure improvements at three locations along the Antelope Valley Line: Balboa Double Track Extension, where the tracks travel under the I-5 freeway north of the Sylmar/San Fernando Station; Canyon Siding Extension near the Santa Clarita Station; and Lancaster Terminal Improvements near the Lancaster station. The new track for the Balboa Double Track Extension will be located farther from sensitive receivers compared to the existing track. For the Canyon Siding Extension, a new track will be located closer to one cluster of residential sensitive receivers (ID NB-5-117) and one pre-school (ID NB-5-A). There are no sensitive receivers within 400 feet of the Lancaster Terminal improvements.

For the remainder of the alignment, although additional train movements would occur, there would be no changes to train speeds or track alignment. The maximum vibration level from a single train event would remain the same as a result of the project.

The predicted levels at the sensitive receivers near the Canyon Siding Extension improvement are presented in **Table 3.10-17**. Although the future track will be located closer to the sensitive receivers, the increase in vibration levels as a result of the project is less than 3 decibels.

Table 3.10-17: Predicted Vibration Levels at Sensitive Receivers near the Canyon Siding Extension

Sensitive Receiver	Speed, mph	Distance to Existing Track, feet	Distance to Future Track	Existing Vibration Level, VdB	Future Vibration Level, VdB	Difference
NB-5-117	39	385	369	58	59	1 dB
NB-5-A	39	267	251	62	63	1 dB

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

Operational vibration impact for sensitive receivers was assessed using the FTA existing vibration criteria flow chart shown in **Figure 3.10-5**, which concludes there is no vibration impact.

The following is the justification for the flow-chart path concluding no vibration impact:

- Project vibration 5 dB above existing? No.
  Near the Canyon Siding Extension, **Table 3.10-17** shows that the future project vibration will be less than 5 dB above existing. The Lancaster Terminal Improvements do not have any sensitive receivers within the screening distance and Balboa Double Track improvements would add track farther from sensitive receivers. Throughout the rest of the study area, there would be no changes to train speeds or track alignment and therefore the project vibration would be equivalent to the existing vibration.
- Heavily use corridor with more than 12 trains per day? Yes.
  The AVL rail corridor is currently considered a heavily used corridor (more than 12 trains a day) comprised of Metrolink, Amtrak, and freight services, depending on the section of the rail corridor.

- Existing vibration exceed criteria? Yes.
  Based on reference vibration levels shown in **Figure 3.10-5**, the vibration from Metrolink trains would exceed the criteria of 65 VdB at Category 1 (highly-vibration sensitive) land uses within 200 feet of the tracks. The vibration would exceed the criteria of 75 VdB at Category 2 (Residential) sensitive receivers within 75 feet of the tracks. The criteria of 75 VdB applies to train corridors with between 30 to 70 events per day.
- Significant increase in number of events? No.
  A significant increase in number of events is defined as an approximate doubling of vibration events. The number of events is the total number of train events at a sensitive receiver, including Metrolink Antelope Valley Line, Metrolink Ventura Line, Amtrak, and Freight. **Table 3.10-18** presents the current and future number of events throughout the study area, and the anticipated increase in vibration exposure in decibels.
- Project vibration 3 dB above existing? No.
  Near the Canyon Siding Extension, **Table 3.10-17** shows that future project vibration will be less than 3 dB above existing. The Lancaster Terminal do not have any sensitive receivers within the screening distance. Balboa Double Track improvements would add track farther from sensitive receivers. Throughout the rest of the study area, there would be no changes to train speeds or track alignment and therefore the project vibration would be equivalent to the existing vibration.
- No Impact (for groundborne vibration and groundborne noise).

Therefore, the Proposed Project would result in a less than significant impact related to operational vibration.

Table 3.10-18: Existing and Proposed Additional Train Vibration Events and Predicted Vibration Increase.

Segment	Existing Metrolink	Existing Amtrak	Existing Freight	Additional AVL	Doubling Event Threshold[1]	Vibration Events Doubled?
Los Angeles Union Station to Burbank	63[2]	11	0[c]	30	74	No
Burbank to Santa Clarita	30	0	5x2=10[3]	30	40	No
Santa Clarita to Palmdale	20	0	5x2=10[3]	20	30	No
Palmdale to Lancaster	18	0	6x2=12[3]	18	30	No

SOURCE: Metro, *Antelope Valley Line Capacity and Service Improvements Program Noise and Vibration Technical Report*, 2021.

[1] Total additional vibration events required for doubling.
[2] Includes trains on Antelope Valley Line and Ventura Line
[3] Number of freight train events could not be verified. 0 train events is conservatively assumed.
[4] Each freight train considered as 2 events due to longer train lengths compared to Metrolink. Number of freight trains from Burbank to Palmdale confirmed in conversation with UPRR.

Mitigation Measures

NV-2 Specific measures to be employed to reduce or mitigate construction vibration impacts shall be developed by the contractor and presented in the form of a Vibration Monitoring Plan as part of the Noise Control Plan. Measurements shall be taken during peak vibration generating construction activities, and the results must be submitted to Metro on a weekly basis.

The following precautionary vibration mitigation strategies should be implemented to minimize the potential for annoyance to occupants in the project area:

- **Alternative Construction Procedures**: If high-vibration construction activities must be performed close to structures, it may be necessary for the contractor to use an alternative procedure that produces lower vibration levels. Examples of high-vibration construction activities include the use of vibratory compaction or hoe rams next to sensitive uses. Alternative procedures include use of non-vibratory compaction in limited areas and a concrete saw in place of a hoe ram to break up pavement.
- **Occupant Temporary Relocation.** When construction or demolition activity must occur very close to the receiver, other less conventional vibration reduction techniques shall be employed. A vibration disturbance coordinator shall be established for affected sensitive occupants regarding vibration annoyance. Vibration levels shall be monitored at the affected uses to determine if vibration levels exceed the vibration annoyance criteria of 0.016 inches per second at residential uses and 0.022 inches per second at commercial uses during construction activity. If construction vibration results in exceedances of the vibration annoyance criteria, occupants shall be temporarily relocated to a hotel during construction times when vibration will be the greatest and most intrusive. Construction activities in non-residential areas shall be scheduled during non-operational hours of commercial uses.

Significance of Impacts after Mitigation

It is anticipated that implementation of Mitigation Measure **NV-2** would reduce impacts at the commercial building in the City of Santa Clarita to less than significant. Where vibration exceedances are predicted, mitigation may not reduce vibration below impact thresholds, and annoyance impacts may be unavoidable. Unconventional mitigation measures may be required for the impacted City of Los Angeles residential receiver during construction of the Balboa Double Track Extension, and possibly for the impacted Lancaster receivers during construction of the Lancaster Terminal Improvements. For a residential receiver, an unconventional vibration reduction method is to relocate the residents to a hotel during construction phases that are loudest and most intrusive. Therefore, with mitigation, the Proposed Project would result in a significant and unavoidable impact related to construction vibration.

Impact 3.10-3) For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Construction

No Impact. Private airstrips or airports within two miles of the three areas where construction activities are planned (in the City of Los Angeles, City of Santa Clarita, and City of Lancaster) were not identified. In addition, the construction areas are not within contours for airport land use plans. Therefore, no construction impacts would occur related to airport noise.

Operations

No Impact. No private airstrips or airports were identified within 2 miles of the proposed project and it is no located within contours for airport land use plans. Therefore, no operational impacts would occur related to airport noise.

Mitigation Measures

No mitigation measures.

Significance of Impacts after Mitigation

No impact.

3.11 TRIBAL CULTURAL RESOURCES

The following summarizes the applicable regulations and the existing setting and provides a detailed impact assessment related to tribal cultural resources (TCRs). The Project Area for Tribal Cultural Resources consists of the AVL corridor and the three capital improvement sites.

3.11.1 Regulatory Framework

3.11.1.1 Federal Regulations

Native American Graves and Repatriation Act (1990). Provides a process for Federal agencies to address new discoveries of Native American human remains, funerary objects, sacred objects and objects of cultural property intentionally excavated or inadvertently discovered on Federal or Tribal lands. "New" discoveries are those events occurring after November 16, 1990, when NAGPRA was enacted. In the event of an inadvertent discovery of any new human remains, funerary objects, sacred objects, or objects of cultural patrimony on Federal or tribal lands during construction, work shall be ceased and the responsible Federal Agency and responsible Indian tribe official shall be contacted to evaluate the site prior to the resumption of work.

3.11.1.2 State Regulations

California Environmental Quality Act. California Environmental Quality Act (CEQA) Guidelines Section 15064.5(e) requires that excavation activities be stopped whenever human remains are uncovered and that the County Coroner be called in to assess the remains. If the County Coroner determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the most likely descendants (MLD), if any, as identified by the NAHC. CEQA Guidelines Section 15064.5 directs the lead agency (or project proponent), under certain circumstances, to develop an agreement with the MLD for the treatment and disposition of the remains, or to rebury the remains in an area not subject to further disturbance if the MLD fails to make a recommendation within 48 hours of being granted access to the remains.

California Public Resources Code. Archaeological and historical sites are protected pursuant to policies and regulations enumerated under the California Public Resources Code (PRC). California PRC Sections 5020–5029.5 continue the former Historical Landmarks Advisory Committee as the State Historical Resources Commission. California PRC Sections 5079–5079.65 define the functions and duties of the Office of Historic Preservation (OHP). The OHP is responsible for the administration of federally and state-mandated historic preservation programs in California and the California Heritage Fund. California PRC Sections 5097.9–5097.991 provide protection to Native American historical and cultural resources and sacred sites and identify the powers and duties of the NAHC. It also requires notification to descendants of discoveries of Native American human remains and provides for treatment and disposition of human remains and associated grave goods. California PRC Section 21083.2(g) protects archaeological resources. California PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for

archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Assembly Bill 52. Assembly Bill (52) formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the Project Area, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a notice of intent to adopt a negative declaration or mitigated negative declaration or a notice of preparation of an environmental impact report.

AB 52 establishes that tribal cultural resources must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency.

California Health and Safety Code. The California Health and Safety Code Section 7050.5(b) specifies protocol when human remains are discovered. Specifically, burials or human remains found either inside or outside a known cemetery are not to be disturbed or removed unless by authority of law, and the area of a discovery of human remains should remain undisturbed until the County Coroner is notified and has examined the remains prior to determining the appropriate course of action.

3.11.1.3 Local Regulations

City of Los Angeles

The City of Los Angeles General Plan does not identify specific tribal cultural resources within the City of Los Angeles, nor does it contain objectives, policies, or programs for their protection, preservation, or management.

City of Burbank

The Burbank 2035 General Plan addresses cultural resources in the Land Use Element. The Land Use Element of the General Plan does not identify specific tribal cultural resources within the City of Burbank, nor does it contain objectives, policies, or programs for their protection, preservation, or management.

City of Santa Clarita

The Conservation and Open Space Element of the City of Santa Clarita's General Plan contains policies, goals, and objectives to protect and preserve the City's tribal cultural resources. Relevant Conservation and Open Space Element objectives and policies related to tribal cultural resources are shown in **Table 3.11 -1**.

Table 3.11-1: City of Santa Clarita Conservation and Open Space Element of the General Plan

Objective/Policy	Description
Objective CO 5.3	Encourage conservation and preservation of Native American cultural places, including prehistoric, archaeological, cultural, spiritual, and ceremonial sites on both public and private lands, throughout all stages of the planning and development process.
Policy CO 5.3.1	For any proposed general plan amendment, specific plan, or specific plan amendment, notify and consult with any California Native American tribes on the contact list maintained by the California Native American Heritage Commission that have traditional lands located within the City's jurisdiction, regarding any potential impacts to Native American resources from the proposed action, pursuant to State guidelines.
Policy CO 5.3.2	For any proposed development project that may have a potential impact on Native American cultural resources, provide notification to California Native American tribes on the contact list maintained by the Native American Heritage Commission that have traditional lands within the City's jurisdiction, and consider the input received prior to a discretionary decision.
Policy CO 5.3.3	Review and consider a cultural resources study for any new grading or development in areas identified as having a high potential for Native American resources, and incorporate recommendations into the project approval as appropriate to mitigate impacts to cultural resources.

SOURCE: City of Santa Clarita, *Conservation and Open Space Element of the Los Angeles General Plan*, June 2011.

County of Los Angeles

The Conservation and Natural Resources Element of the Los Angeles County General Plan contains policies, goals, and objectives to protect and preserve the County's tribal cultural resources. Relevant Conservation and Natural Resources Element goals and policies related to tribal cultural resources are shown in **Table 3.11-2**.

Table 3.11-2: County of Los Angeles Conservation and Natural Resources Element of the General Plan

Objective/Policy	Description
Goal C/NR 14	Protect historic, cultural and paleontological resources.
Policy C/NR 14.4	Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).
Policy C/NR 14.6	Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

SOURCE: County of Los Angeles, *Conservation and Natural Resources Element of the Los Angeles General Plan*, October 2015.

City of Palmdale

The Environmental Resources Element of the City of Palmdale General Plan contains goals and policies related to the protection and conservation of tribal cultural resources within the City. Goals, objectives, and policies relevant to the Proposed Project are found in **Table 3.11-3** below.

Table 3.11-3: Goals, Objectives, and Policies of the Environmental Resources Element of the City of Palmdale General Plan

Goal/Objective/Policy	Description
Goal ER7	Protect historical and culturally significant resources which contribute to the community's sense of history.
Objective ER7.1	Promote the identification and preservation of historic structures, historic sites, archaeological sites, and paleontological resources in the City.
Policy ER7.1.3	Require special studies/surveys to be prepared for any development proposals in areas reasonably suspected of containing cultural resources, or as indicated on the sensitivity map.
Policy ER7.1.4	Promote public awareness of historic, cultural, and paleontological resources.
Policy ER7.1.5	When human remains suspected to be of Native American origin are discovered, cooperate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate disposition of the human remains and any associated grave goods.

SOURCE: City of Palmdale, *Environmental Resources Element of the City of Palmdale General Plan*, January 1993.

City of Lancaster

The Lancaster General Plan promotes community involvement in the protection, preservation, and restoration of the area's significant cultural, historical, and architectural features. The Plan does not identify specific tribal cultural resources within the City, nor does it contain objectives, policies, or programs for their protection, preservation, or management.

3.11.2. Existing Setting

The Project Area is situated on lands that were once inhabited by the Serrano (Lancaster Terminal), the Tataviam (Canyon Siding Extension), and Gabrieleño (Balboa Double Track Extension) tribal nations. The traditional lands of the Chumash are also located in the immediate vicinity and west of the Balboa Double Track Extension. Refer to Appendix E for a full ethnohistory of the Project Area.

Serrano

Ethnographic accounts indicate that the Serrano were the dominant group of Native Americans in the region that includes the project's Lancaster Terminal. The Serrano occupied an area in and around the San Bernardino Mountains between approximately 1,500 and 11,000 feet above

mean sea level. Their territory extended west into the Cajon Pass, east as far as Twentynine Palms, north to Victorville, and south to the Yucaipa Valley. The Serrano were mainly hunters and gatherers who occasionally fished. A variety of materials were used for hunting, gathering and processing food, shelter, and other essential activities, including shells, wood, bone, stone, plant materials, and animal skins and feathers. These materials were commonly converted into baskets, pottery, blankets, mats, nets, bags and pouches, cordage, awls, bows, arrows, drills, stone pipes, musical instruments, and clothing. Settlement locations were determined by water availability, and most Serranos lived in small villages near water sources. Houses and ramadas were round and constructed of poles covered with bark and tule mats. Most Serrano villages also had a ceremonial house used as a religious center. Other structures within the village might include granaries and sweathouses.

Tataviam

The Canyon Siding Extension will be constructed on land occupied by the Tataviam before and at the time of European contact. The Tataviam lived primarily in the area along the upper Santa Clara River drainage and the Transverse Range in the Tejon Pass area. The Tataviam language is a Takic-family language related to Gabrieleño and Serrano. Ethnographic evidence indicates that the Tataviam resided in villages ranging in size from 10 to 15 to as many as 200 people. Villages of various sizes were located near one another, and there were summer and winter villages for seasonal resources and climate. The Tataviam exploited a range of desert and mountain resources such as large and small game, acorns, pinyon pine nuts, yucca buds, sage seeds, and berries. The Tataviam population at the time of European contact was probably no more than 1,000 people. By 1834, nearly all the Tataviam had been baptized at the San Fernando Mission and had married members of other indigenous groups. Today, the Fernandeño Tataviam Band of Mission Indians, descendants of the Tataviam, are based in the San Fernando Valley.

Gabrieleño

Ethnographic accounts of Native Americans indicate that the Gabrieleño once occupied the southern Channel Islands, the Los Angeles Basin, much of Orange County, and the western San Bernardino Valley. Their homeland included the site of the Balboa Double Track Extension. The Gabrieleño were one of several Takic-speaking groups in Southern California at the time of Spanish contact. The Gabrieleño occupied villages located along rivers and at the mouths of canyons. Populations ranged from 50 to 200 inhabitants. Residential structures within the villages were domed, circular, and made from thatched tule or other available wood. The Gabrieleño were fishermen/hunter-gatherers that exploited a wide array of marine and terrestrial game as well as acorns, islay, pinion nut, and a variety of seeds, roots, and other plant materials. The Gabrieleño utilized plank canoes (te'aat), dugout canoes, nets, shellfish hooks, harpoons, and traps when fishing and hunting. They hunted large game with bow and arrow, and used traps, nets and throwing sticks for small game. Plant processing was done with groundstone milling equipment, baskets and seed beaters. The Gabrieleño had a wide array of decorative and ceremonial objects made from steatite, brownware ceramics, bone, shell, asphaltum, and wood.

By the late 18th century, the Gabrieleño population had significantly dwindled due to introduced European diseases and dietary deficiencies. Gabrieleño communities disintegrated as families were separated during the practice of missionization; however, current descendants of the Gabrieleño remain in the Los Angeles Basin today. Although there are no federally-recognized Gabrieleño groups or tribes, State of California recognizes several groups of Gabrieleño descent, including the Tongva and Kizh Nation bands.

Chumash

The Balboa Double Track Extension Project Area is located approximately 3 miles to the east of lands occupied by the Chumash before and at the time of European contact. The prehistory of the Chumash region has been divided into three periods: Early (8,000 to 3,350 years before present [B.P].), Middle (3,350 to 800 years B.P.), and Late (800 to 150 years B.P. or approximately A.D. 1150 to 1800). The Early Period is characterized by the use of large flake and core tools, millingstones, and handstones. During the Middle Period (3,350 to 800 years B.P.) increasing sedentism and emphasis on marine subsistence along the Santa Barbara Channel is reflected by the appearance of coastal villages occupied during a large part of the year. The plank canoe, which made ocean fishing and travel to the Channel Islands safer and more efficient, came into use about 1,500 years B.P. The Chumash became one of the most socially and economically complex hunting and gathering groups in North America during the Late Period (800 to 150 years B.P. or approximately A.D. 1150 to 1800). At this time, there was a series of permanent and semipermanent villages with populations of 200 to 600 or more individuals along the Santa Barbara Channel and on the Channel Islands. The principal economic pursuits of the people of these villages were marine fishing and trading.

When the Spanish arrived in A.D. 1769, the Chumash occupied the coast from Malibu Canyon to San Luis Obispo and inland as far as the western edge of the San Joaquin Valley. By 1804, most villages were abandoned as the Chumash were forced to move to the missions. Exposure to diseases introduced by Europeans soon began to decimate their population. When Spanish authority was removed in 1821, many Chumash left the coastal area and settled in the interior. By 1900, the Chumash population was nearly extinct due to European-borne diseases and intermarriage with the Spanish, Mexicans, and Anglos. In 1855, a reservation of 120 acres was given to the Chumash near Santa Ynez Mission. This small parcel was eventually reduced to 75 acres, the smallest Native American reservation in California. By the 1970s, only about 40 Chumash of mixed blood remained there. Many Chumash today live outside the reservation.

3.11.2.1 Tribal Cultural Resource Identification

To initiate the identification of TCRs that could be affected by the Proposed Project, a search of the Sacred Lands File (SLF) from the NAHC was requested on October 5, 2020. The NAHC responded on October 20, 2020, and reported negative results for SLF search. The NAHC provided a list of 15 Native American individuals and groups to contact for AB-52 consultation. Refer to Appendix E for a full summary of AB-52 Consultation Communication to date. Project notification letters were sent by Metro to all 15 tribes or tribal representatives with an invitation to consult on the Project under AB 52 on October 13, 2020. Two responses were received in reply: one from Mr. Andrew Salas of the Gabrieleño Band of Mission Indians-Kizh Nation (Kizh

Nation) and the second from Mr. Jairo Avila of the Fernandeño Tataviam Band of Mission Indians.

A follow-up email was sent to the remaining 13 tribes/tribal representatives on November 11, 2020. One response was received in reply from Mr. Kenneth Kahn of the Santa Ynez Band of Chumash Indians. On December 10, 2020, follow-up phone calls were made to the remaining 12 tribes/tribal representatives. Three individuals were reached via phone: Mr. Fred Collins of the Northern Chumash Tribal Council, Mr. Charles Alvarez of the Gabrieleño-Tongva Tribe, and Mr. Anthony Morales of the Gabrieleño/Tongva San Gabriel Band of Mission Indians.

During AB 52 consultation, the Project corridor was identified by Mr. Andrew Salas as a TCR. A summary of AB 52 Consultation Communication to date as well as copies of correspondence to date with the NAHC and tribal groups is provided in Appendix E.

Consultation to date has revealed several potential TCRs in the Project Area. The Project Area was identified within the traditional ancestral territory of the Fernandeño Tataviam Band of Mission Indians and encompasses lineage-villages from which members of the Tribe descend. The Project was identified by representatives of the Kizh Nation as a TCR and highly sensitive for cultural materials. The project alignment followed a corridor of trade routes and villages heavily utilized by Native Americans. As a result, there is assumed to be an abundance of materials and artifacts in the Project Area including unmarked burials along the entire corridor, California Register of Historical Resources (California Register) particularly along riparian habitats. None of the identified TCRs have been listed or determined eligible for the California Register or any local register.

3.11.6 Significance Thresholds and Methodology

3.11.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to tribal cultural resources if it would cause a substantial adverse change in the significance of a tribal cultural resource – defined in PRC Section 21074 as either a site, feature, place or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe – and that is:

a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or;
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

3.11.3.2 Methodology

The analysis of tribal cultural resources was based on the results of the records search and literature review, a search of the SLF from the NAHC, and AB 52 consultation. No known TCRs were identified within the Project Area during the SLF search; however, the Kizh Nation identified the Project Area as a TCR. This analysis examines the possibility of encountering additional, unrecorded TCRs during Project construction.

3.11.4 Impact Analysis

Impact 3.11-1) Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource, listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

Less-than-significant Impact with Mitigation. The Project was identified by Mr. Andrew Salas of the Kizh Nation as a TCR; however, the TCR has not been listed or determined eligible for the California Register or any local register. Additionally, it is assumed that an abundance of materials and artifacts are buried in the Project Area including unmarked burials along the entire AVL corridor based on ethnographic accounts documenting the traditional ancestral territory of the Fernandeño Tataviam Band of Mission Indians. However, while tribal consultation as well as archival research has revealed a high likelihood that TCRs are present in the Project Area, no TCRs listed or determined eligible for the California Register or any local register have been identified. Further detail on tribal consultation efforts is provided in the following discussion under **Impact 3.11-2**.

The Proposed Project is located within an urbanized area and has been subject to disruption by development activities associated with the railroad and surrounding urban uses. As a result of previous development activities, surficial archaeological resources and any above-ground tribal cultural resources that may have existed have likely been displaced or destroyed. Considering the stated sensitivity of the Project Area with regard to the assumed presence of materials, artifacts, and unmarked burials along the AVL corridor there is a possibility that ground-disturbing activities could impact previously undiscovered buried tribal cultural resources of historical significance. Therefore, without mitigation, construction of the Proposed Project would result in a potentially significant impact related to TCRs. Potential impacts to TCRs that are not listed or eligible for listing in the California Register or a local register are discussed in Impact 3.11-2. Compliance with Mitigation Measures **CUL-1** and **CUL-2** would reduce impacts to the TCR to less-than-significant levels.

Mitigation Measures

Refer to Mitigation Measures **CUL-1** and **CUL-2** in Section 3.5, Cultural Resources of the Draft EIR. Ongoing AB 52 consultation with Native American tribes may result in specific TCR Mitigation Measures, based on the results of consultation.

Significance of Impacts after Mitigation

Mitigation Measures **CUL-1** and **CUL-2** would mitigate inadvertent impacts to potential subsurface archaeological deposits or tribal cultural resources during construction activities. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact.

Impact 3.11-2) Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

As discussed in Section 3.11.2, the NAHC reported the search of the SLF revealed negative results for the relevant United States Geological Survey quadrangles; however, the Project corridor was identified by Mr. Andrew Salas of the Kizh Nation as a TCR. Project notification letters were sent to 15 tribes or tribal representatives with an invitation to consult on the Project under AB 52.

A total of five responses have been received including: Gabrieleño-Tongva Tribe (Charles Alvarez), Fernandeño Tataviam Band of Mission Indians (Jairo Avila), Northern Chumash Tribal Council (Fred Collins), Santa Ynez Band of Chumash Indians (Kenneth Kahn), and the Gabrieleño Band of Mission Indians – Kizh Nation (Andrew Salas).

Mr. Avila stated that the Project is within the traditional ancestral territory of the Fernandeño Tataviam Band of Mission Indians and encompasses lineage-villages from which members of the Tribe descend. He requested to review grading/excavation plans, the geotechnical report, and the cultural resource assessment report prior to providing tribal comments or scheduling a consultation meeting. Mr. Alvarez stated that tribal monitoring was necessary due to the sensitivity of the areas. Mr. Collins deferred to the local tribal government's recommendations for the Project. Mr. Kahn, during a consultation call, stated that he has done work in the Santa Clarita and Santa Clara River Valley and requested a copy of the South Central Coastal Information Center (SCCIC) records search results. Mr. Cohen stated that they would review all of the information and be in touch with any further requests. During a consultation call, Mr. Salas stated that the route is part of a tribal cultural resource for the Kizh Nation and is considered highly sensitive for cultural materials. Consultation with the Kizh Nation is ongoing to identify any potential impacts and additional mitigation measures, if any. Follow-up emails were sent and phone calls were made to the remaining 10 tribes/tribal representatives. No additional comments have been received to date.

The Proposed Project is located within the existing railroad corridor and an urbanized area and has been subject to disruption by development activities associated with the railroad and surrounding urban uses. The Project will not result in a significant change to the existing developed setting of the area. As a result of previous development activities, surficial archaeological resources that may have existed have likely been displaced or destroyed.

Considering the stated sensitivity of the Project Area with regard to the assumed presence of materials, artifacts, and unmarked burials along the AVL corridor, there is a possibility that ground-disturbing activities during Project implementation could impact previously undiscovered prehistoric archaeological or buried TCRs.

Construction

Less-Than-Significant Impact with Mitigation. Construction activities associated with the additional railroad lines would be limited to minimal at-grade disturbance. Excavation activities would be limited to soils previously impacted during initial rail line construction. Widening of the track bed and the addition of drainage ditches at the Balboa Double Track Extension and Canyon Siding Extension Project locations require excavation of the existing cut slopes and retaining walls, where needed. The maximum height of the new cut slope will be approximately 36 feet. Localized excavation will extend to approximately 10 feet below ground surface.

The Lancaster Terminal Project excavation is localized to the existing Station, the railroad, and city property north of Lancaster Boulevard. The construction will require excavation for building and platform foundations, utility relocations and base for new tracks. Excavation depths of the general site grading are expected to be approximately 4 feet to 6 feet below ground surface. Localized excavation will extend to approximately 10 feet below ground surface.

There is the possibility that previously undiscovered and undocumented resources could be adversely affected or otherwise altered by ground-disturbing activities during construction of the project. Disturbance of undocumented resources would be a potentially significant impact without implementation of mitigation measures. Implementation of Mitigation Measures **CUL-1** and **CUL-2**, as presented below, would avoid or reduce potential impacts to unknown buried resources to a level that is less than significant.

Operations

Less-Than-Significant Impact with Mitigation. Consultation with the Kizh Nation is ongoing to identify potential impacts and additional mitigation measures, if any.

Mitigation Measures

Mitigation Measures **CUL-1** and **CUL-2**.

Significance of Impacts after Mitigation

Mitigation Measures **CUL-1** and **CUL-2** would mitigate inadvertent impacts to potential subsurface archaeological deposits or TCRs during construction activities. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to TCRs.

3.12. HYDROLOGY AND WATER QUALITY

The following summarizes the applicable regulations, existing setting, and provides a detailed impact assessment related to hydrology and water quality impacts. The Project Area for Hydrology and Water Quality consists of the three capital improvement sites. Refer to the Water Resources and Hydrology Technical Memorandum (Appendix J) for additional details related to applicable regulations and the existing setting.

