

ES EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The Executive Summary provides an overview of this Final Environmental Impact Report (EIR) for the C Line (Green) Extension to Torrance, which has been prepared in compliance with the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.) and the State CEQA Guidelines (14 Cal. Code. Regs., § 15000 et seq.). This Final EIR responds to comments received on the Draft EIR during the public comment period and incorporates revisions and clarifications where appropriate.

The project would extend the C Line (Green) from the existing Redondo Beach (Marine) Station to the Mary K. Giordano Regional Transit Center (Torrance TC) for approximately 4.5 miles and provide two new rail stations. The project is officially referred to as the C Line Extension to Torrance Project, though due to recent service changes, the project would now function as an extension of the K Line. Specifically, on June 6, 2025 (subsequent to the completion of the Draft EIR), Metro implemented service changes that redirected the C Line to terminate at the LAX/Metro Transit Center, with the K Line assuming operations along the C Line's former west segment, continuing south from the Aviation/Century Station to the Redondo Beach (Marine) Station. As a result, the segment proposed for extension would be part of the K Line's operational alignment, although the project's official name remains unchanged. Importantly, this change does not alter the adequacy of how the proposed alignment options and alternatives were studied in the Draft EIR, as the project was and still is proposed to include extension of light rail transit service from the existing Redondo Beach (Marine) Metro K Line (formerly C Line) Station to the Torrance TC.

After completion of the Final EIR, the Metro Board may certify the Final EIR, adopt a Mitigation Monitoring and Reporting Program (MMRP) for the project, issue findings of fact on the project's environmental impacts, adopt a statement of overriding considerations, and approve the project.

ES.1-1 Background

The project has evolved over the years based on several planning studies and the scoping process, which are discussed in greater detail in the Alternatives Considered and Eliminated Report (Metro, 2023). Metro completed an Alternatives Analysis (AA) Study in 2009, which studied transit alternatives along the Metro-owned Harbor Subdivision freight railroad right-of-way (Metro ROW) between downtown Los Angeles (LA), Los Angeles International Airport (LAX), and the Ports of Los Angeles and Long Beach. In 2010, Metro initiated a Draft EIS/EIR, but it was put on pause in 2012 due to funding concerns. Following the passage of Measure M in 2016, which provides additional funding for the project, in 2017, Metro reinitiated the project studies with the Supplemental Alternatives Analysis (SAA) that focused on further refining the previously identified alternatives based on feedback from stakeholders. On September 27, 2018, the Metro Board of Directors (Metro Board) voted to approve two alternatives to be carried forward into environmental analysis: the Metro ROW and the Hawthorne Boulevard alignment (both primarily at-grade alignments).

ES.1-2 Environmental Review Process

On January 29, 2021, Metro published a Notice of Preparation (NOP) to solicit public and agency comments on the scope, content, and information that should be considered as part of the Draft EIR for the proposed light rail that would extend approximately 4.5 miles from the end of the existing Metro C Line in Redondo Beach southeast to Torrance. Metro held an agency-specific scoping meeting and two public scoping meetings on February 24 and 27 during a 60-day comment period, which ended on March

29, 2021. All scoping meetings were held virtually due to Los Angeles (LA) County Safer at Home orders during the COVID-19 pandemic.

Following the public scoping review period and NOP release, Metro began developing the Draft EIR. A variety of potential alternatives that satisfy the project's purpose and need were assessed and refined during the screening and project refinement stages of the Draft EIR process. The Draft EIR identified and evaluated the Elevated/At-Grade Alignment as the Proposed Project, as well as two options: the Trench Option and Hawthorne Option. In accordance with CEQA guidelines Section 15126.6(a), the Draft EIR also included three Project Alternatives: No Project Alternative, High Frequency Bus Alternative, and 170th/182nd Grade-Separated Light Rail Transit Alternative (also referred to as the Hybrid Alternative).

Upon release of the Notice of Availability (NOA) on January 26, 2023, a 61-day comment period was initiated for public review and comment on the Draft EIR. During the public comment period, Metro conducted five public hearings, held during the weekday, weekend, and virtually. The public was able to provide comments regarding the content and conclusions of the Draft EIR. Approximately 400 stakeholders attended the public hearings. Additionally, information about the project was distributed through the following methods: 32,000 flyers delivered door-to-door; 47,231 postcards mailed; legal advertisements and display notices published in four newspapers; ads displayed on South Bay Metro bus lines; nine email blasts distributed; a blog post published in Metro's *The Source*; four surveys conducted in transit bus-stop intercept locations; and 250 businesses engaged in door-to-door outreach. Metro received approximately 2,200 comment submissions in the form of emails, voicemails, oral comments at public hearings, comment cards, letters, surveys, and petitions during the comment period (see Appendix C, Public Comments on the Draft EIR).

Following the completion of the Draft EIR public comment period, Metro and Director Holly J. Mitchell's office (LA County Supervisor of the second district) hosted additional community engagement. This included a community walk in the City of Lawndale along the proposed light rail alignments on December 16, 2023, and a community meeting on January 18, 2024 at Springhaven Apartments in Willowbrook near the Rosa Parks/Willowbrook Station, served by the Metro C and A Lines. Community members shared input on the project at these events, which was summarized and shared with the Metro Board prior to the selection of a Locally Preferred Alternative (LPA). See Appendix A for a summary of public engagement.

ES.1-3 Selection of LPA

Based on the Draft EIR and supporting technical studies, comments on the Draft EIR, stakeholder input and additional community engagement in partnership with Director Mitchell, Metro staff recommended the 170th/182nd Grade-Separated Light Rail Transit Alternative (Hybrid Alternative) as the LPA since it best provides local and regional benefits, meets project needs and objectives, and addresses community concerns. Metro presented the staff recommendation to the Metro Planning & Programming Committee in April 2024 and the full Metro Board in May 2024. Both meetings allowed for public comment. At the May 23, 2024 Board meeting, the Metro Board selected the Hybrid Alternative as the LPA to be evaluated in the Final EIR.

ES.2 PROJECT DESCRIPTION

Figure ES-1 shows the project location within LA County. The project historically has been envisioned as an extension of the existing Metro C Line (Green) and therefore the Draft EIR published in January 2023,

Figure ES-1. Project Location and Regional Vicinity



The underlying purpose of the project is to provide high-capacity transit service in the South Bay. Metro has identified the following project objectives:

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- Creating direct connections between the regional transit network and local transit hubs for convenient transfers.
 - Providing an alternative mode of transportation for commuters traveling along congested arterials and Interstate 405 (I-405).
 - Providing First-Last Mile facilities to connect neighborhoods to station areas.
- > Reduce air pollution and greenhouse gas emissions by making transit a more viable transportation choice.
 - > Avoid and minimize environmental impacts on environmental resources to the maximum extent feasible.
 - > Provide a cost-effective project.
 - > Provide more equitable access to regional destinations by improving connections to the Metro regional rail system.

ES.2-1.1 Project Alignments, Options & Alternatives Studied in the Draft EIR

The project was analyzed in the Draft EIR with the following design options:

- > Elevated/At-Grade Alignment (referred to as the Proposed Project in the Draft EIR) – Follows the Metro ROW for the length of the project from the existing Redondo Beach (Marine) Station to the Torrance TC, with an elevated segment, followed by an at-grade segment. An elevated station is located along the Metro ROW adjacent to the Redondo Beach Transit Center (Redondo Beach TC).
- > Trench Option – Follows the Metro ROW for the length of the project, with a below-grade trench segment between Inglewood Avenue and 170th Street, followed by at-grade segments with a short trench to cross under 182nd Street. A one-level station is located along the Metro ROW adjacent to the Redondo Beach TC.
- > Hawthorne Option – Leaves the Metro ROW to run in an elevated guideway along I-405 and turns onto Hawthorne Boulevard near 162nd Street to travel in the center median of Hawthorne Boulevard before rejoining the Metro ROW south of 190th Street. An elevated station would be located in the median of Hawthorne Boulevard, adjacent to the South Bay Galleria.

