

West Santa Ana Branch Transit Corridor

Final EIS/EIR Chapter 6: Evaluation of Alternatives



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**Final EIS/EIR Chapter 6:
Evaluation of Alternatives**

Final Environmental Impact Statement/ Environmental Impact Report

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

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
APE	Area of Potential Effect
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CPUC	California Public Utilities Commission
EIR	environmental impact report
EIS	environmental impact statement
FTA	Federal Transit Administration
LPA	Locally Preferred Alternative
Metro	Los Angeles County Metropolitan Transportation Authority
Metro Board	Metro Board of Directors
MSF	maintenance and storage facility
NEPA	National Environmental Policy Act
O&M	operating and maintenance
Project	WSAB Transit Corridor Project
VMT	vehicle miles traveled
WSAB	West Santa Ana Branch

6 EVALUATION OF ALTERNATIVES

6.1 Introduction

The information included in this chapter provides agency stakeholders and the general public with an identification of the benefits and trade-offs among the alternatives, including design options and maintenance and storage facility (MSF) site options, considered for the Project within Los Angeles County. The four alternatives and options from the West Santa Ana Branch (WSAB) Transit Corridor Project Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) remain under conceptual consideration and were evaluated in the Draft EIS/EIR at the same level of detail. Information comparing Alternatives 1, 2, 3, and 4 is referenced from the Draft EIS/EIR (Los Angeles County Metropolitan Transportation Authority [Metro] 2021a). The comparison of the alternatives is inclusive of the design options and MSF site options, as applicable. These comparisons are considered in terms of effectiveness in meeting the Purpose and Need (see Chapter 1, Purpose and Need, of this Final EIS/EIR) of the Project and are used to confirm the environmentally superior alternative.

Alternative 3 was identified in the Draft EIS/EIR as the Environmentally Superior Alternative and the Staff Preferred Alternative; it was subsequently identified by the Metro Board of Directors as the Locally Preferred Alternative (LPA) in January 2022. Additionally, the Bellflower MSF was identified as a component of the LPA.

Since completion of the Draft EIS/EIR, the LPA was refined based on public comments received on the Draft EIS/EIR and stakeholder coordination. As allowed by 23 United States Code 139 (f)(4)(D), the design continued for the LPA in this Final EIS/EIR to support mitigation design and interagency permitting or other approvals.

Table 6.1 presents the capital and operating and maintenance (O&M) costs presented in the Draft EIS/EIR for the four Build Alternatives, along with characteristics of the alignments, including length, configuration (at grade, aerial, and underground), number of stations, length of alignment in shared right-of-way with existing rail, and length of alignment needing freight track relocation. Comparable information for the LPA is provided in Section 6.4.1. Section 6.4 discusses refinements that have been made to the design of the LPA to reduce impacts, support mitigation design, provide the detail required for interagency approvals, and to address comments received on the Draft EIS/EIR and stakeholder coordination.

Table 6.1. Comparative Build Alternative Cost and Features

Cost/Features	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Capital cost (2020\$ ¹) without MSF ^{2, 4}	\$8.1 billion	\$8.8 billion	\$4.4 billion	\$1.9 billion
Capital cost (2020\$ ¹) with MSF ^{3, 4}	\$8.5 billion – \$8.8 billion	\$9.2 billion – \$9.5 billion	\$4.9 billion – \$5.1 billion	\$2.3 billion – \$2.6 billion
Capital cost per mile with MSF (2020\$ ^{1, 4})	\$442 million – \$455 million	\$479 million – \$490 million	\$331 million – \$346 million	\$355 million – \$389 million
Annual O&M cost (2020\$ ¹)	\$87 million	\$101 million	\$67 million	\$41 million
Alignment length (miles)	19.3	19.3	14.8 ⁵	6.6
At-grade length (miles)	12.3	12.3	12.2	5.6
Aerial length (miles)	4.7	4.7	2.6	1.0
Underground length (miles)	2.3	2.3	0	0
Number of stations	11	12	9	4
Shared right-of-way with rail (miles)	11.4	11.4	10.1	2.0
Freight relocation needed (miles)	8.1	8.1	8.1	1.3

Source: Metro 2021a

Notes: ¹ 2020\$ refers to dollar values assumed in Fiscal Year 2020.

² All estimated costs generally include guideway and track elements, stations, stops, terminals, intermodal and support facilities, sitework and special conditions, systems, right-of-way, vehicles, professional services, and unallocated contingencies. Variable costs not included in the table are Design Options 1 and 2 for Alternative 1 and the maintenance and storage facility site options.

