APPENDIX 2-F: VALUE ENGINEERING REFINEMENTS MEMORANDUM

DATE: **July 13, 2026**

TO: **Scott Rothenberg, Deputy Director of Environmental Services**
Brett Rushing, NEPA Assignment Manager

CC: **LaDonna DiCamillo, Southern California Regional Director**
Stefan Galvez, Director of Environmental Services
Jennifer Gallerani, Senior CEQA/NEPA Manager

FROM: **Tyler Bonstead, Los Angeles to Anaheim Regional Consultant Project Manager**

SUBJECT: **Los Angeles to Anaheim Section – Effects of Value Engineering Design Refinements on the Draft Environmental Impact Report/Environmental Impact Statement and Technical Reports**

1 Purpose

This memorandum serves to document how various design refinements to the California High-Speed Rail (HSR) System's Los Angeles to Anaheim (LA-A) Project Section did not affect the analyses and conclusions presented in the LA-A Project Section Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and supporting technical reports. The cost-reducing value engineering design refinements include the following:

1. Reductions to the trainset capacities of the light maintenance facilities (LMF) constructed under Shared Passenger Track Alternatives A and B
2. Grade changes along the elevated portion of the project alignment in Santa Fe Springs
3. Grade changes along the trench portion of the alignment in Fullerton

Given that the design refinements have been proposed for the purposes of cost-reducing value engineering strategies, the cost analysis in Chapter 6, Project Costs and Operations, of the Draft EIR/EIS reflected the estimated savings generated by the refinements. Job estimates were scaled to reflect an estimate of savings accrued from value engineering refinements, as it relates to construction costs, so that project-generated job creation estimates are not inflated in the Draft EIR/EIS. Within the Final EIR/EIS, applicable Preliminary Engineering for Project Definition (PEPD) sheets (Volume 3) were updated to reflect the design refinements, but no revisions were made to the Draft EIR/EIS impact analyses, as described in more detail throughout Section 3 of this memorandum.

Similarly, the analyses in the following supporting technical reports remain valid, and do not require revisions as a result of the value engineering design refinements:

- Transportation Technical Report
- Air Quality and Global Climate Change Technical Report
- Noise and Vibration Technical Report
- Biological and Aquatic Resources Technical Report
- Aquatic Resources Delineation Report
- Aquatic Resources Impact Memorandum
- Hydrology and Water Resources Technical Report
- Geology, Soils, and Seismicity Technical Report
- Paleontological Resources Technical Report
- Hazardous Materials and Wastes Technical Report
- Supplement to the Hazardous Materials and Wastes Technical Report
- Community Impact Assessment
- Draft Relocation Impact Report
- Aesthetics and Visual Quality Technical Report

2 Project Design Refinements

2.1 Light Maintenance Facility Capacity Reductions

Shared Passenger Track Alternatives A and B each propose an LMF, which would include space for fleet storage activities, repairs, overnight layover accommodations, and servicing facilities. Under Shared Passenger Track Alternative A, the LMF is proposed for construction at 26th Street in Vernon. Under Shared Passenger Track Alternative B, the LMF would be constructed at 15th Street in Los Angeles.

The Draft EIR/EIS provides that the 26th Street LMF would feature a 12-track outdoor train yard to allow for storage of 24 single trainsets, as well as a 1,410-foot-long, six-track shop building that could accommodate 12 trainsets. These outdoor and indoor track components would both be reduced as part of the value engineering refinements (refer to Figure 1 and Table 1). The 26th Street LMF was initially designed prior to 2024 and the site layout exceeded the California High-Speed Rail Authority's (Authority) LMF standards established in its 2024 update of the *Requirements for High-Speed Trainset Fleet and Infrastructure Maintenance Facilities Report*. The 2024 report provides guidance on the minimum storage capacity needed for light maintenance and storage of the anticipated number of trainsets – 20 trainsets in the case of the Los Angeles LMF. Consistent with the Authority's LMF standards, Table 5 of Appendix 2-E of the Draft EIR/EIS, summarizes background information on the intended service and operations of the California HSR System and also identifies the Los Angeles LMF as having a capacity of 20 trainsets. The refined LMF is consistent with the Authority's LMF standards and fully meets all operational needs for the facility.

Table 1 summarizes the value engineering changes to the 26th Street LMF. Although the reductions in tracks and building area would result in slightly less finish earthwork, such changes in quantities would be negligible and the anticipated total cut and spoil necessary for the refined 26th Street LMF is the same as the assumed amount identified in Table 2-23 of the Draft EIR/EIS for the 26th Street LMF.

Table 1. 26th Street Light Maintenance Facility Design Refinements

Component	LMF Presented in Draft EIR/EIS	Proposed Refined LMF
Outdoor Yard Tracks	12	10
Outdoor Yard Trainset Capacity	24	20
Shop Building Tracks	6	5
Shop Building Length	1,410 feet	1,410 feet
Shop Building Width	140 feet[1]	120 feet
Shop Building Trainset Capacity	12	10
Cut/Spoil During Construction	18,000 cubic yards	18,000 cubic yards

[1] The Draft EIR/EIS does not provide the width of the 26th Street LMF shop building, but pursuant to the PEPD, the width is 140 feet.
EIR/EIS = Environmental Impact Report/Environmental Impact Statement; LMF = light maintenance facility

Similarly, the Draft EIR/EIS provides that the 15th Street LMF would feature a 10-track outdoor train yard to allow for storage of 20 single trainsets, as well as a six-track shop building that could accommodate 12 trainsets. The indoor track component would be reduced as part of the value engineering design refinements, which would result in a reduction of the shop building width by 20 feet and in the 26th Street and 15th Street LMFs having the same capacities (refer to Figure 2 and Table 2). Similar to the refined 26th Street LMF, the refined 15th Street LMF would still be consistent with the Authority's LMF standards established in its 2024 update to the *Requirements for High-Speed Trainset Fleet and Infrastructure Maintenance Facilities Report*, with a storage capacity of 20 trainsets and would fully meet all operational needs for the facility. The refined 15th Street LMF would similarly be consistent with Appendix 2-E of the Draft EIR/EIS, which summarizes background information on the intended service and operations of the California HSR System.

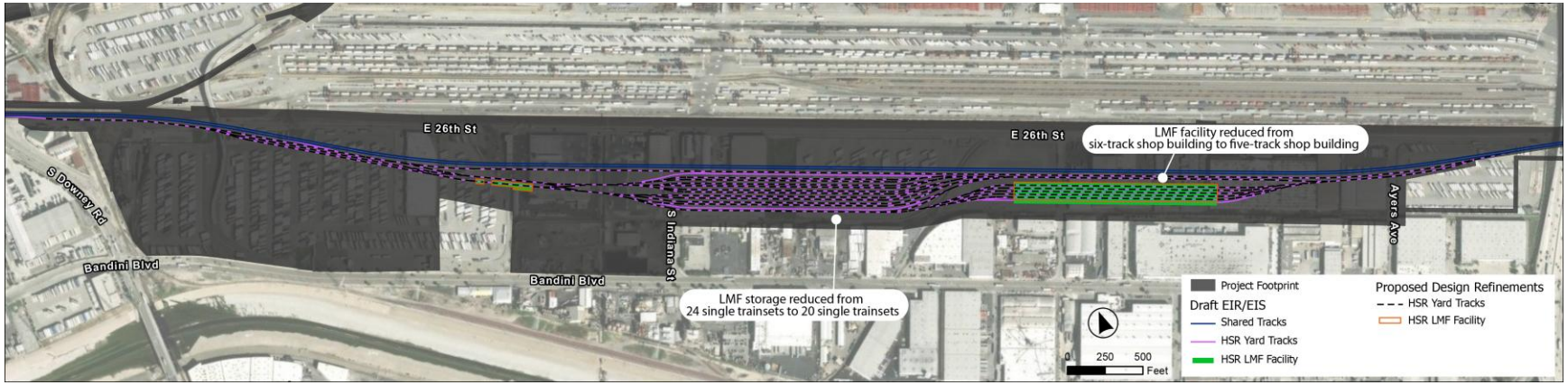


Figure 1. 26th Street Light Maintenance Facility Design Refinement



Figure 2. 15th Street Light Maintenance Facility Design Refinement

Table 2. 15th Street Light Maintenance Facility Design Refinements

Component	LMF Presented in Draft EIR/EIS	Proposed Refined LMF
Outdoor Yard Tracks	10	10
Outdoor Yard Trainset Capacity	20	20
Shop Building Tracks	6	5
Shop Building Length	1,410 feet	1,410 feet
Shop Building Width	140 feet[1]	120 feet
Shop Building Trainset Capacity	12	10
Cut/Spoil During Construction	120,000 cubic yards	120,000 cubic yards