South of 190th Street, there were no design options, and all alignments followed the Metro/BNSF ROW in the same configuration, primarily at-grade with a terminus station at the Torrance TC.

The Draft EIR evaluated three alternatives to the Project under CEQA in accordance with CEQA guidelines Section 15126.6(a) to avoid or minimize impacts:

- > No Project Alternative
- > High-Frequency Bus Alternative
- > 170th/182nd Grade-Separated Light Rail Transit Alternative (Hybrid Alternative and LPA).

ES.2-2 Locally Preferred Alternative

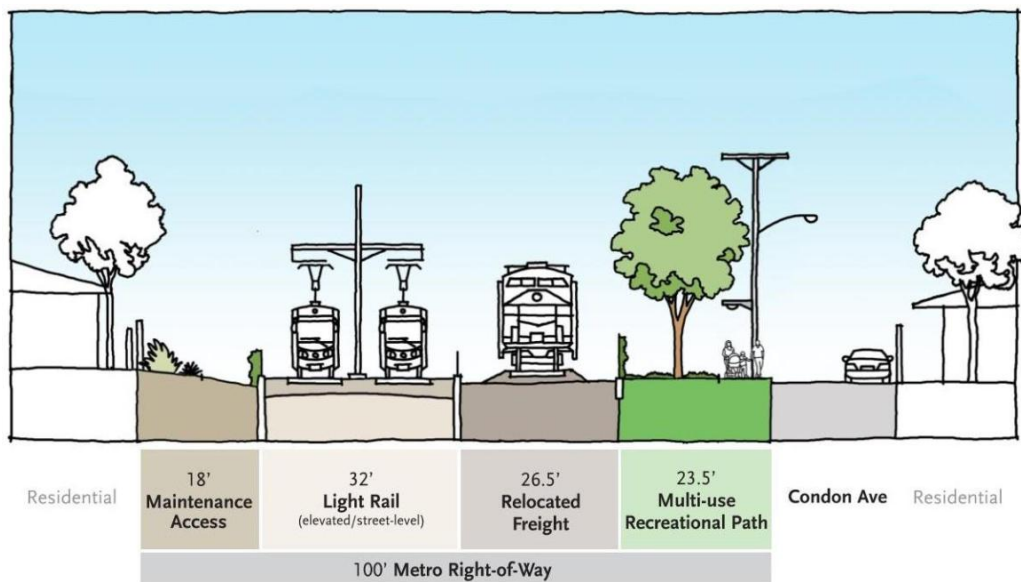
The LPA would extend the Metro light rail approximately 4.5 miles to the south along the existing Metro ROW for the length of the alignment. Two new light rail transit stations are proposed: the Redondo Beach TC Station and the Torrance TC Station. Figure ES-7 shows an overview of the LPA. BNSF operates freight service along the Metro ROW in the project area. As part of the LPA, Metro proposes

constructing two new light rail tracks and relocating the existing freight tracks in certain areas within the Metro ROW. The LPA also includes multi-use recreational paths within the Metro ROW, where there is sufficient room, in the cities of Lawndale and Redondo Beach as discussed further below. South of 190th Street, BNSF and Metro share ownership of the freight corridor and BNSF has several spur tracks to serve adjacent businesses. Metro owns approximately 15 feet in width and would acquire or lease additional ROW from BNSF to accommodate two new light rail tracks between 190th Street and the Torrance TC Station, while ensuring BNSF can maintain freight operations and deliveries via spur lines.

ES.2-3 Locally Preferred Alternative Alignment and Stations

The LPA would begin at the existing elevated Redondo Beach (Marine) Station and continue south within the Metro ROW. The elevated alignment would continue about 400 feet south of the station before briefly descending to at-grade to avoid conflicts with overhead power lines before ascending to cross over Inglewood Avenue and Manhattan Beach Boulevard. South of Manhattan Beach Boulevard, the light rail would shift from the west side of the Metro ROW to the east side and cross 159th to 162nd Streets on an elevated structure before descending to street level near 165th Street, shown in Figure ES-2. Near 168th Street, the light rail would transition into an open-air trench to cross under 170th Street (Figure ES-3), then ascend to travel at-grade near 172nd Street and continue south into Redondo Beach. Between 170th Street and Artesia Boulevard, the Metro ROW narrows from 100 feet to 75 feet.

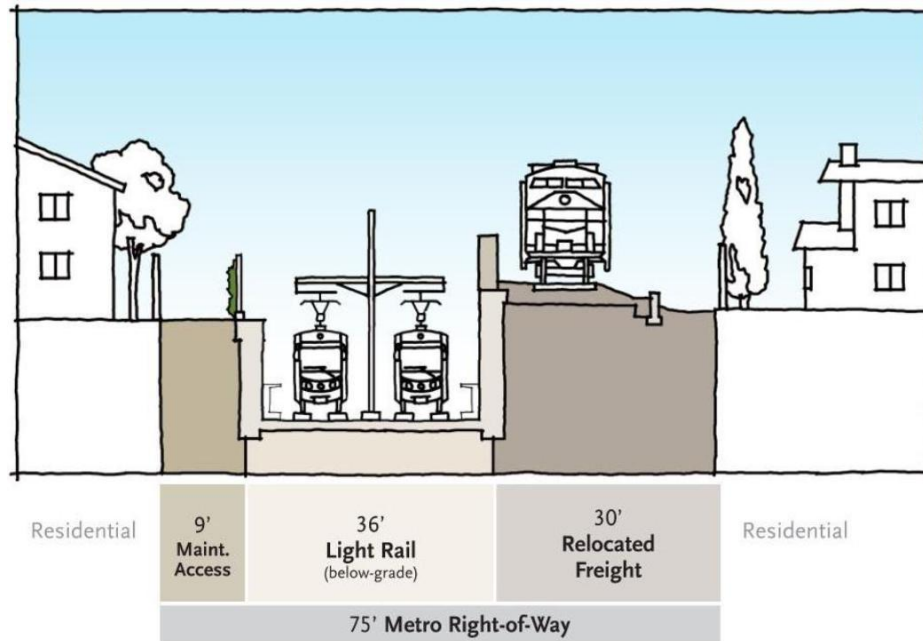
Figure ES-2. Locally Preferred Alternative – Looking South between 165th Street and 168th Street



Source: Cityworks Design, 2025

Dimensions are preliminary and subject to refinement in future phases of design.
Corresponds with Cross-Section H in Appendix B.