³ Costs range from the low end (with the Bellflower MSF site option) to the high end (with the Paramount MSF site option).

⁴ The capital cost estimates will be further refined as the project advances through the project development process and more detailed engineering is undertaken.

⁵ The length of Alternative 3 in the Draft EIS/EIR was incorrectly presented as 14.8 miles; the correct length was 14.5 miles. The alignment endpoints for the LPA are largely unchanged from the Draft EIS/EIR.

MSF = maintenance and storage facility; O&M = operating and maintenance

6.2 Effectiveness in Meeting Purpose and Need

Summarizing information that was provided in Chapter 6, Section 6.3 of the Draft EIS/EIR, this section compares the No Build and four Build Alternatives in terms of meeting the Purpose and Need/Goals and Objectives of the Project at the common level of detail completed for the Draft EIS/EIR. Alternative 3 has now been identified as the LPA and further refined, as discussed in Section 6.4.1. The Purpose and Need for the Project is summarized in Chapter 1 of this Final EIS/EIR. Overall, the purpose of the Project is to provide high-quality, reliable transit service to meet the future mobility needs of residents, employees, and visitors who travel within and through the corridor. In particular, the Project's purpose includes four major points:

- Establish a reliable transit service that will enhance connectivity and reduce travel times to local and regional destinations
- Accommodate future travel demand, including the high number of transit trips made by Study Area residents

- Improve access for densely populated neighborhoods, major employment centers, and other key regional destinations where future growth is forecasted to occur within the Study Area
- Address mobility and access constraints faced by transit-dependent communities, thereby improving transit equity

The No Build Alternative would not achieve any of the project objectives and, therefore, would not address the Purpose and Need of the Project. Alternatives 1, 2, 3, and 4 address the Purpose and Need/Goals and Objectives, but to varying degrees. This section compares mobility and connectivity for historically underserved and transit-dependent communities, travel time improvements on local and regional transportation networks, and accommodation of substantial future employment and population growth.

Alternatives 1 and 2 would have the longest alignments (approximately 19.3 miles, Table 6.1) and, therefore, would serve the largest number of residents and provide the greatest amount of connectivity. As such, the reduction in vehicle miles traveled (VMT), number of daily boardings, emissions and greenhouse gas reduction, and economic benefits are all highest under these alternatives. Alternatives 3 and 4 would serve a smaller number of residents and provide lower connectivity as a result of the shorter alignments associated with these alternatives. Therefore, reductions in VMT, emissions and greenhouse gas reduction, number of daily boardings, and economic benefits would all be lower compared to Alternatives 1 and 2. Alternative 3 would serve 12 cities, which is comparable to the number of cities that would be served by Alternatives 1 and 2.

All of the Build Alternatives would achieve the four major elements of the Project's Purpose by establishing reliable transit service, accommodating future travel demand, improving access, and addressing mobility and access constraints faced by transit-dependent communities in the corridor. Additionally, while Alternatives 1 and 2 would have the greatest amount of environmental benefits, these alternatives would also need to address the greatest extent of environmental effects given the longer alignments and greater number of stations.

As shown in Table 6.1, Alternative 4 would have the lowest capital cost and economic benefits (\$3.0 million in 2020\$). Alternative 3 is the most cost-effective on a per-mile basis with inclusion of the MSF site (Table 6.1), which is required to support operation of the Project. Alternative 3 would connect 12 cities and generate around \$5.1 million (2020\$) in economic activity per year. Therefore, Alternative 3 would still provide many of the same benefits as Alternatives 1 and 2 (which had \$6.6 and \$7.6 million in economic benefits, respectively, in 2020\$), but reduced benefits due to the shorter length of the alignment. Alternative 4 would provide the least amount of benefits and would not be as cost-effective on a per-mile basis compared to Alternative 3.

6.3 Environmentally Superior Alternative

Per California Environmental Quality Act (CEQA) *Guidelines* Section 15126.6 (e)(2), identifying an "environmentally superior alternative" is required. The determination of this alternative is based on the results of the technical analysis presented in the Draft EIS/EIR, inclusive of corresponding technical reports. The environmentally superior alternative is the alternative found to have an overall environmental advantage compared to the other alternatives. Pursuant to CEQA *Guidelines* Section 15126.6(b), alternatives with the potential for avoiding or substantially lessening significant impacts may be considered even if they are more costly. The goal of

identifying the environmentally superior alternative is to assist decision-makers in the project approval process. However, the public agency is not required by CEQA to select the environmentally superior alternative as the approved project.