[1] The Draft EIR/EIS does not provide the width of the 15th Street LMF shop building; however, pursuant to the PEPD, the width of the shop building is 140 feet.
EIR/EIS = Environmental Impact Report/Environmental Impact Statement; LMF = light maintenance facility; PEPD = Preliminary Engineering for Project Definition

Table 2 summarizes the changes to the 15th Street LMF. Although the refined LMF's reduction in building area would result in slightly less finish earthwork, such quantities would be negligible and the refined 15th Street LMF's cut and spoil is anticipated to be the same as the amount identified in Table 2-23 of the Draft EIR/EIS for the 15th Street LMF.

Construction of the LMF at 26th Street or 15th Street, pursuant to the value engineering design refinements, would reduce the number of LMF shop tracks and would not result in ground-disturbing activities in new areas beyond the currently defined project footprints. Because of the LMF shop track reduction, the square footage of the LMF shop buildings would be reduced from 197,400 square feet to 169,200 square feet. The design refinements would also require the same types and amount of construction equipment assumed necessary by the Draft EIR/EIS for constructing the LMFs. The construction schedule would potentially be reduced to a minor extent (e.g., a few days) as part of the refinements.

2.2 Santa Fe Springs Elevated Structure

Shared Passenger Track Alternatives A and B have the same alignment and track infrastructure, with the exception of the LMF locations. The Draft EIR/EIS evaluates a project alignment that proceeds through Santa Fe Springs via two shared passenger rail tracks that would transition from retained fill onto an elevated structure that crosses over Lakeland Road. The BNSF Railway (BNSF) tracks would remain at-grade throughout this area. The elevated structure would continue south and transition from the western side to the eastern side of the corridor. The elevated structure would then veer east out of the existing railroad corridor, proceed through the modified Norwalk/Santa Fe Springs Metrolink Station, and continue south to meet the existing railroad corridor along the corridor's eastern side. Finally, the elevated structure would transition to grade just west of Carmenita Road. The Draft EIR/EIS evaluates a track transition that would occur at a 1.9 percent maximum grade profile.

As part of the value engineering design refinements, the elevated structure's transition to grade would instead occur at a steeper 3.0 percent maximum grade profile, reducing the length of the elevated structure's eastern end. Refer to Figure 3, which depicts the 1.9 percent grade profile in blue and the 3.0 percent grade profile in red. Instead of returning to grade just west of Carmenita Road, the elevated structure with the design refinements would return to grade sooner, by approximately 800 feet.

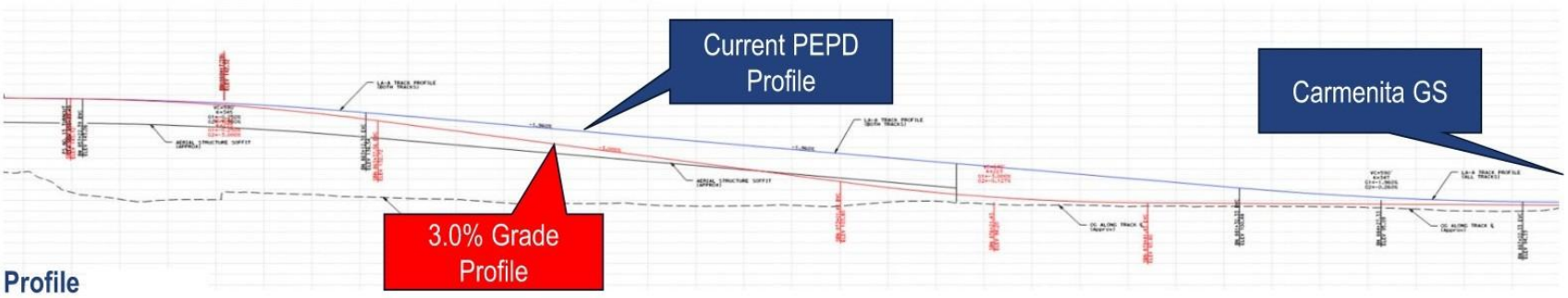


Figure 3. Santa Fe Springs Elevated Structure Design Refinement

The value engineering design refinements' 3.0 percent maximum grade profile would be consistent with Metrolink's applicable standards for shared tracks. The refined grade profile would not result in ground-disturbing activities in new areas beyond the current project footprint. Additionally, as shown in Figure 3, the elevated structure's steeper transition would not affect the maximum height of the structure. The location of where retained fill would be located to support the shared tracks' return to grade would slightly shift towards the northwest within the project footprint as a result of the refined structure's reduced length; however, the amount of retained fill necessary to support the transition would be less than the amount anticipated by the Draft EIR/EIS (i.e., less earthwork and less soil haul trips). No changes to the horizontal rail alignment would occur because of the design refinements. Changes to excavation depths to construct this component are not anticipated. This design refinement would require the same types and amounts of construction equipment as the equipment assumed necessary in the Draft EIR/EIS. The design refinement would not change the project schedule.

2.3 Fullerton Trench

The Draft EIR/EIS evaluates a project alignment that would enter Fullerton at a 2.5 percent maximum grade descending profile that would continue to a below-grade, braced trench as the alignment passes the Fullerton Municipal Airport. Fullerton Municipal Airport is south of the railroad corridor, and the shared tracks would need to be lowered as they pass by the airport so that the HSR project, including the overhead contact system (OCS), trains, and all other project components, would not conflict with the airport's runway protection zone. In the area of the Fullerton Municipal Airport, the shared tracks would also transition from the northern to the southern side of the corridor to serve the existing Fullerton Metrolink/Amtrak Station farther south. The trench would start approximately 850 feet east of Dale Street. The shared tracks would return to grade just west of the Gilbert Street undercrossing via a 2.7 percent maximum grade profile.

As part of the value engineering design refinements, both ends of the Fullerton trench alignment would instead transition to and from the below-grade segment via a steeper 3.0 percent maximum grade profile, reducing the length of the trench's transitional structures by approximately 150 feet at the western end and approximately 160 feet at the eastern end. Refer to Figure 4, which depicts the 2.5 and 2.7 percent grade profiles in blue and the 3.0 percent grade profiles in red. Instead of starting 850 feet east of Dale Street, the trench would start approximately 1,000 feet east of Dale Street.

Similar to the refinement to the elevated structure in Santa Fe Springs, the design refinements' 3.0 percent maximum grade profiles along the Fullerton trench segment would not result in ground disturbance in new areas beyond the current project footprint. Additionally, as shown in Figure 4, the trench's steeper transitions would not affect the maximum depth of the structure, but would result in a shallower profile in areas where the grade is changing. This design refinement would require slightly less earthwork than would be necessary under the project design evaluated in the Draft EIR/EIS. This design refinement would require the same types and amount of construction equipment as assumed necessary in the Draft EIR/EIS. The design refinement would not change the project schedule.

3 Evaluation

Each of the environmental resource topic areas evaluated in the Draft EIR/EIS and supporting technical reports under the National Environmental Policy Act and California Environmental Quality Act are presented below. A qualitative evaluation of how the value engineering design refinements would affect the Draft EIR/EIS' analyses and conclusions with respect to each environmental issue area is also provided.