Figure ES-3. Locally Preferred Alternative – Looking South of 170th Street

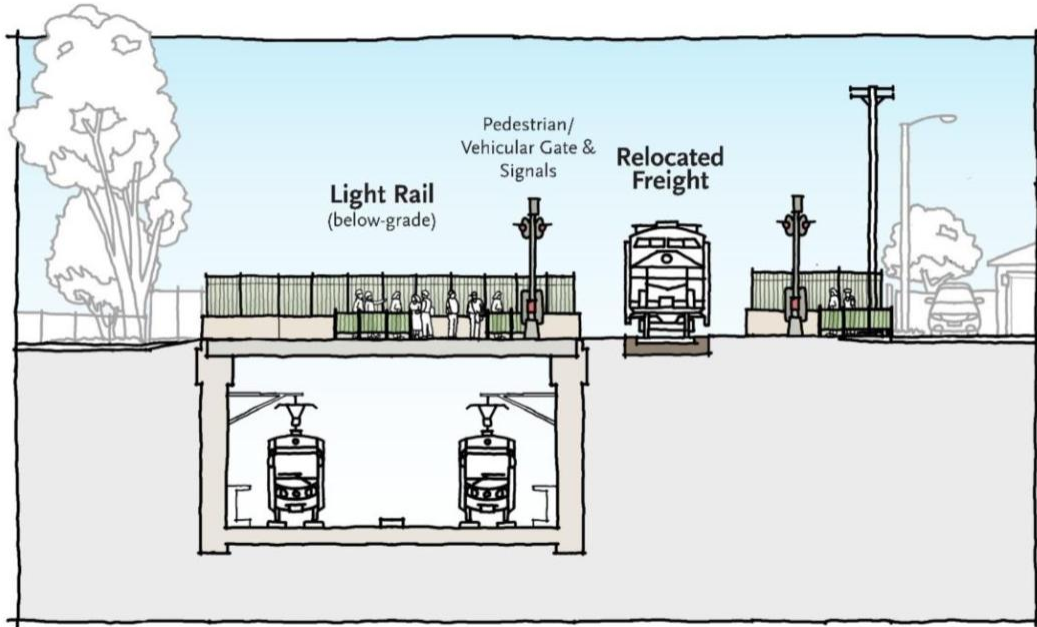


Source: Cityworks Design, 2025

Dimensions are preliminary and subject to refinement in future phases of design.
Corresponds with Cross-Section H.2 in Appendix B.

The alignment would cross over Artesia Blvd and Grant Avenue on new light rail bridges parallel to the existing freight bridges. In this segment, the Metro ROW is 100 feet wide; the freight tracks would remain in place, and the light rail would travel parallel to freight. South of Grant Avenue, the alignment would approach the Redondo Beach TC Station, then descend into a short trench to cross under 182nd Street, as shown in Figure ES-4.

Figure ES-4. Locally Preferred Alternative – Looking South at 182nd Street



Source: Cityworks Design, 2025

Corresponds with Cross-Section M in Appendix B.

South of 182nd Street, the light rail would ascend to at-grade to cross over Hawthorne Boulevard and 190th Street on new bridges parallel to existing freight bridges. South of 190th Street, the alignment would cross under Prairie Avenue, then rise to an elevated structure to allow freight movement below, before descending again to travel at-grade and cross under Del Amo Boulevard. The alignment would continue at-grade before terminating at a new station adjacent to the Torrance TC.

The LPA's light rail tracks would be grade-separated from all roadways that currently cross the Metro ROW. The freight tracks would remain at-grade throughout the length of the corridor where they currently travel at-grade, and would shift in some locations within the Metro ROW to accommodate the light rail tracks. All eight existing at-grade freight crossings from Inglewood Avenue to 182nd Street would be upgraded with safety infrastructure to be quiet-zone ready, which would allow local jurisdictions to implement a quiet zone policy for the corridor in the future. This would eliminate the need for freight trains to use their horn as they approach street crossings and reduce noise along the corridor.

The LPA would provide multi-use recreational paths for walking, cycling, etc. to enhance mobility and access within the neighborhoods and to stations, where feasible. In Lawndale, a multi-use path is proposed between 159th Street and Manhattan Beach Boulevard east of the Metro ROW and Manhattan Beach Boulevard and 170th Street west of the Metro ROW. In Redondo Beach, a multi-use path is proposed between Grant Avenue and 182nd Street west of the Metro ROW.

The following stations would be constructed under the LPA:

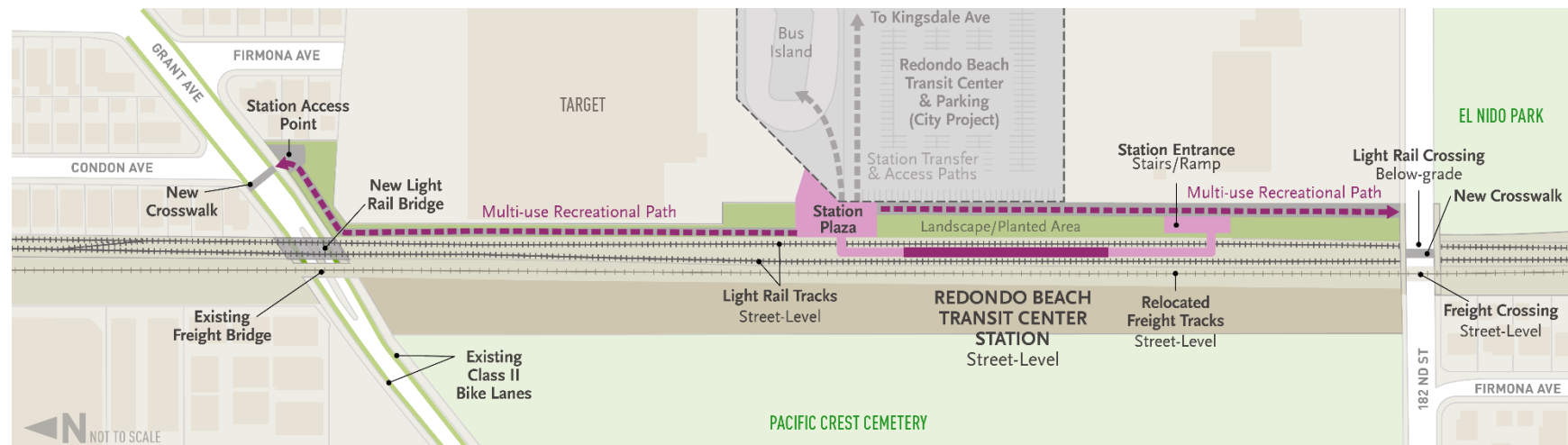
- > Redondo Beach TC Station: The one-level Redondo Beach TC Station, shown in Figure ES-5, would be located south of Grant Avenue, west of the City of Redondo Beach's transit center with the platform

located approximately 10 feet below the existing ground level. Light rail riders would connect to a station plaza via pedestrian pathways, ramps, and stairs to access the adjacent city's transit center. Access to the station would be enhanced with a multi-use path connecting the station between Grant Avenue and 182nd Street.

- > Torrance TC Station: The at-grade Torrance TC Station, shown in Figure ES-6, would be located northwest of Crenshaw Boulevard and west of the City of Torrance's bus transit center. The light rail station would be accessible by pedestrian pathways and crosswalks from the Torrance TC bus plaza and parking areas. This would be the southern terminus station.

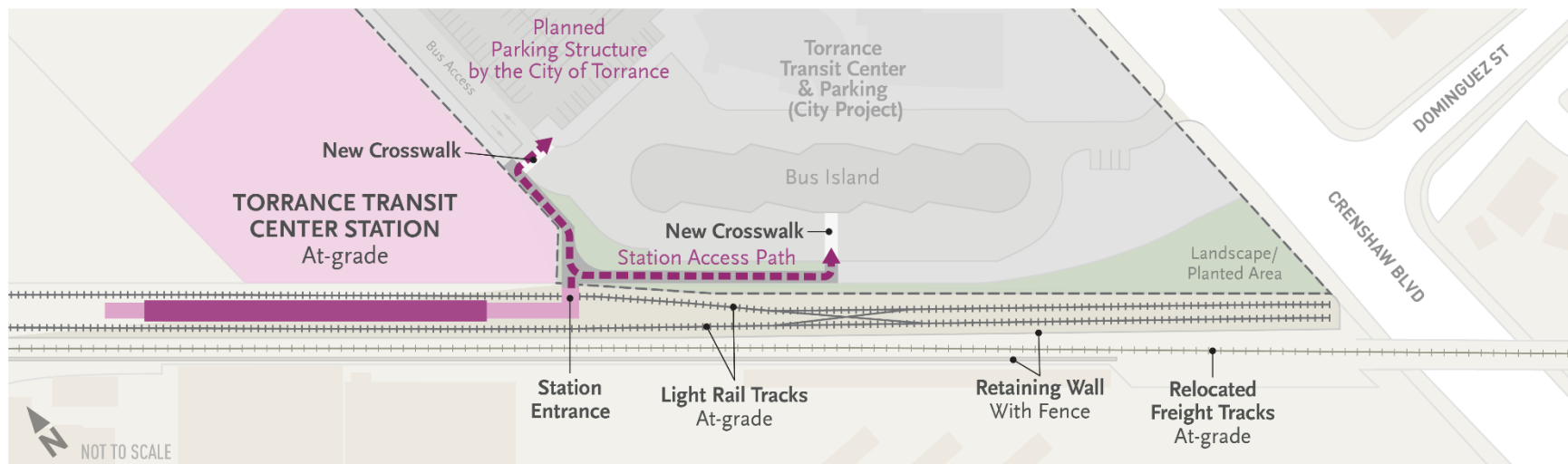
Detailed drawings of the LPA are provided in Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, of this Final EIR. An overview of the LPA is shown in Figure ES-7.