3.12.1 Regulatory Framework

3.12.1.1 Federal Regulations

Clean Water Act (CWA). The CWA of 1972 is the primary federal law that governs and authorizes the United States Environmental Protection Agency (USEPA) and the states to implement activities to control water quality. It establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

The following are important CWA sections:

- Sections 303 and 304 require states to issue water quality standards, criteria, and guidelines.
- Section 401 requires an applicant for a federal license or permit to conduct any activity that may result in a discharge to waters of the United States to obtain certification from the state that the discharge will comply with other provisions of the act. This is most frequently required in tandem with a Section 404 permit request (see below).
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system to control point source discharges from industrial, municipal, and other facilities if their discharges go directly to surface waters (except for dredge or fill material). RWQCB administers this permitting program in California. Section 402(p) requires permits for discharges of stormwater from industrial/construction and MS4s.
- Section 404 establishes a permit program for the discharge of dredge or fill material into waters of the United States. This permit program is administered by the United States Army Corps of Engineers (USACE).

3.12.1.2 State Regulations

Porter Cologne Water Quality Control Act. The California Water Code is California's statutory authority for the protection of water quality. Under this act, the state must adopt water quality policies, plans, and objectives that protect the state's waters. Unlike the CWA, which regulates only surface water, the Porter-Cologne Water Quality Control Act regulates surface water, groundwater, and discharges to land.

California Toxics Rule. Under the California Toxics Rule, the USEPA has proposed water quality criteria for priority toxic pollutants for inland surface waters, enclosed bays, and estuaries. These federally promulgated criteria create water quality standards for California waters and satisfy CWA requirements.

National Pollutant Discharge Elimination System Industrial General Permit (NPDES IGP). The Statewide General Permit for Stormwater Discharges Associated with Industrial Activities, Order 2014-0057-DWQ IGP implements the federally required stormwater regulations in California for stormwater associated with industrial activities discharging to waters of the United States. The IGP regulates discharges associated with 10 federally defined categories of industrial activities. The Local and Suburban Transit (4111) Standard Industrial Classification Code is applicable to the Project and regulated by the IGP. The Lancaster Terminal Improvements include a proposed vehicle wash facility that would discharge wastewater into the local sewer system. The IGP requires the implementation of BMPs, a site-specific SWPPP, and monitoring plan. The IGP also includes criteria for demonstrating no exposure of industrial activities or materials to stormwater and no discharges to waters of the United States.

State Antidegradation Policy. In accordance with the federal Antidegradation Policy, the state policy was adopted by the State Water Resources Control Board (SWRCB) to maintain high-quality waters in California. This state policy restricts the degradation of surface and groundwaters. Implemented by the Regional Water Quality Control Boards (RWQCBs), the policy is necessary to achieve the federal CWA's goals and objectives. In particular, the policy protects bodies of water where the existing water quality is higher than necessary for the protection of present and anticipated beneficial uses. Pollutants regulated under the policy can be attributed to, among other sources, industrial, and municipal discharges. The policy requires that any activity that produces or may produce a waste or increased volume or concentration of waste and that discharges or proposes to discharge into high-quality waters is required to meet waste discharge requirements to control the discharge and assure that a pollution or nuisance will not occur.

Construction General NPDES Permit. In accordance with CWA Section 402(p), which regulates municipal and industrial stormwater discharges under the NPDES program, the SWRCB adopted the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit [CGP]) on September 2, 2009 (Order No. 2009-0009-DWQ [as amended by 2010-0014-DWQ and 2012-0006-DWQ]) (SWRCB 2012).

The main objectives of the CGP are to:

- Reduce erosion from construction projects or activities
- Minimize or eliminate sediment in stormwater discharges from construction projects
- Prevent materials used at a construction site from contacting stormwater
- Implement a sampling and analysis program to monitor construction site runoff
- Eliminate unauthorized non-stormwater discharges from the construction sites
- Implement appropriate measures to reduce potential impacts on waterways both during and after construction projects
- Establish maintenance commitments on post-construction pollution control measures

The CGP requirements apply to any construction project that either results in the disturbance of at least 1 acre of land or is part of a larger common development plan. Additionally, the CGP is required for related construction or demolition activities, including clearing, grading, grubbing, or excavation, or any other activity that results in greater than 1 acre of land disturbance.

Sustainable Groundwater Management Act (SGMA). The SGMA is enforced by the California Department of Water Resources for the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results (DWR, 2019a). The SGMA requires governments and water agencies of high and medium priority basins to halt overdraft and bring groundwater basins into balanced levels of pumping and recharge. The SGMA empowers local agencies to form groundwater sustainability agencies (GSAs) to manage basins sustainably and requires those GSAs to adopt groundwater sustainability plans for crucial groundwater basins in California (DWR, 2019b). Water Code §10720.8 identifies adjudicated areas in the SGMA, which have an existing defined entity administering the adjudication. Under the SGMA, adjudicated portions of basins are exempt from developing a groundwater sustainability plan and forming a GSA. However, the entities administering the adjudications are subject to submitting annual reports. The Proposed Project overlies the San Fernando Valley Groundwater Basin (Basin No. 4-12), the Santa Clara River Valley Groundwater Basin (Basin No. 4-4.07), and the Antelope Valley Groundwater Basin (Basin No. 6-44) all of which are currently adjudicated.

3.12.1.3 Regional Regulations

Water Quality Control Plan, Los Angeles (Basin Plan). The Water Quality Control Plan for the Los Angeles Region (Basin Plan) prepared by the Los Angeles Regional Water Quality Control Board (LARWQCB) (Region 4) outlines the regulatory process for the protection of the beneficial uses of all regional waters. According to the Basin Plan, the beneficial uses established for the Los Angeles Region include municipal, agricultural, industrial, groundwater recharge, freshwater replenishment, navigation, hydropower, water recreation, fishing, aquaculture, freshwater habitat, saline water habitat, estuarine habitat, wetland habitat, marine habitat, wildlife habitat, preservation of biological habitats, rare, threatened, or endangered species, aquatic organisms, spawning reproduction, and/or early development, and shellfish harvesting.

Water Quality Control Plan for the Lahontan Region (Basin Plan). The Antelope Valley portion of the AVL is located within the jurisdictional boundaries of the Lahontan Regional Water Quality Control Board (LRWQCB) (Region 6) South Basin. The LRWQCB develops and enforces water quality objectives and implementation plans that safeguard the quality of water resources in its region. Its duties include developing “basic plans” for its hydrologic area, issuing waste discharge requirements, taking enforcement action against violators, and monitoring water quality. In March 1995, a Water Quality Control Plan for the Lahontan Region, North and South Basins (Basin Plan), adopted by the LRWQCB, took effect. The Basin Plan incorporates language from and replaces three earlier plans: the Lahontan Regional Board’s 1975 North and South Lahontan Basin Plans, as amended through 1991, and the State Water Resources Control Board’s 1980 Lake Tahoe Basin Water Quality Plan, as amended through 1989. Chapter 4.3, Stormwater Runoff, Erosion, and Sedimentation, of the Basin Plan provides the LRWQCB requirements for the control of problems related to stormwater discharges, erosion and sedimentation within the region.

Municipal Separate Storm Sewer System (MS4). The MS4 permit, issued by the LARWQCB, requires permittees to implement a Standard Urban Stormwater Management Plan that designates BMPs that must be used in specified categories of development to treat stormwater

runoff, control peak flow discharges, and reduce post-project discharge of pollutants from stormwater conveyance systems.

LARWQCB Order No. R4-2012-0175 (as amended by State Water Board Order No. WQ 2015-0075 and LARWQCB Order No. R4-2012-0175-A01, NPDES Permit No. CAS004001, Los Angeles MS4 NPDES permit) was originally adopted on November 8, 2012. This MS4 permit regulates the Los Angeles County Flood Control District (LACFCD), the County of Los Angeles and 84 incorporated cities within the LACFCD (including the cities in the Affected Area) for discharges of stormwater and urban runoff from MS4s, also called storm drainage systems. The discharges flow to water courses within the LACFCD and into receiving waters of the Los Angeles Region.

The MS4 NPDES permit requires new development and redevelopment projects to have post-construction controls to manage pollutants, pollutant loads, and runoff volume emanating from the project site. New development and redevelopment projects are also required to implement hydrologic control measures to minimize changes in post-development hydrologic stormwater runoff discharge rates, velocities, and durations. This shall be achieved by maintaining pre-project stormwater runoff flow rates and durations.

The MS4 NPDES permit also requires municipalities to develop and implement low impact development (LID) ordinances. Local LID ordinances are incorporated into each cities' Municipal Codes.

Antelope Valley Integrated Water Management Plan. The Antelope Valley Integrated Water Management Plan includes a description of the region and participants, regional objectives and priorities, water management strategies, implementation, impacts and benefits, data management, financing, stakeholder involvement, relationships to local planning, and state and federal coordination.

3.12.1.4 Local Regulations

City of Los Angeles

General Plan. The City of Los Angeles General Plan includes policies relevant to water quality within the Conservation and Safety Elements related to water resources, water quality, and flood hazards.[1,2] Relevant Conservation and Safety Element objectives and policies related to hydrology and water quality are shown in **Table 3.12-1**.

[1]City of Los Angeles. 1996. *Safety Element of the Los Angeles City General Plan*. Available: https://planning.lacity.org/odocument/31b07c9a-7eea-4694-9899-f00265b2dc0d/Safety_Element.pdf. Accessed: April 29, 2021.
[2]City of Los Angeles. 2001. *Conservation Element of the City of Los Angeles General Plan*. Adopted September 26. Available: https://planning.lacity.org/odocument/28af7e21-ffdd-4f26-84e6-dfa967b2a1ee/Conservation_Element.pdf. Accessed: April 29, 2021.

Table 3.12-1: City of Los Angeles Conservation and Safety Element of the General Plan

Objective/Policy	Description
Objective	Protect the coastline and watershed from erosion and inappropriate sedimentation that may or has resulted from human actions.
Policy 1	Support legislation and efforts to secure and retain federal funding for Pacific coast beach protection and renourishment programs.
Policy 2	Continue to prevent or reduce erosion that will damage the watershed or beaches or will result in harmful sedimentation that might damage beaches or natural areas.
Objective	Protect and enhance the diversity and sustainability of the natural ecologies of the Santa Monica and San Pedro bays, including the bay fishery populations.
Policy 1	Continue to reduce pollutant discharge into the bays from both natural and human sources.
Policy 2	Continue to support legislation and to seek funding and legislation intended for bay and coastal protection, enhancement and habitat restoration.
Policy 3	Continue to support and/or participate in programs to clean bay sediments and/or mitigate potentially harmful effects of contaminants in the sediments and waters of the bays.
Safety Goal 1	A city where potential injury, loss of life, property damage and disruption of the social and economic life of the City due to fire, water related hazard, seismic event, geologic conditions or release of hazardous materials disasters is minimized.
Safety Policy 1.1.1	Coordination: Coordinate information gathering, program formulation and program implementation between City agencies, other jurisdictions and appropriate public and private entities to achieve the maximum mutual benefit with the greatest efficiency of funds and staff.
Safety Policy 1.1.4	Health/environmental protection: Protect the public and workers from the release of hazardous materials and protect City water supplies and resources from contamination resulting from accidental release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation.
Safety Policy 1.1.5	Risk reduction: Reduce potential risk hazards due to natural disaster to the greatest extent feasible within the resources available, including provision of information and training.
Safety Policy 1.1.6	State and federal regulations: Assure compliance with applicable state and federal planning and development regulations, e.g., Alquist-Priolo Earthquake Fault Zoning Act, State Mapping Act and Cobey-Alquist Flood Plain Management Act.

SOURCE: City of Los Angeles*, Conservation Element*, 2001, *Safety Element: An Element of the General Plan*, 1996.

Stormwater Ordinance Los Angeles Municipal Code 64.70. In 1998, the City of Los Angeles passed a stormwater ordinance (Los Angeles Municipal Code 64.70), which prohibits the entry of illicit discharges into the municipal storm drain system and gives the City of Los Angeles local legal authority to enforce the NPDES permit and take corrective actions with serious offenders. Any commercial, industrial, or construction business found discharging waste or wastewater into the storm drain system may be subject to legal penalties. In 2011, the City of Los Angeles passed

an LID ordinance that amends Los Angeles Municipal Code 64.70 and requires development and redevelopment projects to mitigate runoff in a manner that captures rainwater at its source utilizing natural BMPs such as rain barrels, permeable pavement, storage tanks, and infiltration swales.

City of Glendale

In 2015, the City of Glendale passed Ordinance No. 5857 to amend its City Code to comply with requirements of the updated 2012 NPDES permit. This ordinance adopts the County of Los Angeles Department of Public Works LID Standards Manual as the City of Glendale LID Standards Manual.

City of Burbank

In 1989, the City of Burbank passed Ordinance 3163 to amend its City Code to adopt the CEQA Guidelines. Additionally, the City of Burbank NPDES Permit requirements are referenced in the Burbank Municipal Code, Title 9, Chapter 3, Section 401.

City of Santa Clarita

Enhanced Watershed Management Program. The City of Santa Clarita, Los Angeles County, and LACFCD jointly developed an Enhanced Watershed Management Program (EWMP), which allows collaboration among agencies on multi-benefit regional projects to retain both non-stormwater and stormwater runoff, as well as to facilitate flood control and increase water supply. Nearly 90 percent of the Upper Santa Clara River Watershed (USCRW) is open space with approximately 88 percent being undeveloped land and contains one of the last remaining natural rivers in Southern California. The USCRW presents unique challenges for maintaining the balance of population growth, conservation of endangered species habitat, floodplain management, water supply, and wildlife corridors that depend on the Santa Clara River and its floodplain. The EWMP has been developed to protect these beneficial uses of the USCRW receiving waters, while recognizing these unique characteristics.

City of Santa Clarita Stormwater and Urban Runoff Pollution Control. Section 10.04.070 (Construction Activity Stormwater Measures) of Chapter 10.04 of the Santa Clarita Municipal Code (SCMC) identifies specific requirements related to water runoff and discharges during construction within the City.

City of Santa Clarita Floodplain Management Ordinance. The City of Santa Clarita participates in the National Flood Insurance Program (NFIP). The intention of the NFIP is to lessen the financial devastation caused by flooding in communities across the United States. It is a voluntary program based on a mutual agreement between the Federal Emergency Management Agency (FEMA) and the local community. Participation in the program makes federally backed flood insurance available to City residents and allows them to obtain direct federal relief following declared flood disasters (City of Santa Clarita, 2020). In cooperation with FEMA, the City has adopted a Floodplain Management Ordinance (Chapter 10.06 of the SCMC), which governs development in the City's floodplains.

In order to remain an NFIP community, the City must regulate development in its flood hazard areas per the requirements of the Floodplain Management Ordinance along with other various technical documents published by FEMA.

City of Santa Clarita Stormwater Mitigation Plan Implementation. Chapter 17.95 of the SCMC identifies certain requirements for post-construction stormwater activities for development projects to comply with the NPDES and MS4 permits. This chapter requires that each project develop and implement a mitigation plan to lessen the water quality impacts of development by using smart growth practices and BMPs that integrate LID design principles to mimic pre-development hydrology conditions through infiltration, evapotranspiration, rainfall harvest, and use.

City of Palmdale

General Plan. The City of Palmdale General Plan Safety Element expresses the goal to "minimize danger and damage to public health, safety, and welfare resulting from natural hazards" (Goal S1). To this end, it is the City's objective to minimize hazards associated with flood plains in the area (Objective S1.2).

City of Lancaster

General Plan. The City of Lancaster General Plan includes the following objectives related to Hydrology and Water Quality:

> Objective 3.5 Preserve land resources through the application of appropriate soils management techniques and the protection and enhancement of surrounding landforms and open space.
>
> Objective 4.2 Minimize the potential for loss of life, physical injury, property damage, and social disruption resulting from a 100-year flood.

3.12.2. Existing Setting

3.12.2.1 Regional Hydrology

The AVL traverses portions of the Los Angeles River watershed, the Santa Clara River watershed, and the Antelope Valley drainage basin. Generally, the portion of the AVL within the City of Los Angeles is within the Los Angeles River watershed, the portion within the Santa Clarita Valley is within the Santa Clara River watershed, and the portion within the Antelope Valley is within the Antelope Valley Drainage Basin.

The Los Angeles River watershed covers approximately 824 square miles and is one of the largest watersheds in the region extending from the Santa Susana Mountains on the west to the San Gabriel Mountains on the east, and from the Simi Hills to the north down to the Santa Monica Mountains and south through the Los Angeles Basin. The Los Angeles River is 55 miles long and is mostly concrete-lined for flood control purposes though there are sections of the river in the San Fernando Valley that is soft bottomed at the Sepulveda Flood Control Basin. Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions

of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel and Verdugo Wash (both drain the Verdugo Mountains).

The Santa Clara River watershed covers 1,634-square miles and extends from the Pacific Ocean in Ventura County eastward to the San Gabriel Mountains. The main channel of the Santa Clara River is the last major undammed river system in Southern California. The 100-mile long river flows westward from its headwaters near the Town of Acton through the City of Santa Clarita and continues westward to the Pacific Ocean. Large portions of the Santa Clara River and its tributaries remain in a natural state providing high quality riparian habitat.

The Antelope Valley Drainage Basin covers approximately 1,200 square miles of north Los Angeles County and encompasses the entirety of the Antelope Valley. Flows from numerous mountain streams and water courses in the surrounding mountains and foothills flow into the basin and pond in dry lakes along the Los Angeles County line. There are limited natural streams within the basin and the Antelope Valley is subject to unpredictable sheet flows. The only notable surface water feature within the vicinity of the AVL is Amargosa Creek which flows from north to south generally following the SR-14 corridor.

3.12.2.2 Regional Groundwater Hydrology

The AVL overlies three distinct groundwater basins: the San Fernando Valley Groundwater Basin, the Santa Clara River Valley East Groundwater Basin, and the Antelope Valley Groundwater Basin.

The San Fernando Valley Groundwater Basin was adjudicated in 1979 and includes the water-bearing sediments beneath the San Fernando Valley, Tujunga Valley, Browns Canyon, and the alluvial areas surrounding the Verdugo Mountains near La Crescenta and Eagle Rock. The basin is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. The valley is drained by the Los Angeles River and its tributaries. The water-bearing sediments of the basin consist of the lower Pleistocene Saugus Formation, Pleistocene and Holocene age alluvium. The maximum thickness of Holocene alluvium ranges from about 100 feet in the north to 400 feet in the east to about 800 feet on the west and a maximum of about 900 feet near Burbank. The Saugus Formation is 2,000 to 3,000 feet thick in the eastern and western parts of the basin and reaches a maximum thickness of 6,400 feet in the central part of the basin.

The Santa Clara River Valley East Groundwater Basin is the sole source of local groundwater for urban water supply in the City of Santa Clarita and encompasses an area of approximately 103 square miles. It is bordered by the Piru Mountains on the north, impervious rocks of the Modelo and lower Saugus formations on the west, the San Gabriel Mountains on the south and east, and the Santa Susana Mountains on the south. This basin consists of two aquifer systems, the Alluvial Aquifer and the Saugus Formation. The Alluvial Aquifer generally underlies the Santa Clara River system and its several tributaries, and reaches a maximum thickness of about 200 feet. The Saugus Formation underlies almost the entire Upper Santa Clara River area, to depths of at least 2,000 feet.

The Antelope Valley Groundwater Basin is bordered on the southwest by the San Gabriel Mountains, on the northwest by the Tehachapi Mountains, and on the east by a series of hills and buttes that generally follow the Los Angeles/San Bernardino County line. The groundwater basin is divided into twelve subbasins: Finger Buttes, West Antelope, Neenach, Willow Springs, Gloster, Chaffee, Oak Creek, Pearland, Buttes, Lancaster, North Muroc and Peerless. The AVL, and more specifically, the Lancaster Terminal Improvements site overlies the Lancaster subbasin which is the largest of the subbasins in both water use and size, and the most economically significant in terms of population and agriculture. Water is used for agricultural, urban and industrial applications. Groundwater flows to several pumping depressions and partially towards Rosamond and Rogers dry lakes. Due to agricultural, urban and industrial water use, depth to water varies widely, but in general is greatest in the south and west.

3.12.2.2 Capital Improvement Site Hydrology

Balboa Double Track Extension Site

The surface topography of the Balboa Double Track Extension site ranges from approximately 1,300 feet to 1,600 feet above mean sea level (msl). Drainage in the Balboa Double Track Extension site generally flows from north to south, running parallel to I-5. Surveys indicate the presence of seven discharge locations within the Balboa Double Track Extension Project Area. Sheet flow from the drainage areas discharge to a concrete channel that runs parallel and along the east side of the AVL track, however none of the discharge locations show signs of sheet flow erosion or obstructions.

Based on the local Flood Insurance Rate Map (FIRM), most of the Balboa Double Track Extension site lies within Flood Zone D (Area of Undetermined Flood Hazard) with small areas that fall in Flood Zones AE (1 percent chance of flooding) and X (0.2 percent chance of flooding). The Balboa Double Track Extension site contains Upper Los Angeles River soil types.[3] Recent groundwater measurements indicate that the water table is at a below-surface depth of approximately 21 feet at the Balboa Double Track Extension.[4] See Appendix J for further detail on the site's hydrology characteristics.

Canyon Siding Extension Site

The surface topography of the Canyon Siding Extension site ranges from approximately 1,200 feet to 1,300 feet above msl. Drainage in the Canyon Siding Extension site generally flows in an east-to-west direction. All of the Canyon Siding Extension site lies within the 0.2 percent recurrence interval Flood Zone X. Three sub-catchments (drainage area) were delineated to define drainage patterns, with drainage areas ranging from 18 to 793 acres. There are no existing obstructions to sheet flow drainage flowing from upstream of the right-of-way (ROW). Sheet flow drains away from developed areas to an isolated parking lot area. The Canyon Siding Extension site contains Santa Clara River soil type.[5] Recent groundwater measurements indicate that the

[3] Appendix C of the *Los Angeles County Hydrology Manual* (*LACHM).*
[4] LADWP, *Groundwater Wells Map Viewer*, https://dpw.lacounty.gov/general/wells/. Accessed February 24, 2021.
[5] Appendix C of the *Los Angeles County Hydrology Manual* (*LACHM).*

water table is at a below-surface depth of approximately 32 feet.[6] See Appendix J for further detail on the site's hydrology characteristics.

Lancaster Terminal Improvements Site

The surface topography of the Lancaster Terminal Improvements site ranges from approximately 2,335 feet to 2,360 feet above msl. Drainage in the Lancaster Terminal Improvements site flows from south to north alongside Sierra Highway. The entire site lies within the 0.2 percent recurrence interval Flood Zone X. The Lancaster Terminal Improvements site is in the Antelope River-Fremont Valleys Basin of the Armargosa Creek Tributary River where it runs northwest. The Lancaster Terminal Improvements are along the Southern Pacific Railroad. The streams in the vicinity of the Lancaster Terminal Improvements site are intermittent meaning they have full streams in wet weather. The Lancaster Terminal Improvements site is a flat developed area that runs parallel to Armargosa Creek tributary. A field evaluation and digital evaluation model (DEM) aerial drainage pattern review were used to delineate 35-acre and 260-acre sub-catchments (drainage areas). Many streams are present along roads due to the flat gradient. Sheet flow drains from south to north along railroad sides with no observed obstructions until discharging into the receiving waters. The Lancaster Terminal Improvements site contains Antelope Valley soil type.[7] Recent groundwater measurements indicate that the water table is at a below-surface depth of approximately 240 feet.[8] See Appendix J for further detail on the site's hydrology characteristics.

3.12.3 Significance Thresholds and Methodology

3.12.3.1 Significance Thresholds

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would have a significant impact related to water resources and hydrology if it would:

a) Violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality;
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:
    a. Result in substantial erosion or siltation on- or off-site;
    b. Substantially increase the rate or amount of surface runoff in a matter which would result in flooding on- or off-site;
    c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

[6] LADWP. *Groundwater Wells Map Viewer.* https://dpw.lacounty.gov/general/wells/. Accessed February 24, 2021.
[7] Appendix C of the *Los Angeles County Hydrology Manual* (*LACHM).*
[8] LADWP. *Groundwater Wells Map Viewer.* https://dpw.lacounty.gov/general/wells/. Accessed February 24, 2021.

d. Impede or redirect flood flows;

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

3.12.3.2 Methodology

This section presents the results of the Water Resources and Hydrology Technical Memorandum (Appendix J) prepared for the Proposed Project. This study provides an evaluation of potential impacts on existing drainage systems at each capital improvement site as well as peak flow potential based upon the Proposed Project's design and existing drainage characteristics. Preconstruction and post-construction drainage conditions were modeled and an assessment of the adequacy of the existing drainage flow patterns to determine whether the proposed drainage facilities meet the applicable design requirements.

3.12.4 Impact Analysis

This section includes the impact analysis, mitigation measures (if necessary), and significance after mitigation (if applicable). The potential for the Project to result in an impact to Hydrology and Water Quality. is independent of the various design options unless otherwise stated.

Impact 3.12-1) Would the Proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Construction

Less-Than-Significant Impact with Mitigation. Outfalls were identified at all three capital improvement sites. The Balboa Double Track Extension site has seven discharges into an existing drainage channel, there are two outfalls into the Santa Clara River at the Canyon Siding Extension site, and sheet flow runs off of the Lancaster Terminal Improvements site to the north. Construction of each of the capital improvements could result in a significant impact on water quality and exceed water discharge requirements if runoff from the construction site is not properly managed. Grading activities would involve the operation of heavy equipment and shallow excavations. While the potential for soil erosion is considered to be low, stormwater runoff could result in short-term erosion within areas of exposed or stockpiled soils. Furthermore, the compaction of soils as well as use of retaining walls proposed as part of the Balboa Double Track Extension and Canyon Siding Extension improvements may reduce the infiltration capacity of soils and increase runoff and erosion potential. If uncontrolled, soil materials could block storm drainage channels and cause downstream sedimentation. In addition, as discussed in Section 3.9, Hazards and Hazardous Materials, contaminated soils are anticipated to be present as a result of rail operations along the AVL as well as historic uses such as the Bermite-Whitaker site in and around the Canyon Siding Extension site. Accordingly, excavated dirt may be contaminated and surface runoff exposure to soils containing these potential contaminants could reduce the water quality of downstream receiving waters including the Los Angeles River, the Santa Clara

River, and Amargosa Creek. While it is not anticipated that groundwater will be encountered due to the depth of known groundwater basins, if encountered during construction there is potential for the groundwater to be contaminated. If not addressed properly, the extracted groundwater could substantially degrade surface water if allowed to flow into local storm drains or other surface water conveyance facilities. Therefore, without mitigation, the Proposed Project would result in a potentially significant impact related to uncontrolled contaminants entering surface waters. Mitigation Measure **WQ-1** would ensure compliance with the CGP while Mitigation Measures **WQ-3** would ensure compliance with dewatering discharge requirements in the event groundwater is encountered during excavation. Mitigation Measure **WQ-4** would ensure compliance with dewatering discharge requirements for contaminated groundwater which is potentially present in the Canyon Siding Extension site.

Operations

Less-than Significant Impact with Mitigation. AVL rail operations would contribute pollutants in concentrations and amounts that are typical for transportation facilities, including total suspended solids, metals, oils and grease, and debris. Because the AVL is an existing active rail corridor, and the Proposed capital improvements would result in minimal changes in the drainage pattern of each capital improvement site, the character and concentration of pollutants in runoff would be similar to existing conditions and the impact related to water quality standards and waste discharge requirements would be less than significant. Mitigation Measure **WQ-2** would further ensure that operation of the Proposed Project would not contribute to pollutant concentrations in violation of any applicable water quality standards or waste discharge requirements.

The proposed layover facility associated with the Lancaster Terminal Improvements would include vehicle wash facilities that would discharge wastewater into the local sewer system. If vehicle cleaning operations are not managed properly there is potential for a significant impact related to water quality standards and waste discharge requirements. The proposed layover facility is subject to the IGP (Order No. 2014-0057-DWQ), which regulates industrial discharges into municipal sewer systems. Mitigation Measure **WQ-5** would ensure compliance with the IGP requirements.

Mitigation Measures

WQ-1 During construction, Metro shall prepare a Stormwater Pollution Prevention Plan (SWPPP) in compliance with the provisions of the NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (CGP) (Order No. 2009-0009-DWQ, NPDES No. CAS000002) and any subsequent amendments (Order No. 2010-0014-DWQ and Order No. 2012-0006-DWQ), as they relate to project construction activities within the Balboa Double Track Extension, Canyon Siding Extension, and/or Lancaster Terminal Improvements sites. Construction activities shall not commence until a waste discharger identification number is received from the Stormwater Multiple Application and Report Tracking System. The contractor for each capital improvement shall implement all required aspects of the SWPPP during project construction.

WQ-2 Metro shall comply with the NPDES Waste Discharge Requirements for MS4 Discharges within the Coastal Watersheds of Los Angeles County (Order No. 2012-0175, NPDES No. CAS004001), effective December 28, 2012 (known as the Phase I Permit) and NPDES General Permit for Storm Water Discharges From Small Municipal Separate Storm Sewer Systems (NPDES No. CAS000004), as applicable. This post-construction requirement shall apply to each of the capital improvement sites. Metro shall prepare a final Low Impact Design (LID) report in accordance with the applicable local LID Manual. These include the City of Los Angeles Planning and Land Development Handbook for Low Impact Development, May 9, 2016 and the County of Los Angeles Department of Public Works Low Impact Development Standards Manual, February 2014. The LID report shall identify the required BMPs to be in place prior to project operation and maintenance.