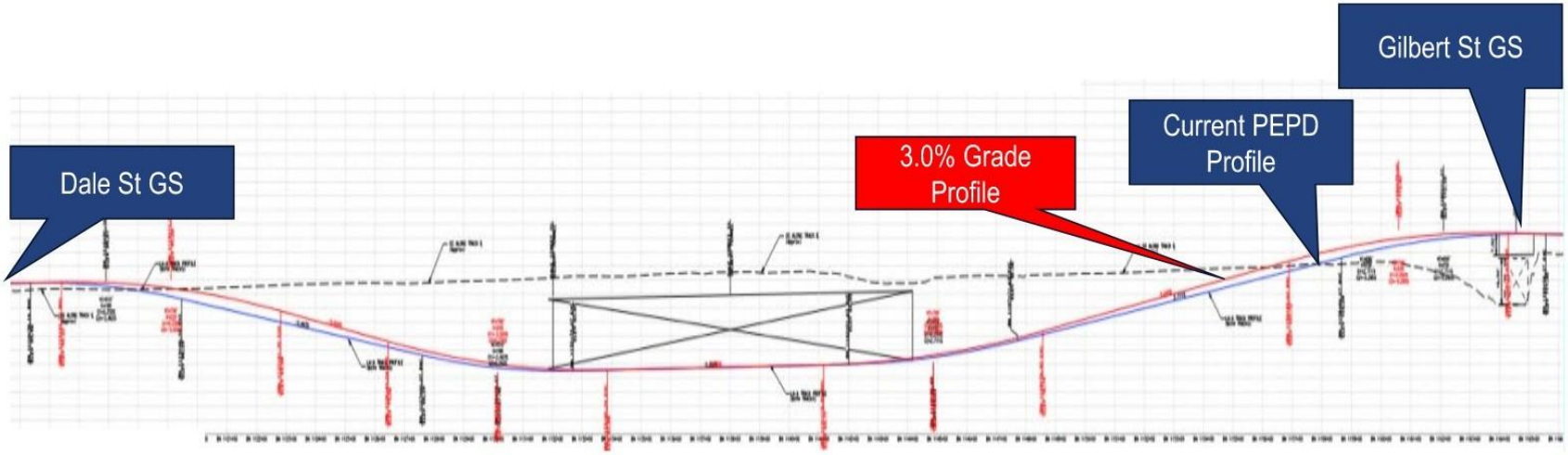


Figure 4. Fullerton Trench Design Refinement

The evaluations in this memorandum generally reference applicable impact avoidance and minimization features (IAMF) and mitigation measures associated with each resource topic. For more detailed lists and description of IAMFs and mitigations applicable to each resource topic, refer to the Draft EIR/EIS Chapter 3 subsections expressly named for those items.

3.2 Transportation

3.2.1 Light Maintenance Facilities

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in less earthwork and slightly less construction-related vehicles on the roadway network. Construction of the design refinements would be subject to the Authority's applicable IAMFs proposed as part of the LA-A Project Section to avoid, minimize, or reduce transportation impacts (refer to Section 3.2.4.2 of the Draft EIR/EIS). In addition, the refinements would be subject to applicable mitigation measures set forth by the Draft EIR/EIS to reduce project impacts to the extent feasible, as well as applicable policies, regulations, and standards (refer to Section 3.2.7 of the Draft EIR/EIS).

Based on the above, construction of the refined LMFs would not have the potential to result in increases to temporary or permanent closures of intersections, roadways, or freeways beyond the project impacts identified in the Draft EIR/EIS, because the refined LMFs would result in slightly less construction-related vehicles on the roadway network and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. The refined LMFs would also not result in additional road configuration changes beyond those identified in the Draft EIR/EIS such that traffic patterns would be altered beyond the Draft EIR/EIS' conclusions. For these reasons, the refined LMFs would also not result in increased adverse effects to bicycle, pedestrian, or transit facility access during construction; have the potential to deteriorate level of service at intersections, roadway segments, or freeway mainline segments beyond the levels identified in the Draft EIR/EIS; nor more adversely disrupt freight and passenger rail services along the project corridor beyond the impacts identified in the Draft EIR/EIS.

Overall, project construction impacts associated with the refined LMFs to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services would be slightly less than those identified in the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street are consistent with HSR guidelines and the intended service and operations of the California HSR System (refer to Section 2.1) and would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). The LMFs were initially designed prior to 2024 and, due to the space provided by the 26th Street and 15th Street sites, the LMFs exceeded the California High-Speed Rail Authority's (Authority) LMF standards established in its 2024 update of the *Requirements for High-Speed Trainset Fleet and Infrastructure Maintenance Facilities Report*. The refined LMFs follow the current guidance and require fewer tracks. This reduction in tracks would not result in new impacts beyond those identified in the Draft EIR/EIS related to diversion or unplanned-for staging of trains elsewhere. Such would be the case based on the Draft EIR/EIS' qualitative analysis of potential continuous permanent impacts on freight rail and passenger rail system capacity under Impact TR-15. As discussed therein, HSR operations would not affect the ability of other passenger rail operators or BNSF to maintain current or planned service levels, based on previously conducted operations analysis conducted by the Authority in 2023, as well as planned staging capacity for freight trains that will be provided by the High Desert Operational Efficiency Project and the Authority' commitment to work closely during project operation with all agencies that

provide freight and passenger rail services, bus services, or maintain operating rights within the corridor. The same would be true when considering the reduced tracks provided by the refined LMFs, which would still be consistent with HSR guidelines and the intended service and operations of the California HSR System. Therefore, operation of the refined LMFs would not result in project impacts to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services beyond those identified in the Draft EIR/EIS.

3.2.2 Santa Fe Springs Elevated Structure

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, given the reduction of retained fill and shortening of the elevated structure by approximately 800 feet (refer to Section 2.2). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.2.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.2.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined elevated structure would not have the potential to result in increases to temporary or permanent closures of intersections, roadways, or freeways beyond the project impacts identified in the Draft EIR/EIS. The refinement would not result in more construction-related vehicles on the roadway network or ground disturbance in areas beyond those evaluated in the Draft EIR/EIS. For these reasons, the refined elevated structure would also not more severely affect access to bicycle, pedestrian, or transit facilities; have the potential to deteriorate level of service at intersections, roadway segments, or freeway mainline segments beyond the levels identified in the Draft EIR/EIS; nor more adversely disrupt freight and passenger rail services along the project corridor beyond the impacts identified in the Draft EIR/EIS.

Overall, project construction impacts associated with the refined Santa Fe Springs elevated structure to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services would be the same or slightly less than those identified in the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade, which would still be consistent with applicable Metrolink standards for shared tracks. Therefore, operation of the refined elevated structure would not result in project impacts to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities, or freight and passenger rail services beyond those identified in the Draft EIR/EIS.

3.2.3 Fullerton Trench

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.2.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.2.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined trench alignment would not have the potential to result in increases to temporary or permanent closures of intersections, roadways, or freeways beyond the project impacts identified in the Draft EIR/EIS, because the refinement would not result in more construction-related vehicles on the roadway network or ground disturbance in areas beyond those

evaluated in the Draft EIR/EIS. For these reasons, the refined trench alignment would also not more severely affect access to bicycle, pedestrian, or transit facilities; have the potential to deteriorate level of service at intersections, roadway segments, or freeway mainline segments beyond the levels identified in the Draft EIR/EIS; nor more adversely disrupt freight and passenger rail services along the project corridor beyond the impacts identified in the Draft EIR/EIS.

Overall, project construction impacts associated with the refined trench alignment in Fullerton to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services would be slightly less than those identified in the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Therefore, operation of the refined trench alignment would not result in project impacts to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities, or freight and passenger rail services beyond those identified in the Draft EIR/EIS.