Figure ES-5. Locally Preferred Alternative – Redondo Beach TC Station Layout



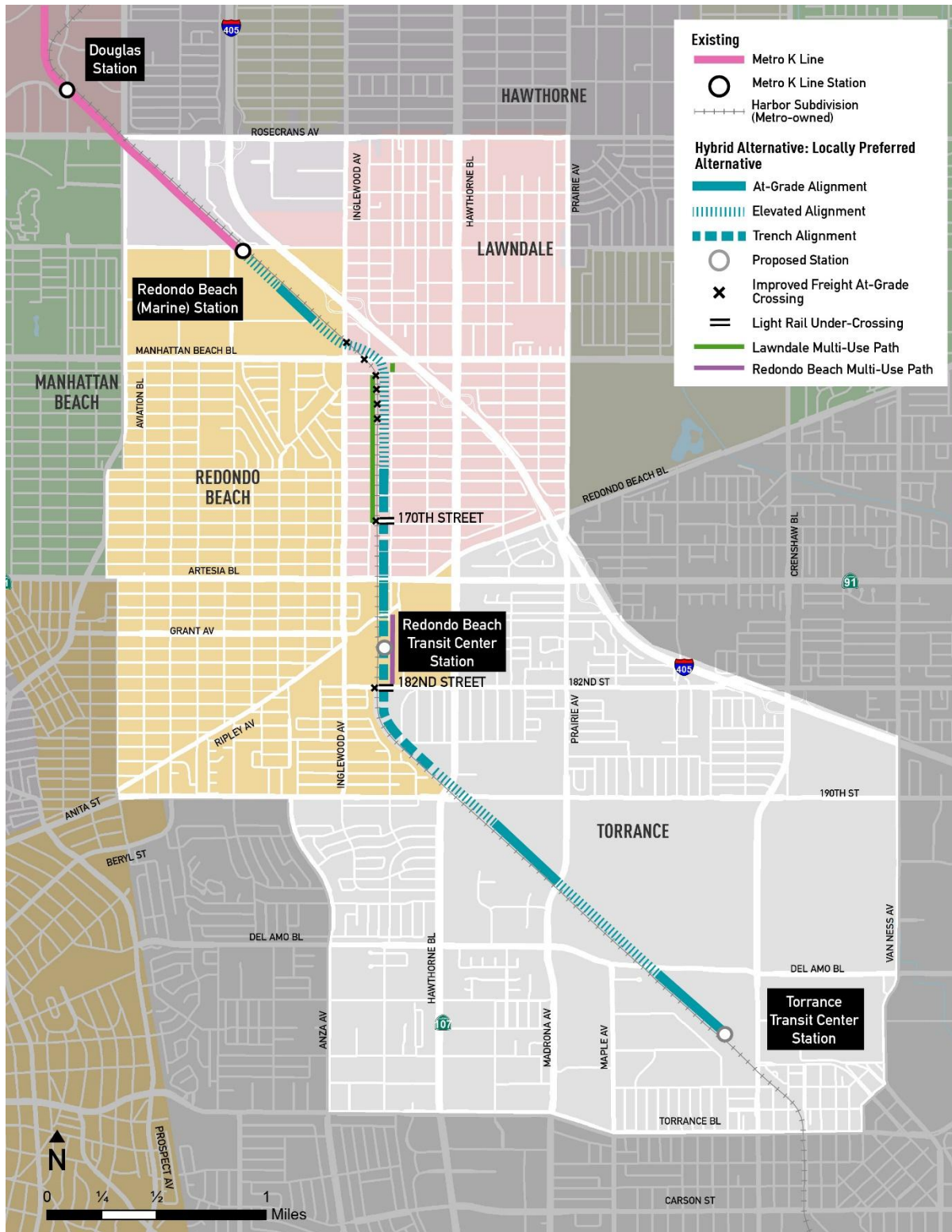
Source: Cityworks Design, 2025
Not to scale

Figure ES-6. Locally Preferred Alternative – Torrance TC Station Layout



Source: Cityworks Design, 2025
Not to scale

Figure ES-7. Locally Preferred Alternative – Overview



Source: STV, 2025

ES.2-4 System Components and Ancillary Facilities

The light rail system components would adhere to the Metro Rail Design Criteria and would use a similar design as used on existing Metro light rail lines. The LPA would require an overhead contact system (OCS), traction power substations (TPSS), and communications and signaling buildings. The OCS poles would be located every 90 to 170 feet apart, and in some locations, the poles would be located on both sides of the track. The TPSSs would be spaced approximately one mile apart along the alignment and require 4,800 square feet of land. Six TPSSs would be needed for the LPA. Communications and signaling buildings would contain train control and communications equipment, which would require approximately 500 square feet and 100 square feet, respectively.

An additional five light rail vehicles would need to be added to Metro's fleet to operate the LPA. The light rail vehicles would be serviced, maintained, and stored at the existing Division 16 Southwestern Yard in the City of Los Angeles or the El Segundo Yard Division 22 in the City of Hawthorne.

ES.2-5 Construction, Operations, and Permit Requirements for the LPA

ES.2-5.1 Construction

The major construction activities include clearing and demolition of existing structures; utility relocations; embankment work; freight track at-grade street crossings; bridges and elevated structures; trenches; retaining walls; stations; railroad and light rail track; and systems construction.

Construction of the LPA is anticipated to last approximately six years, which is longer than the estimated timeframe in the Draft EIR for Elevated/At-Grade Alignment in order to construct two trenches at 170th Street and 182nd Street and shorter than the Trench Option, which has more extensive trenches. Construction activities would primarily occur during daytime hours on weekdays, although some night construction may be required at times to avoid congested freeways and surface streets or due to the nature of certain construction processes, such as the construction of freight tracks to avoid disruption to BNSF operations or the construction of bridges over major arterials. The construction equipment that would be used for the LPA is typical of that found engaged in contemporary highway, building, bridge, and utility work, plus some specialized railroad track and OCS construction equipment. All equipment would conform to current applicable safety and environmental regulations. Off-site construction staging locations would be for temporary use during construction for the laydown of tools, materials, equipment, and vehicles.

ES.2-5.2 Construction Staging and Acquisitions

Construction would be primarily staged within the Metro ROW. Metro has designed the project to avoid displacement of residents. North of 190th Street, the LPA would have limited permanent property acquisitions for non-residential properties to locate the TPSSs. South of 190th Street, the LPA would require partial permanent property acquisitions for non-residential properties along the Metro ROW to build the light rail tracks and accommodate multiple relocated or new freight tracks, storage tracks, spurs, and access roads. For any properties that may have existing contamination, Metro would conduct a Phase II site investigation and implement remediation as needed. Additional details are provided in Section 3.9, Hazards and Hazardous Materials, of the Draft EIR and in Chapter 4, Corrections and Additions, of this Final EIR. The LPA would also include potential off-site locations for temporary use during construction for the laydown of tools, materials, equipment, and vehicles, as well as temporary construction easements. Temporary easements, as well as permanent real estate needs, are identified

in Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, of this Final EIR.