WQ-3 In the event that groundwater is encountered during excavation, the construction contractor for each capital improvement site where groundwater is present shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0095, NPDES Permit No. CAG994004), effective July 6, 2013 (known as the Dewatering Permit) or NPDES General Permit for Limited Threat Discharges to Surface Waters (Order No. R6T-2014-009, NPDES Permit No. CAG996001), as they relate to discharge of non-stormwater dewatering wastes. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall obtain a permit from the RWQCB and/or the City of Los Angeles, respectively.

WQ-4 In the event that groundwater is encountered during excavation associated with Canyon Siding Extension, the contractor shall comply with the provisions of the General Waste Discharge Requirements for Discharges of Treated Groundwater from Investigation and/or Cleanup of VOC Contaminated Sites to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties (Order No. R4-2013-0043, NPDES Permit No. CAG914001), effective April 7, 2013 (known as the Dewatering Permit for contaminated sites), for discharge of non-stormwater dewatering wastes from contaminated sites impacted during construction. The two options to discharge shall be to the local storm drain system and/or to the sanitary sewer system, and the contractor shall require a permit from the RWQCB and/or the City of Santa Clarita, respectively.

WQ-5 Metro shall comply with the NPDES General Permit for Stormwater Discharges Associated with Industrial Activities (IGP; Order No. 2014-0057-DWQ, NPDES No. CAS000001) for demolished, relocated, or new industrial-related properties impacted by the project. This shall include preparation of industrial SWPPP(s), as applicable.

Significance of Impacts after Mitigation

Mitigation Measure **WQ-1** would ensure that contaminants from Project construction activities are managed properly to limit potential impacts on surface water from runoff and erosion. Mitigation Measure **WQ-2** would ensure that runoff and erosion from the capital improvement sites are managed following construction through the implementation of LID BMPs. Mitigation Measures **WQ-3** and **WQ-4** would ensure that if groundwater is encountered during construction, pollutants and contaminated groundwater are handled appropriately prior to release into receiving waters.

Mitigation Measure **WQ-5** would ensure compliance with the IGP, including preparation of a SWPPP specific to the proposed layover facility associated with the Lancaster Terminal Improvements. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact.

Impact 3.12-2) Would the Proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Construction

Less-Than-Significant Impact. As discussed in Section 3.7, Geology and Soils, of the Draft EIR, groundwater has the potential to be encountered during ground disturbing efforts associated with construction. Groundwater is most likely to be encountered where excavation of alluvial or bedrock material is performed during periods of high groundwater or after construction of retaining walls where drains behind the walls collect and divert groundwater. Shallow groundwater (i.e., less than 10 feet below ground surface) is not expected in any of the capital improvement sites. Furthermore, groundwater usage as part of construction of the three capital improvements would be limited such that groundwater supplies and recharge would not be affected. Therefore, impacts would be less than significant.

Operations

Less-than-Significant Impact. The Proposed Project would operate along the existing AVL corridor and would not involve any activities which would drain groundwater supplies or otherwise interfere with groundwater recharge. The Proposed Project would result in a minimal increase in impervious surfaces associated with each of the capital improvement as the Balboa Double Track Extension and the Canyon Siding Extension would be adding a second track along the existing AVL ROW and the Lancaster Terminal Improvements would add a new layover facility within an existing impervious parking lot. The Proposed Project would have no activities which would impede groundwater management of the basin. Therefore, a less-than-significant impact related to groundwater resources would result.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

Impact 3.12-3) Would the Proposed Project Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

- Result in substantial erosion or siltation on- or off-site;
- Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
- Impede or redirect flood flows?

Construction

Less-Than-Significant Impact with Mitigation. No aspect of the Proposed Project's construction would significantly alter the course of a stream or river, and impervious features associated with Project construction would be adjacent to existing development on the AVL and its stations. As a result, streams would not be substantially impacted in terms of siltation or runoff, and flood flows would be unaffected. During construction, it may be necessary for the contractor to reroute drainage around one or more construction areas, which, in turn, may concentrate runoff and/or direct it off site, thereby resulting in substantial erosion on adjacent properties, if not properly managed. This is considered a significant impact. Construction site BMPs designated for soil stabilization and sediment control including, but not limited to, temporary measures like construction entrances, a move-in/move-out, silt fences, hydraulic mulch, concrete washouts, fiber rolls, and inlet protection measures are appropriate BMPs required as part of the SWPPP to actively control sediments and stormwater discharges from the project during the construction phase, year-round.

Operations

Less-Than-Significant Impact. Due to no project features proposed in areas that could significantly affect streams, the Proposed Project would minimally increase peak flow, resulting in minimal potential hydrologic hydromodification impacts. Additionally, because the Proposed Project footprint would not significantly increase beyond the existing ROW, project operations would have less than significant impacts in terms of erosion, runoff, and flood flows. Although there is elevated erosion potential due to channel improvements under I-5, the Proposed Project would not alter the existing channel slope such that substantial erosion may occur. In addition, the minor increase in peak flows (approximately 0.3 percent) would not have a significant impact on downstream system capacity. Therefore, impacts associated with operation of the Proposed Project would be less than significant.

Mitigation Measures

See Mitigation Measures **WQ-1** and **WQ-2**.

Significance of Impacts after Mitigation

Mitigation Measures **WQ-1** and **WQ-2** would implement a construction SWPPP and Low Impact Design (LID) report which would ensure that drainage-related impacts such as erosion and

siltation would be managed appropriately. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to drainage.

Impact 3.12-4) Would the Proposed Project be located in a flood hazard, tsunami, or seiche zones, thus risk release of pollutants due to project inundation?

Less-Than-Significant Impact. None of the three capital improvements sites along the AVL are in flood zones as identified by Los Angeles County. The Water Resources and Hydrology Technical Memorandum (Appendix J) prepared for the Proposed Project modelled peak flows during 100-year and 200-year storm events. According to the Water Resources and Hydrology Technical Memorandum, peak flows are not appreciably increased in the 100-year or larger flood events and the addition of a new double track extension at the Balboa Double Track Extension Site will increase the peak flow only 0.3 percent, which results in minimal hydrologic hydromodification impacts. Because no aspect of the Proposed Project's construction or operation can increase potential flood hazards, a less-than-significant impact would occur.

Mitigation Measures

No mitigation measures are required.

Significance of Impacts after Mitigation

Less-than-significant impact.

Impact 3.12-5) Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Construction

Less-Than-Significant Impact with Mitigation. Outfalls were identified at all three capital improvement sites. The Balboa Double Track Extension site has seven discharges into an existing drainage channel, there are two outfalls into the Santa Clara River at the Canyon Siding site, and sheet flow runs off of the Lancaster Terminal Improvements site to the north. As discussed, construction of the Proposed Project would involve activities such as grading that have the potential to result in runoff that would spread contaminants into surface or groundwater supplies resulting in potentially significant impacts on water quality. Project construction would be subject to the CGP pursuant to Section 402(p) of the CWA. Mitigation Measure **WQ-1** would ensure that contaminants from Project construction activities are managed properly to limit potential impacts on surface water from runoff and erosion. Mitigation Measures **WQ-3** and **WQ-4** would ensure that if groundwater is encountered during construction, pollutants and contaminated groundwater are handled appropriately prior to release into receiving waters.

Operations

Less-Than-Significant Impact with Mitigation. No aspect of ongoing operations would be expected to obstruct implementation of a water quality control plan or sustainable groundwater management plan. The addition of a new double track extension at the Balboa Double Track Extension site will increase the peak flow only 0.3 percent, resulting in minimal potential

hydrologic hydromodification impacts. The only changes relative to existing conditions are an increase of train frequency and volume in existing rail ROW, minor increases in peak flows, and industrial sewer discharge operations associated with the proposed Lancaster Terminal Improvements. Accordingly, the Project would be subject to the IGP and the LA County MS4 NPDES permit as required by the RWQCB and pursuant to the Basin Plan. Mitigation Measures **WQ-2** and **WQ-5** would address these potential significant impacts.

Mitigation Measures

See Mitigation Measures **WQ-1** through **WQ-5**.

Significance of Impacts after Mitigation

Mitigation Measure **WQ-1** would ensure that contaminants from Project construction activities are managed properly to limit potential impacts on surface water from runoff and erosion. Mitigation Measure **WQ-2** would ensure that runoff and erosion from the capital improvement sites are managed following construction through the implementation of LID BMPs. Mitigation Measures **WQ-3** and **WQ-4** would ensure that if groundwater is encountered during construction, pollutants and contaminated groundwater are handled appropriately prior to release into receiving waters. Mitigation Measure **WQ-5** would ensure compliance with the IGP including preparation of a SWPPP specific to the proposed layover facility associated with the Lancaster Terminal Improvements. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact.

4. Other Environmental Considerations

Section 15126 of the California Environmental Quality Act (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, growth-inducing effects, and significant irreversible environmental changes are discussed in the following sections.

4.1 EFFECTS DETERMINED NOT TO BE SIGNIFICANT

Metro has determined that the Proposed Project would not have the potential to cause significant impacts related to the resource areas listed below. Similarly, there is no potential for the Proposed 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.

- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems
- Wildfire

4.1.1 Agriculture and Forestry Resources

Regulatory Framework

Federal Regulations

- The United States Bureau of Land Management (BLM)

State Regulations

- Farmland Mapping & Monitoring Program (FMMP)
- Williamson Act Farmlands

Local Regulations

- County of Los Angeles General Plan – Conservation and Natural Resources Element
- City of Los Angeles General Plan – Conservation Element
- City of Burbank General Plan – Land Use Element
- City of Santa Clarita General Plan – Conservation and Open Space Element
- City of Palmdale General Plan – Environmental Resources Element
- City of Lancaster General Plan – Land Resources Element

Existing Conditions

The Balboa Double Track Extension site lies adjacent to existing Grazing Land. However, there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance within the area of improvements.[1] The areas of disturbance are not included in the Farmland Mapping and Monitoring Program of the California Department of Conservation.[2] There are no identified agricultural resources in the areas of disturbance, nor does the Project Area contain areas zoned for agricultural use. Los Angeles County does not participate in the Williamson Act program and the areas of disturbance are not under a Williamson Act Contract.[3] There are no areas of forest land as defined in Public Resources Code (PRC) Section 12220(g) or timberland as defined in PRC Section 4526 within the areas of disturbance.

Impact a) Would the Proposed Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. Implementation of the Proposed Project would not result in the conversion of farmland to non-agricultural uses. No loss of farmland would result from the implementation of the Proposed Project. Therefore, no impact would occur during construction or operational activities.

Impact b) Would the Proposed Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The areas of disturbance are not under a Williamson Act Contract. Therefore, no impact would occur during construction or operational activities.

Impact c) Would the Proposed Project 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))?

No Impact. There are no areas of forest land or timberland within the areas of disturbance. The Proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production. Therefore, no impact would occur during construction or operational activities.

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[1] California Department of Conservation, *California Important Farmland Finder*, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed February 2021.
[2] California Department of Conservation, *Farmland Mapping & Monitoring Program*, https://www.conservation.ca.gov/dlrp/fmmp, accessed February 2021.
[3] California Department of Conservation, *The Williamson Act of 2016-17*, https://www.conservation.ca.gov/dlrp/wa/Documents/stats_reports/2018%20WA%20Status%20Report.pdf.

Impact d) Would the Proposed Project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There is no forest land identified within the areas of disturbance. The Proposed Project would not result in the loss of forest land or conversion of forest land to non-forest use. Therefore, no impact would occur during construction or operational activities.

Impact e) Would the Proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?

No Impact. There is no farmland or forestland located in the areas of disturbance. The Proposed Project would not change the existing environment in a manner that would result in the conversion of farmland or forestland to other kinds of land uses. Therefore, no impact would occur during construction or operational activities.

4.1.2 Land Use and Planning

Regulatory Framework

Federal Regulations

There are no applicable federal plans, policies, or regulations in regard to land use and planning.

State Regulations

- Sustainable Communities and Climate Protection Act of 2008 (Senate Bill [SB] 375, Chapter 728)
- California Planning and Zoning Law

Regional Regulations

- SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)
- Metro Countywide Sustainability Planning Policy & Implementation Plan
- Metro Active Transportation Strategic Plan
- Metro 2009 Long Range Transportation Plan (LRTP)
- Metro Sustainable Rail Plan
- Metro Complete Streets Policy
- Metro First/Last Mile Strategic Plan
- Metro Transit Oriented Communities Policy

Local Regulations

- City of Los Angeles General Plan – Framework Element; Land Use Element (Granada Hills – Knollwood Community Plan, Arleta – Pacoima Community Plan, Northeast Los Angeles Community Plan, Silver Lake – Echo Park – Elysian Valley Community Plan, Sun Valley – La Tuna Canyon Community Plan, Sylmar Community Plan).
- City of Los Angeles Mobility Plan 2035 (MP2035)

- Los Angeles County General Plan 2035 – Land Use Element, Mobility Element
- City of Burbank General Plan – Land Use Element
- City of Santa Clarita General Plan – Land Use Element
- City of Palmdale General Plan – Land Use Element
- City of Lancaster General Plan

Existing Conditions

Based on parcel level data from the Southern California Association of Governments (SCAG), the capital improvement sites are located in a highly urbanized area and are surrounded by commercial, industrial, institutional, open space, residential, transportation, and vacant land uses. **Table 4.1-1** shows a breakdown of the land uses within 0.5 mile of each of the capital improvement sites.

Table 4.1-1: Land Uses Within 0.5 Mile of Capital Improvement Sites

Land Use Type	Balboa Double Track Extension	Canyon Siding Extension	Lancaster Terminal Improvements
Commercial	0.0%	17.7%	18.2%
Industrial	6.7%	14.6%	7.7%
Institutional and Public Facilities	0.6%	1.3%	14.2%
Open Space and Recreation	4.1%	0.9%	4.6%
Residential	3.4%	10.6%	30.7%
Transportation, Communications, and Utilities	52.3%	4.6%	9.6%
Vacant, Under Construction, or Unknown	32.9%	50.3%	14.9%

SOURCE: Terry A. Hayes Associates Inc., 2021.

Impact a) Would the Proposed Project physically divide an established community?

Construction and Operation

No Impact. The AVL is an existing commuter rail line operated by Metrolink on ROW owned by Metro. The Proposed Project would be constructed within the existing Metro ROW adjacent to existing rail track. The Balboa Double Track Extension site and the Canyon Siding Extension site would be accommodated by existing rail ROW, and the Lancaster Terminal Improvements would construct the proposed layover facility on City of Lancaster-owned property currently used as a City parking lot. No new physical barriers would be constructed such that an established community would be divided by the Proposed Project and all existing grade crossings along the AVL would be maintained other than the Golden Oak Road crossing in the City of Santa Clarita and the Lancaster Boulevard crossing in the City of Lancaster. At these crossings, the Proposed Project would add an additional track to the crossing and update crossing infrastructure but access through the crossings would be maintained such that no impact to existing vehicle or pedestrian circulation would occur. Operations would continue along an existing track line for

which there are already rail crossings and easements established to connect existing communities. Therefore, no impact would occur.

Impact b) Would the Proposed Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Construction and Operation

No Impact. The Proposed Project would construct capital improvements to an existing rail line and would not introduce any new land uses to the Project Area. SCAG's 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) focuses on the need to coordinate land use and transportation decisions to manage travel demand within the region.

The Proposed Project would be compatible with the 2020-2045 RTP/SCS by increasing the AVL's daily train car capacity, which is anticipated to result in higher ridership rates and therefore, improve mobility throughout the SCAG region, a key goal of the RTP/SCS. Additionally, while minor acquisitions, easements, or temporary construction easements may be necessary at select locations to accommodate construction activities, the Proposed Project would almost entirely be constructed within existing rail or street ROW and would therefore be consistent with local land use elements and zoning. While the Lancaster Terminal Improvements would include construction of a new layover facility within the City of Lancaster-owned parking lot, the land use designation and intended use of the parking area as a transportation facility serving the Lancaster Terminal would be maintained. Therefore, no impact would occur.

4.1.3 Mineral Resources

Regulatory Framework

Federal Regulations

There are no applicable federal plans, policies, or regulations in regard to mineral resources.

State Regulations

- The Surface Mining and Reclamation Act of 1975

Local Regulations

- City of Los Angeles General Plan – Conservation Element
- City of Burbank General Plan – Open Space and Conservation Element
- County of Los Angeles General Plan – Conservation and Natural Resources Element
- City of Santa Clarita General Plan – Conservation and Open Space Element
- City of Palmdale General Plan – Environmental Resources Element
- City of Lancaster General Plan

Existing Conditions

A mineral resource is defined by the State Department of Conservation, State Mining and Geology Board, the United States Bureau of Mines, and United States Geological Survey as a concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible. In Los Angeles County, mineral resources serve various public, commercial, scientific, and recreational purposes. Local extraction sites are valuable assets used to help facilitate the continual growth of the region and economic market. Important local mineral resources include construction materials and minerals of historical significance, including precious gemstones and metals. Aggregate resources include rock, sand, and gravel, which are important for the construction and manufacturing of concrete. Petroleum resources include oil and gas deposits, which are vital for various energy uses, including transportation, heat production and electricity generation.

Impact a) Would the Proposed Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Construction

No Impact. Ground disturbing activities would be shallow and typically limited to within a few feet of the surface. Existing land uses and development do not allow for the extraction of mineral resources, and resource recovery does not occur within or directly adjacent to the rail ROW. Although there is a possibility that significant mineral resources could be located within certain areas, mining would not be feasible without interfering with rail operations. Construction activities would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Therefore, no impact would occur related to construction activities.

Operations

No Impact. Operational activities would not result in the extraction of sand, gravel, or oil resources or further preclude the extraction of such resources and would not introduce new oil districts or oil producing uses. Operational activities would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State. Therefore, no impact would occur related to operational activities.

Impact b) Would the Proposed Project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Construction

No Impact. No mineral resource recovery sites have been identified within or directly adjacent to the capital improvement sites. Construction activities would not result in the loss of availability of

a known mineral resource that would be of value to the region and the residents of the State. Therefore, no impact would occur related to construction activities.

Operations

No Impact. Operational activities would not result in the extraction of sand, gravel, or oil resources or further preclude the extraction of such resources and would not introduce new oil districts or oil producing uses. Operational activities would not result in the loss of availability of a mineral resource recovery site delineated on a local general plan, specific land or other land use plan. Therefore, no impact would occur related to operational activities.

4.1.4 Population and Housing

Regulatory Framework

Federal Regulations

The Proposed Project is not being undertaken by a federal agency or using federal funds, and therefore is not subject to Executive Order 12898 to address environmental justice. There are no applicable federal plans, policies, or regulations in regard to population and housing impacts.

State Regulations

- California Relocation Act

Regional Regulations

- SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS)
- SCAG Regional Comprehensive Plan (RCP)
- Regional Housing Needs Assessment (RHNA)

Local Regulations

- City of Los Angeles General Plan - Framework Element, Housing Element, Land Use Element (Granada Hills – Knollwood Community Plan, Arleta – Pacoima Community Plan, Northeast Los Angeles Community Plan, Silver Lake – Echo Park – Elysian Valley Community Plan, Sun Valley – La Tuna Canyon Community Plan, Sylmar Community Plan).
- City of Los Angeles Transit Oriented Communities Affordable Housing Incentive Program Guidelines
- City of Burbank General Plan – Land Use Element
- City of Santa Clarita General Plan – Housing Element
- City of Palmdale General Plan – Land Use Element
- City of Lancaster General Plan

Existing Conditions

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. SCAG has multiple planning documents related to population and housing, including the 2020-2045 RTP/SCS, Regional Comprehensive Plan, and Regional Housing Needs Assessment. The RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The Regional Comprehensive Plan is an advisory plan that addresses important regional issues like housing, traffic/transportation, water, and air quality. The RCP serves as an advisory document to local agencies in the Southern California region for their information and voluntary use for preparing local plans and handling local issues of regional significance. The Regional Housing Needs Assessment does not necessarily encourage or promote growth, but rather allows communities to anticipate growth collectively as a region and subregions that enhance quality of life, improve access to jobs, promote transportation mobility, and address social equity along with fair share housing needs.

Impact a) Would the Proposed Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Construction

No Impact. The Proposed Project would not require any right-of-way acquisitions that would impact existing housing. In addition, the Proposed Project would not construct new housing or businesses that could induce growth. Therefore, no impact would occur related to construction activities.

Operations

No Impact. Ridership on the AVL has been increasing since the implementation of the 2015 fare reduction program. Metrolink anticipates this upward trend in ridership to continue along the AVL as economic and housing growth continues in the Los Angeles basin and the suburban and outlying areas such as the City of Santa Clarita and the Antelope Valley. Accordingly, the Proposed Project is intended to serve the growing demand for commuter rail in the region by providing more frequent and reliable service between the City of Los Angeles and the Antelope Valley. The Proposed Project would not include new housing or businesses and no new stations would be provided as part of the Proposed Project such that direct or indirect induced growth in a particular location would be anticipated. Therefore, no impact would occur related to operational activities.

Impact b) Would the Proposed Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Construction

No Impact. The Proposed Project would not result in the displacement of any people, housing, or businesses. Construction would not require any right-of-way acquisitions for capital

improvements that would necessitate construction of replacement housing or relocation of existing businesses. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would operate within an existing rail ROW. No physical barriers would be introduced that would displace people or businesses. Therefore, no impact would occur related to operational activities.

4.1.5 Public Services

Regulatory Framework

Federal Regulations

- Federal Emergency Management Act (FEMA)
- Disaster Mitigation Act of 2000
- Federal Fire Safety Act (FFSA)

State Regulations

- California Fire Code, Title 24, Part 9
- Title 8 California Code of Regulations (CCR) Sections 1270 and 6773
- California Health and Safety Code
- Mutual Aid Agreements (MAA)
- California Governor's Office of Emergency Management Agency (Cal-EMA).

Local Regulations

- City of Los Angeles General Plan, Framework and Safety Elements
- Los Angeles Fire Code 2014
- City of Burbank General Plan – Safety Element
- County of Los Angeles General Plan – Public Services and Facilities Element
- City of Santa Clarita General Plan – Safety Element
- City of Palmdale General Plan – Public Services and Safety Elements
- City of Lancaster General Plan

Existing Conditions

Table 4.1-2 shows the applicable institutional and public entities providing public services to the capital improvement sites.

Table 4.1-2: Public Service Entities in the Project Area

	Balboa Double Track Extension	Canyon Siding Extension	Lancaster Terminal Improvements
Fire Services	Los Angeles Fire Department (LAFD)	Los Angeles County Fire Department (LACFD)	Lancaster Bureau of Fire

Police Services	Los Angeles Police Department (LAPD); San Fernando Police Department (SFPD)	Los Angeles Sheriff's Department (LASD)	LASD; Lancaster Bureau of Police
Schools	Los Angeles Unified School District (LAUSD)	Saugus Union School District; College of the Canyons	Lancaster School District
Parks	Los Angeles Department of Recreation and Parks	City of Santa Clarita Parks Division	City of Lancaster Parks, Recreation & Arts Department
Other Public Facilities	Los Angeles Public Library; Los Angeles County Library	Los Angeles County Library; Santa Clarita Public Library	Los Angeles County Library; United States Postal Service (USPS)

SOURCE: Terry A. Hayes Associates, Inc 2021.

There are no public schools, fire stations, police stations, parks, or other public facilities located within 0.25 mile of either the Balboa Double Track Extension site or the Canyon Siding Extension site. Within 0.25 of the Lancaster Terminal Improvements site, there is one fire station (LACFD Station 33), one police station (LASD Lancaster Station), one school facility (Antelope Valley High School District offices), and one USPS office.

Impact a) For fire protection, would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

Construction

No Impact. 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 the Proposed Project. Construction activities would not disrupt fire protection services. The Proposed Project, particularly near the Lancaster Terminal Improvements site, may require temporary sidewalk, lane, and/or road closures. Emergency vehicle access may be impeded during construction. Lane and/or road closures would be scheduled to minimize disruptions. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would not require the physical acquisition, displacement, or relocation of fire protection facilities; therefore, there would be no need to replace or physically alter existing fire protection facilities. During operations, the Proposed Project would have the potential to indirectly influence growth by stimulating new transit-orientated development near

existing stations and the development of vacant lots in the High Desert. Each jurisdiction along the AVL rail corridor has plans and policies related to fire protection services and growth accommodations. The Proposed Project would not result in additional at-grade crossings. As discussed in Section 3.1, Transportation, a typical crossing delay lasts approximately 70 seconds and the Proposed Project's increased rail service frequency would increase the frequency of delay but not lengthen the time needed for each crossing delay. Given the minimal delay time at grade crossings posed by existing and proposed Metrolink service, influence on response times would similarly be minimal. Therefore, no impact would occur related to operational activities.

Impact b) For police protection, would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

Construction

No Impact. 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 the Proposed Project. Construction activities would not disrupt police protection services. The Proposed Project, particularly near the Lancaster Terminal Improvement site, may require temporary sidewalk, lane, and/or road closures. Emergency vehicle access may be impeded during construction. Lane and/or road closures would be scheduled to minimize disruptions. The nearest local fire responders would be notified, as appropriate, of traffic control plans during construction to coordinate emergency response routing. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would not require the physical acquisition, displacement, or relocation of police facilities; therefore, there would be no need to replace or physically alter existing fire protection facilities. During operations, the Proposed Project would have the potential to indirectly influence growth by stimulating new transit-orientated development near existing stations and the development of vacant lots in the High Desert. Each jurisdiction along the AVL rail corridor has plans and policies related to police services and growth accommodations. The Proposed Project would not result in additional at-grade crossings. As discussed in Section 3.1, Transportation, a typical crossing delay lasts approximately 70 seconds and the Proposed Project's increased rail service frequency would increase frequency delay but not lengthen the time needed for each crossing delay. Given the minimal delay time at grade crossings posed by existing and proposed Metrolink service, influence on response times would similarly be minimal.

Impact c) For schools, would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

Construction

No Impact. 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 the Proposed Project. Construction activities would not disrupt existing schools as no schools have been identified adjacent to the capital improvement sites. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would not require the physical acquisition, displacement, or relocation of school facilities; therefore, there would be no need to replace or physically alter existing school facilities. The Proposed Project would have the potential to indirectly influence growth by stimulating new transit-orientated development near existing stations and the development of vacant lots in the High Desert. Each jurisdiction along the AVL rail corridor has plans and policies related to school facilities. Operational activities would not increase the use of school facilities such that unplanned substantial physical deterioration of the facility would occur or be accelerated. Therefore, no impact would occur related to operational activities.

Impact d) For parks, would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

Construction

No Impact. The Proposed Project would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities. No parks or recreational facilities have been identified adjacent to the capital improvement sites. Additionally, construction would not increase use of the 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. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would be constructed and would operate within the AVL ROW and would not impact parks nor have long-term effects. In addition, no park or recreational facility

has been identified adjacent to the capital improvement sites. The Proposed Project would not require the physical acquisition, displacement, or relocation of park facilities; therefore, there would be no need to replace or physically alter existing park facilities. Indirectly, the Proposed Project would increase access to parks and recreational facilities, which may result in increased usage of these facilities. However, local residents are the primary users of parks and other recreational facilities along the corridor and the Proposed Project would not induce a substantial number of new visitors such that new or physically altered park facilities would be required to meet demand. Therefore, no impact would occur related to operational activities.

Impact e) For other public facilities, would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives.

Construction

No Impact. 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 the Proposed Project. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would not require the physical acquisition, displacement, or relocation of libraries or other public facilities; therefore, there would be no need to replace or physically alter existing libraries or other public facilities. Indirectly, the Proposed Project could increase access to facilities, which may result in increased usage of these facilities. However, local residents are the primary users of these facilities within the corridor and the Project would not induce a substantial number of new visitors such that new or physically altered parks, libraries or other public facilities would be required to meet demand. Therefore, no impact would occur related to operational activities.

4.1.6 Recreation

Regulatory Framework

Federal Regulations

There are no applicable federal plans, policies, or regulations in regard to mineral resources.

State Regulations

- Quimby Act

Local Regulations

- City of Los Angeles General Plan – Open Space Element

- City of Burbank General Plan – Open Space and Conservation Element
- City of Santa Clarita General Plan – Conservation and Open Space Element
- County of Los Angeles General Plan – Parks and Recreation Element
- City of Palmdale General Plan – Parks, Recreation, and Trails Element
- City of Lancaster General Plan

Existing Conditions

Parkland and recreational facilities include local and regional parks, recreation centers, ballfields and other sports pitches, golf courses, public swimming facilities, tennis courts, running tracks, equestrian facilities, recreational bike paths, and open space used for recreational and educational purposes, or for the preservation of natural resources. There are many recreational facilities located along the 76.6-mile rail corridor. Three recreational facilities were identified within 0.5 mile of the capital improvement sites and analyzed for potential impacts, including Duane R Harte Park within 0.5 mile of the Canyon Siding Extension site and the American Heroes Park and Jane Reynolds Park within 0.5 mile of the Lancaster Terminal Improvements site.