3.3 Air Quality and Global Climate Change

3.3.1 Light Maintenance Facilities

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in slightly less air pollutant and greenhouse gas (GHG) emissions generated by construction vehicles and equipment. Construction of the refined LMFs would require the same types of construction equipment as the equipment assumed necessary in the Draft EIR/EIS and would be subject to the Authority's applicable IAMFs (refer to Section 3.3.4.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.3.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined LMFs would not have the potential to result in increased emissions of criteria air pollutants or GHGs beyond the levels identified in the Draft EIR/EIS, because the refined LMFs would result in slightly less construction activity than the LMFs evaluated in the Draft EIR/EIS. Accordingly, the refined LMFs would not increase the potential for conflicts with applicable air quality plans or exacerbation of global climate change beyond the project impacts identified by the Draft EIR/EIS, because the lower levels of construction activity associated with the refined LMFs would not result in more emissions than the LMFs evaluated in the Draft EIR/EIS. Additionally, the refined LMFs would not have the potential to result in increased health risks to sensitive receptors due to localized criteria pollutants, diesel particulate matter (DPM), hazardous emissions, or odors, because the refined LMF components would not install new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS.

Overall, the refined LMFs' construction impacts associated with applicable air quality plans, global climate change, health risks, hazardous emissions, and odors would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner and within the same footprints as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). The refined LMFs are consistent with HSR guidelines and the intended service and operations of the California HSR System. Additionally, like the LMFs evaluated in the Draft EIR/EIS, the refined LMFs would not include diesel emission sources, such as generators, and, thus, would not

directly result in new impacts related to air pollutant emissions or GHG emissions beyond those identified in the Draft EIR/EIS.

With respect to the potential for indirect impacts, the reduced tracks at the refined LMFs would not result in diversion or staging of HSR trains elsewhere that could then cause associated indirect air quality impacts due to disruptions to freight rail and other passenger rail services within the corridor. As discussed in Section 3.2.1, the Draft EIR/EIS qualitatively evaluated potential continuous permanent impacts on freight rail and passenger rail system capacity under Impact TR-15. As discussed therein, HSR operations would not affect the ability of other passenger rail operators or BNSF to maintain current or planned service levels, based on operations analysis that the Authority conducted in 2023, planned staging capacity for freight trains provided by the High Desert Operational Efficiency Project, and the Authority' commitment to work closely during project operation with all agencies that provide freight and passenger rail services, bus services, or maintain operating rights within the corridor. The same conclusion would apply to the refined LMFs, because the refinements would still be consistent with HSR guidelines and the intended service and operations of the California HSR System, allowing for sufficient levels of service for the anticipated number of trains operating each day along the project section. The Authority would also still coordinate during project operation with all agencies that operate within the corridor to prevent potential impacts to freight rail and passenger rail system capacity. As such, the refined LMFs would not indirectly result in new impacts related to air pollutant emissions or GHG emissions beyond those identified in the Draft EIR/EIS. Therefore, operation of the refined LMFs would result in slightly less potential for operational impacts to air quality plans, global climate change, health risks, hazardous emissions, and odors compared to the project operation effects evaluated in the Draft EIR/EIS.

3.3.2 Santa Fe Springs Elevated Structure

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, including less haul trucks due to less retained fill required to construct the structure (refer to Section 2.2). This would result in slightly less air pollutant and GHG emissions generated by construction vehicles and equipment. The refined elevated structure would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined elevated structure would require the same types of construction equipment as the equipment assumed necessary in the Draft EIR/EIS and would be subject to the Authority's applicable IAMFs (refer to Section 3.3.4.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.3.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased emissions of criteria air pollutants or GHGs beyond the levels identified in the Draft EIR/EIS, because the refined elevated structure would result in slightly less construction activity than the elevated structure evaluated in the Draft EIR/EIS. Accordingly, the refined elevated structure would not increase the potential for conflicts with applicable air quality plans or exacerbation of global climate change beyond the project impacts identified by the Draft EIR/EIS, because the lower level of construction activity associated with the refined elevated structure would not result in a more emissions than the elevated structure evaluated in the Draft EIR/EIS. Additionally, the refined elevated structure would not have the potential to result in increased health risks on sensitive receptors due to localized criteria pollutants, DPM, hazardous emissions, or odors because the refined elevated structure would be smaller and would not result in construction activities outside of the areas of disturbance evaluated in the Draft EIR/EIS.

Overall, the construction impacts associated with the refined Santa Fe Springs elevated structure and applicable air quality plans, global climate change, health risks, hazardous emissions, and odors would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade, which would still be consistent with applicable Metrolink standards for shared tracks. Therefore, operation of the refined elevated structure would not result in increased potential for operational impacts to air quality plans, global climate change, health risks, hazardous emissions, or odors beyond the impacts identified in the Draft EIR/EIS.

3.3.3 Fullerton Trench

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). This would result in slightly less air pollutant and GHG emissions generated by construction vehicles and equipment. The refined trench alignment would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined trench alignment would require the same types of construction equipment as the equipment assumed necessary in the Draft EIR/EIS and would be subject to the Authority's applicable IAMFs (refer to Section 3.3.4.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.3.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased emissions of criteria air pollutants or GHGs beyond the levels identified in the Draft EIR/EIS, because the refined trench alignment would result in slightly less construction activity than the trench alignment evaluated in the Draft EIR/EIS. Accordingly, the refined trench alignment would not increase the potential for conflicts with applicable air quality plans or exacerbation of global climate change beyond the project impacts identified by the Draft EIR/EIS, because the lower level of construction activity associated with the refined trench alignment would not result in a more emissions than the trench alignment evaluated in the Draft EIR/EIS. Additionally, the refined trench alignment would not have the potential to result in increased health risks on sensitive receptors due to localized criteria pollutants, DPM, hazardous emissions, or odors, because the refined trench alignment would not result in additional construction activity or work outside of the areas of disturbance evaluated in the Draft EIR/EIS.

Overall, the construction impacts associated with the refined Fullerton trench alignment and applicable air quality plans, global climate change, health risks, hazardous emissions, and odors would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the trench evaluated in the Draft EIR/EIS, just with a shorter length. Therefore, operation of the refined trench alignment would not result in increased potential for impacts associated with air quality plans, global climate change, health risks, hazardous emissions, or odors beyond the impacts identified in the Draft EIR/EIS.

3.4 Noise and Vibration

3.4.1 Light Maintenance Facilities

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In

addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1). Construction of the refined LMFs would require the same types of construction equipment as the equipment assumed necessary in the Draft EIR/EIS and would be subject to the Authority's applicable IAMFs (refer to Section 3.4.4.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.4.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Impacted sensitive receivers are not identified by the Draft EIR/EIS within the vicinity of the 26th Street and 15th Street LMFs. Given that the refined LMFs would require slightly less construction activity and would be developed within the areas of disturbance of the LMFs evaluated in the Draft EIR/EIS, the refined LMFs would also not result in construction activities in proximity to sensitive receivers. As such, the refined LMFs' noise and vibration impacts during project construction would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Additionally, the refined LMFs' tracks and shop buildings would not be located nearer to sensitive receivers than the LMF components evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2), because the refined LMF components would be installed within the areas of disturbance of the LMFs evaluated in the Draft EIR/EIS. Furthermore, impacted sensitive receivers are not identified by the Draft EIR/EIS within the vicinity of the 26th Street and 15th Street LMFs. Based on the above, the refined LMFs would result in the same noise and vibration impacts during project operation as the project components evaluated in the Draft EIR/EIS.