The Draft EIS/EIR described and evaluated in detail the environmental impacts of a range of alternatives. Based on that analysis, Alternative 3 was identified as the environmentally superior alternative in Chapter 6, Section 6.4 of the Draft EIS/EIR. This section of the Final EIS/EIR summarizes the analysis in Section 6.4 of the Draft EIS/EIR for the four Build Alternatives at a common level of detail. The No Build Alternative is also discussed in this section. Overall, Alternative 3 has a shorter alignment and results in fewer environmental impacts compared to Alternatives 1 and 2. However, to further understand the alternatives from an environmental impact comparison, other factors are also considered, including issue areas that have the greatest potential to result in long-term, significant impacts; community concerns; and overall benefit that each alternative would provide.

6.3.1 No Build/No Project Alternative

The No Build/No Project Alternative represents year 2042 conditions without the Project; a detailed description of assumptions for this scenario is provided in Section 2.5.1 in Chapter 2, Project Description/Alternatives Considered, of this Final EIS/EIR. The No Build/No Project Alternative would result in no impacts under all of the environmental topics, with the exception of consistency with land use and plans development. Operation-related impacts for the No Build/No Project Alternative would limit the opportunity to intensify land uses at potential project station areas and throughout the corridor. This would limit jurisdictions from developing compact communities around a public transit system. As such, the No Build/No Project Alternative would result in a significant impact for land use impacts. Overall, the No Build/No Project Alternative would have the least number of impacts compared to the other alternatives.

Since the No Build/No Project Alternative would not include a new rail service in the Study Area, it would provide no environmental benefits to the region. The No Build/No Project Alternative would also not achieve any of the project objectives and, therefore, would not address the Purpose and Need of the Project. As such, the No Build/No Project Alternative would not be the environmentally superior alternative when compared to the Build Alternatives, even when impacts are considered.

6.3.2 Alternative 1 Environmental Summary

Alternative 1 would result in the highest number of vibration impacts and moderate noise impacts, and the second-highest number of severe noise impacts compared to the other Build Alternatives. Mitigation has been identified for these impacts; however, not all impacts would be fully mitigated. Alternative 1 would have the highest number of unmitigated vibration impacts and severe noise impacts. After mitigation, Alternative 1 would result in the second-highest number of moderate noise impacts, similar to Alternative 2. This alternative would have the potential to affect the greatest number of archaeological sites. Alternative 1 would affect the second-highest number of parcels and would displace the second-highest number of businesses and employees. This alternative would displace the same number of residential units and residents as Alternative 2. This alternative would also be located in proximity to the second-highest number of hazardous materials sites, which would affect capital cost and potentially result in delays during construction to account for remediation efforts.

Construction of Alternative 1 would result in large amounts of import and export quantities of soil, largely due to the tunnel segment. This would require increased truck trips, which would increase the greenhouse gas emissions from construction vehicles and fuel used, compared to Alternatives 3 and 4. Emissions levels for nitrogen oxides (NO_x) would exceed the regional threshold even after mitigation, and hazardous subsurface gases would be encountered during construction of the tunnel segment. Construction would impact the second-highest number of streets and sidewalks and the most private property.

Alternative 1 would provide regional benefits. Specifically, this alternative would provide the greatest VMT reductions, and would be comparable to Alternative 2 in terms of emissions/greenhouse gas reductions during operation. Alternative 1 would have the second-highest user benefit hours, daily new transit trips, and average weekday daily boardings. During construction, this alternative would be comparable to Alternative 2 in terms of the number of jobs created.

The Draft EIS/EIR documented two design options for Alternative 1. Design Option 1 would change the northern terminus to behind the east side of the historic Los Angeles Union Station building and the Metropolitan Water District building below the baggage area parking facility. It would result in a greater number of project boardings than Alternative 1. Design Option 2 would add the Little Tokyo Station. It would increase project costs and daily boardings. Although adding this station would provide new access and transfer opportunities, there are community concerns with Design Option 2 related to access and noise, dust, and vibration nuisances during construction.

Given the trade-offs of the environmental benefits compared to environmental impacts, mitigation, property acquisition requirements, and risks associated with hazardous materials, Alternative 1 is not the environmentally superior alternative.