ES.2-5.3 Operations

The operating hours and schedules would be comparable to the other operating patterns of Metro's current rail lines. The proposed hours of operation are 4:00 a.m. to 1:00 a.m. On weekdays, trains would operate during early morning hours from 4:00 a.m. to 6:00 a.m. and late-night hours from 7:00 p.m. to 1:00 a.m. every 15 minutes. On weekdays, trains would operate every five minutes during peak travel hours, which are typically during the commuting periods. Weekend system headways would be reduced compared to weekdays due to reduced commuter demand.

ES.2-5.4 Project Features

As a part of the LPA, several project features would be implemented during construction or included in the project design plans to ensure compliance with applicable laws, guidelines, and agency guidelines. These project features include design elements, best management practices, and other measures that are either required by law, permit conditions, or approvals from federal, state, regional or local agencies or that reflect industry best practices in transit construction and operations. Unlike CEQA mitigation measures, which are adopted to reduce or avoid significant environmental impacts identified in the EIR, project features are incorporated into the project as standard components of its design and implementation. The project features are described further in each respective section within Chapter 3, as well as in Appendix 2-C, Project Features in the Draft EIR, and Chapter 4, Corrections and Additions, of this Final EIR.

ES.2-5.5 Required Permits and Approvals

Construction and implementation of the LPA would require permits and approvals from responsible agencies such as the City of Lawndale, City of Redondo Beach, and the City of Torrance, and other departments and owners with jurisdiction over protected resources. Metro will comply with all applicable federal, state, and local environmental regulations and will responsibly mitigate significant environmental impacts resulting from the LPA in accordance with Metro policies and applicable laws. The anticipated permits and approvals are listed in Table ES-1.

Table ES-1. Permits and Approvals

Agency/Jurisdiction		Permit/Approval Required
State	California Department of Transportation	Approvals for modifications to Caltrans lease agreement (Artesia Boulevard and Hawthorne Boulevard bridges)
	State Department of Toxic Substances Control	Hazardous materials cleanup
	State Water Resources Control Board	Construction General Permit and SWPPP
		NPDES Dewatering Permit
		LA County MS4 NPDES Package
	California Public Utilities Commission	Grade separations, crossings, state safety oversight
	California Department of Fish and Wildlife	Consultation on protected species
Regional	Metro Board	Certification of the Final EIR, adoption of CEQA Findings, a Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Program, and approval of the project
	Regional Water Quality Control Board	Construction General Permit and SWPPP
	Southern California Edison	Permits for utility relocation
	LA County Department of Public Works	Permits for utility relocation
	LA County Fire Department	Discretionary actions
	BNSF Railroad	Approval of track relocations
Local	City of Lawndale City of Redondo Beach City of Torrance	Permits (traffic, street use, lighting, landscape, building demolition) ¹
	Redondo Beach Fire Department Torrance Fire Department	Discretionary actions

Caltrans = California Department of Transportation

¹Necessary permits from the cities of Lawndale, Redondo Beach, and Torrance include only those related to work within the cities' rights-of-way. Metro would not require local permits for activities within the Metro ROW.

ES.3 DESIGN REFINEMENTS

Following the action of the Metro Board and receipt and review of public comments on the Draft EIR, the conceptual engineering of the project has continued to progress. The following design refinements were made after circulation of the Draft EIR and include minor adjustments to the alignments, support structure design, construction staging areas, and optional locations for light rail support facilities. These refinements were made to enhance compliance with design or environmental requirements and to respond to comments received on the Draft EIR.

The design refinements are discussed further in Chapter 3, Design Refinements, which includes an evaluation of the refinements and determines that the refinements would *not* result in any new significant environmental impact or change the intensity of the impacts disclosed in the Draft EIR.

The design refinements apply to all rail alignments studied in the Draft EIR, unless otherwise noted, as shown in Table ES-2.

Table ES-2. Design Refinements since the Draft EIR Publication

ID	Location	City/ Jurisdiction	Reason for Refinement	Description of Refinement	Reference
1	Private Property: South of the Redondo Beach (Marine) Station, north of Santa Fe Avenue, west of Metro ROW	Redondo Beach	Based on further analysis of power needs and site access, an additional optional location for a Traction Power Substation (TPSS) was identified at the north end of the project. The new option would provide greater flexibility for maintenance operations and address potential challenges related to crane access at TPSS No. 1A.	The new TPSS option would be located on a parcel identified in the Draft EIR for permanent easement. The larger footprint required for the TPSS at this location could necessitate a larger partial acquisition or, if needed to accommodate all the elements of the project that impact the parcel, full acquisition of the property.	Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, Page RW-302
2	Public Property: Manhattan Beach Boulevard crossing ¹	Lawndale	In response to comments from the Metropolitan Water District (MWD) on the Draft EIR regarding a potential utility conflict with a cast-in-drilled-hole (CIDH) pile proposed in the center of Manhattan Beach Boulevard—specifically, its location above a MWD water pipeline—an alternate support location for the elevated light rail structure is proposed at this location.	The refined design for the elevated light rail structure would eliminate the CIDH pile within Manhattan Beach Boulevard and shift the proposed straddle bents—located within the Metro ROW—to the north and south of the boulevard. This change would avoid any potential conflict with the underground MWD pipeline, allowing it to remain in place during both project construction and operation.	Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, Page TC-302 and RW- 304
3	Private Properties: Between 190th Street and south of Del Amo Boulevard	Torrance	Based on coordination with BNSF regarding the proposed freight track realignment, the design was refined to include a maintenance access path to serve the relocated freight tracks.	South of 190th Street, the railroad corridor would be widened by approximately five feet beyond what was included in the Draft EIR, to the southwest of the Metro ROW, to accommodate a maintenance access path for the freight tracks. This refinement would increase the area of partial acquisitions from industrial properties.	Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, Page RW-313 through RW-318, T-314 through T-318

ID	Location	City/ Jurisdiction	Reason for Refinement	Description of Refinement	Reference
4	Private Properties: North of Prairie Avenue, west of Metro ROW	Torrance	More detailed modeling of power demand for light rail operations indicated that minimum traction power voltage requirements may not be met with TPSS No. 5A, located near the Prairie Avenue overcrossing. To ensure adequate system performance, the design was refined to identify an alternate location (TPSS No. 5B) farther south, adjacent to the Del Amo Boulevard bridge.	TPSS No. 5B would be located to the north side of the Del Amo Boulevard bridge, on a parcel previously identified for acquisition as part of the project.	Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, Page RW-318
5	Private Properties: Parcels (APN: 7352- 015-005, 7352-015- 006, and 7352-015-004) between Prairie Avenue and Del Amo Boulevard	Torrance	In response to comments from both Torrance Refining Company (TORC) and Torrance Logistics Company (TLC), the project design was refined to minimize the partial acquisition of the TORC property. This refinement addresses safety, security, and property concerns related to the TORC facility operations and compliance with applicable regulations.	Between north of Prairie Avenue and Del Amo Boulevard, the project footprint (including freight, light rail, and access roads) has shifted westward to avoid the TORC parcel. As a result, a larger partial acquisition would be required from the adjacent vacant parcel west of the rail corridor. This shift would also require additional modifications to the existing Prairie Avenue and Del Amo Boulevard bridges. At Prairie Avenue, a new box tunnel would be constructed to allow a realigned freight track and access road to pass beneath the roadway. At Del Amo Boulevard, the area beneath the bridge would be widened on the west to accommodate light rail and realigned freight and to provide sufficient clearance.	Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, Page RW-315 through RW-318