3.4.2 Santa Fe Springs Elevated Structure

Table 3.4-13 of the Draft EIR/EIS provides estimated construction noise impact distances along the LA-A project section, including for the Santa Fe Springs elevated structure, based on 8-hour equivalent sound level (L_{eq}) measurements. Although the refined elevated structure in Santa Fe Springs would require slightly less total construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), L_{eq} construction noise within an 8-hour period would be the same for the refined elevated structure as the elevated structure evaluated in the Draft EIR/EIS, because construction of the refined elevated structure would require use of the same types of construction equipment as the equipment assumed in the Draft EIR/EIS. The refined elevated structure would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.4.4.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.4.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, the estimated noise impact distances for construction of the refined Santa Fe Springs elevated structure would be the same as those provided in Table 3.4-13 of the Draft EIR/EIS for the elevated structure. Given that the refined elevated structure would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS, the refined elevated structure would not result in construction activities in proximity to additional sensitive receivers. As such, the refined elevated structure's noise and vibration impacts during project construction would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. The refined structure's return to grade approximately 800 feet to the northwest of Carmenita Road would be in an area currently built out with industrial uses, which are not

considered sensitive receptors for noise. Table 3.4-16 of the Draft EIR/EIS, which provides the number of affected receivers at locations along the project corridor, does not identify affected receivers during project operation in Santa Fe Springs, including where the refined elevated structure would return to grade. Therefore, operation of HSR trains on the refined elevated structure would not result in noise and vibration impacts to sensitive receptors during project operation, the same finding as in the Draft EIR/EIS.

3.4.3 Fullerton Trench

Table 3.4-13 of the Draft EIR/EIS provides estimated construction noise impact distances along the LA-A project section, including for the Fullerton trench alignment, based on 8-hour equivalent sound level L_{eq} measurements. The refined trench alignment in Fullerton would require slightly less construction activity in the currently defined project corridor than those assumed by the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). However, L_{eq} construction noise within an 8-hour period would be the same for the refined trench alignment as the trench alignment evaluated in the Draft EIR/EIS, because construction of the refined trench alignment would require the same types of construction equipment as the equipment assumed necessary in the Draft EIR/EIS. Construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.4.4.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.4.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, the estimated noise impact distances for construction of the refined Fullerton trench alignment would be the same as those provided in Table 3.4-13 of the Draft EIR/EIS for the trench alignment. Given that the refined trench alignment would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS, the refined trench alignment would result in construction activities in similar proximity to sensitive receivers. As such, the refined trench alignment's noise and vibration impacts during project construction would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. The shorter length would reduce the length of the transitional structures by approximately 150 feet at the western end and approximately 160 feet at the eastern end. The eastern end would return to grade in an industrial area where affected receivers are not identified. The western end would return to grade parallel to and south of Lakeside Drive, where existing single-family residence are located. However, the refined trench alignment's return to grade would not occur in closer proximity to the Lakeside Drive residences, because the project corridor proceeds parallel to Lakeside Drive. Thus, the refined trench alignment's return to grade would be equidistant to the Lakeside Drive residences as the trench alignment evaluated in the Draft EIR/EIS (approximately 125 feet from the BNSF right-of-way to the property lines of the Lakeside Drive residences). The Draft EIR/EIS does not identify affected receivers along Lakeside Drive. Although the refined trench alignment could necessitate slightly more energy use for HSR trains to ascend the 3.0 maximum grade profile, the residences are sufficiently far enough away that new operational noise impacts due to HSR service and the refined trench alignment are not anticipated. Therefore, operation of HSR trains on the refined trench alignment would not result in noise and vibration impacts to sensitive receptors during project operation as the project components, the same conclusion as what is currently in the Draft EIR/EIS.

3.5 Electromagnetic Fields and Electromagnetic Interference

3.5.1 Light Maintenance Facilities

As discussed in Section 3.5.6 of the Draft EIR/EIS, project construction would generate radio frequency (RF) fields from occasional radio transmissions and direct current (DC) magnetic field disturbances from movement of large construction vehicles and equipment. These impacts would be intermittent, occurring only during construction, and would be primarily restricted to the construction areas.

With respect to the refined LMFs, electromagnetic field (EMF) and electromagnetic interference (EMI) impacts would be restricted to the LMF construction areas. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in fewer construction vehicles and less equipment. Construction of the refined LMFs would require the same types of construction equipment as the equipment assumed in the Draft EIR/EIS and would be subject to the Authority's applicable IAMFs (refer to Section 3.5.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.5.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined LMFs would not have the potential to result in increased levels of EMFs or EMI that could interfere with sensitive equipment or communications equipment, because the refined LMFs would result in fewer construction-related vehicles and less equipment and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Thus, construction of the refined LMFs would not increase exposure of sensitive facilities to EMFs or EMI beyond the levels identified in the Draft EIR/EIS.

With respect to project operation, electric power for the HSR traction power system would be supplied through connections to the existing electric power grid. The Shared Passenger Track Alternatives would generate EMFs on and adjacent to trains during HSR service. Ground currents would have the potential to result in corrosion, and high currents and contact EMI generated by the project OCS could interfere with the signal systems of adjacent railroads. HSR trains would also use radio systems that could result in EMI. The refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Therefore, operation of the refined LMFs would not increase exposure of sensitive facilities to EMFs or EMI beyond the levels identified in the Draft EIR/EIS, and the refined LMFs' EMF and EMI impacts would be the same as the impacts identified in the Draft EIR/EIS.

3.5.2 Santa Fe Springs Elevated Structure

Generation of RF fields and DC magnetic field disturbances would be intermittent, occurring only during construction, and would be primarily restricted to the construction areas. With respect to the Santa Fe Springs elevated structure, EMF and EMI impacts would be restricted to the segment of the alignment extending generally from Lakeland Road to approximately 800 feet west of Carmenita Road. The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), resulting in slightly fewer construction vehicles and less equipment. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.5.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.5.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased levels of EMFs or EMI that could interfere with sensitive equipment or communications equipment, because the refinement would use the same construction-related vehicles and equipment, but less construction activity overall, and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Thus, construction of the refinement would not increase exposure of sensitive facilities to EMFs and EMI beyond the levels identified in the Draft EIR/EIS, and the refined elevated structure's construction EMF and EMI impacts would be slightly less than the impacts concluded in the Draft EIR/EIS.

With respect to project operation, the Shared Passenger Track Alternatives would generate EMFs on and adjacent to trains during HSR service, ground currents, high currents and contact EMI due to the project OCS, and EMI due to radio systems. The refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS. Sensitive facilities would not be any closer to the project corridor due to the refinement and the refinements themselves would not be any closer to sensitive facilities. The refinement would not result in greater levels of EMFs or EMI that could affect a greater number of sensitive facilities. Therefore, operation of the refined elevated structure would not increase exposure of sensitive facilities to EMFs or EMI beyond the levels identified in the Draft EIR/EIS, and the refined elevated structure's EMF and EMI impacts would be the same as the impacts identified in the Draft EIR/EIS.

3.5.3 Fullerton Trench

Generation of RF fields and DC magnetic field disturbances would be intermittent, occurring only during construction, and would be primarily restricted to the construction areas. With respect to the Fullerton trench alignment, construction EMF and EMI effects would be restricted to the segment of the alignment extending generally from 1,000 feet east of Dale Street to 160 feet west of Gilbert Street. The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refined trench alignment would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.5.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.5.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased levels of EMFs or EMI that could interfere with sensitive equipment or communications equipment, because the refinement would result in fewer construction-related vehicles and less equipment and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Thus, construction of the refinement would not increase exposure of sensitive facilities to EMFs and EMI beyond the levels identified in the Draft EIR/EIS, and the refined trench alignment's construction EMF and EMI impacts would be less than the impacts identified in the Draft EIR/EIS.

With respect to project operation, the Shared Passenger Track Alternatives would generate EMFs on and adjacent to trains during HSR service, ground currents, high currents and contact EMI due to the project OCS, and EMI due to radio systems. The refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Sensitive facilities would not be any closer to the project corridor due to the refinement, nor would the refinement result in greater levels of EMFs or EMI that could affect a greater number of sensitive facilities. Therefore, operation of the refined trench alignment would not increase exposure of sensitive facilities to EMFs or EMI beyond the levels identified in the Draft EIR/EIS, and the

refined trench alignment's EMF and EMI impacts would be the same as the impacts concluded in the Draft EIR/EIS.