6.3.3 Alternative 2 Environmental Summary

Similar to Alternative 1, Alternative 2 would require a considerable level of mitigation given the number of significant impacts. Alternative 2 would result in the highest number of severe noise impacts and the second-highest number of vibration impacts and moderate noise impacts compared to the other Build Alternatives. After mitigation, Alternative 2 would result in the highest number of moderate noise impacts and would have the same number of unmitigated vibration and severe noise impacts as Alternative 1. Alternative 2 would permanently affect the highest number of parcels and displace the greatest number of businesses. This alternative would have the same number of displacements of residential units and residents as Alternative 1. This alternative would also be located in proximity to the highest number of hazardous materials sites, which would affect capital cost and potentially result in delays during construction to account for remediation efforts.

Similar to Alternative 1, construction of Alternative 2 would result in exceedances of emissions levels for NO_x and effects related to hazardous subsurface gases due to the tunnel segment. Additionally, construction would require increased truck trips, which would increase the greenhouse gas emissions from construction vehicles and fuel used compared to Alternatives 3 and 4. Alternative 2 would create the largest amount of construction jobs, but construction would also impact the greatest number of streets and sidewalks and the second-highest number of private properties.

Alternative 2 would result in considerably more environmental impacts and mitigation measures, as well as affect the greatest number of parcels. Thus, Alternative 2 is not the environmentally superior alternative.

6.3.4 Alternative 3 Environmental Summary

Alternative 3, as evaluated in the Draft EIS/EIR, would result in fewer vibration impacts and both moderate and severe noise impacts compared to Alternatives 1 and 2. Mitigation identified for these impacts would not fully mitigate all impacts. Alternative 3 would affect fewer parcels, displacing approximately 25 to 50 percent fewer businesses and employees, but would have the same number of displacements of residential units and residents as Alternatives 1 and 2. This alternative would also be located in proximity to fewer hazardous materials sites than Alternatives 1 and 2 due to the shorter length of the alignment.

Alternative 3 would not include a tunnel segment, which would decrease construction impacts, such as excavation quantities, emissions, and fuel usage. As a result, NO_x levels would be below the regional threshold. Additionally, effects associated with hazardous subsurface gas would be avoided. While construction would still impact private property as well as streets and sidewalks along the alignment, impacts would be fewer than those for Alternatives 1 and 2. Based on estimates provided in Table 6.1, the number of construction jobs created would be less than Alternatives 1 and 2, but would still result in approximately 44,000 to 45,700 jobs¹ resulting in substantial economic benefits.

Alternative 3 was identified in the Draft EIS/EIR as the environmentally superior alternative when compared to the No Build Alternative and Alternatives 1, 2, and 4 based on the trade-offs among environmental benefits, impacts, and capital cost.

6.3.5 Alternative 4 Environmental Summary

Alternative 4 would result in the lowest number of impacts, which is attributed to this alternative having the shortest alignment. Specifically, this alternative would result in the lowest number of vibration and moderate and severe noise impacts, both with and without mitigation. Alternative 4 would also have the smallest effect on properties and would displace the lowest number of businesses, employees, and residential units. This alternative would also be located in proximity to the lowest number of hazardous materials sites. This alternative would not have significant and unavoidable impacts associated with consistency with land use plans and development. With implementation of Alternative 4, intersection operations would not be adversely impacted after mitigation, but street and sidewalk closures would still be required, although less than under Alternatives 1, 2, and 3.

Similar to Alternative 3, Alternative 4 would not include a tunnel segment, which would decrease construction impacts such as excavation quantities, emissions, and fuel usage. Because this alternative would have the shortest alignment, the quantities of each of these impacts would be the smallest. Similar to Alternative 3, NO_x levels would be below the regional threshold and affects associated with hazardous subsurface gas would be avoided. Additionally, construction of this alternative would impact the fewest number of streets, sidewalks, and private properties. While these reduced impacts are beneficial, construction of Alternative 4 would create the fewest

¹ The number presented is person-year jobs (one job for one person for one year)

jobs, estimated between 22,400 to 24,000 jobs², which is approximately half the number of jobs created by Alternative 3.

Given the limited regional environmental benefits, Alternative 4 is not the environmentally superior alternative when compared to the other Build Alternatives, even when the reduced impacts and mitigation are considered.

6.3.6 Maintenance and Storage Facility Options

The Draft EIS/EIR presented two MSF site options for the Project:

- Paramount MSF site option
- Bellflower MSF site option

The Bellflower MSF site option was identified as a component of the LPA by the Metro Board in January 2022.

Major considerations for an MSF site are cost and potential environmental impacts. The Paramount MSF site option would have a higher capital cost (approximately \$681 million in 2020\$) compared to the Bellflower MSF site option (approximately \$458 million in 2020\$). The Paramount MSF site option would have a greater capital cost due to the lead tracks, an additional grade crossing, site work, and special conditions needed to connect the MSF site to the project alignment.