Impact a) Would the Proposed Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Construction

No Impact. The Proposed Project would not require the physical acquisition, displacement, or relocation of parks or other recreational facilities during construction. No parks or recreational facilities have been identified adjacent to the capital improvement sites. 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. Construction activities would not 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. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project does not include residential or commercial uses that would result in increased use of parks and recreational facilities, and therefore operational activities would not directly lead to the substantial physical deterioration of parks and recreational facilities. An indirect impact may occur because access to parks and other recreational facilities would be increased as a result of the Proposed Project. It is not anticipated that the Proposed Project would induce a substantial number of new visitors to parks and recreational facilities.

The Proposed Project may require additional employees associated with more frequent rail service. The number of new jobs would be minimal, and a substantial employment base and residential population currently exists in the region to accommodate the potentially small increase in new jobs. During operations, the Proposed Project would have the potential to indirectly

influence growth by stimulating new transit-orientated development near existing stations and the development of vacant lots in the High Desert. Each jurisdiction along the AVL rail corridor has plans and policies related to the existing and future availability of recreational facilities. The Proposed Project would be consistent with the recreation management goals of each of the affected jurisdictions by providing mobility improvements and connections to activity centers where local jurisdictions have planned for growth to be focused. Operational activities would not increase the use of existing neighborhood and regional parks or other recreational facilities such that unplanned substantial physical deterioration of the facility would occur or be accelerated. Therefore, no impact would occur related to operational activities.

Impact b) Does the Proposed Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Construction

No Impact. The Proposed Project does not include any recreational facilities, nor would it require the construction or expansion of recreational facilities. The Proposed Project would not include the construction of residential uses or approval of a tentative map or parcel map, which would require the construction of new recreational facilities in accordance with the Quimby Act of 2015. Construction workers are unlikely to utilize local parks and are more likely to utilize parks near their places of residence. Furthermore, construction jobs are temporary in nature and the employment opportunities resulting from construction are not anticipated to result in population growth that would necessitate the need for more recreational facilities. Construction activities would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project does not include residential or commercial uses that would result in increased use of parks and recreational facilities and the need for new parks and recreational facilities. Indirectly, the Proposed Project would increase access to parks and recreational facilities, which may result in increased usage of these facilities. However, it is not anticipated that the Proposed Project would induce a substantial number of new visitors to parks and recreational facilities as the AVL primarily serves commuters who make home-to-work trips rather than recreational trips. As such, the Proposed Project would not result in the need for construction or expansion of recreational facilities which would have a physical effect on the environment. Operational activities would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Therefore, no impact would occur related to operational activities.

4.1.7 Utilities and Service Systems

Regulatory Framework

Federal Regulations

- Clean Water Act (CWA)

State Regulations

- State Water Code
- The California Integrated Waste Management Act of 1989 (AB 939)
- Urban Water Management Planning Act

Regional Regulations

- Metropolitan Water District of Southern California (MWD) Regional Urban Water Management Plan (RUWMP)
- MWD Integrated Regional Plan (IRP)

Local Regulations

- Los Angeles Department of Water and Power (LADWP) Urban Water Management Plan (UWMP)
- Los Angeles County Sanitation District (LACSD) Sewer System Management Plan (SSMP)
- City of Santa Clarita Integrated Solid Waste Management Program
- City of Los Angeles Bureau of Sanitation (LABS) Strategic plan

Existing Conditions

The water supply system for the Proposed Project is operated and maintained by LADWP, Los Angeles County Waterworks District (LACWD), and Santa Clarita Valley Water (SCVW). Wastewater in the capital improvement sites flows through infrastructure maintained by LACSD, Santa Clarita Valley Sanitation District (SCVSD), and the Lancaster Sewage System. Wastewater is collected through the sewage systems and then processed in the Saugus and Lancaster Wastewater Reclamation Plants. Electricity is provided to the Balboa Double Track Extension site by LADWP and to the Canyon Siding Extension and Lancaster Terminal Improvements sites by Southern California Edison. Solid waste generated by the capital improvement sites would be disposed of by Waste Management to the Antelope Valley Recycling & Disposal Facility. Telecommunications is provided to the Project Area by Frontier Communications and Spectrum Communications.

Impact a) Would the Proposed Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Construction

Less-Than-Significant Impact. Utility companies have not been contacted at this time in the planning process. During Advanced Conceptual Engineering, the Project team would coordinate with utility companies to request information. These companies would be contacted to ensure they are aware of the Proposed Project and provide mark-ups, as-builts or confirmation of owner

exhibits. A utility composite basemap would be developed to outline the utilities within the Project boundary. The basemap would be used to identify conflict locations with Proposed Project work and existing utility facilities. Each utility company would need to be contacted on a periodic basis to determine if there are any new plans for their facilities. The utility composite basemap would be updated as new information becomes available.

Utility coordination meetings would be set up with each utility company with potentially affected facilities to help determine if relocation would be required or the facility could be protected-in-place. The utility coordination meetings would help to ensure all the utility companies are engaged early during project development. Preliminary relocation concepts would be developed and presented to each utility owner with affected facilities. Utility agreements would be finalized to ensure the designs are prepared by third party utility owners.

Water Facilities. The layover facility proposed as part of the Lancaster Terminal Improvements site would require a new water line which would be extended from Lancaster Boulevard to serve train wash operations. Construction activities associated with the extension of the water line would be consistent with typical utility relocation activities and of a similar intensity as those associated with the construction of the layover facility. Water appurtenances such as fire hydrants and water meters could be relocated and/or adjusted to accommodate project elements within the Lancaster Terminal Improvement site. These facilities would be relocated in close proximity to existing facilities, typically within a few feet of existing locations. Relocations would require minimal ground disturbance and would be finished within a few days. Construction activities would not require the construction or relocation of water facilities which could cause significant environmental effects. Therefore, a less-than-significant impact would occur related to construction activities.

Wastewater Treatment or Storm Water Drainage Facilities. The layover facility proposed as part of the Lancaster Terminal Improvements would require a new sewer connection that would be extended to Lancaster Boulevard to serve train wash operations at the proposed layover facility. Similar to the water line, construction activities associated with the extension of the water line would be consistent with typical utility relocation activities and of a similar intensity as those associated with the construction of the layover facility. Construction activities associated with all of the capital improvements, such as earthwork, could result in increased erosion. In addition, the Proposed Project could require minor modifications to storm drains, particularly near the Lancaster Terminal. Catch basins, manholes and to a certain extent laterals may be relocated and/or adjusted where conflicts exist. These modifications would not include culvert widening or conversion of open channels to close conduits and drainage patterns would remain approximately the same as existing conditions. Construction activities would not alter the course of any streams or rivers. Construction activities would not require the construction or relocation of wastewater treatment or storm water facilities which could cause significant environmental effects. Therefore, no impact would occur related to construction activities.

Electric Power Facilities. The Proposed Project would not require new or relocated distribution infrastructure such as transmission lines from power facilities and transformers. The Lancaster Terminal station would receive power from existing electricity lines. Metrolink trains are not electrically powered and would not require a new source of electrical power. The Proposed Project

would not require the construction or relocation of electric power facilities which could cause significant environmental effects. Therefore, no impact would occur related to construction activities.

Natural Gas Facilities. The Proposed Project would not require new natural gas facilities. The majority of the Proposed Project would be constructed in the existing ROW and no natural gas facilities have been identified in the construction zone outside of the ROW. At this time, no natural gas lines have been identified that would require relocation. Therefore, construction activities would not require the construction or relocation of natural gas facilities which could cause significant environmental effects. Therefore, no impact would occur related to construction activities.

Telecommunication Facilities. The Proposed Project would not require new telecommunication facilities. The majority of the Proposed Project would be constructed in the existing ROW and no telecommunication facilities have been identified in the construction zone outside of the ROW. Therefore, no impact would occur related to construction activities.

Operations

No Impact. This potential impact relates to significant environmental effects associated with the construction or relocation of utilities. There is no nexus for assessing the potential for operational impacts. Therefore, no impact would occur related to operational activities.

Impact b) Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Construction

No Impact. The Proposed Project would use water during construction activities (e.g., for dust control). This short-term use would require minimal water supplies when compared to regional water use associated with land use developments. Construction-related water use would not necessitate new water deliveries to the region. Therefore, no impact would occur related to construction activities.

Operations

Less-Than-Significant Impact. Long-term water usage associated with the Proposed Project would consist of train wash operations at the layover facility proposed as part of the Lancaster Terminal Improvements. Water usage associated with train wash operations would be minor and LACWD would have adequate supply to serve the proposed layover facility. Therefore, a less-than-significant impact would occur related to operational activities.

Impact c) Would the Proposed Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Construction

No Impact. The Proposed Project would generate wastewater during construction through the use of temporary worker restrooms. The Proposed Project would utilize the existing construction worker pool in the Los Angeles County as opposed to importing new workers that would increase wastewater generation. In addition, wastewater generation would be negligible in relation to the size and capacity of the wastewater treatment system and would not overburden the system. Therefore, no impact would occur related to construction activities.

Operations

No Impact. As discussed, the Proposed Project would generate modest amounts of wastewater. Trains and stations would have restrooms. The minimal generation of wastewater would have no potential to affect capacity at treatment facilities. Therefore, no impact would occur related to operational activities.

Impact d) Would the Proposed Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Construction

No Impact. The Proposed Project would require the removal of soil, asphalt and concrete to accommodate various construction activities, including station platform construction and curb cuts. The anticipated amount of construction debris has not been estimated at this time in the planning process. Regardless, 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, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project does not include a direct operational source of solid waste. Indirectly, solid waste would be generated by transit users. Similar to existing conditions, trains and stations would include waste bins that would be emptied at least one time per week. The minimal solid waste collected at trains and stations would have no potential to affect landfill capacity of solid waste reduction goals. Therefore, no impact would occur related to operational activities.

Impact e) Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction

No Impact. The Proposed Project would be required to comply with all applicable federal, state, and local statutes and regulations pertaining to solid waste disposal. There is no element of construction activities that would be outside of compliance. Therefore, no impact would occur related to construction activities.

Operations

No Impact. The Proposed Project would be required to comply with all applicable federal, state, and local statutes and regulations pertaining to solid waste disposal. There is no element of operational activities that would be outside of compliance. Therefore, no impact would occur related to operational activities.

4.1.8 Wildfire

Regulatory Framework

Federal Regulations

- National Fire Plan

State Regulations

- California Fire Code
- California Public Resources Code
- California Strategic Fire Plan

Local Regulations

- Los Angeles County Operational Area Emergency Response Plan
- Los Angeles County Fire Department, 2020 Strategic Fire Plan
- Los Angeles County Fuel Modification Standards
- City of Los Angeles General Plan – Safety Element
- City of Burbank General Plan – Safety Element
- City of Santa Clarita General Plan – Safety Element
- City of Palmdale General Plan – Safety Element
- City of Lancaster General Plan

Existing Conditions

The capital improvement sites are susceptible to wildland fires due to proximity to varied terrain, vegetative fuel composition, and the region's weather patterns. The Balboa Double Track Extension site and Canyon Siding Extension site are located within Very High Fire Hazard Severity Zones (VHFHSZ). The California Department of Forestry and Fire Protection (CAL FIRE) uses FHSZs to classify anticipated fire-related hazards for the entire state and includes classifications for State Responsibility Areas (SRAs), Local Responsibility Areas, and Federal Responsibility Areas. Fire and emergency services would be provided to the capital improvement sites by the Los Angeles Fire Department (LAFD) and Los Angeles County Fire Department (LACFD).

The Proposed Project would operate near several emergency/disaster routes, including Interstate 5 and the Sierra Highway near the Balboa Double Track Extension, Soledad Canyon Road near the Canyon Siding Extension and Avenue J, Avenue I, and Division Street in the City of Lancaster. In addition, the rail ROW is identified as an emergency route in the City of Lancaster and at the Canyon Siding Extension.[4] Los Angeles County and each of the cities affected by the Proposed Project have developed emergency response plans.

Impact a) Would the Proposed Project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The Proposed Project would not impede public access to emergency/disaster routes and would not interfere with an adopted emergency response plan or emergency evacuation plan, including the Los Angeles County Operational Area Emergency Response Plan. Construction activities limited to the areas of improvement would not interfere with emergency plans on nearby surface streets. Operating conditions would be similar to existing conditions in terms of emergency routes and would also not interfere with evacuations. Therefore, no impact would occur related to construction or operational activities.

Impact b) Would the Proposed Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The Proposed Project does not include a land use development with occupants (e.g., residential or commercial developments). Trains are mobile vehicles that can travel to avoid rider and driver exposure to wildfire risk. There is no potential for the Proposed Project to expose people to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire. Therefore, no impact would occur related to construction or operational activities.

[4] Los Angeles County Department of Public Works, *Disaster Route Maps,* https://dpw.lacounty.gov/dsg/DisasterRoutes/city.cfm, accessed February 2021.

Impact c) Would the Proposed Project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The Proposed Project would not require the installation or maintenance of new infrastructure such as roads, fuel breaks, emergency water sources, power lines, or other utilities that may exacerbate fire risk. Construction activities associated with the installation of tracks, ancillary facilities and the Lancaster Terminal Improvements may require the relocation of some utilities. Such activities would occur in previously disturbed areas and would not exacerbate fire risk and would not result in temporary or ongoing impacts to the environment. In addition, the proposed Lancaster Terminal Improvements would include installation of a permanent fueling facility at the layover facility which may include a fuel storage tank. The fueling facility would be designed in accordance with SCRRA design criteria and would be located within an urbanized portion of the City of Lancaster posing limited risk of wildfire as the area is fully developed. Therefore, no impact would occur related to construction or operational activities.

Impact d) Would the Proposed Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The topography at the Lancaster Terminal is flat and not located near a body of water. The station area is not prone to downslope or downstream flooding or landslides. The Balboa Double Track Extension and Canyon Siding Extension would be located near elevated topography in the form of low hills adjacent to the capital improvement sites. It is possible that the areas could be affected by downslope or downstream flooding or landslides. However, the effect would not be exacerbated beyond the risk to the existing tracks. While the Proposed Project would result in a moderate increase in impervious ground coverage, the Proposed Project construction would be in compliance with a project-specific SWPPP as well as the Construction General Permit under NPDES and would not affect drainage patterns within the capital improvement sites. Additionally, the Proposed Project would result in no potential hydrologic hydromodification impacts. Accordingly, the Proposed Project would not exacerbate downslope or downstream flooding or landslides along the AVL rail corridor. Therefore, no impact would occur related to construction or operational activities.

4.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

Section 15216.2(b) of the CEQA Guidelines requires EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Sections 3.1 through 3.12 of this EIR provide a detailed analysis of all significant environmental impacts related to the project. These sections identify feasible mitigation measures, where available, that could avoid or reduce significant impacts and determine whether the mitigation measures would reduce these impacts to a less than significant level. Chapter 5.0, Cumulative Impacts, of this EIR identifies the significant cumulative impacts resulting from the combined impacts of the project and related projects considered in the cumulative analysis.

If a specific impact in either the project or cumulative analysis cannot be fully reduced to a less than significant level, it is considered a significant and unavoidable impact. Implementation of the proposed project would result in significant and unavoidable impacts related to construction noise and vibration. The following impacts would be significant and unavoidable even after the implementation of mitigation measures:

- Operation of the Project would conflict with the South Coast Air Quality Management District (SCAQMD) 2016 Air Quality Management Plan (AQMP) as the Project would generate emissions of nitrogen oxides (NO_X) that would exceed SCAQMD regional thresholds.
- Operation of the Project would generate emissions of nitrogen oxides (NO_X) that would exceed the SCAQMD regional thresholds. While no mitigation is available to address NO_X emissions from Metrolink diesel locomotives, Metrolink is studying ways to reduce emissions throughout its fleet including transitioning to renewable diesel fuel and new propulsion technologies with the ultimate aspirational goal of zero emissions trains.
- Construction and operation of the Project would influence the regional GHG emissions inventory through direct emissions associated with diesel fuel consumption from rail propulsion resulting in a net increase in greenhouse gas emissions. While no mitigation is available to address this net increase, Metrolink is studying ways to reduce emissions throughout its fleet with the ultimate GHG reduction target of reducing total fleetwide operational emissions by 50 percent by 2030.
- Construction activities associated with each of the three capital improvements would result in increases in noise levels that would exceed local significance thresholds. While mitigation measures would likely reduce noise impacts associated with the Canyon Siding Extension construction to less-than-significant in the City of Santa Clarita, higher noise level exceedances associated with the Balboa Double Track Extension in the City of Los Angeles and the Lancaster Terminal Improvements in the City of Lancaster may not be reduced below applicable significance thresholds by mitigation.
- Construction activities associated with each of the three capital improvements would result in vibration levels that would exceed Federal Transit Administration (FTA) annoyance thresholds. While mitigation would likely reduce vibration impacts associated with the Canyon Siding Extension construction to less-than-significant, mitigation may not reduce vibration impacts associated with the Balboa Double Track Extension or the Lancaster Terminal Improvements below impact FTA annoyance impact thresholds.

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

4.3 GROWTH-INDUCING IMPACTS

Section 15126.2(d) of the CEQA Guidelines requires that the EIR consider growth-inducing impacts of the Proposed Project. Growth-inducing impacts are characteristics of a project that could directly or indirectly foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. According to the CEQA Guidelines, such projects include those that would remove obstacles to population growth (e.g., a major expansion of a wastewater treatment plant). In addition, as set forth in the CEQA Guidelines, increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects.

Projects that are growth-inducing are typically located in more isolated or underdeveloped areas because these areas are more likely to require the additional infrastructure (e.g., housing, roads, utilities, schools) to support any growth that would accompany the project. Generally, these impacts are considered significant if a project would directly or indirectly lead to substantial population or employment growth in the project area that would exceed growth projections and planned capacities, or otherwise lead to a degradation of environmental quality such as increased noise or air quality.

SCAG develops, refines and maintains the Southern California regional and small area socio-economic forecasting/allocation models. The projections from these models help regional and local jurisdictions with their long-range planning effort mandated by federal and state regulations, one of which is the RTP/SCS. The 2020-2045 RTP/SCS shows an estimated 11 percent increase in the population of Los Angeles County over the next two decades, to 11.674 million inhabitants by 2045. The percent increase over the same period of time for the cities that comprise the region served by the AVL (Cities of Lancaster, Palmdale, Santa Clarita, San Fernando, and Los Angeles) is estimated to be higher than for the County as a whole, at approximately 18 percent. The AVL rail corridor is anticipated to experience strong population and employment growth over the next 20 years and solutions to realize the full potential of the AVL will be crucial to support this growth.

While the Proposed Project would not directly induce substantial growth, it would have the potential to indirectly influence growth by stimulating new transit-orientated development near existing stations and the development of vacant lots in the High Desert due to the more convenient and frequent commuter rail service proposed as part of the Proposed Project. This growth may occur from the implementation of regional and local policies that encourage growth opportunities; intensification of land uses at potential station areas and along the corridor; alternatives to automobile travel; and the planning for residents, visitors, and employees within the vicinity of the existing AVL stations. The Proposed Project would be consistent with the population and housing management goals of each of the affected cities by providing mobility improvements and connections to activity centers where local jurisdictions have planned for growth to be focused.

There are a number of factors that influence growth related to transit improvements including: public policies to encourage development, station area demographics, high transit reliability and effective service and design, strong real estate market trends, assembly of parcels, and station area/neighborhood design. To the extent that the Proposed Project improves transit reliability and overall service in the region, it would incentivize some degree of development consistent with

planning efforts to develop compact communities in centralized areas that are well served by transit. The AVL rail corridor is already well served by transit and have seen some degree of transit-oriented development surrounding stations. With the implementation of the Proposed Project, the opportunities for such growth would be enhanced and facilitated while helping to reduce reliance on personal automobiles in the region. In this regard, the Proposed Project would not only support the growth management goals of the affected jurisdictions, but it would also help to reduce potential environmental impacts associated with foreseeable growth anticipated in the region. Growth that may indirectly result from implementation of the Proposed Project would not be unplanned but rather would be consistent with local and regional planning efforts to manage growth. It is not anticipated that the level of development that could be stimulated by the Proposed Project would exceed any regional growth projections given the already densely developed condition of the region served by the AVL. Potential growth inducement impacts associated with the Proposed Project would be less than significant.

4.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Guidelines Section 15126.2(d) requires a discussion of any significant irreversible environmental changes that would be caused by a proposed project should it be implemented. The CEQA Guidelines state that uses of nonrenewable resources during the initial and continued phases of a project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with a project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

Construction of the Proposed Project would entail the one-time irreversible and irretrievable commitment of nonrenewable resources, such as energy (fossil fuels used for construction equipment) and construction materials (such as lumber, sand, gravel, metals, and water). Additionally, labor and natural resources would be used to produce construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Any construction would also require a substantial onetime expenditure of both local and State funds, which are not retrievable. Land used to construct the Proposed Project is considered an irreversible commitment during the period the land is used. After construction is completed, land used for construction staging would be available for other uses. This commitment of long-term land resources is consistent with the policies of the jurisdictions along the AVL corridor to promote transit-oriented uses.

The consumption of nonrenewable resources related to the Proposed Project includes water, petroleum products, and electricity. Water would be used to control fugitive dust emissions and clean Metrolink trains. In addition, fossil fuels would be used for transporting workers and materials during construction, fuel would be used for trains and maintenance activities, and electricity would be used at stations. The consumption amount and rate of these resources would not result in significant environmental impacts or the unnecessary, inefficient, or wasteful use of

such resources, because they would increase transit use (which increases energy efficiency) and decrease automobile dependence (which uses fossil fuels).

Benefits from the Proposed Project would include improved mobility, transit accessibility, and energy and time savings. The resource commitment and consumption are considered appropriate because regional and local area residents and visitors would benefit from improved transit services, which, in turn, would result in an overall decrease in the irreversible and irretrievable commitment of nonrenewable resources. The Proposed Project would remove passenger cars from the regional roadway network, easing the increase in VMT and the usage of fossil fuels. As discussed within the Draft EIR, the Proposed Project would reduce regional VMT and reduce mobile source energy consumption. Therefore, the project can substantially decrease the irreversible and irretrievable commitment of resources.

Maintenance of Metrolink trains would primarily use household-type cleaning materials, such as detergents and cleansers. Oil, solvents, and other materials would be used for train maintenance in relatively small volumes and would be consistent with existing Metrolink operations along the AVL. Such materials are not considered acutely hazardous materials according to the National Institute of Health. There is the potential for hazardous materials/waste spills to occur; however, the storage and disposal of hazardous materials/waste will be conducted in accordance with all federal and State requirements in order to prevent or manage hazards. In the unlikely event that a spill does occur, remediation would be conducted accordingly. Therefore, there would be minimal risk of irreversible damage caused by an environmental accident associated with hazardous or acutely hazardous materials.

5. Cumulative Impacts

The California Environmental Quality Act (CEQA) Guidelines Section 15355 defines cumulative impacts as two or more individual effects resulting from a project or a number of projects that, when considered together, are considerable or will compound other environmental impacts. CEQA Guidelines Section 15130(a) requires that an EIR shall discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable." As set forth in CEQA Guidelines Section 15065(a)(3), "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. Thus, the cumulative impact analysis allows the EIR to provide a reasonable forecast of future environmental conditions to more accurately gauge the effects of multiple projects.

CEQA Guidelines Section 15130(b) further provides that the discussion of cumulative impacts reflects "the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone." Rather, the discussion is to "be guided by the standards of practicality and reasonableness and should focus on the cumulative impact to which the identified other projects contribute." Pursuant to CEQA Guidelines Section 15130(a), the analysis of cumulative impacts is only necessary if the impact is significant and the project's incremental effect is cumulatively considerable. If the lead agency determines that a project's incremental effect is not cumulatively considerable, the EIR need only briefly describe the basis for its findings.

CEQA Guidelines Sections 15130(b)(1)(A) and (B) include two methodologies for assessing cumulative impacts. One method is a list of past, present, and probable future projects producing related or cumulative impacts. The other method is 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.

5.1 METHODOLOGY

The assessment presented below addresses the potential effect of the Proposed Project in combination with the related past, present, and reasonably foreseeable probable future projects or in combination with adopted growth projections.

Except for GHG emissions, which is inherently a cumulative impact, cumulative impacts for each resource are determined by assessing whether the project, combined with past, present, and reasonably probable future projects, would result in a significant cumulative impact and, if so, whether the Proposed Project's incremental contribution to that significant impact is cumulatively considerable. GHG emissions are assessed using consistency with projections in planning documents.

Table 5-1 shows the significance of the Proposed Project's impacts on each environmental topic evaluated in the Draft EIR.

Table 5-1 – Impact Summary for Cumulative Analysis

Environmental Topic	Project-Specific Impact?	Potential for Cumulative Impact?
Agricultural and Forestry Resources Historic Resources Land Use and Planning Mineral Resources Population and Housing Public Services Recreation Utilities and Service Systems Wildfire	No Impact/Less-Than-Significant	No
Greenhouse Gas Emissions	No	Yes (Existing Cumulative Impact) – Further Assessed Below
Energy Resources	Less-Than-Significant	Yes – Further Assessed Below
Aesthetics Biological Resources Geology, Soils, and Paleontological Resources Hazards and Hazardous Materials Hydrology and Water Quality Cultural Resources Transportation Tribal Cultural Resources	Less-Than-Significant with Mitigation	Yes – Further Assessed Below
Air Quality **Noise and Vibration**	Significant and Unavoidable	Yes – Further Assessed Below

SOURCE: Terry A. Hayes Associates Inc., 2021.

5.2 RELATED PAST, PRESENT, AND REASONABLY FORESEEABLE PROBABLE FUTURE PROJECTS

Related past, present, and reasonably foreseeable probable future projects that are considered in the cumulative impact analysis are those projects that may occur in the Project vicinity within the same timeframe as the Proposed Project. Related past, present, and reasonably foreseeable probable future projects associated with the regional transportation network in the vicinity of the AVL as well as those projects within half a mile of the three capital improvements are depicted graphically in **Figure 5-1a** through **Figure 5-1c** and listed in **Table 5-2**. Related projects of particular relevance to the Proposed Project are discussed below.