3.6 Public Utilities and Energy

3.6.1 Light Maintenance Facilities

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in slightly less earthwork activity and ground disturbance. Construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.6.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.6.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined LMFs would not have the potential to result in increased interference with or disruptions to utility services, because the refined LMFs would result in slightly less construction activity and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. The refined LMFs would also not increase demand on utility providers beyond that identified in the Draft EIR/EIS; result in increased disruptions to or prevent access of existing utilities in the HSR right-of-way; nor result in increased disruptions related to the proposed electrical facilities. Due to the reduced construction activity, the refined LMFs' construction impacts associated with public utilities and energy would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Although the LMFs were initially designed to exceed the Authority's minimum LMF capacity for Los Angeles due to the space provided by the 26th Street and 15th Street sites, the refined LMFs would still be consistent with the Authority's LMF standards established in its *Requirements for High-Speed Trainset Fleet and Infrastructure Maintenance Facilities Report* and, therefore, would provide sufficient levels of service for the anticipated number of trains operating each day along the project section. The refined LMFs would also include the same maintenance operation facilities as the LMFs evaluated in the Draft EIR/EIS, including, but not limited to, the two-story administrative building, right-of-way access to storage tracks for crews, train washer, employee parking spaces, power facilities, water storage cistern, bult storage area, paved area for deliveries/materials, and collection point. Tables 3.6-19 and 3.6-20 of the Draft EIR/EIS provide the anticipated water demand increases that would result due to land use changes necessitated by the 26th Street and 15th Street LMFs and proposed Anaheim Regional Transportation Intermodal Center (ARTIC) HSR facilities. Given that the refined LMFs would not increase the capacities of the LMFs evaluated in the Draft EIR/EIS, the refined LMFs would not result in higher water demand above the levels estimated in Tables 3.6-19 and 3.6-20 of the Draft EIR/EIS. Therefore, operation of the refined LMFs would not result in impacts associated with public utilities and energy beyond those identified in the Draft EIR/EIS.

3.6.2 Santa Fe Springs Elevated Structure

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), which would result in slightly less earthwork activity and ground disturbance. The refined elevated structure would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.6.4.2 of the Draft EIR/EIS),

applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.6.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Construction of the refined elevated structure would not have the potential to result in increased interferences with or disruptions to utility services, nor increased impacts to the capacity of applicable utility providers beyond the impacts identified in the Draft EIR/EIS, because the refined elevated structure would result in slightly less construction activity and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. For these same reasons, construction of the refined elevated structure would not result in increased disruptions to access of existing utilities in the HSR ROW or disruptions related to the proposed electrical facilities. Thus, the refined elevated structure's construction impacts associated with public utilities and energy would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. As such, the refined elevated structure would not change use of the BNSF right-of-way and would have no effect on land use changes proposed by the project that would result in additional operational water demand above existing water use. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with public utilities and energy compared to the project components evaluated in the Draft EIR/EIS.

3.6.3 Fullerton Trench

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refined trench alignment would also not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.6.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.6.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased interferences with or disruptions to utility services, nor increased impacts to the capacity of applicable utility providers beyond the impacts identified in the Draft EIR/EIS, because the refined trench alignment would result in slightly less construction activity and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. For these same reasons, construction of the refined trench alignment would not result in increased disruptions to access of existing utilities in the HSR ROW or disruptions related to the proposed electrical facilities. Thus, the refined trench alignment's construction impacts associated with public utilities and energy would be slightly reduced compared to those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. As such, the refined trench alignment would not change use of the BNSF right-of-way and would have no effect on land use changes proposed by the project that would result in additional operational water demand above existing water use. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with public utilities and energy compared to the project components evaluated in the Draft EIR/EIS.

3.7 Biological and Aquatic Resources

3.7.1 Light Maintenance Facilities

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in slightly less ground disturbance. Construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.7.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.7.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards.

Construction of the refined LMFs would not have the potential to increase impacts to special-status plant and wildlife species or protected migratory birds and raptors beyond those identified in the Draft EIR/EIS, because the 26th Street and 15th Street LMF sites are in existing industrial areas and do not contain habitats to support special-status and other protected species. Similarly, the 26th Street and 15th Street LMF sites do not contain aquatic resources, riparian habitat and special-status natural communities, wildlife movement corridors, or locally protected trees and shrubs due to the existing industrial uses of the sites. As such, the refined LMFs would not increase impacts to biological and aquatic resources beyond those identified in the Draft EIR/EIS, because none exist on the sites. Overall, the refined LMFs' construction impacts associated with biological and aquatic resources would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). As previously discussed, the 26th Street and 15th Street LMF sites do not contain habitats to support special-status plant and wildlife species and other protected migratory birds and raptors, nor do they contain aquatic resources, riparian habitat and special-status natural communities, wildlife movement corridors, or locally protected trees and shrubs. Thus, during project operation, the same would be true of the sites. Although moving trains could kill or injure birds through bird strikes, or indirectly result in nest failure or abandonment due to noise, lighting, and startle and motion disturbances, the refined LMFs do not increase the potential for impacts during project operation to special-status avian species and other protected migratory birds and raptors, because of the identical manner in which the refined LMFs would operate to the LMFs evaluated in the Draft EIR/EIS. For these same reasons, the refined LMFs would not increase the potential for impacts during project operation to free-ranging mountain lions or special-status bats due to train strikes, interactions with electrical systems, or night lighting. Therefore, the refined LMF's operational impacts associated with biological and aquatic resources would be the same as those evaluated in the Draft EIR/EIS.

3.7.2 Santa Fe Springs Elevated Structure

Construction of the refined elevated structure in Santa Fe Springs would not have the potential to result in increased impacts to special-status plant species beyond those identified in the Draft EIR/EIS, because the project footprint between Lakeland Road and Carmenita Road is an existing urban area that does not contain habitat to support special-status plant species. Furthermore, the refined elevated structure would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), resulting in slightly less earthwork, and the refined elevated structure would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Although the refined elevated structure would be installed in an area containing habitat that could support special-status bats, special-status birds, and nesting migratory birds and raptors, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.7.4.2 of the Draft EIR/EIS),

applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.7.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. Compliance with the foregoing requirements, combined with the slightly smaller scale of the refinement's construction activities, would reduce impacts such that they would be the same or less as those identified in the Draft EIR/EIS. Similarly, the urban area of the refined elevated structure, the refinement's slightly smaller scale, and the Authority's compliance with applicable requirements would prevent the refined elevated structure from resulting in increased impacts to aquatic resources, riparian habitat and special-status natural communities, wildlife movement corridors, or locally protected trees and shrubs beyond those evaluated in the Draft EIR/EIS. Thus, the refined elevated structure's construction impacts associated with biological and aquatic resources would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. The value engineering refinement would not affect the maximum height of the elevated structure. Although moving trains could kill or injure birds through bird strikes, or indirectly result in nest failure or abandonment due to noise, lighting, and startle and motion disturbances, because the manner in which the refined elevated structure would operate to the elevated structure is identical to that evaluated in the Draft EIR/EIS, the refinement would not increase the potential for impacts during project operation to special-status avian species and other protected migratory birds and raptors. For these same reasons, the refined elevated structure would not increase the potential for impacts during project operation to free-ranging mountain lions or special-status bats due to train strikes, interactions with electrical systems, or night lighting. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with biological and aquatic resources compared to the project components evaluated in the Draft EIR/EIS.