The Paramount MSF site option would require the acquisition of four parcels that would displace five retail and industrial manufacturer businesses, including the Paramount Swap Meet and Paramount Drive-in Theater. The Paramount MSF site lead tracks would be located east of existing freight tracks, which would cause the existing freight track to move farther into the residential properties west of the alignment, adding to the number of acquisitions required for this site.

The Bellflower MSF will require the acquisition of two parcels that will displace the Hollywood Sports Paintball and Airsoft Park and Bellflower BMX business, which operates as a single business. The Bellflower MSF site will be directly accessible to the Metro rail right-of-way, so right-of-way acquisitions for the lead tracks will not be required. No residential properties would be affected by the Bellflower MSF site.

Overall, the Bellflower MSF site will require fewer acquisitions, displace fewer businesses, and have lower capital cost compared to the Paramount MSF site. Therefore, the Bellflower MSF site option is the preferred site. For the Bellflower MSF site to be viable, the City of Bellflower would need to rezone the site and end its lease with the current occupants. Coordination with Bellflower is ongoing regarding the use of this site.

6.3.7 Environmental Superior Alternative Findings

As summarized in the prior sections, while the Build Alternatives would result in varying levels of impacts and benefits, Alternative 3 will have an overall environmental advantage. Alternative 3 was identified to have fewer permanent acquisitions, residential and business displacements, noise and vibration impacts, and be in proximity to fewer hazardous materials sites compared to Alternatives 1 and 2. Construction of Alternative 3 will affect access to fewer community

² The number presented is person-year jobs (one job for one person for one year)

facilities, require fewer construction laydown areas, and will not result in exceedances in daily regional emissions compared to Alternatives 1 and 2. Due to the lack of connectivity and limited benefits achieved with four stations, Alternative 4 would provide a lower level of environmental benefits to the region when compared to the other Build Alternatives. Overall, Alternative 3 will generate environmental benefits by providing mobility and connectivity to transit-dependent populations in 12 cities throughout the corridor, as well as \$5.1 million (2020\$) in economic activity annually to the region. As such, Alternative 3 (the identified LPA) is the environmentally superior alternative pursuant to CEQA requirements.

6.4 Information Subsequent to the Draft EIS/EIR

Based on comments received on the Draft EIS/EIR and stakeholder coordination, and as authorized by 23 United States Code 139 (f)(4)(D), Metro has refined and continued the design of the LPA to reduce impacts, support mitigation design, and provide the detail required for interagency approvals. Metro has coordinated with the following key parties in support of comments received on the Draft EIS/EIR and refinements to the LPA: the California Public Utilities Commission (CPUC), the California Department of Transportation (Caltrans), the U.S. Army Corps of Engineers, the Ports of Los Angeles and Long Beach in conjunction with the Union Pacific Railroad, and corridor cities. This coordination is documented in Section 7.8 of Chapter 7, Public Outreach, Agency Consultation, and Coordination, of this Final EIS/EIR. Refinements to the LPA made as a result of these comments and coordination are detailed in Section 2.4.3.2 of Chapter 2, Project Description/Alternatives Considered, and Appendix E, Project Refinements since Circulation of the Draft EIS/EIR, of this Final EIS/EIR. The refinements and associated analysis have not identified any new or substantially more severe significant adverse impacts than were identified in the Draft EIS/EIR. In several cases the refinements reflect additional mitigation and environmental design to further reduce impacts compared to those identified in the Draft EIS/EIR.

Chapter 3, Transportation, and each section of Chapter 4, Affected Environment and Environmental Consequences, of this Final EIS/EIR includes a discussion of how the refinements to the LPA, stakeholder coordination, and/or comments on the Draft EIS/EIR have affected the analysis and information presented for each topic. In addition, one new design option was identified during stakeholder coordination after circulation of the Draft EIS/EIR (Close 186th Street) and was evaluated in this Final EIS/EIR. Updates are summarized in the sections that follow relative to Alternative 3 from the Draft EIS/EIR.

6.4.1 Summary of Updates for the LPA

Table 6.2 provides an overview of the capital and O&M cost and characteristics of the LPA. The *West Santa Ana Branch Transit Corridor Project Final Locally Preferred Alternative Capital Cost Report* (Metro 2024x) details the capital cost assumptions, and the *West Santa Ana Branch Transit Corridor Project Final Operating and Maintenance Cost Report* (Metro 2024w) provides information on the O&M assumptions for the LPA; the information is also summarized in Section 2.5.2.8 of Chapter 2, Project Description/Alternatives Considered, of this Final EIS/EIR. Appendix F, Funding and Financing for the West Santa Ana Branch Project, of this Final EIS/EIR provides information on committed and planned funding for the LPA.