Figure 5-1a: Related Past, Present, and Reasonably Foreseeable Probable Future Projects

Figure 5-1b: Related Past, Present, and Reasonably Foreseeable Probable Future Projects

Figure 5-1c: Related Past, Present, and Reasonably Foreseeable Probable Future Projects

Table 5-2: Related Past, Present, and Reasonably Foreseeable Probable Future Projects

Map ID	Project Name	Location	Description	Status
REGIONAL AND MAJOR TRANSPORTATION PROJECTS				
N/A	State Rail Plan	California	The mission of the 2018 State Rail Plan (SRP) is to provide a safe, sustainable, integrated and efficient California rail network that successfully moves people and goods while enhancing the state's economy and livability. Identified investments in the North LOSSAN and Antelope Valley service area call for providing 30-minute service frequencies between the Santa Clarita and San Fernando Valley communities and Los Angeles, to ensure connectivity and provide access to the statewide network, including HSR services.	Planning
N/A	Metrolink SCORE Program	Los Angeles County	The Metrolink SCORE Program is an initiative to upgrade the regional rail system to meet the current and future needs of the traveling public. The Program allocates $10 billion to various capital improvements including adding tracks, grade separations, and upgrading signal systems across the entire Metrolink system. The intent of the Program is to allow Metrolink trains to operate more frequently, reliably, and with more regular schedules. On the AVL, the Proposed Project service frequencies are included in the 2028 SCORE plan.	Planning/ Phase 1 Planned Completion by 2028
N/A	Union Pacific Railroad Unified Plan	Antelope Valley Line	UPRR's Unified Plan 2020 will serve as an operating plan for a phased implementation of Precision Scheduled Railroading principles in the company's entire rail network (UPRR, 2019). UPRR has expressed plans to expand their operations, including along the AVL corridor.	Beginning Implementation Phase
1	Link US	Los Angeles Union Station	The Link US project will reconfigure the rail yard at LAUS and will potentially allow regional one-seat trips from Ventura County and the Antelope Valley to San Bernardino and San Diego counties. The project will also provide capacity to meet demand from the future California High-Speed Rail project. The completion of the Link US project will help facilitate the operation of 30-minute service on the Metrolink system, including the AVL, enabling more efficient operations for all rail passenger services at LAUS.	Environmental

Map ID	Project Name	Location	Description	Status
2	LOSSAN Corridor Planning	Southern California	The LOSSAN Corridorwide Strategic Implementation establishes a 20-year service objective for the entire corridor and identifies a range of infrastructure improvements required to support this objective, including more peak period trains and faster through-express trains. The SIP anticipates increased connecting trips to the Antelope Valley, which the proposed project would help accommodate.	Planning
3	Los Angeles-Glendale-Burbank Feasibility Study	Los Angeles County	Metro staff conducted a feasibility study to consider adding additional stations in the City of Glendale and in the City of Los Angeles as well as considering opportunities to provide more frequent passenger rail service throughout the day from LAUS to the City of Burbank and ultimately to the Antelope Valley.	Planning and Feasibility
4	Doran Street and Broadway/Brazil Grade Separation	Glendale and Los Angeles	The grade separation through Salem/ Sperry Overpass and Doran Street West Connection to ultimately close the at-grade crossings at Doran Street and Broadway/Brazil.	Design Review Process
5	North Hollywood to Pasadena BRT Corridor Study	North Hollywood to Pasadena	The North Hollywood to Pasadena Transit Corridor (NoHo to Pasadena BRT) would provide 18 miles of BRT service connecting several cities and communities between the San Fernando and San Gabriel Valleys, including the City of Burbank. A BRT stop is proposed at the Downtown Burbank Metrolink Station.	Planning
6	Burbank Airport – North Station	North Hollywood Way & South Fernando Boulevard (Burbank)	The new Burbank-North Metrolink Station is approximately 1 mile from the Hollywood Burbank Airport terminal. The Burbank-Glendale-Pasadena Airport Authority operates a free shuttle bus linking the terminal to the station. The new station is within walking distance to the future airport terminal and proposed mixed-use development. It features a side platform with passenger amenities, including passenger information, a phone, ticket vending machines, seating, bike racks, and LED display boards showing train, flight, and bus arrival and departure times. Improvements adjacent to the platform include a “kiss-and-ride” drop-off area and a bus drop-off area.	Completed 2018
7	I-5 North Capacity Improvements	I-5 from SR-14 to Parker Road	Addition of HOV lane and truck lane along I-5 starting at the SR-14 interchange and ending before Parker Road.	Anticipated NOP Spring 2021

Map ID	Project Name	Location	Description	Status
8	California High-Speed Rail (HSR)	San Francisco to San Diego	The project's Phase 1 will connect San Francisco to the Los Angeles basin via the Central Valley. HSR service will connect Union Station to the Burbank Airport station and then to the Antelope Valley community of Palmdale. From the Palmdale Station, the HSR will continue north through Lancaster toward Bakersfield.	Phase 1 planned completion 2033
9	East San Fernando Valley LRT Project	San Fernando Valley	New 9-mile LRT line that will extend north from the Van Nuys Metro G Line (Orange) station to the Sylmar/San Fernando Metrolink Station.	Environmental Process
10	Brighton to Roxford Double Track Project	Burbank to Sylmar	The Brighton to Roxford Double Track Project will add a second main line track of approximately 9 miles along an existing 10.5-mile single track portion of the L.A. Metro-owned Valley Subdivision Railway in the eastern San Fernando Valley. The corridor runs between Hollywood Way in the City of Burbank and Roxford Street in Sylmar. The Brighton to McGinley Segment of the project, is a critical double track segment to enabling 30-minute bi-directional service along the AVL with quiet zone ready infrastructure at each crossing.	Design Review Process / NEPA Process
28	Brightline West	Los Angeles, CA to Las Vegas, NV	Brightline West plans to build and operate a high-speed rail line between Southern California and Las Vegas. The current plan for this service is to initially develop the corridor from Las Vegas to Victorville, and then reach the City of Palmdale utilizing the proposed High Desert Corridor. Virgin Trains is interested in reaching the Los Angeles basin from Palmdale, by utilizing the planned CHSRA alignment, or the existing AVL corridor on an interim basis.	Construction expected to start in 2021
BALBOA DOUBLE TRACK EXTENSION (Los Angeles)				
11	San Fernando Road widening	San Fernando Road at Balboa Boulevard	Widening San Fernando Road at Balboa Road (adjacent to Balboa Boulevard). Install a right-turn lane on west side of San Fernando Road at Balboa Road to provide additional capacity. This will require ROW acquisition, retaining walls and re-striping	Expected Completion 2021
12	Cascades Project Development	16325 Silver Oaks Drive	428-unit condominium complex with horse trails and a new fire station	Final Tract Map Approved 2018

Map ID	Project Name	Location	Description	Status
13	I-5 Capacity Improvements	I-5 from I-405 to SR-14	Add mixed flow, High Occupancy Vehicle (HOV), and truck lanes to I-5 between the I-405 interchange and SR-14	Planning
14	SR-14 Capacity Improvements	SR-14 from I-5 to P8	Addition of an Express Lane on SR-14 beginning at the I-5 interchange and ending in Palmdale on Avenue P8	Planned Construction After 2032
CANYON SIDING EXTENSION (Santa Clarita)				
15	Henry Mayo Newhall Memorial Hospital Specific Plan	23845 McBean Parkway	The plan proposes the development of up to 200,000 square feet of building area for a new Diagnostic and Treatment (D&T) Building, a new Inpatient Building, and clinical services, plus up to 292 new parking spaces to be added to Parking Structure No. 4 through the addition of three aboveground levels to the existing structure. The total buildout capacity of hospital and medical office space within the Specific Plan and Master Plan area would increase from 698,000 square feet to 898,000 square feet. The hospital is about 3 road miles from the project site.	City Approval Process
16	Santa Clarita Commerce Center	Railroad Avenue & Oak Ridge Drive	Previously approved industrial subdivision for up to four new industrial buildings, ranging from 32,000 to 222,000 square feet	Under Planning Review
17	Bridge to Home	Drayton Street & Springbrook Avenue	Permanent homeless shelter including three 20-bed dormitories and eight family units. Also, a two-story, approximately 18,680 square-foot building, with men/women shelter facilities, dining area, kitchen, intake offices, outdoor family plaza, and recreation area will be built.	Planning Approved
18	Magic Mountain Parkway Extension	Magic Mountain Parkway from Bouquet Canyon Avenue/Railroad Avenue to Via Princessa	Magic Mountain Parkway extension from the intersection of Bouquet Canyon/Railroad Avenue to Via Princessa: construct a new road and bridge with 3 lanes in each direction	Expected Completion 2023
19	River Village Area D	26407 Brahman Court	184 multi-family units on 32 acres	Planning Approved, Under Construction

Map ID	Project Name	Location	Description	Status
20	Neighborhood Storage	Golden Valley Road & Valley Center Drive	156,060 square-foot, three-story storage facility on 2.3 acres	Planning Approved
21	Five Knolls and Galloway Senior Housing	Five Knolls Drive & Golden Valley Road	140 age-restricted units, senior center, YMCA	Under Construction
22	Golden Triangle Apartments	20600 Golden Triangle Road	164-unit apartment complex in 9 buildings on a 20.3-acre site	Under Planning Review
23	Princessa Crossroads	Via Princessa between Golden Valley Road and Sheldon Avenue	680,000 square feet of business park/ retail and 710 residential units on a 166-acre site	Under Planning Review
24	KB Homes	17104 Provo Lane	245 single family homes. Part of the planned 1100 units described in the Specific Plan.	Under Construction
25	Jefferson Vista Canyon	17350 Humphreys Parkway, Santa Clarita	480-unit apartment community. This is the first section of residential development described in the Specific Plan. Additional residential units are planned throughout the TOC for a total of 1100 units.	Completed in 2020
26	Vista Canyon Specific Plan	Area bordering Lost Canyon Road directly south of the Santa Clara River	The Vista Canyon area was annexed to Santa Clarita in 2012. The Specific Plan contains the development plans, infrastructure plans, development regulations, design guidelines, and implementation program necessary to achieve the orderly and compatible development of Vista Canyon. It includes plans for a new Metrolink station and a large Transit Oriented Community (TOC) built around it. The plan area was previously undeveloped land located east of SR-14 and surrounded by a mix of residential and commercial uses. It is approximately 6 road miles east from the project site.	Planning, Under Construction
27	Vista Canyon Metro Station	Vista Canyon Road (proposed)	The project will construct a Metrolink Station serving the area in and around the Vista Canyon Specific Plan area. It will replace the existing Via Princessa Station about two miles to the west and will include double track and turnback track. This new station will be intermodal with a bus transfer station. Active transportation access will be included through significant extensions of the Santa Clara River Trail.	Under Construction, Expected Completion in 2022

Map ID	Project Name	Location	Description	Status
LANCASTER TERMINAL IMPROVEMENTS (Lancaster)				
29	Lancaster Amargosa Creek Specific Plan	10th Street W and W Avenue L	The City of Lancaster is facilitating a comprehensive planning process for the 150-acre Amargosa Creek site located between Avenue L and Avenue K-I along 10th Street West. The City envisions the site becoming a mixed-use development including office, retail, and major medical facilities, with the potential for hotel and/or residential components.	Planning, last updated August 2007
30	Multi-Family Residential Development	Sahuayo Street and Avenue K-4	80-unit residential building for special needs housing with an emphasis on transition aged youth and young families and a density bonus in the SP 80-02 (Specific Plan No. 80-02: Lancaster Business Park) zone.	Planning Approved
31	Single Family Home Development	5th Street E and Avenue K	New subdivision, 21 units	Partially Constructed
32	SR-14 Ramp Improvements & Intersecting Street Improvements	Avenue J Interchange Avenue K Interchange	Geometric changes to on- and off-ramps, traffic improvements both east and west of each interchange including bike lanes, widened sidewalks, and traffic signal improvements. Plans are also underway for similar projects along Avenues G, M and L.	Expected Completion 2023
33	Mixed-Use Development	15th Street West between Avenue J-2 and Avenue J-4	Zoned mixed-use neighborhood, 37 units	Approved Tentative Tract Map
34	Downtown Lancaster Specific Plan	Downtown Lancaster (Lancaster Boulevard from 10th Street to Sierra Highway)	The Specific Plan determines infrastructure and land use plans for the revitalization of Lancaster's central downtown area. It includes efforts to better connect the area to the Lancaster Metrolink Station through enhanced crosswalks and pedestrian paseos, higher density development, and mixed-use structures.	Planning, last updated January 2020
35	Mixed-Use Development (1.6 mi from project)	Avenue I and 20th Street West	Zoned mixed-use commercial, proposed 458-unit complex and commercial development on approximately 27.9 acres	Project Under Review
36	Multi-Family Residential Development	Sierra Highway and Avenue I	Zoned commercial, proposed 114-unit affordable housing complex on approximately 5.67 acres	Project Under Review

Map ID	Project Name	Location	Description	Status
37	Single Family Home Development	Division Street and Avenue I	Zoned single family residential, 167 units	Approved Tentative Tract Map
38	Pacific Marigold Encore (1.4 mi from project)	Avenue H-12 and Challenger Way	New subdivision, 43 units	Partially Constructed
39	Single Family Home Development	Avenue H-8 and 5th Street E	New subdivision, 55 units	Partially Constructed
40	Single Family Home Development	Sierra Highway between Avenue H and Avenue H-13	Lancaster Housing Authority affordable housing, 324 single family units	Project Under Review

SOURCE: Terry A. Hayes Associates Inc., 2020.

Brighton to Roxford Double Track Project. The Brighton to Roxford Double Track Project, proposed by Metro, adds a second main line track along an 11-mile single track portion of the Valley Subdivision portion of the AVL that runs between Hollywood Way in the City of Burbank and through the cities of Los Angeles and San Fernando, to Roxford Street in Sylmar. This creates over 25 miles of continuous double track rail between Los Angeles Union Station in Downtown Los Angeles to the Sylmar community in the San Fernando Valley. The goal is to improve regional rail and mobility service while enhancing safety for the corridor communities and commuters on the AVL. The portion of the project between Brighton Street and Penrose Street, known as Brighton to McGinley, is a critical capital improvement for enabling 30-minute bi-directional service along the AVL in combination with the Proposed Project. Brighton to McGinley would extend the existing siding at Brighton Street approximately 15,312 feet and add second platforms at the Burbank Airport-North and Sun Valley stations. The Brighton to Roxford Double Track Project was environmentally cleared under CEQA in 2020.

Link US Early Operational Phase. The Link US project is intended to address the operational and capacity constraints stemming from the current “stub-end” track configuration at Los Angeles Union Station (LAUS), which requires trains to stop and turn at LAUS. The Link US project will reconfigure the rail yard at LAUS, potentially allowing regional one-seat Metrolink trips from Ventura County and the Antelope Valley to San Bernardino and San Diego counties. The project will also provide capacity to meet demand from the future California High-Speed Rail project. The completion of the Link US project will facilitate the operation of 30-minute service on the Metrolink system, including the AVL, enabling more efficient operations for all rail passenger services.

California High-Speed Rail (CAHSR). The ultimate vision for California’s HSR system is to provide service from San Francisco to the Los Angeles basin in under three hours at speeds capable of exceeding 200 miles per hour. The Palmdale to Burbank project section, originally part of the Phase 1 HSR network (CHSRA, 2018), currently is not fully funded, and its implementation currently is deferred in favor of completing the Central Valley portions of the system. According to the original system plan, the CHSRA intends to utilize the AVL rail corridor, running parallel to the AVL between Lancaster and Palmdale, and then re-entering the corridor (after traversing the San Gabriel Mountains via tunnel) in the vicinity of the new Burbank Airport – North Metrolink Station. Although the horizontal and vertical alignments have not been fully defined, CHSRA’s Alternative Analysis identifies the potential for significant track realignments within the 100-foot, Metro-owned railroad right-of-way (ROW) to allow for two dedicated HSR tracks within segments of the Corridor.

The track alignment and ROW configuration will need to be developed in collaboration with CHSRA, recognizing the planned shared or adjacent utilization of the Metro owned ROW between Lancaster and Palmdale and between Burbank Airport-North and Los Angeles Union Station. Track and rail systems also will need to be designed in accordance with Southern California Regional Rail Authority (SCRRA) engineering standards. Once HSR is implemented, the potential will exist for timed service coordination between Metrolink and HSR.

Union Pacific Railroad (UPRR) Unified Plan. The UPRR runs freight trains on the AVL corridor between the Central Valley and the Ports of Los Angeles and Long Beach within the Los Angeles area. This 75-mile corridor runs at-grade through the San Fernando Valley, turning east to roughly follow the SR-14 corridor to Palmdale. The UPRR holds the freight operating rights on the AVL. UPRR's Unified Plan 2020 will serve as an operating plan for a phased implementation of Precision Scheduled Railroading principles across their entire rail network. UPRR has expressed plans to expand their operations, including along the AVL corridor.

5.3 CUMULATIVE IMPACT ANALYSIS

Aesthetics

There is an existing cumulative impact in the Project Area related to aesthetics and visual resources. The cumulative setting is the Project Area and existing views of the AVL from surrounding land uses including residential and recreational facility uses. Past projects have resulted in a highly urbanized landscape from the construction of buildings, transportation infrastructure, and other structures that have adversely affected scenic vistas, scenic resources, and visual character and quality. In addition, other present or reasonably foreseeable future projects could result in the loss of visual resources, particularly street trees and historic buildings, though this is unlikely as the related past, present, and reasonably foreseeable probable future projects mostly consist of infill development projects that would not drastically change the existing setting. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative aesthetic impact.

Regarding construction activities, the presence of construction vehicles, equipment, visual signs of construction, and personnel would present visually disruptive elements but would be temporary. As discussed in Section 3.2, Aesthetics, construction of the Canyon Siding Extension would result in potentially significant impacts to residents north of the Santa Clara River and users of the Santa Clara River Trail due to the presence of construction equipment along the hillside lining the south side of the Canyon Siding Extension site. This potential impact would be temporary and Mitigation Measure **AES-1** would reduce the impact to these residents to a less-than-significant level. There are no related past, present, and reasonably foreseeable probable future projects located within the viewshed of the affected residents north of the Santa Clara River or users of the Santa Clara River Trail. Therefore, the Proposed Project construction activities, in combination with construction activities associated with related past, present, and reasonably foreseeable probable future projects in the City of Santa Clarita, would not result in a significant cumulative impact.

All other impacts associated with construction of the Proposed Project were determined to be less than significant. The presence of construction vehicles, equipment, visual signs of construction and construction staging, laydown of materials, and nighttime construction lighting would present visually disruptive elements in the viewsheds of the three capital improvements. While there is potential for visual disruptions associated with the Proposed Project construction to contribute to the existing cumulative impact, the visual impact of construction activities would be temporary. Therefore, the

Proposed Project's incremental contribution to the existing significant cumulative visual impact would not be cumulatively considerable.

Regarding operational activities, the Proposed Project would result in permanent alterations to the AVL track layout as well as the Santa Clarita Station platform and the Lancaster Terminal. Permanent changes to slopes along the Balboa Double Track Extension site and the hillside along the south side of the Canyon Siding Extension site would result from proposed grading activities required to accommodate the second track at both locations. None of the related past, present, and reasonably foreseeable probable future projects would alter the hillsides or slopes affected by the Proposed Project. As discussed in Section 3.2, Aesthetics, the permanent impact of grading at the Balboa Double Track Extension site would not result in a significant impact as the changes would not be visible to viewer groups and views of the surrounding hillsides would remain unaffected. Impacts related to alterations to the hillside along the south side of the Canyon Siding Extension site were determined to be potentially significant due to the change in views of the hillside for residents located north of the Santa Clara River as well as Santa Clara River Trail users. Mitigation Measure **AES-2** would reduce potential visual impacts by requiring revegetation of the hillside and since the existing ridgelines would remain unaffected by the Project, the impact would be less-than-significant with mitigation. Therefore, the Proposed Project operational activities would not cause a cumulatively considerable contribution to the existing cumulative impact.

Air Quality

There is a significant existing cumulative impact in the Project Area related to air quality. The cumulative setting is the SCAB and MDAB. The Los Angeles County portion of the SCAB is currently designated nonattainment of the NAAQS for eight-hour average O_3 and 24-hour average $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$. The Los Angeles County portion of the MDAB is currently designated nonattainment of the NAAQS for O_3 and the CAAQS for PM_{10}. The Proposed Project could contribute to the significant cumulative air quality impact.

In its White Paper on assessing cumulative impacts under CEQA, the SCAQMD recognized that a project may generate emissions without having a cumulatively considerable impact on air quality if project-level emissions remain below the applicable Air Quality Significance Thresholds developed by the air district. The AVAQMD has not established significance thresholds for assessing cumulative impacts. The impact analysis for the capital improvements and associated service increase within both air district jurisdictions follows the SCAQMD guidance based on their subject matter expertise and for corridor-wide consistency in the impact analysis. If project emissions exceed an applicable Air Quality Significance Threshold, even after mitigation, then it could result in a significant and unavoidable cumulatively considerable net increase in emissions contributing to regional Nonattainment conditions.

Regarding construction activities, as discussed in Section 3.3, Air Quality, the Proposed Project would not generate emissions that would exceed SCAQMD or AVAQMD localized or regional significance thresholds. Therefore, the Proposed Project construction activities would not result in a cumulatively considerable contribution to the existing significant cumulative air quality impact.

Regarding operational activities, the Proposed Project would not introduce a new, permanent source of ozone precursor or particulate matter emissions to the SCAQMD or AVAQMD jurisdictions. As the Metrolink fleet is gradually upgraded over time, older Tier 0 engines and eventually Tier 2 engines will be phased out of operations. Based on the level of NO_X and PM emission reductions achieved by implementing the newer Tier 4 engines—approximately 65 percent and 85 percent reduction from Tier 2 and Tier 0 engines, respectively—it is anticipated that fleetwide average emissions per mile will be reduced over time. However, the Proposed Project rail propulsion operations would generate emissions of NO_X that would exceed the SCAQMD regional thresholds. Emissions of NO_X contribute to the formation of O_3 in the atmosphere through photochemical reactions and are considered ozone precursors. Accordingly, NOx emissions from the Proposed Project are an indication of the Project's contribution to the existing cumulative impacts associated with O_3 attainment in the SCAB. The SCAB is designated nonattainment of the O_3 air quality standards at both the federal and state level.

The Proposed Project would reduce VMT and associated transportation criteria air pollutant emissions in the Project Area. The Proposed Project would be consistent with the 2016 AQMP, the AVAQMD Ozone Attainment Plan, as well as each city's General Plan. However, the Proposed Project would result in a significant cumulative impact to air quality because the operational NOx emissions would exceed the SCAQMD significance thresholds.

The significant cumulative impact does not account for future emission reductions associated with the Metrolink Climate Action Plan. Metrolink goals include being 100 percent petroleum fuel free by 2022 and achieving 100 percent zero emissions by 2028. Project-related NO_X emissions would be drastically reduced by not using petroleum fuel and eliminated by using locomotive technology that results in zero emissions. As these emission reduction goals are considered aspirational and Metrolink is in the process of studying fleet modernization and emerging zero- and near-zero-emissions applications the implementation schedule for transitioning away from the existing locomotive fleet to a petroleum-free fleet and then to a net zero emissions fleet is not known at this time. Therefore, NO_X reductions associated with these goals have not been quantified.

Biological Resources

There is an existing significant cumulative impact in the Project Area related to biological resources. The cumulative setting for special-status plants is Coastal Sage Scrub community. The cumulative setting for bat species is considered bat roosting habitat within California because some of the bat species with potential to be in the Project Area are migratory and could be found in various counties throughout the State. The cumulative setting for bird species is considered nesting and foraging habitat within trees within the AVL rail ROW and its immediate surroundings. Existing and continuing development contributes to cumulative impacts on plants, bats, and bird species. Habitat removal from current and future development in the Project Area is the biggest threat to plants, bats, and bird species. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative biological impact.

Regarding construction activities, the Proposed Project would include vegetation removal, grading, and movement of construction equipment through undeveloped open space areas adjacent to the AVL rail corridor. The Proposed Project could result in temporary impacts on plants, bats, bird species, and riparian habitat through the removal of trees and vegetation. Mitigation Measures **BIO-1** through **BIO-19** would mitigate inadvertent impacts to biological resources during construction activities. Effects to biological resources (e.g., plant and wildlife species) would not be significant with mitigation. Therefore, the Proposed Project construction activities would not result in a cumulatively considerable contribution to the existing cumulative impact.

Regarding operational activities, the Proposed Project's incremental contribution to the exiting cumulative biological impact would not be cumulatively considerable. There is already a high level of human activity, night lighting, and noise in the Project Area and the Proposed Project would not increase levels of human activity, night lighting, or noise significantly. Operation of the Proposed Project would not result in impacts on any species identified as a candidate, sensitive, or special-status. Once construction is complete, no additional removal of trees or vegetation would be required; therefore, project operation would not interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Therefore, the Proposed Project operational activities would not cause a cumulatively considerable contribution to the existing cumulative biological impact.

Cultural Resources

Archaeological Resources. There is an existing cumulative impact in the Project Area related to archaeological and paleontological resources. The cumulative setting is the areas of potential disturbance. Archaeological resources that could be impacted by Project construction activities include potential subsurface archaeological materials that may exist in the Project vicinity. Most of the related past, present, and reasonably foreseeable probable future projects are development or transportation projects, whose construction could include excavation that could disturb buried archaeological resources and human remains, if extant. Although much of the Project Area is developed and paved, there is a potential for buried archaeological deposits to exist. The potential for an individual project to impact significant archaeological resources is unknown but it is possible that cumulative growth and development in the Project Area could have impacts on significant archaeological resources. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to this impact.

Potential impacts to buried archaeological resources that may be encountered during construction of the Proposed Project would be mitigated to a less-than-significant-level with implementation of Mitigation Measures **CUL-1** and **CUL-2**. Impacts to cultural resources would not be significant with mitigation. Therefore, the incremental contribution of the Proposed Project construction activities the existing cumulative archaeological impact would not be cumulatively considerable.

Regarding operational activities, the potential to disturb archaeological resources is only possible during construction activities. There is no potential for the AVL operations to encounter archaeological resources. Therefore, the Proposed Project operational activities would not contribute to the existing cumulative impact.

Energy Resources

There is an existing cumulative impact in the Project Area related to energy resources. The cumulative setting is both regional and statewide. State, regional, and local agencies and jurisdictions have published a wide range of documents intended to reduce energy consumption and increase the use of renewable energy. The intent is typically to reduce the use of nonrenewable energy to reduce pollution that contributes to global warming. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative impact.

Regarding construction activities, the Proposed Project would consume approximately 3,851,894 gallons of diesel fuel through off-road equipment engine combustion and on-road truck engine combustion. In addition, Project construction worker trips would consume approximately 55,927 gallons of gasoline through on-road worker vehicle engine combustion. Annual average petroleum-based fuels consumption during construction activities would be approximately 770,379 gallons of diesel fuel and 11,185 gallons of motor gasoline. Los Angeles County retail sales of diesel fuel and gasoline in 2018 were approximately 253 million gallons and 3,658 million gallons, respectively. Relative to existing petroleum-based transportation fuels consumption in Los Angeles County, construction of the Project would temporarily increase annual diesel fuel consumption within the County by approximately 0.30 percent and would temporarily increase annual gasoline fuel consumption by approximately 0.00031 percent. All equipment and vehicles that would be used in construction activities would comply with applicable CARB regulations, the Pavley and Low Carbon Fuel Standards, and the Corporate Average Fuel Economy Standards. The Proposed Project would adhere to the provisions of the Metro Green Construction Policy to control and minimize emissions to the maximum extent feasible. Adherence to the energy reduction policies and the relatively low use of energy resources for construction ensure that the Proposed Project would not result in a significant impact. Therefore, the incremental contribution of the Proposed Project construction activities to the existing cumulative energy impact would be less than cumulatively considerable.

Regarding operational activities, implementation of the Proposed Project would displace approximately 11,445,259 on-road VMT annually from the regional roadway network in 2028 through increased ridership attracted and accommodated by the expanded transit service. The CARB EMFAC model indicates that passenger vehicles will consume an average of 30.7 miles per gallon of gasoline in 2028. The Proposed Project would result in a 372,810-gallon reduction in gasoline consumption per year. AVL corridor rail service would increase by approximately 555,083 rail miles resulting in an increase of 1,401,579 gallons of diesel fuel consumption per year. Metrolink has implemented a number of energy conservation policies and programs including a fuel conservation program designed to reduce train idling by 35 percent system-wide. In addition, Metrolink is pursuing alternative locomotive propulsion technologies such as hybrid,

battery, and hydrogen applications. The effects of Proposed Project operations combined with Related Projects on regional petroleum-based transportation would not constitute a wasteful or inefficient use of energy resources. On the contrary, implementation of the Proposed Project would improve regional transportation energy efficiency by resulting in substantial reduction in gasoline consumption. Therefore, the Proposed Project operational activities would not have a cumulatively considerable contribution to the existing cumulative impact.

Geology and Soils

There is an existing cumulative impact in the Project Area related to geology and soils as the entire Southern California region is subject to risks associated with seismic activity, and any past, present, or reasonably foreseeable development in the region carries potential risk of seismic-related impacts. The cumulative setting is the Southern California region which includes the Cities along the AVL Corridor. The seismic context is an important consideration because the ground shaking forces are regional in nature. The potential for a seismic event, including landslides, is the primary cumulative consideration for geology and soils. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative impact.

Regarding construction activities, none of the related past, present, and reasonably foreseeable probable future projects in the vicinity of the three capital improvements would include grading or other construction activities on the slopes affected by the Proposed Project and would not pose risk of a cumulative effect on slope stability, seismic risk, or paleontological resources. The Proposed Project would include grading and excavation along slopes, such that existing landslide risks could be worsened or exacerbated. Mitigation Measure **GEO-1** would ensure that the Proposed Project would be designed based on the latest versions of local and state building codes and regulations in order to counteract erosion and geologic hazards. Grading and excavation associated with Proposed Project construction would also have the potential to unearth or destroy unique paleontological or geologic features. Mitigation Measures **PAL-1** and **PAL-2** would ensure impacts to unknown paleontological resources would be less than significant as paleontological monitoring and a resource recovery plan would be implemented. Therefore, the incremental contribution of Proposed Project construction activities would not to the existing cumulative impact would not be cumulatively considerable.

Regarding operational activities, the Proposed Project would be located in a seismically active region. There is potential for operational activities to be influenced by earthquakes and related effects, such as ground shaking and liquefaction. Mitigation Measure **GEO-1** would mitigate inadvertent impacts to geology and soils during construction activities by ensuring the Proposed Project is designed to limit potential seismic impacts. Effects to geology and soils would not be significant with mitigation. Therefore, the Proposed Project operational activities would not cause a cumulatively considerable contribution to the existing cumulative impact.

Greenhouse Gas Emissions

There is an existing cumulative impact in the Project Area related to GHG emissions. The cumulative setting is both regional and statewide. The State of California, through AB 32 and SB 32, has acknowledged that GHG emissions are a statewide impact. Emissions generated by the Proposed Project combined with past, present, and reasonably probable future projects could contribute to this impact. The CEQA Guidelines emphasize that the effects of GHG emissions are cumulative in nature and should be analyzed in the context of CEQA's existing cumulative impacts analysis. The OPR acknowledges that although climate change is cumulative in nature, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

The Proposed Project would result in a net increase in GHG emissions as a result of construction vehicle and equipment use and increased diesel fuel use associated with rail propulsion. Reducing on-road VMT is recognized as one of the fundamental pillars of achieving statewide and regional GHG emissions reduction targets. Implementation of the Proposed Project would enhance and expand existing transit services along the AVL Corridor, providing more robust public transit accessibility and encouraging Los Angeles County residents to shorten and displace trips as well as use active modes of transportation. However, the analysis provided in Section 3.6, Greenhouse Gas Emissions quantified direct GHG emissions associated with the Project concluding that the total net annual GHG emissions increase resulting from the Proposed Project relative to existing conditions would be approximately 11,169.5 $MTCO_2e$ after accounting for the VMT reductions and the amortized construction emissions. Since the Proposed Project would result in a net increase in GHG emissions it would contribute to the significant cumulative impact of climate change. Mitigation measures **GHG-1** and **GHG-2** would contribute to reductions in GHG construction emissions, but significant cumulative impacts associated with Project-related GHG emissions would remain. Though the Project would increase annual GHG emissions the significant cumulative impact does not account for future emission reductions associated with the Metrolink Climate Action Plan. Metrolink's goals as defined by their Climate Action Plan include being 100 percent petroleum fuel free by 2022 and achieving 100 percent zero emissions by 2028. Project-related GHG emissions would be drastically reduced by not using petroleum fuel. Specifically, Metrolink is exploring the potential to rely on renewable diesel fuel for its rail operations, which can achieve up to 80 percent reductions in CO_2 emissions depending on the fuel feedstock.