3.7.3 Fullerton Trench

Construction of the refined trench alignment would not have the potential to result in increased impacts to special-status plant species beyond those identified in the Draft EIR/EIS, because the project footprint between Dale Street and Gilbert Street is an existing urban area that does not contain habitat to support special-status plant species. Furthermore, the refined trench alignment would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3) and would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Although the refined trench alignment would be installed in an area containing habitat that could support special-status bats, special-status birds, and nesting migratory birds and raptors, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.7.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.7.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. Compliance with the foregoing requirements, combined with the slightly smaller scale of the refinement's construction activities, would reduce impacts such that they would be the same or less as those identified in the Draft EIR/EIS. Similarly, because of the urban area of the refined trench alignment, the refinement's slightly smaller scale, and the Authority's compliance with applicable requirements, there would not be increased impacts to aquatic resources, riparian habitat and special-status natural communities, wildlife movement corridors, or locally protected trees and shrubs beyond those evaluated in the Draft EIR/EIS. Thus, the refined trench alignment's construction impacts associated with biological and aquatic resources would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Although moving trains could kill or injure birds through bird strikes, or indirectly result in nest failure or abandonment due to noise, lighting, and startle and motion disturbances, because the manner in which the refined trench alignment would operate to the trench alignment is identical to that evaluated in the Draft EIR/EIS, the refinement would have the same potential for impacts during project operation to special-status avian species and other protected migratory birds and raptors. For these same reasons, the refined trench alignment would not increase the potential for impacts during project operation to free-ranging mountain lions or special-status bats due to train strikes, interactions with electrical systems, or night lighting. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with biological and aquatic resources compared to the project components evaluated in the Draft EIR/EIS.

3.8 Hydrology and Water Resources

3.8.1 Light Maintenance Facilities

Construction activities associated with the refined LMFs would include excavation, grading, and construction staging areas, which could create potential for degradation of surface water and groundwater quality through soil and pollutants carried by runoff, as well as alter drainage patterns, resulting in redirection of stormwater runoff, changes in runoff volumes and rates, and diversion of stream flows. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in slightly less ground disturbance.

Based on the above, construction of the refined LMFs would not have the potential to result in increased impacts to drainage patterns, hydraulic capacity, and surface water quality beyond those identified in the Draft EIR/EIS. The reduced construction activities and absence of new areas of disturbance beyond those evaluated in the Draft EIR/EIS would not result in new excavation, grading, and construction staging activities for the refined LMFs that have not yet been analyzed and could result in new impacts. Furthermore, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.8.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.8.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards, ensuring impacts associated with the refined LMFs are reduced to the same level as impacts associated with the LMFs evaluated in the Draft EIR/EIS. Additionally, the refined LMFs would not result in increases in new impervious surfaces; therefore, construction of the refined LMFs would not increase the potential for impacts associated with stormwater runoff, groundwater volume and quality, recharge, and flood hazards. Overall, the refined LMFs' hydrology and water resources impacts during project construction would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). The refined LMFs would not result in increased maintenance activities or pollutants from brake dust that could cause temporary increases of suspended sediment in waterbodies beyond those evaluated in the Draft EIR/EIS. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with hydrology and water quality compared to the project components evaluated in the Draft EIR/EIS.

3.8.2 Santa Fe Springs Elevated Structure

Construction activities associated with the refined Santa Fe Springs elevated structure would include excavation, grading, and construction staging areas, which could create potential for degradation of surface water and groundwater quality through soil and pollutants carried by runoff, as well as alter drainage patterns, resulting in redirection of stormwater runoff, changes in runoff volumes and rates, and diversion of stream flows. The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS due to its shorter length (refer to Section 2.2), resulting in slightly less earthwork activity and ground disturbance. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased impacts to drainage patterns, hydraulic capacity, and surface water quality beyond those identified in the Draft EIR/EIS, because the reduced construction activities and absence of new areas of disturbance beyond those evaluated in the Draft EIR/EIS would prevent the refined elevated structure from resulting in new excavation, grading, and construction staging activities that have not yet been analyzed. Furthermore, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.8.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.8.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards, ensuring impacts associated with the refined elevated structure are reduced to the same level as impacts associated with the elevated structure evaluated in the Draft EIR/EIS. Additionally, the refined elevated structure would not result in increases in new impervious surfaces; therefore, construction of the refined elevated structure would not increase the potential for impacts associated with stormwater runoff, groundwater volume and quality, recharge, and flood hazards. Overall, the refined elevated structure's hydrology and water resources impacts during project construction would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. As such, the refined elevated structure would not result in increased maintenance activities or pollutants from brake dust that could cause temporary increases of suspended sediment in waterbodies beyond those evaluated in the Draft EIR/EIS. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with hydrology and water resources compared to the project components evaluated in the Draft EIR/EIS.

3.8.3 Fullerton Trench

Construction activities associated with the refined Fullerton trench alignment would include excavation, grading, and construction staging areas, which could create potential for degradation of surface water and groundwater quality through soil and pollutants carried by runoff, as well as alter drainage patterns, resulting in redirection of stormwater runoff, changes in runoff volumes and rates, and diversion of stream flows. The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased impacts to drainage patterns, hydraulic capacity, and surface water quality beyond those identified in the Draft EIR/EIS, because the reduced construction activities and absence of new areas of disturbance beyond those evaluated in the Draft EIR/EIS would prevent the refined trench alignment

from resulting in new excavation, grading, and construction staging activities that have not yet been analyzed. Furthermore, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.8.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.8.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards, ensuring impacts associated with the refined trench alignment are reduced to the same level as impacts associated with the trench alignment evaluated in the Draft EIR/EIS. As the refined trench alignment would not result in increases in new impervious surfaces, construction of the refined trench alignment would not increase the potential for impacts associated with stormwater runoff, groundwater volume and quality, recharge, and flood hazards. Overall, the refined trench alignment's hydrology and water resources impacts during project construction would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. As such, the refined trench alignment would not result in increased maintenance activities or pollutants from brake dust that could cause temporary increases of suspended sediment in waterbodies beyond those evaluated in the Draft EIR/EIS. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with hydrology and water resources compared to the project components evaluated in the Draft EIR/EIS.

3.9 Geology, Soils, Seismicity, and Paleontological Resources

3.9.1 Light Maintenance Facilities

The Shared Passenger Track Alternatives do not include the types of construction that could potentially result in induced seismic faulting, extraction of substantial groundwater, or creation of unstable seismic conditions or stresses in the Earth's crust. If untreated, construction activities associated with the refined LMFs including excavation, grading, and construction staging have the potential for surface water runoff and exposure of unprotected soils to wind and water erosion. The aforementioned construction activities could also result in risks caused by unstable or expansive soil conditions and subsurface gas hazards or impacts to paleontological resources.

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1). Like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.9.4.2 of the Draft EIR/EIS) and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements the Authority would implement measures to address geological and geotechnical constraints, prevent erosion, monitor gas sites, protect inadvertently encountered paleontological resources, and protect against other potential geological and soil conditions during construction of the refined LMFs. Given that the refined LMFs' construction activities would be subject to the same requirements as the components evaluated in the Draft EIR/EIS and would not expand beyond the currently defined LMF footprints, construction of the refined LMFs would not have the potential to result in increased impacts related to fault rupture, seismically induced ground shaking, liquefaction, seismically induced flooding from dam failure, slope failure hazards, cut-and-fill slopes, collapsible soils, erosion, landslide, lateral spreading, collapse, soil corrosion or expansive soils, mineral or energy resources, subsurface oil and gas resources, and paleontological resources. Overall, the refined LMFs' construction impacts associated with geology, soils, seismicity, and paleontological resources would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Implementation of applicable IAMFs would prevent exposure of the refined LMFs to secondary seismic hazards during project operation. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with geology, soils, seismicity, and paleontological resources compared to the project components evaluated in the Draft EIR/EIS.

3.9.2 Santa Fe Springs Elevated Structure

Construction activities associated with the refined Santa Fe Springs elevated structure would include excavation, grading, and construction staging areas, which could increase the potential for surface water runoff and expose unprotected soils to wind and water erosion and potentially cause exposure to corrosive soils that corrode or weaken concrete or uncoated steel. The aforementioned construction activities could also result in risks caused by unstable or expansive soil conditions and subsurface gas hazards or impacts to paleontological resources.