Table 6.2. LPA Cost and Features

Cost/Features	LPA
Capital cost (2023\$ ¹) ^{2,3}	\$5.9 billion
Capital cost (YOE\$ ⁴) ^{2,3}	\$7.2 billion
Capital cost per mile with MSF (2023\$ ^{1,2,3})	\$410 million
Annual O&M cost (2023\$ ¹)	\$118 million
Alignment length (miles)	14.5
At-grade length (miles)	12.1
Aerial length (miles)	2.4
Number of stations	9
Shared right-of-way with rail (miles)	9.8
Freight relocation needed (miles)	8.7

Source: Metro 2024x and 2024w

Notes: ¹ 2023\$ refers to dollar values assumed in Fiscal Year 2023.

² All estimated costs generally include guideway and track elements, stations, stops, terminals, intermodal and support facilities, sitework and special conditions, systems, right-of-way, vehicles, professional services, and unallocated contingencies. The MSF is also included in this cost.

³ The capital cost estimates will be further refined as the project advances through the project development process and more detailed engineering is undertaken.

⁴ YOE\$ refers to dollar values assumed in the estimated year of expenditure based on the updated Project schedule.

LPA = Locally Preferred Alternative; MSF = maintenance and storage facility; O&M = operating and maintenance; YOE = year of expenditure

Traffic and Parking: Updates to the traffic operations analysis (i.e., level-of-service and delay) for the LPA reflect refinements made in coordination with the applicable jurisdiction, including opening previously closed at-grade crossings, closing previously open at-grade crossings, left-turn restrictions, and realigning and signalizing intersections. For these refinements, the traffic study was also updated at adjacent intersections that could be affected by the change (for instance, closing an at-grade crossing could result in an increase in traffic volumes at the adjacent intersection(s) where at-grade crossings remain open). In addition, in response to comments received on the Draft EIS/EIR and refinements to the LPA, the Final EIS/EIR was updated to include analysis of 9 additional intersections, bringing the total number of intersections analyzed to 81.

Compared to the results in the Draft EIS/EIR, the number of intersections exceeding the level-of-service criteria decreased from 20 to 19, although some of the locations of the affected intersections differ. Prior to mitigation, intersection delays will exceed the level-of-service criteria at 19 intersections as a result of the LPA, of which 3 intersections will experience adverse levels-of-service during 1 peak period, while the other 16 intersections will experience adverse levels-of-service during both peak periods. Similar to the Draft EIS/EIR, delays at 12 intersections will continue to exceed the level-of-service criteria after mitigation during one or both peak periods.

Refinements to the project footprint and right-of-way needs for the LPA, in addition to the provision of new on-street parking since release of the Draft EIS/EIR, have changed the previously identified on-street and off-street parking removal, resulting in an overall increase in the loss of on-street parking and an overall reduction in the number of off-street parking

spaces that will be removed by the LPA. Based on comments on the Draft EIS/EIR and stakeholder coordination, the analysis of spillover parking was refined to forecast corridor-wide transit parking demand for all nine stations along the LPA, in addition to the forecasts of demand at the five stations with transit parking included in the Draft EIS/EIR. The analysis has also been updated to remove the consideration of available on-street parking to meet unmet transit parking demand, thereby providing a more conservative analysis of potential parking effects. As concluded in Section 3.4 in Chapter 3, Transportation, of this Final EIS/EIR, the changes to the parking spaces removed as a result of the LPA will not result in adverse parking effects.

Property Acquisitions and Displacements: Based on the refinements to the LPA, comments on the Draft EIS/EIR, and stakeholder coordination, the right-of-way needs for the LPA have been updated. Specifically, refinements to the right-of-way needs for the LPA will avoid previously identified displacements, and the LPA will displace 58 businesses and 13 residential units compared to 65 businesses and 21 residential units identified in the Draft EIS/EIR. Additionally, the information on permanent acquisitions has been updated to account for acquisitions required for transit parking facilities. The permanent acquisitions for these facilities were identified in Chapter 4, Section 4.19.3.3, Construction-related Acquisitions and Displacements, of the Draft EIS/EIR as a permanent, full acquisition during the construction phase of the Project and noted that they would be converted from a construction staging area to parking facilities to support operation of the Project. Because the area would first be used as a construction staging area prior to being converted to a parking facility, the permanent acquisition was noted in Section 4.19.3.3 rather than in the operational analysis presented in Section 4.3, Acquisitions and Displacements, of the Draft EIS/EIR.