Hazards and Hazardous Materials

There is an existing cumulative impact in the Project Area related to hazards and hazardous materials. The cumulative setting is a one-mile band along the AVL rail corridor. There are known hazardous sites in the Project Area and associated remediation efforts including the Bermite-Whitaker site which is a Cortese database listed site near the Canyon Siding Extension site. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative impact.

Regarding construction, the Proposed Project as well as related past, present, and reasonably foreseeable probable future projects would all involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. Potential impacts associated with the Proposed Project would be extensively regulated by federal, state, and local laws, regulations, and policies. It is reasonably foreseeable that the related past, present, and reasonably foreseeable probable future projects would implement and comply with these existing hazardous materials laws, regulations, and policies. With the implementation of Mitigation Measures **HAZ-1** and **HAZ-2**, the Proposed Project's contribution to cumulative impacts associated with the storage, use disposal, and transport of hazardous materials, contaminated soil, and groundwater would not be cumulatively considerable. There is potential for the Proposed Project to result in the upset of contaminated soils from past activities and hazardous operations within the AVL rail corridor and its surroundings. Any hazardous wastes or materials encountered through ground-disturbing activities would be handled and disposed of in accordance with federal, state, and local regulatory requirements. All future projects in the Project Area would be subject to the same federal, state, and local regulations. These regulations require an individual site evaluation and, if hazardous materials are encountered, cleanup by the responsible party prior to or during construction. Further, with the implementation of Mitigation Measures **HAZ-3** and **HAZ-4**, the Proposed Project's contribution to cumulative impacts would not be cumulatively considerable as any potential contaminated soil encountered during construction would be addressed through appropriate remediation strategies. Accordingly, the Proposed Project's contribution to cumulative impacts associated with contaminated soil would not be cumulatively considerable.

Regarding operations, vehicle maintenance activities would require the use of detergents, cleansers, and fuels, particularly in the Lancaster Terminal where the proposed layover facility would be located. The potential for exposure to these hazards and hazardous materials would be limited. Metrolink facilities are staffed with personnel trained in hazardous materials emergencies. Metrolink staff is available 24 hours a day through the Quality Assurance Department to respond to hazardous materials releases, and Metrolink's sites frequently undergo emergency response drills. There would be no hazardous emissions associated with operations of the Proposed Project.. As such, , the Proposed Project operational activities would not have a cumulatively considerable contribution to the existing cumulative impact.

Hydrology and Water Quality

There is an existing cumulative impact in the Project Area related to hydrology and water quality. The cumulative setting for hydrology and water quality includes the Project Area and the Los Angeles River watershed, the Santa Clara River watershed, and the Antelope Valley drainage basin and the receiving water bodies downstream of the Proposed Project (i.e., Los Angeles River, Santa Clara River, and Amargosa Creek). Regarding groundwater, the cumulative setting includes the groundwater basins underlying the Proposed Project including the San Fernando Valley Groundwater Basin, the Santa Clara River Valley East Groundwater Basin, and the Antelope Valley Groundwater Basin. State, regional, and local agencies have determined that development in the region has resulted in pollutants affecting the water quality of both surface water and groundwater resources. In addition, development in the region has resulted in limited availability of water resources due to the use of groundwater for municipal water supplies and

existing pollutant loads of surface water sources. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative impact.

Construction of the proposed capital improvements could result in temporary changes in grades and drainage patterns, discharge of pollutants into surface waters, exposure of soils to stormwater and erosive conditions. In addition, temporary dewatering may be required. These construction-related impacts would be addressed by Mitigation Measure **WQ-1** which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) that complies with the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). Similarly, there is potential for contaminated groundwater to be encountered during construction of the capital improvements, in particular, the Canyon Siding Extension. To ensure that groundwater and/or contaminated groundwater is handled properly and avoid impacts to receiving surface or groundwater resources Mitigation Measures **WQ-3** and **WQ-4** would require dewatering permits to be acquired in the event that groundwater is encountered during construction. With implementation of Mitigation Measures **WQ-1**, **WQ-3**, and **WQ-4**, impacts on receiving waters would be avoided and the Proposed Project's incremental contribution to the existing cumulative impact is not cumulatively considerable.

The Proposed Project would have no impact on local groundwater table level as no groundwater pumping activities are proposed and water usage associated with the Project would be minimal. Therefore, the Proposed Project would not contribute to cumulative impacts on groundwater levels. Regarding flood risks, none of the three capital improvements sites are located in flood zones as identified by Los Angeles County and the Proposed Project would result in minimal hydrologic hydromodification such that there would be no increased risk of flooding associated with the Project. Therefore, the Proposed Project would not contribute to cumulative impacts related to flood risks.

AVL rail operations would contribute pollutants in concentrations and amounts that are typical for transportation facilities, including total suspended solids, metals, oils and grease, and debris. Because the AVL is an existing active rail corridor, and the Proposed capital improvements would result in minimal changes in the drainage pattern of each capital improvement site, the character and concentration of pollutants in runoff would be similar to existing conditions and the impact related to water quality standards and waste discharge requirements would be less than significant. Mitigation Measure **WQ-2** would further ensure impacts associated with erosion and site drainage would be less than significant by requiring preparation of a post construction SWPPP. Operations associated with the Lancaster Terminal Improvements would include vehicle wash facilities that would discharge wastewater into the local sewer system. If vehicle cleaning operations are not managed properly there is potential for a significant impact related to water quality standards and waste discharge requirements. The proposed layover facility is subject to the IGP (Order No. 2014-0057-DWQ) which regulates industrial discharges into municipal sewer systems. Mitigation Measure **WQ-5** would ensure compliance with the IGP requirements. With implementation of Mitigation Measures **WQ-2** and **WQ-5** impacts on receiving waters would be avoided and the Proposed Project's incremental contribution to the existing cumulative impact is not cumulatively considerable.

Noise

There is an existing cumulative impact in the Project Area related to noise as existing noise levels exceed the State Land Use and Noise Compatibility Guidelines. The cumulative setting for noise is adjacent to the AVL Corridor. State, regional, and local agencies and jurisdictions have published a wide range of documents intended to control noise levels and reduce community exposure. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to the existing cumulative impact.

Regarding construction, there are multiple related past, present, and reasonably foreseeable probable future projects in the vicinity of the capital improvement sites where construction activities would take place. While related past, present, and reasonably foreseeable probable future projects are anticipated to result in changes in the noise environment, none of the related past, present, and reasonably foreseeable probable future projects are located close enough to the capital improvements such that the combined construction-period impacts would influence the noise or vibration environment. The Proposed Project could increase ambient noise levels at sensitive receptors by up to 17 dBA L_{eq} near the capital improvement construction sites, generating significant increases before mitigation measures are applied. Mitigation Measure **NV-1** is anticipated to reduce the impacts in the City of Santa Clarita to less than significant by requiring noise monitoring and control measures when levels exceed allowable standards; however, it is likely that noise exceedances associated with the Balboa Double Track Extension and Lancaster Terminal Improvements construction cannot be mitigated to less than significant. Similarly, construction activities would result in a potentially significant impact related to vibration at nearby sensitive receivers. Mitigation Measure **NV-2** is anticipated to reduce the impact to less than significant at commercial receivers in the City of Santa Clarita by requiring vibration monitoring and control measures when levels exceed allowable standards; however, it is anticipated that not all construction-related vibration impacts can be reduced to less than significant despite mitigation efforts. Therefore, the incremental contribution of the Proposed Project construction activities to the existing cumulative impact would be cumulatively considerable.

The Proposed Project impact assessment includes existing noise, which encompasses any noise increases associated with past projects. Future rail projects may increase noise within the cumulative setting, by adding noise sources and increasing the number of noise events. Highway and road projects could potentially combine with the Proposed Project's operational noise in areas where the highways or roads are close to the AVL rail corridor. There are several rail projects that could potentially add noise to portions of the AVL rail corridor. These include ESFV Light Rail, California High-Speed Rail, Brightline West, and the UPRR Unified Plan. Several of the projects have not finalized the routes or operations, so the associated noise for the final design/plans is not available. Final designs/decisions for these projects should be considered cumulative effects.

The ESFV Light Rail is currently being constructed (expected to open in 2028) and would run adjacent to the AVL rail corridor from Van Nuys Boulevard to San Fernando Station, about 2.5 miles in the City of Los Angeles (Pacoima area) and City of San Fernando. There are only two sensitive receivers close to the tracks in that section, San Fernando Middle School and the

adjacent residence along Robert F. Kennedy Drive. At the environmental stage, ESFV Light Rail was predicted to produce noise from operations at about 60 dBA, 10 dBA or more below the existing noise measured in the general area as part of AVL rail corridor. As such, the Proposed Project's operational noise in combination with the light rail noise would result in a minimal cumulative effect to the noise environment. The incremental contribution of the Proposed Project operation to the existing cumulative noise impact would not be cumulatively considerable.

The Proposed Project and related transit projects such as the ESFV Light Rail would reduce VMT and associated transportation noise from operation of motor vehicles in the Project Area as people shift to public transit.. Additionally, the Brighton to Roxford Double Track Project would install quiet zone infrastructure that would enable local jurisdictions such as the City of Los Angeles to implement quiet zones along the AVL, which would result in a cumulative decrease in rail-related noise if such improvements are made in the future. The incremental contribution of the Proposed Project operation to the existing cumulative noise impact would not be cumulatively considerable.

For vibration, the Proposed Project does not change the maximum vibration levels on which impacts are assessed. Other rail projects may increase the maximum vibration in the Project Area if different vehicle types are used and the vibration is greater for the added vehicles. Also, a rail project may increase the number of occurrences of vibration events, which is also included in a vibration assessment. However, nearby highway projects, current or future, are not expected to increase vibration in the Proposed Project Study Area. The Proposed Project itself would not result in significant vibration impacts during operation and its contribution to cumulative vibration impacts would not be cumulatively considerable.

Transportation

There is an existing cumulative impact in the Project Area related to transportation. The cumulative setting is the regional and transit network as well as local roadways that intersect the AVL rail corridor. Future growth and development in the region would generate additional traffic on roadways along the primary alignment, which would adversely affect traffic flow. The additional traffic on roadways generated by cumulative projects would increase the temporary construction impacts on circulation. The Proposed Project would result in construction equipment and traffic operating on local roadways and would require temporary lane reductions as well as potential street closures where construction work is proposed within existing at-grade crossings, namely Golden Oak Road in the City of Santa Clarita and Lancaster Boulevard in the City of Lancaster. Mitigation Measure **TR-1** would implement a Traffic Management Plan to ensure that the Proposed Project would not interfere with transit access, traffic circulation, pedestrian access, or bicycle circulation during construction.

Related past, present, and reasonably foreseeable probable future projects along the AVL such as the Brighton to Roxford Double Track Project could be constructed concurrently with the Proposed Project, which may result in impacts on AVL operations. The Proposed Project may result in disruptions to AVL operations during construction as construction work along the main track and at the Santa Clarita and Lancaster Terminal stations may require service interruption and result in station access impediments. Accordingly, there is potential for the Proposed Project

to contribute to a significant cumulative impact on AVL operations during construction. Mitigation Measure **TR-2** would ensure that construction of the Proposed Project is coordinated amongst the construction contractor, Metrolink, and Metro including construction activities associated with related past, present, and reasonably foreseeable probable future projects such as the Brighton to Roxford Double Track Project. Therefore, the Proposed Project would not result in a cumulatively considerable contribution to cumulative impacts on AVL service.

Regarding operational activities, the Proposed Project is expected to decrease VMT and is also aligned with long-term environmental goals and relevant plans for the region and municipalities. Since the Proposed Project has a finding of less-than-significant for VMT, the Project would also imply a less than significant cumulative impact for VMT. Cumulative impacts from the implementation of other projects are not expected to substantially increase hazards due to a geometric design feature or incompatible uses, as other projects would be expected to adhere to applicable design criteria and standards and be subject to regulatory permitting. The future cumulative growth and resulting increase in traffic and congestion in the region could increase emergency response times. The Proposed Project would not result in increased delays at existing at-grade rail crossings but would result in an increase in the frequency of delays due to greater volume of trains traversing the AVL rail corridor. Other than the Brighton to Roxford Double Track Project, related past, present, and reasonably foreseeable probable future projects listed in **Table 5-2** would not affect at-grade rail crossings such that additional delays would result. The Brighton to Roxford Double Track Project would upgrade 16 existing at-grade roadway crossings to significantly enhance safety and make these crossing quiet zone ready. While such safety upgrades may result in a modest increase in gate-down time at any given crossing, the increase would be minimal and would not have the potential to affect emergency access or response time. Therefore, the Proposed Project would not have a cumulatively considerable contribution to a significant cumulative impact on emergency access.

Tribal Cultural Resources

There is an existing cumulative impact in the Project Area related to tribal cultural resources. The cumulative setting is the areas of potential disturbance. The Kizh Nation, Fernandeno Tataviam, and Gabrieleno/Tongva San Gabriel Band of Mission Indians tribal representatives identified areas of high sensitivity within the Project Area including the AVL Corridor itself. The potential for an individual project to affect significant tribal cultural resources is unknown but it is possible that cumulative growth and development in the Project area would impact tribal cultural resources. The Proposed Project combined with past, present, and reasonably probable future projects could contribute to this impact. AB 52 requires that a lead agency consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a project prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. Mitigation measures developed for each project would ensure compliance with AB 52 by mitigating inadvertent impacts to tribal cultural resources and potential subsurface archaeological deposits, including tribal monitoring during construction activities, and ensuring the appropriate disposition of human remains, if encountered. With implementation of Mitigation Measures **CUL-1** and **CUL-2**, the

Proposed Project's incremental contribution to the existing cumulative impact is not cumulatively considerable.

Regarding operational activities, the potential to disturb tribal cultural resources is only possible during construction activities. There is no potential for the AVL service to encounter tribal cultural resources. Therefore, the Proposed Project operational activities would not contribute to the existing cumulative impact.

6. Alternatives

6.1 INTRODUCTION

CEQA requires an analysis of a reasonable range of potentially feasible alternatives to the Proposed Project to substantially reduce or eliminate significant impacts associated with project development. Section 15126.6(a) of the CEQA Guidelines states:

> *"An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. 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 range of feasible alternatives is selected and discussed in a manner intended to foster meaningful public participation and informed decision making.

An EIR must briefly describe the rationale for selection and rejection of alternatives. The Lead Agency may make an initial determination as to which alternatives are feasible, and, therefore, merit in-depth consideration. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not substantially reduce or avoid any significant environmental effects.

6.2 PROJECT-LEVEL IMPACTS

Sections 3.1 through 3.12 of this EIR provide a detailed analysis of all significant environmental impacts related to the Project. These sections identify feasible mitigation measures, where available, that could avoid or reduce significant impacts and determine whether the mitigation measures would reduce these impacts to a less than significant level. Chapter 5.0, Cumulative Impacts, of this EIR identifies the significant cumulative impacts resulting from the combined impacts of the Project and related past, present, and reasonably probable future projects considered in the cumulative analysis.

The Proposed Project would result in potentially significant impacts related to transportation, aesthetics, air quality, biological resources, cultural resources, geology, soils, paleontological resources, hazards and hazardous materials, noise and vibration, tribal cultural resources, and hydrology and water quality. A majority of these impacts can be mitigated to less-than-significant levels with implementation of feasible mitigation measures. However, the following impacts would be significant and unavoidable even after the implementation of mitigation measures:

- Construction activities associated with each of the three capital improvements would result in increases in noise levels that would exceed local significance thresholds. While mitigation measures would likely reduce noise impacts associated with the Canyon Siding Extension construction to less-than-significant in the City of Santa Clarita, higher noise level exceedances associated with the Balboa Double Track Extension in the City of Los Angeles and the Lancaster Terminal Improvements in the City of Lancaster may not be reduced below applicable significance thresholds by mitigation.
- Construction activities associated with each of the three capital improvements would result in vibration levels that would exceed Federal Transit Administration (FTA) annoyance thresholds. While mitigation would likely reduce vibration impacts associated with the Canyon Siding Extension construction to less-than-significant, mitigation may not reduce vibration impacts associated with the Balboa Double Track Extension or the Lancaster Terminal Improvements below impact FTA annoyance impact thresholds.

The following discussion provides a summary of potentially significant impacts associated with the Proposed Project:

Transportation

The Proposed Project would improve regional mobility by enabling more frequent and reliable Metrolink service along the AVL. In addition, the AVL is an existing commuter rail line and construction activities associated with the Proposed Project would occur mostly within the existing AVL right-of-way (ROW). Accordingly, the Proposed Project is consistent with applicable programs, plans, ordinances and policies. Construction would result in additional traffic along local streets and highways as well as temporary lane reductions and potential street closures where construction work is proposed within existing at-grade crossings, namely Golden Oak Road in the City of Santa Clarita and Lancaster Boulevard in the City of Lancaster. These construction effects could include inconveniences associated with temporary disruptions to existing travel patterns and temporary access limitations. Mitigation Measure **TRA-1** would reduce potential construction impacts on transit, vehicular, bicycle, and pedestrian circulation by requiring a Traffic Management Plan. In addition to disruptions to traffic along local streets and highways, the Proposed Project would require construction work along the AVL track and at the Santa Clarita Station and Lancaster Terminal Station that could potentially result in disruptions and schedule delays to existing AVL service. Mitigation Measure **TRA-2** would reduce construction-related impacts to AVL transit service by requiring an operating agreement to plan and manage AVL service around construction activities.

Operation of the Proposed Project would not result in significant impacts related to transit, traffic circulation or pedestrian facilities. The Proposed Project would improve transit frequency and reliability resulting in higher transit ridership. Similarly, the Proposed Project is anticipated to result in an overall reduction in vehicle miles traveled (VMT) resulting in modest improvements in regional traffic conditions benefiting the circulation system as a whole. The Proposed Project would provide improved safety at the Golden Oak Road rail crossing as a result of a revised crossing configuration, including installation of pedestrian crossing gates and improvements to the existing Soledad Canyon Road bicycle lane configuration at the Golden Oak Road rail

crossing. In addition, less-than-significant impacts to emergency access would result from operation of the Proposed Project because the Proposed Project would not result in longer delays at at-grade crossings but would result in more frequent delays as a result of the higher volume of trains travelling the AVL.

Aesthetics

Construction activities would occur along the hillside within and adjacent to the rail ROW along the south side of the Canyon Siding Extension site in the City of Santa Clarita. Residents north of the Santa Clara River and users of the Santa Clara River Trail are considered sensitive viewer groups and would be most affected by views of these construction activities as they have unobstructed views of the rail ROW and construction activities would temporarily alter the views of the undeveloped hillsides from these areas. Mitigation Measure **AES-1** would reduce the potential visual impact posed by construction to a less-than-significant level by screening construction equipment in the Canyon Siding Extension site from sensitive viewers. In addition, while a majority of construction work would take place during daytime hours, some nighttime work may be required which could potentially increase nighttime light or glare, temporarily affecting visibility. Mitigation Measure **AES-3** would ensure that nighttime construction work would result in a less-than-significant impact by requiring nighttime construction lighting to be limited to the construction areas, and avoid spillover on adjacent land uses.

The portion of the Canyon Siding Extension site west of Center Point Parkway, vegetation along the hillsides lining the south side of the site would be removed due to grading activities, which would result in a potential significant impact to scenic vistas and the visual character of LU 2. Mitigation Measure **AES-2** would ensure the impact would be less than significant by requiring removed vegetation be replaced to the greatest extent possible to minimize the degree of visual change caused to the hillsides lining the south side of the site and reducing the effect on visually sensitive viewers (i.e., residents north of the Santa Clara River and along the Santa Clara River Trail).

Air Quality

The Proposed Project would not introduce a new, permanent source of ozone precursor or particulate matter emissions to the SCAQMD or AVAQMD jurisdictions. As the Metrolink fleet is gradually upgraded over time, older Tier 0 engines and eventually Tier 2 engines will be phased out of operations. Based on the level of NO_X and PM emission reductions achieved by implementing the newer Tier 4 engines—approximately 65 percent and 85 percent reduction from Tier 2 and Tier 0 engines, respectively—it is anticipated that fleetwide average emissions per mile will be reduced over time. However, the Proposed Project rail propulsion operations would generate emissions of NO_X that would exceed the SCAQMD regional thresholds, a significant impact. Emissions of NO_X contribute to the formation of O_3 in the atmosphere through photochemical reactions and are considered ozone precursors. The SCAB is designated nonattainment of the O_3 air quality standards at both the federal and state level.

The significant impact does not account for future potential emission reductions associated with the Metrolink Climate Action Plan. Metrolink goals include being 100 percent petroleum fuel free

through the application of renewable diesel fuel by 2022 and achieving 100 percent zero emissions by 2028 through the application of alternative propulsion technologies. As these emission reduction goals are considered aspirational and Metrolink is in the process of studying fleet modernization and emerging zero- and near-zero-emissions applications, the implementation schedule for transitioning away from the existing locomotive fleet to a petroleum-free fleet and then to a net zero emissions fleet is not known at this time. Therefore, NO_X reductions associated with these goals have not been quantified and impacts associated NOx emissions from Project operations are considered significant and unavoidable. Regardless it is important to note that Metrolink's "moon shot" is to transition its fleet to zero emissions by 2028, which is also the anticipated time AVL service would be increased as a result of the Proposed Project.

Biological Resources

Construction activities would include vegetation removal, construction worker and vehicle movement, staging, and installation of track within the capital improvement sites and their surroundings. This could result in direct and indirect impacts on special-status wildlife species if these activities were to be conducted while wildlife species are within or adjacent to the affected areas. Special-status birds and mammals are known to use the trees and open space areas in and around the capital improvement areas. Removal of trees and habitat and the addition of noise, vibration, air pollution, and human activity from construction activities could result in direct and indirect impacts to special-status wildlife species. Mitigation Measures **BIO-1** and **BIO-2** would ensure that construction activities avoid nesting birds to the greatest extent possible by minimizing the amount of construction work that would take place during nesting season and by requiring a nesting bird management plan that would require the monitoring and management of construction activities that take place during nesting season. Mitigation Measure **BIO-3** would avoid construction impacts on bats by requiring a preconstruction survey for the presence of bats and identifying measures to remove roosted bats or otherwise protect bat roosts from construction activities ensuring that construction impacts on bats would be less than significant. Mitigation Measures **BIO-4**, **BIO-5**, and **BIO-6** would address potential impacts to existing site vegetation by delineating the construction site to avoid inadvertent disturbance to surrounding vegetation, requiring a revegetation plan to replace vegetation removed during construction and by requiring nighttime lighting that does not disrupt photosynthesis cycles. Mitigation Measure **BIO-7** would avoid potential impacts to the California Gnatcatcher, a special status species, by ensuring that identified California Gnatcatcher habitat is not affected by construction during breeding season.

In addition to potential direct and indirect impact on special status species, the Proposed Project could temporarily impact riparian vegetation in both the Balboa Double Track Extension site and Canyon Siding Extension site. Mitigation Measures **BIO-8** through **BIO-10** would ensure that impacts to riparian habitat would be less than significant by controlling invasive species, identifying potential runoff into riparian wetland areas, and by reintroducing native biota in areas where construction has cleared vegetation.

Construction activities have the potential to remove mature trees as part of site clearing activities and associated grading activities. Mitigation Measures **BIO-13** through **BIO-19** would ensure a less-than-significant impact related to local ordinances by requiring compliance with local tree ordinances including conducting a preconstruction tree survey, requiring replacement of displaced trees and providing protections of existing trees, including root protection, compost, and slope stabilization measures.

Cultural Resources

Surficial archaeological resources that may have existed have likely been displaced or destroyed by the construction of the existing AVL track. However, there is the possibility that ground-disturbing activities during the excavation of the cut slopes and addition of retaining walls could impact previously undiscovered prehistoric or archaeological resources. Additional excavation activities for the Platform to Platform Pedestrian Undercrossing and the Island Platform with Platform to Parking Lot Pedestrian Undercrossing Design Options associated with the Canyon Siding Extension and the Island Platform with Pedestrian Undercrossing Design Option associated with the Lancaster Terminal Improvements present further risk of impact to these resources. Therefore, without mitigation, the Proposed Project would result in a significant impact related to archaeological resources. Implementation of Mitigation Measures **CUL-1** and **CUL-2** would mitigate inadvertent impacts to potential subsurface archaeological deposits during construction activities ensuring less-than-significant impacts.

Geology, Soils, and Paleontological Resources

The Proposed Project is located in a geologically active region prone to earthquakes, liquefaction, seismically-induced slope failure, and landslides. All three of the capital improvement sites lie within an Alquist-Priolo Earthquake Zone and cross multiple major earthquake fault zones. The Balboa Double Track Extension site is intersected by the San Fernando and Santa Susana faults within the Sierra Madre Fault Zone; to the south of the Balboa Double Track Extension site lies the Mission Hills Fault Zone and Northridge Fault. The Canyon Siding Extension site is intersected by the Honor Rancho section of the San Gabriel Fault Zone. Major earthquake fault zones underlay other portions of the AVL outside of the capital improvement sites, including the Soledad Fault and the Mojave Section of the San Andreas Fault Zone. The Balboa Double Track Extension site and the Canyon Siding Extension site are both within areas that are susceptible to landslides and debris flows. Therefore, without mitigation, the Proposed Project would result in a significant impact related to slope failure risks. Mitigation Measure **GEO-1** would ensure that the Proposed Project is designed to limit potential impacts related to ground shaking, liquefaction, lateral spreading, and seismically-induced slope failure. Regarding paleontological resources, there is potential for excavation activities associated with construction of the capital improvements and design options to unearth or destroy unique paleontological or geologic features and without mitigation, the Proposed Project would result in a significant impact on paleontological resources. Mitigation Measures **PAL-1** and **PAL-2** would ensure that no paleontological resources are damaged or destroyed during construction as paleontological monitoring and a resource recovery plan would be implemented.

Greenhouse Gas Emissions

The Proposed Project is programed in the SCAG 2020–2045 Connect SoCal RTP/SCS and therefore would not conflict with the RTP/SCS or other applicable plan adopted for the purpose of reducing the emissions of greenhouse gases. The Proposed Project would change long-term GHG emissions by increasing locomotive emissions in the AVL corridor and removing passenger vehicles from the roadway network. The total net annual GHG emissions increase resulting from the Proposed Project operations and construction relative to existing conditions would be approximately 11,169.5 $MTCO_2e$ after accounting for the VMT reductions and the amortized construction emissions. As the significance threshold has been established as net-zero emissions, without mitigation, the Proposed Project would result in a significant impact related to direct and indirect GHG emissions. Mitigation Measures **GHG-1** and **GHG-2** would contribute to reductions in GHG construction emissions; however, no mitigation measures have been identified to significantly reduce operational emissions, which would be the primary source of impactful emissions. This estimated annual increase represents a conservative approximation as it does not account for any future enhancements to Metrolink's fleet and operations that could substantially reduce CO_2 emissions from rail propulsion.

As of 2019, technical analysis supporting the Metrolink Climate Action Plan determined that Metrolink systemwide operations generated approximately 87,000 $MTCO_2$ emissions annually and offset approximately 130,000 $MTCO_2$, for a net reduction of approximately 43,000 $MTCO_2$. Therefore, implementation of the Proposed Project would lower the net GHG emissions reduction to approximately 31,830 $MTCO_2e$; however, Metrolink operations would continue to offset substantially more emissions than they generate, and this analysis did not consider future improvements in system operations being explored through Climate Action Plan programs.

Hazards and Hazardous Materials

Construction activities would use and generate hazardous waste. Hazardous materials would include, but are not limited to vehicle fuels, asphalt/concrete, lubricants, epoxy resins, drilling fluids, and paints. The use of these materials, including their routine transport and disposal, carries the potential for an accidental release into the local environment. Although typical construction management practices limit and often eliminate the risk of such accidental releases, the extent and duration of project construction presents a possible risk to the environment, through the routine transport of hazardous materials. Therefore, without mitigation, the Proposed Project would result in a potentially significant impact related to the transport, use and disposal of hazardous materials during construction. Implementation of Mitigation Measures **HAZ-1** and **HAZ-2** would ensure that any accidental spills or releases of hazardous materials during construction would be managed properly and any hazardous wastes or known contaminated materials are disposed of properly. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to construction activities.

There is potential for contaminated soil and groundwater, aerially deposited lead, presence of lead-based paints, presence of asbestos containing materials, and various historic uses that handled or stored hazardous materials within the vicinity of the capital improvement sites.