ID	Location	City/ Jurisdiction	Reason for Refinement	Description of Refinement	Reference
6	City Property: City of Torrance Transit Center (APN: 7352-002-912)	Torrance	In response to comments from the City of Torrance, an alternative construction staging location has been identified, which would avoid potential conflicts with the City of Torrance's proposed parking garage.	An alternate construction staging site has been identified on a parcel (APN: 7352-002-911) adjacent to the Torrance Transit Center on Crenshaw Boulevard. This adjustment would allow construction staging to proceed without interfering with the City of Torrance's planned parking garage development.	Chapter 2, Description of the Locally Preferred Alternative, Page 2-36
7	City Property: Torrance Transit Center Station Path	Torrance	In response to comments from the City of Torrance, the design was refined to address pedestrian safety and security concerns related to a segment of the proposed path connecting Crenshaw Boulevard to the Torrance Transit Center Station area. Specifically, the City raised concerns that the path could encourage pedestrians to cross Crenshaw Boulevard outside of signalized intersections.	The proposed path would provide pedestrian access from the light rail platform to the proposed bus plaza within the Torrance Transit Center. The segment of the proposed path that would have extended from the bus plaza to Crenshaw Boulevard has been removed from the design.	Appendix B, Select Advanced Conceptual Engineering Drawings - Locally Preferred Alternative, Page T-321

Source: STV, 2025

¹This refinement only applies to the Elevated/At-Grade Alignment and LPA.

APN = Assessor's Parcel Number; BNSF= BNSF Railway; CIDH= cast-in-drilled-hole; MWD = Metropolitan Water District; ROW = right-of-way; TLC = Torrance Logistics Company; TORC = Torrance Refining Company; TPSS = Traction power substation

ES.4 CORRECTIONS AND ADDITIONS

This Final EIR includes the corrections and additions to the Draft EIR, specifically addressing subject matter presented in the Draft EIR that has been corrected or added. Pursuant to Public Resources Code Section 21092.1 and CEQA Guidelines Section 15088.5, these changes do not constitute “significant new information” that would require recirculation of the Draft EIR. These revisions do not disclose a new significant and unavoidable environmental impact, a substantial increase in the severity of an impact, or identify a new feasible mitigation measure or alternative considerably different from those provided in the Draft EIR, which would considerably lessen a significant impact, but that Metro has declined to implement. Rather, the EIR’s corrections and additions clarify, amplify, or make insignificant modifications to the Draft EIR.

ES.5 RESPONSE TO COMMENTS ON THE DRAFT EIR

The Final EIR includes responses to all comments made on the Draft EIR during the comment period described in Section ES.2. Written responses to comments are included in Chapter 5 of this Final EIR, and copies of emails, letters, comment cards, voicemails, and transcribed spoken comments are included in Appendix C of this Final EIR. The responses to comments are organized by commenters: agencies, organizations, groups and businesses, public hearings, and individuals. Several topics were mentioned frequently by commenters. To address these efficiently and consistently, and to ensure accuracy, major topic responses (MR) were developed for the following topics and are included in Section 5.2 of this Final EIR:

- > MR-1: Selection of Alternatives
- > MR-2: Operational Noise Analysis Methodology and Impact Thresholds
- > MR-3: Operational Noise Project Features and Mitigation Measures
- > MR-4: Potential Negative Health Effects Related to Noise, Vibration, and Air Quality
- > MR-5: Vibration Impact Types and Impact Thresholds
- > MR-6: Vibration Analysis During Final Design
- > MR-7: Utility Relocation and Hazardous Materials Safety
- > MR-8: Light Rail and Freight Train Safety
- > MR-9: Light Rail Security
- > MR-10: Changes to Community Character
- > MR-11: Traffic Delay and Level-of-Service
- > MR-12: Emergency Access
- > MR-13: Soil Stability and Sinkholes
- > MR-14: Property Values and Impacts to Businesses
- > MR-15: Metro Ridership Forecasting Methodology
- > MR-16: Response to Lawndale and Redondo Beach Community Letter
- > MR-17: Response to Torrance Community Letter
- > MR-18: Homelessness
- > MR-19: Project Benefits
- > MR-20: Proximity Impacts of Relocated Freight Tracks
- > MR-21: Cost Estimates and Schedule

ES.6 ALTERNATIVES CONSIDERED IN THE DRAFT EIR

CEQA requires that a range of reasonable project alternatives are considered that could meet most of the basic project objectives and substantially reduce or eliminate significant impacts associated with the project. CEQA Guidelines Section 15126.6(a) states, in part:

“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.”

- > No Project Alternative – The No Project Alternative is required by CEQA Guidelines Section 15126.6(e) and assumes that Metro would not implement the 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.
- > High Frequency Bus Alternative – The HFB Alternative would implement a rapid bus service instead of a light rail extension.
- > 170th/182nd Grade-Separated Light Rail Transit Alternative – As discussed previously, this alternative was selected as the LPA by the Metro Board.

ES.7 ENVIRONMENTAL IMPACT ANALYSIS

The Draft EIR identifies potential environmental impacts due to the construction and operation of the Options and Alternatives and analyzes any significant impacts and implementation of feasible mitigation measures. Project features are incorporated as part of the project and consist of design features, best management practices, or other measures required by law and/or permit approvals that avoid or minimize potential effects. Mitigation measures are additional actions, not otherwise part of the project, that are designed to avoid, minimize, or compensate for significant impacts.

Table ES-3 below provides a high-level overview of the topic areas where environmental impacts have been identified for the LPA in the Draft EIR and this Final EIR.

Table ES-3. Summary of Environmental Impacts for the Locally Preferred Alternative

Level of Impact	Environmental Topic Areas
No Impact/Less than Significant Impact	Transportation During Construction & Operation Aesthetics During Operation Air Quality During Construction & Operation Land Use and Planning During Construction & Operation Greenhouse Gas Emissions During Construction & Operation Hazards and Hazardous Materials During Construction & Operation Geology, Soils, and Paleontological Resources During Operation Hydrology and Water Quality During Construction & Operation Utilities and Service Systems During Construction & Operation Energy During Construction & Operation Cultural Resources During Operation Tribal Cultural Resources During Operation Public Services During Construction & Operation
Less than Significant Impact with Mitigation	Aesthetics During Construction Noise and Vibration During Operation Biological Resources During Construction & Operations Geology, Soils, and Paleontological Resources During Construction Cultural Resources During Construction Tribal Cultural Resources During Construction
Significant and Unavoidable Impact	Noise and Vibration During Construction

ES.8 SIGNIFICANT AND UNAVOIDABLE IMPACTS

CEQA Guidelines under Section 15216(b) require EIRs to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. The Draft EIR identifies environmental resources with significant and unavoidable impacts and presents feasible mitigation measures to reduce impacts to a less than significant level. If a specific impact cannot be reduced to a less than significant level, it is considered a significant and unavoidable impact. As concluded in the Draft and Final EIR and shown in Table ES-3, the following impacts would be significant and unavoidable, even after implementation of mitigation measures:

- > Air Quality (construction – Trench Option only)
- > Noise (construction – all alignments; operation – Elevated/At-Grade Alignment only)
- > Vibration (construction – all alignments)

ES.8-1 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6 requires that an “environmentally superior” alternative be identified. The environmentally superior alternative is the alternative that would be expected to generate the fewest adverse impacts. If the environmentally superior alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

As discussed in the Draft EIR Table ES-4, the No Project Alternative would avoid many of the construction impacts identified for the light rail project, but it would have significant and unavoidable impacts during operation related to transportation, land use and planning, air quality, greenhouse gas emissions, and energy as it would conflict with plans and programs that assumed the project would be

built. The HFB Alternative would reduce all construction and operational impacts identified for a light rail project. Therefore, the HFB Alternative is the environmentally superior alternative as it would avoid or reduce all impacts to a less than significant level. However, the HFB Alternative would not realize the same level of benefits from vehicle miles traveled reduction, air quality improvements, greenhouse gas emissions reduction, and energy savings as the light rail alignments.