Visual and Aesthetics: The visual analysis has been updated to include the revised list of historic properties/historical resources identified in Chapter 4, Section 4.14, Historic, Archaeological, and Paleontological Resources, of this Final EIS/EIR. Additionally, in response to comments on the Draft EIS/EIR, the LPA includes a new Project Measure, VA PM-8 (Residential Screening for Aerial Structures), which requires privacy screening along portions of the aerial structure adjacent to the rear of residential properties in the Cities of Paramount, Bellflower, and Cerritos if the soundwall in those locations will not be sufficiently tall to provide similar privacy screening. Additionally, in response to comments on the Draft EIS/EIR, stakeholder coordination, and to reflect refinements to the LPA, new or updated visual simulations were prepared. The visual analysis was also updated to account for changes in the height and location of soundwalls, which resulted from the updated noise analysis prepared for the Final EIS/EIR. No new significant impacts to visual and aesthetic resources were identified as a result in the modifications to the LPA.

Noise and Vibration: A key concern raised in public comments on the Draft EIS/EIR was the operational noise impacts identified in the Draft EIS/EIR. Consideration of these comments, along with coordination with the CPUC and local jurisdictions, led to the following updates to the noise analysis: refined design of soundwalls at at-grade crossings; taller soundwall heights; addition of soundwalls along Randolph Street; updates to the analysis to use operating speeds versus design speeds; and revised specifications for audible warnings, crossing signal bell shrouds, and a gate-down-bell-stop variance at crossings located near sensitive receivers. These efforts were taken to reduce the residual noise impacts identified in the Draft EIS/EIR. Additionally, noise clusters were added as a result of comments received on the Draft EIS/EIR and refinements to noise modeling. Cluster N367 was added as a

planned use as identified by the City of Huntington Park. Clusters N369 to N376 were added as a result of a newly constructed multi-family use as identified by the City of South Gate. Clusters N349 to N366 and N368 were divided from clusters presented in the Draft EIS/EIR to better disclose and mitigate noise impacts at specific locations and are not new sensitive receivers. In some cases, noise clusters were removed upon further review because they were not noise sensitive (N218, N232, N233, N264, N266), the property would be acquired thereby displacing the sensitive receiver (N47), or sensitive uses had been consolidated into one location (N348: Mayne Events Center/Los Angeles County Fire Museum). The updates in the analysis methodology and mitigation measures reduced the number of light rail transit (LRT) pass-by noise impacts after mitigation from 101 moderate and 59 severe impacts identified in the Draft EIS/EIR to 31 moderate and 4 severe impacts for the LPA without the design option. The LPA with the design option (Close 186th Street) would result in 33 moderate and 2 severe LRT pass-by impacts after mitigation. Regarding relocated freight tracks, the number of relocated freight track noise impacts after mitigation were reduced from 37 moderate and 11 severe impacts identified in the Draft EIS/EIR to 38 moderate and 1 severe impact for the LPA without and with the design option. Ancillary facility noise impacts related to traction power substation noise were reduced from 5 moderate and 2 severe impacts to 1 moderate and 2 severe impacts.

The number of vibration impacts remaining after mitigation decreased from 13 to 2 as a result of refined mitigation analysis and the use of speeds derived from system modeling in the analysis. The vibration analysis was also updated for two vibration-sensitive facilities in the City of Bellflower (Dante Valve Company and City of Bellflower High-Capacity Water Well No. 1) and one vibration-sensitive facility in the City of South Gate (a newly constructed residential building). With mitigation, there will not be adverse impacts at these facilities during operation or construction.

Energy, Air Quality, and Greenhouse Gases: Estimates for the consumption of energy and emissions of air pollutants and greenhouse gases for both the construction and operating phases of the LPA have changed as a result of updates to modeling made in response to comments and updates to the construction schedule. The changes remain net beneficial compared to the No Build Alternative, and construction and operational air quality impacts remain less than significant.