Disturbances of soil, soil vapor, or groundwater during construction at known, potential, or historical concern sites would potentially result in the upset of hazardous materials into the environment and presenting potential for significant impacts. Disturbance of these concern sites could create a health risk to construction workers and nearby residents or the public during construction. In addition, the Balboa Double Track Extension site is located within a known Methane Zone and Methane Buffer Zone. There is potential for ground disturbing activities such as track removal and grading to result in the release of methane vapor presenting potential risks of explosion. Notably, portions of the Canyon Siding Extension site are located within the historic boundaries of the Whitaker-Bermite Facility, which is included in the Cortese List of hazardous materials sites compiled pursuant to Government Code Section 65962.5. There is higher potential for soil contamination and hazardous material release impacts during construction at this site.

Mitigation Measure **HAZ-3** would be implemented to ensure that all unknown environmental concerns are identified prior to ground disturbance activities and if necessary, to identify appropriate remediation or corrective action to address such concerns. Mitigation Measure **HAZ-4** would ensure that any concerns related to the presence of methane gas in the Balboa Double Track Extension site are addressed through design solutions in accordance with the City of Los Angeles requirements. With implementation of these Mitigation Measures, the potential environmental concerns identified would be negligible because hazardous materials and contaminated groundwater would be managed appropriately, property assessments (Phase I and II ESAs) would be completed prior to construction, and the contractor will be prepared for encountering known or undocumented hazardous materials. Therefore, with mitigation, the Proposed Project would result in a less-than-significant impact related to construction activities.

Noise and Vibration

Construction would require the use of heavy equipment, pneumatic tools, drill rigs, generators, concrete pumps, and other similar equipment. Use of such equipment would result in noise exceedances at sensitive land uses surrounding all three of the capital improvement sites. Construction activities are anticipated to result in noise exceedances of local noise thresholds by up to 13.1 decibels in the City of Los Angeles (noise limit of 78 decibels), 6.2 decibels in the City of Santa Clarita (noise limit of 75 [residential] to 85 [commercial] decibels), and 17.2 decibels in the City of Lancaster (noise limit of 75 [residential] to 85 [commercial] decibels). Accordingly, construction activities associated with all three capital improvements would result in a potentially significant impact without mitigation. Mitigation Measure **NV-1** includes noise monitoring and performance standards that would address construction-related impacts; however, it is likely that certain louder construction activities associated with the Balboa Double Track Extension and the Lancaster Terminal Improvements cannot be mitigated such that noise levels would be below established significance thresholds. Therefore, impacts associated with construction of the Proposed Project would be significant and unavoidable.

Construction vibration predictions for the receivers near construction activities associated with all three capital improvement sites identified exceedances of vibration annoyance limits. Vibration impacts related to construction would not reach levels that risk damage to structures

(0.2 inch/sec). However, the vibration levels from construction exceed the annoyance threshold during all five phases of construction. The use of the vibratory roller drives the largest exceedances. Mitigation Measure **NV-2** would require specific measures to be employed to reduce construction vibration impacts; however, it is likely that vibration levels would still exceed annoyance thresholds and impacts related to construction would be significant and unavoidable.

Tribal Cultural Resources

The Project corridor was identified by Mr. Andrew Salas of the Kizh Nation as a Tribal Cultural Resource (TCR); however, the TCR has not been listed or determined eligible for the California Register of Historic Resources (CRHR) or any local register. Additionally, it is assumed that an abundance of materials and artifacts are buried in the Project Area including unmarked burials along the entire AVL corridor based on ethnographic accounts documenting the traditional ancestral territory of the Fernandeño Tataviam Band of Mission Indians. The Proposed Project is located within an urbanized area and has been subject to disruption by development activities associated with the railroad and surrounding urban uses. As a result of previous development activities, surficial archaeological resources and any above-ground tribal cultural resources that may have existed have likely been displaced or destroyed. Considering the stated sensitivity of the Project Area with regard to the assumed presence of materials, artifacts, and unmarked burials along the AVL corridor, there is the possibility that ground-disturbing activities could impact previously undiscovered buried tribal cultural resources of historical significance. Therefore, without mitigation, construction of the Proposed Project would result in a potentially significant impact related to TCRs. Potential impacts to TCRs that are not listed or eligible for listing in the CRHR or a local register are discussed in Impact 3.11-2. Compliance with Mitigation Measures **CUL-1** and **CUL-2** would reduce impacts to the TCR to less-than-significant levels.

Hydrology and Water Quality

Construction of the proposed capital improvements could result in temporary changes in grades and drainage patterns, discharge of pollutants into surface waters, exposure of soils to stormwater and erosive conditions. In addition, temporary dewatering may be required. These construction-related impacts would be addressed by Mitigation Measure **WQ-1** which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) that complies with the General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). Similarly, there is potential for contaminated groundwater to be encountered during construction of the capital improvements, in particular, the Canyon Siding Extension. To ensure that groundwater and/or contaminated groundwater is handled properly and avoid impacts to receiving surface or groundwater resources Mitigation Measures **WQ-3** and **WQ-4** would require dewatering permits to be acquired in the event that groundwater is encountered during construction. With implementation of Mitigation Measures **WQ-1**, **WQ-3**, and **WQ-4**, impacts on receiving waters would be avoided and the impact would be less than significant.

AVL rail operations would contribute pollutants in concentrations and amounts that are typical for transportation facilities, including total suspended solids, metals, oils and grease, and debris. Because the AVL is an existing active rail corridor, and the Proposed capital improvements would

result in minimal changes in the drainage pattern of each capital improvement site, the character and concentration of pollutants in runoff would be similar to existing conditions and the impact related to water quality standards and waste discharge requirements would be less than significant. Mitigation Measure **WQ-2** would further ensure impacts associated with erosion and site drainage would be less than significant by requiring preparation of a post-construction SWPPP. Operations associated with the Lancaster Terminal Improvements would include vehicle wash facilities that would discharge wastewater into the local sewer system. If vehicle cleaning operations are not managed properly there is potential for a significant impact related to water quality standards and waste discharge requirements. The proposed layover facility is subject to the IGP (Order No. 2014-0057-DWQ) which regulates industrial discharges into municipal sewer systems. Mitigation Measure **WQ-5** would ensure compliance with the IGP requirements. With implementation of Mitigation Measures **WQ-2** and **WQ-5** impacts on receiving waters would be avoided and the Proposed Project's incremental contribution to the existing cumulative impact is not cumulatively considerable.

6.3 PROJECT OBJECTIVES

Per the CEQA Guidelines, the achievement of project objectives should influence the selection of alternatives analyzed in a Draft EIR. Specifically, the "range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects." (CEQA Guidelines Section 15126.6(c)). Consistent with the State Rail Plan and Metrolink's Southern California Optimized Rail Expansion (SCORE) program, and in anticipation of substantial population and employment growth in the North Los Angeles County region over the next 20 years, Metro seeks to improve rail service on the AVL to realize its full potential as a regional mobility enhancement and not just a peak-hour commuter service. Accordingly, the Proposed Project seeks to:

- Provide regular and more frequent Metrolink services to improve regional connectivity, and accessibility through the enabling of 30-minute bi-directional passenger rail service to the Santa Clarita Valley, and 60-minute bi-directional service to the City of Lancaster along the AVL corridor.
- Improve passenger service reliability and efficiency on the AVL rail corridor.
- Provide necessary infrastructure improvements to enhance operational flexibility and reliability along the AVL corridor.
- Support the vision and goals for rail service in the region consistent with the California State Rail 2040 Plan and Metrolink's SCORE program.

6.4 ALTERNATIVES TO THE PROPOSED PROJECT

The CEQA statute, the CEQA Guidelines, and related court cases do not specify a precise number of alternatives to be evaluated in an EIR. Rather, "the range of alternatives required in an EIR is governed by the rule of reason that sets forth only those alternatives necessary to permit a reasoned choice." At the same time, CEQA Guidelines Section 15126.6(b) requires that "...the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project" and Section 15126.6(f) requires that "[t]he alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project." Accordingly, alternatives that would not address potentially significant effects are not considered herein. However, the CEQA Guidelines require that a No Project alternative must be included in the EIR. Other alternatives may involve modifying project elements.

Alternatives should be selected on the basis of their ability to attain all or most of the basic objectives of the project, while reducing the project's potentially significant environmental effects. Section 15126.6(c) of the CEQA Guidelines states that "...[t]he EIR should briefly describe the rationale for selecting alternatives to be discussed [and]...shall include sufficient information to allow meaningful evaluation, analysis and comparison with the proposed project." The feasibility of the alternatives is another consideration in the selection of alternatives. The CEQA Guidelines, section 15126.6(f)(1) states that "among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations [and] jurisdictional boundaries. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making." Alternatives that are considered remote or speculative, or whose effects cannot be reasonably predicted, do not require consideration. Therefore, feasibility, the potential to mitigate significant project-related impacts, and reasonably informing the decision-maker are the primary considerations in the selection and evaluation of alternatives.

The Proposed Project includes options for station upgrades as part of the Canyon Siding Extension and Lancaster Terminal Improvements mainly related to various potential configurations of platform access. The purpose of considering various design options for platform access is to provide Metro and Metrolink with flexibility in design to accommodate potential for additional funding beyond that required for the base design. Metro determined that stakeholders and decision-makers would best be informed about the Proposed Project by equally evaluating the potential environmental impacts of multiple station design concepts and profiles. Accordingly, rather than evaluating these various station design concepts in this Alternatives chapter, the Design Options are included as part of the analysis of the Proposed Project. Generally, impacts associated with any of the Design Options would be similar or the same as those associated with the base design with some moderate differences in the location or intensity of construction effects while there would be varying degrees of benefit to Metrolink operations depending on the design option. For a comparison of the Proposed Project and the design options, please refer to Executive Summary, Section ES.14, and Executive Summary, **Table ES-5**. The following analysis

includes two alternatives. The two alternatives are a No Project Alternative (Alternative 1) and a reduced scope Hourly Service-Only Alternative (Alternative 2).

Alternative 1 – No Project Alternative

The No Project Alternative is required by CEQA Guidelines Section 15126.6(e)(2) and assumes that the Proposed Project would not be implemented by Metro. The No Project Alternative allows decision-makers to compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project. The No Project Alternative is evaluated in the context of the existing transportation facilities in the Project Area and other capital transportation improvements and/or transit and highway operational enhancements that are reasonably foreseeable.

The No Project Alternative would include the Brighton to Roxford Double Track Project and the Link US Project in addition to other transportation and land use projects listed in Chapter 5 Cumulative Impact Analysis, of this EIR. The Brighton to Roxford Double Track Project would provide nine miles of track through the single-track portion of Metro's Valley Subdivision Railway which include the AVL. The project would provide capacity and safety improvements along this portion of the AVL and allow for more efficient and reliable Metrolink operations. The Link US Project would reconfigure the existing Union Station rail yard and will potentially allow regional one-seat trips from Ventura County and the Antelope Valley, to San Bernardino and San Diego counties. The project will also provide capacity to meet demand from the future California High-Speed Rail project.

Under the No Project Alternative, existing (pre-COVID 19) Metrolink service would be maintained with some improvement in reliability and operational flexibility afforded by other capital improvements along the AVL such as the Brighton to Roxford Double Track Project. Metrolink timetables, particularly off-peak service may be adjusted in the future based upon changes in demand and operational flexibility afforded by related projects on the corridor. The planned late-night trips on Friday and Saturday would be added to the AVL schedule consistent with the Phase 1 of the Metro Board-approved Motion (File #2019-0571) supporting funding and planning for the Proposed Project. Peak service improvements would be limited to providing longer train consists (i.e. five-car consists rather than four-car consists) to alleviate crowding on existing trains; however, peak-hour crowding has not been an issue historically, and the degree to which existing peak-hour train consists could be lengthened is limited by existing station platform lengths, storage track capacity, and rolling stock limitations.

Alternative 2 –Hourly Service-Only Alternative

Alternative 2 would only implement the Balboa Double Track Extension capital improvement enabling hourly bi-directional service along the AVL between Los Angeles Union Station and the Antelope Valley during off-peak hours. The location of the Balboa Double Track Extension is a key section of the AVL, as identified in the AVL Study, which currently limits Metrolink's ability to provide clock-face interval service between the Santa Clarita Valley and the San Fernando Valley. Constructing the Balboa Double Track Extension, as opposed to either the Canyon Siding Extension or the Lancaster Terminal Improvements, would provide the length of double track

necessary at a key choke point along the AVL to allow bi-directional hourly service between Los Angeles Union Station and the Lancaster Station. Expanded late-night service, including late-night trains seven days a week, would also be enabled under Alternative 2. Neither the Canyon Siding Extension nor the Lancaster Terminal Improvements would be implemented under Alternative 2, which would limit Metrolink's ability to expand service beyond hourly service due to the limitations on expanded rolling stock presented by existing storage track capacity and operational conflicts associated with the single-track configuration through the Canyon Siding Extension site. Alternative 2 would be consistent with Phase 2 of the Metro Board-approved Motion (File #2019-0571) supporting funding and planning for the Proposed Project.

6.5 ALTERNATIVES ANALYSIS

Under CEQA Guidelines Section 15126.6(d), each alternative is evaluated in sufficient detail to allow meaningful evaluation, analysis, and comparison with the Proposed Project (including the route options). The alternatives analysis addresses the same environmental topics that were evaluated in Chapter 3 (i.e., aesthetics, air quality, biological resources, cultural resources, energy resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, noise and vibration, transportation, and tribal cultural resources). Potentially significant impacts and the mitigation measures proposed to reduce them to less-than-significant levels are described in Chapter 3, Environmental Impact Analysis. Environmental resources to which the Proposed Project would not have the potential to cause significant impacts or would have a less-than-significant impact with regulatory compliance are addressed in Section 4.1, Effects Determined Not to Be Significant. An alternatives analysis is not warranted for environmental resources to which the Proposed Project was determined to not have potential significant impacts. These include agriculture and forestry resources, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, utilities and service systems, and wildfire.

Analysis of No Project Alternative

Aesthetics

The No Project Alternative would not include physical changes to the existing AVL or its surroundings. This alternative would not result in permanent alterations to existing hillsides or other visual resources and existing views of and around the AVL would remain unaffected. Existing station platforms including the Santa Clarita Station and Lancaster Terminal would remain unchanged with no potential to affect views or scenic resources along the AVL. Impacts would be less than those of the Proposed Project, which were determined to be less-than-significant with mitigation measures.

Air Quality

The No Project Alternative includes the existing transportation network and land use developments that generate air pollutant emissions. Without the Proposed Project, mobile sources and land uses would continue to generate pollution. However, there is no specific action

associated with the No Project Alternative that would cause an impact. Modest reduction in passenger vehicle use could be realized under the No Project Alternative as the AVL would continue to provide commuter rail service with some capacity to meet growing ridership. There would be no potential to conflict with or obstruct air quality plans, result in a cumulatively considerable net increase of a criteria pollutant, expose sensitive receptors to substantial pollutant concentrations, or result in other emissions such as odors that could adversely affect a substantial number of people. The No Project Alternative would not result in a significant impact related to construction or operational activities. No construction impacts would result from the No Project Alternative and while the Alternative would not have the same level of improvement to regional mobile source emissions, the ongoing operation of the AVL contributes to air quality improvements consistent with regional and local air quality plans. Since Metrolink service would not increase under the No Project Alternative impacts associated with diesel locomotive emissions would be less than those of the Proposed Project which were determined to be significant and unavoidable due to an exceedance of SCAQMD regional thresholds for NO_X. No impact on air quality would result from the No Project Alternative.

Biological Resources

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect biological resources. This alternative would not result in the removal of trees or other vegetation in the open space and undeveloped areas either within the AVL ROW or its surroundings. The No Project Alternative would not impact terrestrial habitat, riparian habitat, or wetlands. This alternative would not impact candidate, sensitive, or special status species or impede the movement of wildlife. There would be no potential to conflict with policies or ordinances protecting biological resources or conflict with conservation plans. The No Project Alternative would not result in a significant impact related to biological resources. Impacts would be less than or equal to those of the Proposed Project, which were determined to be less than significant with mitigation for construction activities and no impact for operational activities.

Cultural Resources

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect cultural resources. This alternative would not result in ground disturbance, acquisition, and/or modification of cultural resources along the AVL. There would be no potential for construction or operational activities to disturb historic or archaeological resources. The No Project Alternative would not result in a significant impact related to cultural resources. This impact would be less than what was identified for the Proposed Project, which was determined to be less-than-significant with mitigation.

Energy

The No Project Alternative includes the existing transportation network and land use developments that consume transportation fuels, electricity, and natural gas. Without the Proposed Project, mobile sources and land uses would continue to use transportation fuels at existing levels. However, there is no specific action associated with the No Project Alternative that would cause an impact. There would be no potential to create impacts related to fuel consumption

or conflicts with renewable energy or energy efficiency plans. The No Project Alternative would not result in a significant impact related to construction or operational activities. Construction impacts would be less than those of the Proposed Project, which were determined to be less than significant for construction.

A consequence of the No Project Alternative would be that Metro would not be able to improve regional transit ridership to the degree it would improve under the Proposed Project. It is anticipated that expansion of Metrolink service along the AVL would reduce regional vehicle miles traveled by making Metrolink service a more attractive mode of transportation through the provision of more frequent and reliable service. While existing AVL service would be able to accommodate some future regional growth in ridership, the potential VMT reduction associated with the No Project Alternative would be minimal as only one additional late-night train on Fridays and Saturdays would be added to AVL service under the No Project Alternative. The benefit of improved ridership and associated VMT reduction would not be fully realized under the No Project Alternative.

Geology, Soils, and Paleontological Resources

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect geology and soils. This alternative would not result in ground disturbance, acquisition, and/or modification of geology and soils from construction or operations of the Proposed Project. There would be no potential for construction or operational activities to result in impacts from seismic events, landslides, erosion, lateral spreading, subsidence, liquefaction, collapse, alternative wastewater systems, or paleontological resources beyond potential seismic risks that already exist. The No Project Alternative would not result in a significant impact related to geology and soils or paleontological resources. This impact would be less than what was identified for the Proposed Project, which was determined to be less-than-significant for construction activities and less-than-significant with mitigation for operational activities.

Greenhouse Gas Emissions

The No Project Alternative includes the existing transportation network and land use developments that generate greenhouse gas (GHG) emissions. Without the Proposed Project, mobile sources and land uses would continue to generate pollution. However, there is no specific action associated with the No Project Alternative that would cause an impact. There would be no potential to generate significant GHG emissions or conflict with GHG reduction plans. Metrolink would continue to improve its systemwide GHG emissions through the GHG reduction strategies and emerging technologies identified in the Metrolink Climate Action Plan. The No Project Alternative would not result in a significant impact related to construction or operational activities. Construction impacts would be less than those of the Proposed Project, which were determined to not be significant.

A consequence of the No Project Alternative would be that Metro would not be able to improve regional transit ridership to the level of improvement under the Proposed Project. It is anticipated

that expansion of Metrolink service along the AVL under the Proposed Project would reduce regional vehicle miles traveled by making Metrolink service a more attractive mode of transportation through the provision of more frequent and reliable service. While existing AVL service would be able to accommodate some future regional growth in ridership, the potential VMT reduction associated with the No Project Alternative would be minimal as only one additional late-night train on Fridays and Saturdays would be added to AVL service under the No Project Alternative. The benefit of improved ridership and associated VMT reduction would not be fully realized under the No Project Alternative. The No Project Alternative would have no potential to create impacts related to GHG emissions. There would be no potential for operational impacts and the No Project Alternative would avoid significant impacts related to net increases in GHG emissions associated with increased fuel usage from rail propulsion.

Hazards and Hazardous Materials

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect hazards and hazardous materials. This alternative would not result in impacts to hazardous materials, airports, emergency response plans, or wildland fires. The No Project Alternative would not result in a significant impact related to hazards and hazardous materials. This impact would be less than what was identified for the Proposed Project, which was determined to be less-than-significant with implementation of mitigation measures.

Hydrology and Water Quality

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect hydrology and water quality. No impacts to surface water or groundwater resources would occur and existing site drainage would be unaffected. Existing operations along the AVL would be maintained and there would be no new potential for pollutants to affect receiving surface water or groundwater. The No Project Alternative would not result in a significant impact related to hydrology and water quality. Impacts would be less than or equal to those of the Proposed Project, which were determined to be less than significant with mitigation for construction activities and less than significant with mitigation for operational activities.

Noise and Vibration

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect noise and vibration. There would be no construction activities and no new noise or vibration exposure associated with heavy-duty equipment or construction trucks. There would be no potential to increase ambient noise levels, generate excessive vibration, or expose people to excessive aircraft noise. Impacts from construction would be less than those of the Proposed Project, which were determined to be significant and unavoidable.

The No Project Alternative includes the existing transportation network and land use developments that generate operational noise. Without the Proposed Project, mobile sources and land uses would continue to generate operational noise. However, there is no specific action associated with the No Build Alternative that would cause a new noise impact beyond existing conditions. While Metrolink trains would continue to generate noise associated with audible

warning devices such as horns, impacts from operations would be less than those of the Proposed Project, which were determined to be less than significant.

Transportation

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect the transportation system. There would be no construction activities and associated lane closures and/or traffic hazards. There would be no potential to conflict with programs, plans, ordinance, or policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. There would also be no potential for increased hazards due to design features or incompatible land uses or inadequate emergency access. The No Project Alternative would not result in a significant impact related to construction activities. Construction impacts would be less than those of the Proposed Project, which were determined to be less than significant with mitigation.

The No Project Alternative would not change existing operating conditions on local roadways. There would be minor changes in AVL service operations associated with the addition of additional late-night trains which would have limited potential for transportation effects. There would be no potential to conflict with programs, plans, ordinance, or policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. There would also be no potential for increased hazards due to design features or incompatible land uses or inadequate emergency access. Operational impacts would be less than those of the Proposed Project, which were determined to be less than significant.

Tribal Cultural Resources

The No Project Alternative would not include physical changes to the existing AVL or its surroundings that could affect tribal cultural resources. There would be no potential for construction or operational activities to disturb tribal cultural resources. The No Project Alternative would not result in a significant impact related to tribal cultural resources. Impacts would be less than or equal to those of the Proposed Project, which were determined to be less than significant with mitigation for construction activities and no impact for operational activities.

Analysis of Alternative 2

Aesthetics

Construction activities associated with Alternative 2 would be limited to those associated with the Balboa Double Track Extension. Construction activities would generally be at a similar or lower grade as the surrounding roadways and uses. Although tall construction equipment would be used, views of the surrounding undeveloped hillsides from the I-5 freeway would remain and would not be substantially altered or obstructed and a less-than-significant impact on scenic vistas would occur. While the Balboa Double Track Extension is located along the I-5 corridor, which is an eligible State scenic highway, construction activities would primarily occur within the existing rail ROW. No construction activities or tree removals are proposed in the surrounding Santa Susana and San Gabriel Mountains, the primary visual resources within I-5 viewshed. Therefore, construction

activities associated with Alternative 2 would not damage scenic resources associated with the I-5 freeway, and a less-than-significant impact on state scenic highways would occur. Residents would have limited views of construction activities since construction activities would occur to the rear of the residences, where views of construction activities would be mostly blocked by existing vegetation that separate the rail ROW from the residential properties. Motorists traveling along the I-5 freeway would continue to have unobstructed views of the Santa Susana and San Gabriel Mountains and a less-than-significant impact on visual character would result. Similar to the Proposed Project, construction activities may temporarily affect nighttime lighting and may result in glare, a potentially significant impact related to light and glare would occur during construction requiring mitigation. Alternative 2 would avoid potentially significant visual impacts in the City of Santa Clarita and City of Lancaster as no construction activities associated with the Canyon Siding Extension and Lancaster Terminal Improvements would occur. Overall, construction period impacts associated with Alternative 2 would be less than significant other than potential impacts related to nighttime construction lighting at the Balboa Double Track Extension.

Operation of Alternative 2 would consist of hourly Metrolink service and would result in similar impacts to visual quality and resources as the Proposed Project, namely the movement of trains along an existing and active rail corridor. Permanent alterations to landforms associated with the Balboa Double Track Extension would consist of soil cut slopes and retaining walls. Given the heights and locations of these components, Alternative 2 would not obstruct or substantially alter views of the surrounding mountains and the existing landforms outside of the rail and transportation corridors and the scenic features of the surrounding mountains would not be disturbed. Permanent changes to landforms associated with the Canyon Siding Extension would not occur under Alternative 2 thus avoiding potentially significant impacts. Operation of Alternative 2 would result in less-than-significant impacts. Accordingly, impacts would be less than those of the Proposed Project which were determined to be less-than-significant with mitigation.

Air Quality

Alternative 2 would only construct the Balboa Double Track Extension. As discussed in Section 3.3, Air Quality, and shown in **Table 3.3-15**, daily air pollutant emissions that would be generated during construction activities involved in the Balboa Double Track Extension, would remain well below the applicable South Coast Air Quality Management District (SCAQMD) mass daily thresholds at the regional and local scales. Emissions generated during construction would be related to a daily construction equipment activity, construction worker trips, and haul truck trips. Similar to the Proposed Project, Alternative 2 would result in less-than-significant impacts related to construction activities. However, the quantity of construction emissions associated with Alternative 2 would be less than those of the Proposed Project as no construction work associated with the Canyon Siding Extension or the Lancaster Terminal Improvements would occur.

Similar to the Proposed Project, Alternative 2 would operate Metrolink trains along the AVL but only provide hourly service. Accordingly, emissions that would be generated by Metrolink diesel locomotives would be less than those under the Proposed Project; however, it is anticipated that Alternative 2 would result in less ridership than the Proposed Project and would not reduce VMT and associated mobile source pollutant emissions as much as the Proposed Project. Rail

propulsion operations under Alternative 2 would generate emissions of NO_X that would exceed the SCAQMD regional thresholds. The significant impact does not account for future emission reductions associated with the Metrolink Climate Action Plan. Metrolink goals include transitioning to 100 percent petroleum fuel free through the application of renewable diesel fuel by 2022 and achieving 100 percent zero emissions by 2028 through the application of alternative propulsion technologies. If Metrolink can realize these aspirational goals Project-related NO_X emissions would be significantly reduced by not using petroleum fuel and eliminated by using locomotive technology that results in zero emissions. As these emission reduction goals are considered aspirational and Metrolink is in the process of studying fleet modernization and emerging zero- and near-zero-emissions applications, the implementation schedule for transitioning away from the existing locomotive fleet to a petroleum-free fleet and then to a net zero emissions fleet is not known at this time. Therefore, NO_X reductions associated with these goals have not been quantified and impacts associated NOx emissions from Project operations are considered significant and unavoidable. Regardless, it is important to note that Metrolink's "moon shot" is to transition its fleet to zero emissions by 2028 which is also the anticipated time AVL service would be increased as a result of the Proposed Project. Regardless, similar to the Proposed Project, Alternative 2 would also result in a significant and unavoidable impact, although to a lesser degree than the Proposed Project as locomotive activity along the AVL would not be as frequent as the Proposed Project.

Similar to the Proposed Project, Alternative 2 would not conflict with or obstruct air quality plans, result in a considerable cumulative net increase of a criteria pollutant, expose sensitive receptors to substantial pollutant concentrations, or result in other emissions such as odors that could adversely affect a substantial number of people.

Biological Resources

Alternative 2 would not construct the Canyon Siding Extension or the Lancaster Terminal Improvements and would therefore avoid potential impacts on terrestrial habitats, riparian habitats, or wetlands in the City of Santa Clarita and the City of Lancaster. Impacts associated with the Balboa Siding Extension would include vegetation removal, including mature trees as well as grading activities near identified water features that may support wetland indicators. Accordingly, Alternative 2 would have the potential to affect migratory and nesting bird species and roosting bats, which could result in a potentially significant impact. There would be no potential to conflict with policies or ordinances protecting biological resources or conflict with conservation plans. Construction impacts would be less than those of the Proposed Project, which were determined to be less-than-significant with mitigation; however, impacts would still be potentially significant requiring mitigation.

Cultural Resources

Alternative 2 would not construct the Canyon Siding Extension or the Lancaster Terminal Improvements and would avoid ground disturbing activities in the City of Santa Clarita and the City of Lancaster. However, there is the possibility that ground-disturbing activities during the excavation of the cut slopes and addition of retaining walls associated with the Balboa Double

Track Extension could impact previously undiscovered prehistoric or archaeological resources, a potentially significant impact. Accordingly, construction impacts could require mitigation measures to mitigate inadvertent impacts to potential subsurface archaeological deposits similar to the Proposed Project. Alternative 2 would have less potential to encounter subsurface archaeological resources than the Proposed Project, which was determined to result in a less-than-significant impact with mitigation. Similar to the Proposed Project, operational activities would not result in a significant impact.

Energy

Alternative 2 would not include substantial construction activities related to the Proposed Project as only the Balboa Double Track Extension would be constructed. As discussed in Section 3.6, Energy Resources, construction activities would consume petroleum-based fuels amounting to approximately 1,299,588 gallons of diesel fuel and 21,433 gallons of gasoline for the Balboa Double Track Extension. This level of fuel consumption would be less than that required for the Proposed Project, which was determined to result in less-than-significant impacts related to construction activities.

Similar to the Proposed Project, direct electricity demand for locomotive propulsion and from Metrolink stations would not be significant. Energy consumption would be less than that of the Proposed Project due to the fewer number of trains and rolling stock required to provide hourly service. There would be no potential to conflict with energy conservation plans. Similar to the Proposed Project, Alternative 2 would not result in a significant impact related to operational activities. However, it is anticipated that Alternative 2 would result in less ridership than the Proposed Project. As a result, this alternative would not reduce VMT and associated transportation energy use as much as the Proposed Project. Alternative 2 would result in less of a permanent energy benefit than the Proposed Project.