ES.9 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table ES-4 summarizes the impacts of all alignments and project alternatives considered in the EIR process. Table ES-5 through Table ES-19 identify the environmental impacts, mitigation measures, and level of significance after mitigation, if applicable. Detailed analyses of these topics are provided in Chapter 3, Environmental Impacts, of the Draft EIR, with corrections, additions, and clarifications to the Draft EIR analysis provided in Chapter 4, Corrections and Additions, of this Final EIR.

Table ES-4. Summary of Alternatives' Environmental Impacts

		Elevated/At-Grade Alignment	Trench Option	Hawthorne Option	No Project Alternative	HFB Alternative	LPA
Transportation	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	SUI	LTS	LTS
Land Use and Planning	Construction	LTS	LTS	LTSM	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	SUI	LTS	LTS
Aesthetics	Construction	LTSM	LTSM	LTSM	LTS	LTS	LTSM
	Operation	LTS	LTS	LTS	LTS	LTS	LTS
Air Quality	Construction	LTS	SUI	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	SUI	LTS	LTS
Greenhouse Gas Emissions	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	SUI	LTS	LTS
Noise	Construction	SUI	SUI	SUI	LTS	LTS	SUI
	Operation	SUI	SUI/LTSM ¹	LTS	LTS	LTS	SUI/LTSM ¹
Vibration	Construction	SUI	SUI	SUI	LTS	LTS	SUI
	Operation	LTSM	LTSM	LTSM	LTS	LTS	LTSM
Biological Resources	Construction	LTSM	LTSM	LTSM	LTS	LTS	LTSM
	Operation	LTSM	LTSM	LTSM	LTS	LTS	LTSM
Geology, Soils, and Paleontological Resources	Construction	LTSM	LTSM	LTSM	LTS	LTS	LTSM
	Operation	LTS	LTS	LTS	LTS	LTS	LTS
Hazards and Hazardous Materials	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	LTS	LTS	LTS

		Elevated/At-Grade Alignment	Trench Option	Hawthorne Option	No Project Alternative	HFB Alternative	LPA
Hydrology and Water Quality	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	LTS	LTS	LTS
Utilities and Service Systems	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	LTS	LTS	LTS
Energy	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	SUI	LTS	LTS
Cultural Resources	Construction	LTSM	LTSM	LTSM	LTS	LTS	LTSM
	Operation	LTS	LTS	LTS	LTS	LTS	LTS
Tribal Cultural Resources	Construction	LTSM	LTSM	LTSM	LTS	LTS	LTSM
	Operation	LTS	LTS	LTS	LTS	LTS	LTS
Public Services	Construction	LTS	LTS	LTS	LTS	LTS	LTS
	Operation	LTS	LTS	LTS	LTS	LTS	LTS

¹ With the establishment of quiet zones by the Cities of Lawndale, Redondo Beach, and Torrance (MM-NOI-4), the Trench Option and LPA would have a less than significant impact with mitigation for operational noise.

HFB = High Frequency Bus; LPA = Locally Preferred Alternative; LTS = Less than significant; LTSM = Less than significant with mitigation; SUI = Significant and unavoidable impact

Table ES-5. Summary of Transportation Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Transportation				
A. Will the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Will the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
C. Will the Project substantially increase hazards due to a geometric design feature or incompatible uses?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Transportation				
D. Will the Project result in inadequate emergency access?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Table ES-6. Summary of Land Use Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Land Use				
A. Would the Project physically divide an established community?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Significant Operations: Less than Significant	Construction: MM-LU-1: Temporary Crossings	Construction: Less than Significant Operations: Less than Significant

Table ES-7. Summary of Visual and Aesthetics Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Visual & Aesthetics				
A. Would the Project have a substantial effect on a scenic vista?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
B. Would the Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Visual & Aesthetics				
C. In non-urbanized areas, would the Project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point such as a sidewalk). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
D. Would the Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	LPA	Construction: Significant Operations: Less than Significant	Construction: MM-AES-1: Construction Lighting	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Significant Operations: Less than Significant	Construction: MM-AES-1: Construction Lighting	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Significant Operations: Less than Significant	Construction: MM-AES-1: Construction Lighting	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Significant Operations: Less than Significant	Construction: MM-AES-1: Construction Lighting	Construction: Less than Significant Operations: Less than Significant

Table ES-8. Summary of Air Quality Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Air Quality				
A. Would the Project conflict with or obstruct implementation of the applicable air quality plan?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Significant Operations: Less than Significant	Construction: MM-AQ-1: Cleaner Haul Trucks	Construction: Significant and Unavoidable Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Significant Operations: Less than Significant	Construction: MM-AQ-1: Cleaner Haul Trucks	Construction: Significant and Unavoidable Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
C. Would the Project expose sensitive receptors to substantial pollutant concentrations?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Air Quality				
D. Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Table ES-9. Summary of Greenhouse Gas Emissions Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Greenhouse Gas Emissions				
A. Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Table ES-10. Summary of Noise and Vibration Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Noise and Vibration				
A. Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established by the FTA, in the local general plan or noise ordinance, or applicable standards of other agencies?	LPA	Construction: Significant Operations: Significant	Construction: MM-NOI-1: Noise Control Plan Operations: MM-NOI-2: Soundwalls MM-NOI-3: Low Impact Frogs MM-NOI-4: Quiet Zone Establishment	Construction: Significant and Unavoidable Operations: Less than Significant ¹
	Elevated/At-Grade Alignment	Construction: Significant Operations: Significant	Construction: MM-NOI-1: Noise Control Plan Operation: MM-NOI-2: Soundwalls MM-NOI-3: Low Impact Frogs MM-NOI-4: Quiet Zone Establishment	Construction: Significant and Unavoidable Operations: Significant and Unavoidable
	Trench Option	Construction: Significant Operations: Significant	Construction: MM-NOI-1: Noise Control Plan Operations: MM-NOI-2: Soundwalls MM-NOI-3: Low Impact Frogs MM-NOI-4: Quiet Zone Establishment	Construction: Significant and Unavoidable Operations: Less than Significant ¹

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Noise and Vibration				
	Hawthorne Option	Construction: Significant Operations: Significant	Construction: MM-NOI-1: Noise Control Plan Operations: MM-NOI-2: Soundwalls MM-NOI-3: Low Impact Frogs MM-NOI-5: Wheel Squeal Noise Monitoring	Construction: Significant and Unavoidable Operations: Less than Significant
B. 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?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Noise and Vibration				
C. Would the Project result in generation of excessive ground-borne vibration?	LPA	Construction: Significant Operations: Significant	Construction: MM-VIB-1: Vibration Control Plan MM-VIB-2: Construction Equipment Location Operations: MM-VIB-4: Low-Impact Frogs MM-VIB-5: Resilient Fasteners MM-VIB-6: Ballast Mats	Construction: Significant and Unavoidable Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Significant Operations: Significant	Construction: MM-VIB-1: Vibration Control Plan MM-VIB-2: Construction Equipment Location MM-VIB-3: Pre- and Post-Construction Surveys Operations: MM-VIB-4: Low-Impact Frogs MM-VIB-5: Resilient Fasteners MM-VIB-6: Ballast Mats	Construction: Significant and Unavoidable Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Noise and Vibration				
	Trench Option	Construction: Significant Operations: Significant	Construction: MM-VIB-1: Vibration Control Plan MM-VIB-2: Construction Equipment Location Operations: MM-VIB-4: Low-Impact Frogs MM-VIB-5: Resilient Fasteners MM-VIB-6: Ballast Mats	Construction: Significant and Unavoidable Operations: Less than Significant
	Hawthorne Option	Construction: Significant Operations: Less than Significant	Construction: MM-VIB-1: Vibration Control Plan MM-VIB-2: Construction Equipment Location	Construction: Significant and Unavoidable Operations: Less than Significant

¹With the establishment of quiet zones by the Cities of Lawndale, Redondo Beach, and Torrance (MM-NOI-4), the Trench Option and LPA would have a less than significant impact with mitigation for operational noise.