Water Resources: Based on refinements to the LPA, the analysis of water resources includes updated estimates of the amount of impervious area within the LPA and for elements that will be reconstructed or modified to accommodate the LPA (e.g., freight track realignment, relocation of bike trails). Refinements to the conceptual engineering design for the LPA have slightly expanded the total footprint for rail facilities and local street modifications. Compliance with the Caltrans Statewide MS4 Permit and Clean Water Act Section 408 compliance were added as project design features discussed in Chapter 4, Section 4.11.3.1, Water Resources, of this Final EIS/EIR. Additionally, in response to comments on the Draft EIS/EIR, the analysis was updated to evaluate effects of the LPA on an existing high-capacity water well located in the City of Bellflower. Specific project measures and descriptions were added to clarify what measures will be implemented for project compliance and impact minimization strategies. Impacts to water resources will remain not adverse under NEPA and less than significant under CEQA.

Cultural Resources: Additional information collected after circulation of the Draft EIS/EIR indicated that the single archaeological site identified in the Draft EIS/EIR for Alternative 3

had already been recovered by construction of another project and no longer remains to be affected by construction of the LPA. The Section 106 process, through consultation and expansion of the Area of Potential Effect (APE) to accommodate refinements to the LPA, as well as the change in construction schedule which was used to screen resources, resulted in the identification of additional historic properties/historical resources within the APE; however, the LPA will have no adverse effect on historic properties under Section 106 and impacts remain less than significant under CEQA.

Hazards and Hazardous Materials: The boundaries of the Affected Area for hazards and hazmat have been updated since the Draft EIS/EIR to reflect refinements to the LPA. Within the updated Affected Area for hazards and hazmat, a similar number of educational facilities, pipelines, and oil and gas wells have been identified for the LPA as were identified for Alternative 3 in the Draft EIS/EIR, although the specific educational facilities and pipelines have changed slightly. Additionally, since circulation of the Draft EIS/EIR, the United States Environmental Protection Agency provided supplemental groundwater well location information for the three adjacent Superfund sites identified in the Draft EIS/EIR which has been integrated into the analysis. Additionally, in response to a comment from a stakeholder, the analysis was updated to integrate information related to high pressure natural gas pipelines in the Affected Area for hazards and hazmat. As in the Draft EIS/EIR, with implementation of mitigation, impacts related to hazards and hazardous materials will not be adverse under NEPA and less than significant under CEQA.

6.4.2 Design Option

The LPA includes a design option (Close 186th Street) that was identified after circulation of the Draft EIS/EIR in coordination with stakeholders, specifically the City of Artesia. The design option is described in Section 2.5.2.3 of Chapter 2, Project Description/Alternatives Considered, of this Final EIS/EIR. The design option would close 186th Street but keep 187th Street open to traffic in the City of Artesia and turn Corby Avenue into a cul-de-sac with an access driveway for the existing business. The LPA with the design option would not substantially increase capital costs and would not increase or decrease boardings on the Project compared to the LPA without the design option. The LPA with the design option would not result in additional adverse effects compared to the LPA without the design option. The LPA with the design option would result in one additional temporary construction easement and would eliminate one permanent acquisition compared to the LPA without the design option. The design option would not displace residential units or businesses. Compared to the LPA without the design option, the LPA with the design option would reduce the number of remaining severe noise impacts by one and increase the number of moderate noise impacts by one. The overall remaining number of impacts after mitigation would be 35 for the LPA with and without the design option.

6.5 Next Steps

The information presented in this chapter highlights the important trade-offs between the alternatives evaluated in the Draft and Final EIS/EIR. These trade-offs are discussed under the context of meeting the Purpose and Need of the Project and the environmentally superior alternative. Each of these considerations offers agency stakeholders, the general public, and decision-makers an opportunity to assess major environmental distinctions and the high-level trade-offs among the alternatives. The refined LPA and updated environmental analysis, as detailed in this Final EIS/EIR, have not revealed any new or substantially more severe

significant environmental effects. In light of this, and in accordance with 40 Code of Federal Regulations (CFR) 1502.9(d), 23 CFR 771.130(a), and CEQA Guidelines Section 15088.5, preparation of a supplemental EIS and recirculation of the Draft EIR is not required.

This Final EIS/EIR will be used to inform the Metro Board, the Federal Transit Administration (FTA), and the general public of the environmental effects resulting from the Project. Following circulation of the Final EIS/EIR for public review, the Metro Board, as CEQA lead agency for the Project, will decide among the alternatives, including design options and the No Build Alternative, and consider certification of the Final EIR; adoption of Findings of Fact, the Mitigation and Monitoring Program, Statement of Overriding Considerations; and the approval of the Project. The FTA, as the National Environmental Policy Act (NEPA) lead agency for the Project, in a similar fashion will make a final decision on a proposed action. FTA will issue the Record of Decision to satisfy NEPA requirements for the Project.