Geology, Soils, and Paleontological Resources

The Balboa Double Track Extension is intersected by the San Fernando and Santa Susana faults within the Sierra Madre Fault Zone; to the south of the Balboa Double Track Extension lies the Mission Hills Fault Zone and Northridge Fault. Similar to the Proposed Project, Alternative 2 would be subject to seismic-related risks, which would require mitigation to address geotechnical design. Construction of the Balboa Double Track Extension would require the re-alignment of both the existing Main Line track and existing Sylmar Siding, and installation of an approximately 475-foot retaining wall along the west side of the AVL corridor. As a result, construction activities associated with Alternative 2 have the potential to affect slope stability which could be addressed by mitigation measures similar or the same as those required under the Proposed Project. Construction impacts would be less than those of the Proposed Project as geotechnical and paleontological considerations associated with the Canyon Siding Extension and the Lancaster Terminal Improvements would not apply. Construction impacts would be less-than-significant with mitigation. Similar to the Proposed Project, operational activities would not result in a significant impact.

Greenhouse Gas Emissions

Alternative 2 would include construction of the Balboa Double Track Extension. As discussed in Section 3.8, Greenhouse Gas Emissions, construction activities would generate GHG emissions through the exhaust of off-road equipment and on-road vehicles that would be used to complete the work. As shown in **Table 3.8-7**, construction of the Balboa Double Track Extension site improvements would generate approximately 1,676.1 metric tons of carbon dioxide equivalent ($MTCO_2e$) of GHG emissions. Per SCAQMD guidance, GHG construction emissions are considered together with operational emissions to assess significance. Similar to the Proposed Project, Alternative 2 would use diesel locomotive engines consistent with existing Metrolink operations and Alternative 2 would result in the addition of fewer trains to AVL operations resulting in fewer GHG emissions associated with operations. However, while the direct operational GHG emissions have not been quantified for Alternative 2, it is presumed that Alternative 2 would result in a net increase in GHG emissions when considering direct emissions from construction, operational rail propulsion, and taking into considering the reduction in VMT. Therefore, construction and operation of Alternative 2 would result in fewer direct GHG emissions overall when compared to the Proposed Project, but would not avoid the significant impact associated with direct net increases in GHG emissions. It is anticipated that Alternative 2 would increase ridership on the Metrolink system thereby reducing regional VMT. However, the VMT reduction would be less than that of the Proposed Project but would still result in a reduction of transportation-related energy use. As a result, Alternative 2 would not conflict with GHG reduction plans. Similar to the Proposed Project, Alternative 2 would result in a significant impact related to direct GHG emissions from construction or operational activities but the total net increase in emissions would be less than the Proposed Project. Alternative 2 would result in less of a permanent GHG benefit than the Proposed Project as the VMT reduction associated with Alternative 2 would be less resulting in less of an indirect benefit. As discussed, the significant impact of this does not account for future emission reductions associated with the Metrolink Climate Action Plan. Metrolink goals include transitioning to 100 percent petroleum fuel free through the application of renewable diesel fuel by 2022 and achieving 100 percent zero emissions by 2028 through the application of alternative propulsion technologies. If Metrolink can realize these aspirational goals Project-related and Alternative 2-related GHG emissions would be significantly reduced by not using petroleum fuel and eliminated by using locomotive technology that results in zero emissions. As these emission reduction goals are considered aspirational and Metrolink is in the process of studying fleet modernization and emerging zero- and near-zero-emissions applications, the implementation schedule for transitioning away from the existing locomotive fleet to a petroleum-free fleet and then to a net zero emissions fleet is not known at this time. Therefore, GHG emissions impacts associated with Alternative 2 are considered significant though less than those of the Proposed Project due to reduced fuel consumption associated with rail propulsion and fewer emissions associated with construction activities.

Hazards and Hazardous Materials

Alternative 2 would construct the Balboa Double Track Extension in the City of Los Angeles involving use of hazardous materials, including vehicle fuels, oils, and transmission fluids for on-

site construction equipment. Although typical construction management practices limit and often eliminate the risk of accidental releases of hazardous materials, the extent and duration of Alternative 2 construction presents a possible risk to the environment through the routine transport of hazardous materials. Therefore, there is potential for a significant impact associated with construction activities and mitigation would be required. In addition, the Balboa Double Track Extension site is located within a known Methane Zone and Methane Buffer Zone. Accordingly, there is potential for ground disturbing activities such as track removal and grading to result in the release of methane vapor presenting potential risks of explosion, a potentially significant impact requiring mitigation. Alternative 2 would operate along the existing AVL and there would be no change to existing emergency response plans. There would be no new hazardous situation related to airports or wildland fires. Similar to the Proposed Project, Alternative 2 would result in a potentially significant impact related to hazards and hazardous materials. Impacts would be less than those of the Proposed Project as hazardous material concerns and conditions associated with the Canyon Siding Extension and Lancaster Terminal Improvements would not apply to the Alternative, which were determined to be less-than-significant with mitigation.

Hydrology and Water Quality

Alternative 2 would not construct the Canyon Siding Extension or the Lancaster Terminal Improvements and would avoid construction-related discharges of pollutants into receiving waters within the Santa Clara River Watershed and the Antelope Valley Drainage Basin as well as potentially contaminated groundwater from the Canyon Siding Extension site. Potential impacts associated with construction of the Balboa Double Track Extension include temporary changes in grades and drainage patterns, discharge of pollutants into surface waters, exposure of soils to stormwater and erosive conditions which have the potential to result in significant impacts on water quality if not mitigated. Since impacts associated with the Canyon Siding Extension and the Lancaster Terminal would be avoided, impacts associated with Alternative 2 would be less than those of the Proposed Project, which were determined to be less-than-significant with mitigation; however, impacts would still be potentially significant requiring mitigation.

Noise

Alternative 2 would include construction of the Balboa Double Track Extension which poses potentially significant construction impacts to sensitive land uses adjacent to the AVL ROW. Construction period impacts associated with the Canyon Siding Extension and Lancaster Terminal Improvements would not apply to Alternative 2. Therefore, impacts of Alternative 2 would be less than those of the Proposed Project, which were determined to be significant and unavoidable. However, since Alternative 2 would include construction of the Balboa Double Track Extension, construction impacts associated with the Alternative would still be significant and unavoidable.

Alternative 2 would operate within the existing AVL ROW and would enable hourly Metrolink service. As fewer trains would operate along the AVL under Alternative 2, operational impacts would be less than those estimated for the Proposed Project, which did not exceed significance thresholds. Similar to the Proposed Project, Alternative 2 would result in less-than-significant impacts related to operational activities.

Transportation

Alternative 2 would operate within the existing AVL ROW and would not include any alterations to existing station facilities or grade crossings. Construction of the Balboa Double Track Extension would result in additional traffic, which would consist of equipment, employee vehicles, and material deliveries in trucks along local roadways such as San Fernando Road in the City of Los Angeles. In addition, due to the required main track realignment of the Balboa Double Track Extension, there is potential for construction to result in schedule delays, increased dwell times, and overall decreased performance of the AVL as AVL service may be interrupted in order to install the track. The Balboa Double Track Extension under Alternative 2 would pose the same design considerations related to the I-5 pier protection. Due to potential AVL schedule delays and construction-related traffic, Alternative 2 would have the potential to result in a significant impact requiring mitigation measures. However, the construction-related impacts of Alternative 2 would be less than those of the Proposed Project, which were determined to be less-than-significant with mitigation.

Similar to the Proposed Project, there would be no potential for Alternative 2 to conflict with programs, plans, ordinance, or policies addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. There would also be no potential for increased hazards due to design features or incompatible land uses. As with the Proposed Project, Alternative 2 would result in additional trains traversing the AVL resulting in more frequent delays at at-grade rail crossings; however, the frequency would be less than that of the Proposed Project between Santa Clarita Valley and Los Angeles Union Station as only hourly service would be provided. It can reasonably be assumed that Alternative 2 would result in some decrease in regional VMT though the improvement would be less than the Proposed Project, as 30-minute service under the Proposed Project is anticipated to attract more ridership than Alternative 2 service improvements due to convenience and reliability associated with more frequent service. Operational impacts would be less than those of the Proposed Project, which were determined to be less than significant.

Tribal Cultural Resources

Alternative 2 would not construct the Canyon Siding Extension or the Lancaster Terminal Improvements and would avoid ground disturbing activities in the City of Santa Clarita and the City of Lancaster. However, there is the possibility that ground-disturbing activities during the excavation of the cut slopes and addition of retaining walls associated with the Balboa Double Track Extension could impact previously undiscovered buried tribal cultural resources of historical significance, a potentially significant impact. Accordingly, construction impacts would require mitigation measures to mitigate inadvertent impacts to potential buried tribal cultural resources similar to the Proposed Project. Construction impacts from Alternative 2 would have less potential to encounter undiscovered tribal cultural resources as no construction activities associated with the Canyon Siding Extension or the Lancaster Terminal Improvements would occur. Impacts of the Proposed Project were determined to be less-than-significant with mitigation. Similar to the Proposed Project, operational activities would not result in a significant impact.

6.6 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA Guidelines Section 15126.6 requires that an "environmentally superior" alternative be selected among the alternatives that are evaluated in the Draft EIR. The environmentally superior alternative is the alternative that would be expected to generate the fewest adverse impacts. A summary of the impacts of the No Project Alternative (Alternative 1) and Alternative 2 relative to the Proposed Project is shown in **Table 6-1**.

The No Project Alternative is considered the environmentally superior alternative because there would be no physical changes to the existing environment resulting in construction with a minor increase in Metrolink service. Other transit projects would be constructed to enhance the regional network, including the Brighton to Roxford Double Track Project and the Link US Project to improve AVL service reliability and safety. Not constructing and operating the Proposed Project would eliminate the potentially significant impacts related to transportation (construction), aesthetics (construction and operations), air quality (operations), biological resources (construction), cultural resources (construction), geology and soils (construction and operations), greenhouse gas emissions (construction and operation), noise (construction), and tribal cultural resources (construction). However, the regional transit network within the AVL corridor would not be substantially enhanced by the other transit projects.

If the No Project Alternative is identified as environmentally superior, CEQA requires selection of the environmentally superior alternative other than the No Project Alternative from among the Proposed Project and the other alternatives evaluated in the Draft EIR. Alternative 2 is the environmentally superior alternative because, as compared to the Proposed Project and design options, it avoids or reduces multiple construction impacts in the City of Santa Clarita and the City of Lancaster related to transportation, aesthetics, air quality, biological resources, cultural resources, energy resources, geology and soils, hazardous materials, noise, and tribal cultural resources. It also avoids or reduces operational impacts related to transportation, aesthetics, air quality, and greenhouse gas emissions.

Table 6-1: Comparison of Alternatives to the Proposed Project

Environmental Resource	Proposed Project Impacts	No Project Alternative Impacts	Alternative 2 Impacts
Aesthetics	Less than Significant with Mitigation	Avoided	Reduced
Air Quality	Significant and Unavoidable (Operations)	Reduced	Reduced
Biological Resources	Less than Significant with Mitigation	Avoided	Reduced
Cultural Resources	Less than Significant with Mitigation	Avoided	Reduced
Energy	Less than Significant	Reduced	Reduced
Geology and Soils	Less than Significant with Mitigation	Avoided	Reduced
Greenhouse Gas Emissions	Significant and Unavoidable (Construction and Operation)	Reduced	Reduced

Environmental Resource	Proposed Project Impacts	No Project Alternative Impacts	Alternative 2 Impacts
Hazards and Hazardous Materials	Less than Significant with Mitigation	Avoided	Reduced
Noise and Vibration	Significant and Unavoidable (Construction)	Avoided	Reduced
Transportation	Less than Significant with Mitigation	Reduced	Reduced
Tribal Cultural Resources	Less than Significant with Mitigation	Avoided	Reduced
Hydrology and Water Quality	Less than Significant with Mitigation	Avoided	Reduced

Notes:
Avoided = Impacts under this alternative avoided as compared to impacts for the Proposed Project.
Reduced = Impacts under this alternative reduced as compared to impacts for the Proposed Project.
Similar = Impacts under this alternative similar to impacts for the Proposed Project.
Greater = Impacts under this alternative greater to impacts for the Proposed Project.

7. Public and Agency Outreach

Metro initiated a comprehensive outreach program for the Proposed Project. The outreach program focused on increasing awareness and education, disseminating information, garnering public input, and supporting the technical and legal environmental processes. To encourage the submittal of comments during the Public Scoping period, legal advertisement notices were published in 11 English, Spanish, Armenian and Chinese language newspapers; 479 notices were mailed to occupants, property and business owners located within 500 feet of each the capital improvement sites; social media posts published in advance of the virtual scoping meetings; blog publications; email outreach to 4,965 stakeholders; and 10,000 notices delivered door-to-door in the Town of Acton. Metro received 77 unique written comments during the Public Scoping period. Comments were received through the following methods: Proposed Project website; a special Project email address and telephone number; U.S. Mail; Metro social media and blogs; or by submitting a written or oral comment at the three virtual Public Scoping Meetings. It should be noted that due to the global COVID-19 pandemic, all public meetings conducted during scoping and as part of the public review of the Draft EIR have been conducted virtually consistent with County of Los Angeles health guidelines and Metro Community Relations policy. This section summarizes both the Public Scoping efforts and comments received during the 45-day Public Scoping Period.

7.1 SCOPING PROCESS

The scoping process included the following activities:

- The Notice of Preparation (NOP) was filed with the County Clerk/Recorder of Los Angeles County and with the State Clearinghouse Office of Planning and Research to formally initiate the CEQA process.
- NOP notices in 11 English, Spanish, Armenian, and Chinese were placed in newspapers for public circulation.
- The NOP was mailed to potentially affected government agencies, Native American tribes, residents, and businesses to advise them of Project initiation and to invite participation.
- Social media posts were posted on Facebook, Twitter, and Nextdoor.
- Email notifications of scoping meeting were sent to stakeholders.
- Targeted door-to-door noticing of scoping meetings to stakeholders in the Town of Acton was conducted.
- Project-related articles and scoping meeting notices were published on Metro's online blog publications and also the project website.
- Virtual meetings with potentially affected and/or interested parties in the Project Area were held.
- Comments that were received during and after the scoping meetings were recorded.

The comments and questions received during the Public Scoping process were reviewed and considered by Metro and were used to determine the appropriate scope of issues to be addressed in the Draft EIR. The comments are part of the public record for the Proposed Project.

7.2 GOVERNMENT AND OTHER AGENCY CONSULTATION

Per CEQA requirements, Metro notified federal, State, county, and city agencies and Native American tribes within the Project Area, including responsible agencies, public agencies that have legal jurisdiction with respect to the Proposed Project, and other organizations or individuals that requested notice. A copy of the NOP was filed with the Los Angeles County Clerk and State Clearinghouse. The agencies included:

- Acton Town Council
- Caltrans
- City of Burbank
- City of Glendale
- City of Lancaster
- City of Los Angeles
- City of Palmdale
- City of San Fernando
- City of Santa Clarita
- City of Santa Clarita Transit
- Los Angeles County
- Los Angeles County Public Works
- Los Angeles County Supervisor Kathryn Barger
- Los Angeles Department of Transportation
- LOSSAN Rail Corridor Agency
- Metro Board of Directors
- Metrolink
- Metrolink Board of Directors
- Native American Heritage Commission
- North Los Angeles County Transportation Coalition
- Office of City of Los Angeles Council President Nury Martinez, District 6
- Office of City of Los Angeles Councilmember Monica Rodriguez, District 7
- Office of City of Los Angeles Councilmember Paul Krekorian, District 2
- Office of Los Angeles County Board Supervisor Hilda Solis, First District
- Office of Los Angeles County Board Supervisor Kathryn Barger, Fifth District
- Office of Los Angeles Mayor Eric Garcetti
- San Fernando Valley Council of Governments

7.3 TRIBAL COORDINATION

In accordance with Assembly Bill 52, Metro notified and consulted with Native American tribes traditionally and culturally affiliated with the geographic area of the Proposed Project. Consultation with an affiliated tribe is required within 30 days of receiving a request for consultation. Metro received responses from five tribes: Gabrieleño-Tongva Tribe (Charles Alvarez), Fernandeño Tataviam Band of Mission Indians (Jairo Avila), Northern Chumash Tribal Council (Fred Collins), Santa Ynez Band of Chumash Indians (Kenneth Kahn), and the Gabrieleño Band of Mission Indians – Kizh Nation (Andrew Salas). Consultation calls and other correspondences took place with each tribe many of whom requested additional Project information when available. Further consultation efforts with all interested tribes are ongoing and are anticipated to be complete following circulation of the Draft EIR. Further discussion of the tribal consultation process is provided in Section 3.11, Tribal Cultural Resources.

7.4 COMMUNITY OUTREACH

7.4.1 Community Notification Methods

To maximize public awareness, a variety of noticing methods were implemented in advance of the Public Scoping Meetings. These included:

- Mailing bi-lingual (English/Spanish) notices;
- Distributing multi-lingual (English/Spanish) electronic noticing to the Proposed Project database of contacts;
- Distributing flyers door-to-door within the Town of Acton;
- Purchasing geo-targeted social media advertisements on Facebook, Twitter, and Nextdoor;
- Presenting to various community groups, business groups, councils of governments, elected officials, and neighborhood councils throughout the Project Area; and
- Placing paid media advertisements and earned media through organic publicly gained media, including stories from local blogs, print, and online newspapers (English/Spanish/Chinese) advertising the meetings.

All forms of noticing provided meeting details (dates, times, locations, and in-language services) as well as contact information for accessing additional details. Additionally, each notice provided information on the public comment period deadline and the various ways the public could submit comments for consideration in the Draft EIR.

All meeting notices were produced in English,Spanish, and Armenian with newspaper notices being provided in English, Spanish, Chinese, and Armenian. Postal notices produced in English and Spanish were mailed to a total of 479 property owners, business owners, and non-owner-occupied residents, located within 500 feet from each of the capital improvement sites. Email notification efforts included communicating with about 5,000 interested contacts in the Project

database that included contact names, organizations (if any), mailing addresses, email addresses and also included contact information for all federal, State and local elected offices and city staff within the Project Area.

7.4.2 Notice of Preparation

The first step in the scoping process was the filing of an NOP. The initial NOP for the Project was released on October 1, 2020 by the Governor's Office of Planning and Research State Clearinghouse. The NOP was delivered via email by the State Clearinghouse to 14 State agencies. The updated NOP released on October 20, 2020 was delivered via email to the same State agencies. The NOP was mailed to responsible agencies and members of the public to request their comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the lead agency. The updated NOP released on October 20, 2020 extended the scoping comment period an additional 15 days.

7.4.3 Stakeholder Briefings and Events

Metro established a Project Development Team (PDT) consisting of local agency and city partners to present project updates and gather feedback from project area stakeholders. Metro hosted meetings with the PDT on a monthly basis. The **Table 7-1** lists the PDT meetings held prior to the scoping period. Stakeholders included in the PDT meetings include:

- Acton Town Council
- Antelope Valley Transit Authority
- California High Speed Rail Authority
- Caltrans
- City of Burbank
- City of Glendale
- City of Lancaster
- City of Los Angeles
- City of Palmdale
- City of San Fernando
- City of Santa Clarita
- City of Santa Clarita Transit
- Los Angeles County
- Los Angeles County Public Works
- Los Angeles County Supervisor Kathryn Barger
- Los Angeles Department of Transportation
- LOSSAN Rail Corridor Agency
- Metro Board of Directors
- Metrolink
- Metrolink Board of Directors
- North Los Angeles County Transportation Coalition
- Office of City of Los Angeles Council President Nury Martinez, District 6

- Office of City of Los Angeles Councilmember Monica Rodriguez, District 7
- Office of City of Los Angeles Councilmember Paul Krekorian, District 2
- Office of Los Angeles County Board Supervisor Hilda Solis, First District
- Office of Los Angeles County Board Supervisor Kathryn Barger, Fifth District
- Office of Los Angeles Mayor Eric Garcetti
- San Fernando Valley Council of Governments

Table 7-1: PDT Meeting Dates and Times

Project Development Meeting Date	Timing
5/27/20	Pre-Scoping
7/28/20	Pre-Scoping
8/26/20	Pre-Scoping
9/23/20	Pre-Scoping

Additionally, Metro provided information and updates on the Project to established local community organizations and community events, to increase awareness about the Study, promote the scoping meetings and obtain feedback. The following community organizations were contacted and briefed on the Project before, during, and after the scoping period:

- Go Glendale
- Commuters of Burbank
- Santa Clarita Economic Development Corporation
- Antelope Valley Economic Development & Growth Enterprise (AV EDGE)

7.5 PUBLIC SCOPING MEETINGS

Metro conducted three virtual public scoping meetings on the Zoom Webinar platform during the 45-day scoping period. Meeting times were chosen to maximize participation from local residents, businesses and community stakeholders across all project areas. Notification of the meetings was conducted in compliance with CEQA Guidelines. Each virtual scoping meeting opened with an introduction followed by a presentation that described the Proposed Project, CEQA process, and ways to provide comment. Following, the presentation public comments and questions and answers were facilitated by Metro staff.

A total of 76 people attended the Public Scoping Meetings in October and November 2020. A total of 19 oral public comments were received and 27 questions were submitted via the Q&A function during the public scoping meetings. The three scoping meetings were held on October 15, October 17, and November 5, 2020.

7.6 ACCOMMODATIONS FOR MINORITY, LOW-INCOME, AND PERSONS WITH DISABILITIES

During the Public Scoping process, limited English proficiency (LEP) accommodations were made in order to expand access for participants. Scoping notices in English, Spanish, and Armenian were developed and distributed through several different methods, including mail delivery, email, and geo-targeted social media.

Materials were developed in English, Spanish, and Armenian and translation request forms were made available at each of the three Public Scoping Meetings to ensure all language needs were met. Additionally, scoping meeting notices included the Metro LEP phone number, which gives stakeholders the ability to make Metro aware of any language or ADA accommodations required for attendance at any of the Public Scoping Meetings. Live interpretation services were provided during each of the three virtual scoping meetings. Live Spanish interpretation was provided during the October 17th and November 5th scoping meetings.

7.7 SUMMARY OF SCOPING COMMENTS

This section summarizes the key issues raised during the scoping period. A total of 78 unique written comments were submitted to the Project team. Most comments received were submitted via email. 46 comments were submitted during the scoping meetings. Letters of support for the project were submitted from organizations including the North Los Angeles County Transportation Coalition, Antelope Valley Economic Development & Growth Enterprise, Vista Canyon and the Golden State Gateway Coalition. As shown in **Table 7-2**, a total of five agencies submitted comment letters during the 45-day comment period.

Table 7-2: Agency Comments

No.	Agency	Date Submitted
1.	California Department of Transportation (Caltrans) District 7	October 28, 2020
2.	California Department of Fish and Wildlife	November 10, 2020
3.	City of Santa Clarita	November 16, 2020
4.	Acton Town Council	November 16, 2020
5.	North Los Angeles County Transportation Coalition JPA	November 12, 2020

SOURCE: Metro, *Public Scoping Summary Repor*t, 2021.

The following provides a summary of comments received describing the source, environmental concerns raised, and agency/elected offices comments.

7.7.1 Agency Comments

Caltrans District 7

- Commented that Metro would be required to obtain an encroachment permit for any project work proposed (particularly near the Balboa Double Track Extension) on or in the

vicinity of the Caltrans right-of-way and that all environmental concerns must be adequately addressed.

California Department of Fish and Wildlife (CDFW)

- Provided a series of comments and recommendations to assist Metro in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on biological resources, particularly pertaining to fish and wildlife within and adjacent to the three capital improvements.
- Recommends that Metro provide a complete Biological Baseline Assessment and impact analysis of the flora and fauna within and adjacent to the three capital improvements and where the Project may result in ground disturbance.
- Recommends that Metro provide a thorough discussion of the direct, indirect and cumulative impacts expected to adversely affect biological resources with specific measures to offset said impacts.

The City of Santa Clarita

- Requested that the project's traffic study address concerns related to traffic signal coordination and increased delays at at-grade crossings at Soledad Canyon Road, Newhall Avenue and Railroad Avenue. Additionally, existing congestion issues adjacent to railroad crossings were noted that present safety issues.
- With regards to safety, the City of Santa Clarita requests that Metro evaluate all railroad crossings in the City for potential safety enhancements as part of the project.
- With regards to noise, the City of Santa Clarita requests that Metro evaluate noise mitigations and analyze which locations in the City would be eligible for quiet zone status.

The City of Santa Clarita Councilmember Marsha McLean

- Expressed the City's interest and support for late night trains and enhancements to daytime train schedules.

The City of Burbank Councilmember Springer

- Expressed the City's support for additional Amtrak service in Burbank.

The Gabrielinos Band of Mission Indians-Kizh Nation

- Acknowledges that the project location is within their Ancestral Tribal Territory and requests to schedule a consultation with Metro to discuss the project and surrounding location in further detail, per AB 52 requirements.

Native American Heritage Commission (NAHC)

- Recommends that Metro consult with California Native American tribes that are traditionally and culturally affiliated with the geographic area of the proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources.
- Provided a series of recommendations for Cultural Resources Assessments to adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources.

The Santa Clarita Valley Bicycle Coalition

- Recommends the completion of an existing Class I trail (Chuck Pontius Trail) along the southside of Soledad Canyon Road from Golden Oak Road to the Santa Clarita Metrolink Station to encourage users to move safely across Soledad Canyon Road.

Rail Passenger Association of California (Rail PAC)

- Requested that Metro study express buses along SR-14 as an alternative to the project. Rail PAC was also supportive of the Balboa Double Track and Santa Clarita improvements, as well as half hour service between Santa Clarita/Via Princessa and Los Angeles.

7.7.2 Community Comments

Town of Acton

- Several comments from the representatives and residents of the Town of Acton expressed concerns about impacts that would result from the project and the doubling of the number of trains that would run through the community. Notable amongst these cited potential impacts included increased noise and congestion. Stakeholders from the Town of Acton have requested that Metro prepare a noise impact analysis that reflect maximum sound levels that are expected from the projects, instead of average noise levels over a 24-hour period. To mitigate potential noise impacts, several Acton residents and organizations have requested Metro to consider the use of “Quiet Zones” to mitigate increased noise levels from trains.
- Additional comments requested Metro to further study the noise impacts that the project will have on wildlife in the Town of Acton. Comments requested that Metro consider the “startle” response that many animals, such as horses, may have to noises such as train horns.
- Additional comments also requested that Metro further examine congestion related impacts in the Town of Acton. It was noted that trains cross over several at-grade crossings, which currently force drivers to wait up to 10 minutes for trains to pass. To

address this, requests have been made by the Acton Town Council and other organizations and residents for Metro to address the issue of congestion in the EIR.

- Concerns were also expressed by community members regarding access to public meetings. Notably, stakeholders requested that Metro make accommodations for the Town of Acton to address issues with low internet bandwidths and availability by providing call-in options for meetings.

The City of Santa Clarita

- Residents commented on the need for quiet zones within Santa Clarita.

8. Lead Agency and List of Preparers

This chapter provides the Lead Agency and contributors to the Draft EIR.

8.1 LEAD AGENCY

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Erika Wilder, Principal Environmental Specialist, Environmental Services

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9. Organizations Consulted

This chapter provides the organizations, agencies and persons consulted as part of the development of the Draft EIR.

9.1 AGENCY AND ELECTED OFFICE STAKEHOLDER BRIEFINGS

Acton Town Council
Antelope Valley Transit Authority
California High Speed Rail Authority
Caltrans, District 7
City of Burbank
City of Glendale
City of Lancaster
City of Los Angeles
City of Palmdale
City of San Fernando
City of Santa Clarita
City of Santa Clarita Transit
Los Angeles County
Los Angeles County Public Works
Los Angeles County Supervisor Kathryn Barger
Los Angeles Department of Transportation
LOSSAN Rail Corridor Agency
Metro Board of Directors
Metrolink/Southern California Regional Rail Authority
Metrolink Board of Directors
North Los Angeles County Transportation Coalition
Office of City of Los Angeles Council President Nury Martinez, District 6
Office of City of Los Angeles Councilmember Monica Rodriguez, District 7
Office of City of Los Angeles Councilmember Paul Krekorian, District 2
Office of Los Angeles County Board Supervisor Hilda Solis, First District
Office of Los Angeles County Board Supervisor Kathryn Barger, Fifth District
Office of Los Angeles Mayor Eric Garcetti
San Fernando Valley Council of Governments
Union Pacific Railroad

9.2 COMMUNITY STAKEHOLDER BRIEFINGS

Go Glendale
Commuters of Burbank
Santa Clarita Economic Development Corporation
Antelope Valley Economic Development & Growth Enterprise

9.3 NATIVE AMERICAN CONSULTATION

Gabrieleño-Tongva Tribe
Fernandeno Tataviam
Northern Chumash Tribal Council
Santa Ynez Band of Chumash Indians
Gabrieleno Band of Mission Indians - Kizh Nation

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