Table ES-11. Summary of Biological Resources Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
A. Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	LPA	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-2: Nesting Bird Season Restrictions and Pre-Construction Surveys MM-BIO-3: Roosting Bat Restrictions and Survey Requirements MM-BIO-4: Pre-construction Rare Plant Survey Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
A. Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Elevated/At-Grade Alignment	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-2: Nesting Bird Season Restrictions and Pre-Construction Surveys MM-BIO-3: Roosting Bat Restrictions and Survey Requirements MM-BIO-4: Pre-construction Rare Plant Survey Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
A. Would the Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Trench Option	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-2: Nesting Bird Season Restrictions and Pre-Construction Surveys MM-BIO-3: Roosting Bat Restrictions and Survey Requirements MM-BIO-4: Pre-construction Rare Plant Survey Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
			MM-BIO-2: Nesting Bird Season Restrictions and Pre-Construction Surveys MM-BIO-3: Roosting Bat Restrictions and Survey Requirements MM-BIO-4: Pre-construction Rare Plant Survey Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	
B. Would the 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 Wildlife or U.S. Fish and Wildlife Service?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
C. 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?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
D. Would the Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
E. Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	LPA	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
			Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	
	Trench Option	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Biological Resources				
	Hawthorne Option	Construction: Significant Operations: Significant	Construction: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat Operations: MM-BIO-1: General Protection Measures to Avoid and Minimize Impacts on Sensitive Biological Resources MM-BIO-5: Off-site Mitigation for Southern Tarplant Habitat	Construction: Less than Significant Operations: Less than Significant
F. Would the Project conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Table ES-12. Summary of Geology, Soils, and Paleontological Resources Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Geology, Soils, and Paleontological Resources				
A. 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 (AP) Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? ii. Strong seismic ground shaking iii. Seismic-related ground failure, including liquefaction iv. Landslides	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project result in substantial soil erosion or the loss of topsoil?	LPA	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Geology, Soils, and Paleontological Resources				
	Trench Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Hawthorne Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
C. Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
D. Would the Project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code, creating substantial direct or indirect risks to life or property?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Geology, Soils, and Paleontological Resources				
E. Would the 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?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
F. Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	LPA	Construction: Significant Operations: No Impact	Construction: MM-GEO-1: Engage a Qualified Paleontological Resources Specialist	Construction: Less than Significant Operations: No Impact
	Elevated/At-Grade Alignment	Construction: Significant Operations: No Impact	Construction: MM-GEO-1: Engage a Qualified Paleontological Resources Specialist	Construction: Less than Significant Operations: No Impact
	Trench Option	Construction: Significant Operations: No Impact	Construction: MM-GEO-1: Engage a Qualified Paleontological Resources Specialist	Construction: Less than Significant Operations: No Impact
	Hawthorne Option	Construction: Significant Operations: No Impact	Construction: MM-GEO-1: Engage a Qualified Paleontological Resources Specialist	Construction: Less than Significant Operations: No Impact

Table ES-13. Summary of Hazards and Hazardous Materials Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Hazards and Hazardous Materials				
A. Would the Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
C. Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Hazards and Hazardous Materials				
D. Would the Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Trench Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Hawthorne Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
E. 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?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
F. For a project located within the vicinity of a private airstrip, as a result, create a safety hazard for people residing or working in the project area.	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Hazards and Hazardous Materials				
G. Would the Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
H. Would the Project expose people or structures to a significant risk of loss, injury or death involving wildfires, including where wildland fires are adjacent to urbanized areas or where residences are intermixed with wildlands?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Table ES-14. Summary of Hydrology and Water Quality Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Hydrology and Water Quality				
A. Would the Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
C. Would the 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?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Hydrology and Water Quality				
D. Would the Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
E. Would the Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Table ES-15. Summary of Utilities and Service Systems Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Utilities and Service Systems				
A. Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Utilities and Service Systems				
C. Would the 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?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Trench Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Hawthorne Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
D. Would the 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?	LPA	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Trench Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
	Hawthorne Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact
E. Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact

Table ES-16. Summary of Energy Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Energy				
A. Would the Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project conflict with or obstruct a State or local plan for renewable energy or energy efficiency?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Table ES-17. Summary of Cultural Resources Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Cultural Resources				
A. Would the Proposed Project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	LPA	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Elevated/At-Grade Alignment	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Trench Option	Construction: No Impact Operations: No Impact	None	Construction: No Impact Operations: No Impact
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
B. Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	LPA	Construction: Significant Operations: No Impact	Construction: MM-CUL-1: Cultural Resources Identification Training MM-CUL-2: Cultural Resources Monitoring and Mitigation Plan	Construction: Less than Significant Operations: No Impact
	Elevated/At-Grade Alignment	Construction: Significant Operations: No Impact	Construction: MM-CUL-1: Cultural Resources Identification Training MM-CUL-2: Cultural Resources Monitoring and Mitigation Plan	Construction: Less than Significant Operations: No Impact
	Trench Option	Construction: Significant Operations: No Impact	Construction: MM-CUL-1: Cultural Resources Identification Training	Construction: Less than Significant Operations: No Impact

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Cultural Resources				
			MM-CUL-2: Cultural Resources Monitoring and Mitigation Plan	
	Hawthorne Option	Construction: Significant Operations: No Impact	Construction: MM-CUL-1: Cultural Resources Identification Training MM-CUL-2: Cultural Resources Monitoring and Mitigation Plan	Construction: Less than Significant Operations: No Impact
C. Would the Project disturb any human remains, including those interred outside of formal cemeteries?	LPA	Construction: Significant Operations: No Impact	Construction: MM-CUL-3: Unanticipated Discovery of Human Remains	Construction: Less than Significant Operations: No Impact
	Elevated/At-Grade Alignment	Construction: Significant Operations: No Impact	Construction: MM-CUL-3: Unanticipated Discovery of Human Remains	Construction: Less than Significant Operations: No Impact
	Trench Option	Construction: Significant Operations: No Impact	Construction: MM-CUL-3: Unanticipated Discovery of Human Remains	Construction: Less than Significant Operations: No Impact
	Hawthorne Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact

Table ES-18. Summary of Tribal Cultural Resources Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Tribal Cultural Resources				
A. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is 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)?	LPA	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Tribal Cultural Resources				
A. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is 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)?	Trench Option	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Tribal Cultural Resources				
B. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a 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?	LPA	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Tribal Cultural Resources				
B. Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a 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?	Trench Option	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Significant Operations: Less than Significant	Construction: MM-TCR-1: Native American Monitoring MM-TCR-2: Unanticipated Discovery of Tribal Cultural Resource Objects (Non-Funerary/Non-Ceremonial) MM-TCR-3: Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects	Construction: Less than Significant Operations: Less than Significant

Table ES-19. Summary of Public Services Impacts Evaluation

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Public Services				
A. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for: i. fire protection; ii. police protection; iii. schools; iv. parks; v. libraries?	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant

Environmental Impact	Alignment	Impact Before Mitigation	Proposed Mitigation Measures	Impact After Mitigation
Public Services				
B. Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
C. Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	LPA	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Elevated/At-Grade Alignment	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Trench Option	Construction: Less than Significant Operations: Less than Significant	None	Construction: Less than Significant Operations: Less than Significant
	Hawthorne Option	Construction: Less than Significant Operations: No Impact	None	Construction: Less than Significant Operations: No Impact