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), due to its shorter length. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.9.4.2 of the Draft EIR/EIS) and applicable policies, regulations, and standards, under which the Authority would implement measures to address geological and geotechnical constraints, prevent erosion, monitor gas sites, protect inadvertently encountered paleontological resources, and protect against other potential geological and soil conditions during construction of the refined elevated structure. Given that construction activities would be subject to the same requirements as the component evaluated in the Draft EIR/EIS and would not expand beyond the currently defined project corridor, construction of the refined elevated structure would not have the potential to result in increased impacts related to fault rupture, seismically induced ground shaking, liquefaction, seismically induced flooding from dam failure, slope failure hazards, cut-and-fill slopes, collapsible soils, erosion, landslide, lateral spreading, collapse, soil corrosion or expansive soils, mineral or energy resources, subsurface oil and gas resources, and paleontological resources. Overall, the refined elevated structure's construction impacts associated with geology, soils, seismicity, and paleontological resources would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. With implementation of applicable IAMFs, the refined elevated structure would not be exposed to secondary seismic hazards during project operation. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with geology, soils, seismicity, and paleontological resources compared to the project components evaluated in the Draft EIR/EIS.

3.9.3 Fullerton Trench

Construction activities associated with the refined Fullerton trench alignment would include excavation, grading, and construction staging areas, which would increase the potential for surface water runoff and expose unprotected soils to wind and water erosion and potentially cause exposure to corrosive soils that corrode or weaken concrete or uncoated steel. The aforementioned construction activities could also result in risks caused by unstable or expansive soil conditions and subsurface gas hazards or impacts to paleontological resources.

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the trench alignment evaluated in the Draft EIR/EIS, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.9.4.2 of the Draft EIR/EIS) and applicable policies, regulations, and standards, under which the Authority would implements measures to address geological and geotechnical constraints, prevent erosion, monitor gas sites, protect inadvertently encountered paleontological resources, and protect against other potential geological and soil conditions during construction of the refined trench alignment. Given that construction activities would be subject to the same requirements as the component evaluated in the Draft EIR/EIS and would not expand beyond the currently defined project corridor, construction of the refined trench alignment would not have the potential to result in increased impacts related to fault rupture, seismically induced ground shaking, liquefaction, seismically induced flooding from dam failure, slope failure hazards, cut-and-fill slopes, collapsible soils, erosion, landslide, lateral spreading, collapse, soil corrosion or expansive soils, mineral or energy resources, subsurface oil and gas resources, and paleontological resources. Overall, the refined trench alignment's construction impacts associated with geology, soils, seismicity, and paleontological resources would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. With implementation of applicable IAMFs, the refined trench alignment would not be exposed to secondary seismic hazards during project operation. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with geology, soils, seismicity, and paleontological resources compared to the project components evaluated in the Draft EIR/EIS.

3.10 Hazardous Materials and Wastes

3.10.1 Light Maintenance Facilities

Construction activities associated with the refined LMFs would temporarily increase the regional transport, use, storage, and disposal of hazardous materials, which could present a risk to public health and safety if improperly used or inadvertently spilled. Additionally, staging and construction activities could inadvertently disturb sites with previously undocumented contamination or could affect previously identified sites with contaminated soil and groundwater. Regarding the latter, the 26th Street LMF site contains five sites of potential environmental concern (PEC) within the project footprint, including one PEC site, the Exide Technologies property, that is also on the State of California's Cortese List and, as of September 2024, a proposed Superfund site. The 15th Street LMF site contains three PEC sites within the project footprint, including one PEC site, the City of Los Angeles Asphalt Plant Number 1, that is also on the Cortese List. Risks associated with construction within or near sites with contamination include direct and indirect exposure of the workforce and local sensitive receptors to contaminants, the potential to exacerbate or spread existing environmental contamination, and the creation of environmental contamination via incidental mobilization of unknown or contained environmental contamination.

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1). As such, the refined LMFs would not increase the potential for impacts related to the regional transport, use, storage, and disposal

of hazardous materials or disturbance of PEC sites or sites with previously undocumented contamination compared to the impacts associated with the LMFs evaluated in the Draft EIR/EIS. Like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.10.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.10.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. With compliance with the foregoing requirements, the Authority would implement measures to verify the extent of and address existing documented and undocumented contamination within the LMF sites, as well as establish site-specific health and safety protocols to control releases of contaminants or contaminated media during construction. The Authority would also be required to coordinate with the applicable regulatory oversight agencies and the responsible parties regarding the Exide Technologies property.

Given that construction activities associated with the refined LMFs would be subject to the same requirements as the components evaluated in the Draft EIR/EIS and would not expand beyond the currently defined LMF footprints, construction of the refined LMFs would not have the potential to result in increased impacts related to the transport, use, storage, and disposal of hazardous materials and wastes; accidental releases of hazardous materials; inadvertent disturbance of unknown hazardous materials and wastes; disturbances of or exposure to PEC or Cortese List sites; asbestos and lead-based paint (LBP); handling of hazardous materials, substances, or waste within 0.25 mile of a school; or risks associated with landfills and oil and gas wells. Overall, the refined LMFs' construction impacts associated with hazardous materials and wastes would be the same or slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Operation of the refined LMFs would involve the use of small amounts of hazardous materials like solvents, paints, and cleaners and generation of wastes. However, like the LMFs evaluated in the Draft EIR/EIS, the refined LMFs would be subject to the Authority's IAMFs and applicable policies, regulations, and standards. With compliance with the foregoing requirements, the refined LMFs would not result in new impacts during project operation associated with hazardous materials and wastes, compared to the project components evaluated in the Draft EIR/EIS.

3.10.2 Santa Fe Springs Elevated Structure

Construction activities associated with the refined Santa Fe Springs elevated structure would temporarily increase the regional transport, use, storage, and disposal of hazardous materials. Additionally, staging and construction activities could inadvertently disturb sites with previously undocumented contamination or could affect previously identified sites with contaminated soil and groundwater. Regarding the latter, the refined elevated structure would proceed through an area containing several PEC sites, as shown in Appendix 3.10-A of the Draft EIR/EIS, in Figure 13 and Figure 14.

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), due to its shorter length. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.10.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.10.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, verify the extent of and address existing documented and undocumented contamination that could be disturbed along the project

footprint, as well as establish site-specific health and safety protocols to control releases of contaminants or contaminated media during construction.

Given that construction activities would be subject to the same requirements as the component evaluated in the Draft EIR/EIS and would not expand beyond the currently defined project corridor, construction of the refined elevated structure would not have the potential to result in increased impacts related to the transport, use, storage, and disposal of hazardous materials and wastes; accidental releases of hazardous materials; inadvertent disturbance of unknown hazardous materials and wastes; disturbances of or exposure to PEC or Cortese List sites; asbestos and LBP; handling of hazardous materials, substances, or waste within 0.25 mile of a school; or risks associated with landfills and oil and gas wells. Overall, the refined elevated structure's construction impacts associated with hazardous materials and wastes would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. Maintenance activities associated with the refined elevated structure would involve the use of small amounts of hazardous materials like solvents, paints, and cleaners and generation of wastes. However, like the elevated structure evaluated in the Draft EIR/EIS, the refined elevated structure would be subject to the Authority's IAMFs and applicable policies, regulations, and standards. Compliance with the foregoing requirements would prevent the refined elevated structure from resulting in impacts during project operation. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with hazardous materials and wastes compared to the project components evaluated in the Draft EIR/EIS.

3.10.3 Fullerton Trench

Construction activities associated with the refined Fullerton trench alignment would temporarily increase the regional transport, use, storage, and disposal of hazardous materials. Additionally, staging and construction activities could inadvertently disturb sites with previously undocumented contamination or could affect previously identified sites with contaminated soil and groundwater. Regarding the latter, the refined trench alignment would proceed through an area containing PEC sites, as shown in Appendix 3.10-A of the Draft EIR/EIS, in Figure 17 and Figure 18.

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the trench alignment evaluated in the Draft EIR/EIS, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.10.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.10.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, verify the extent of and address existing documented and undocumented contamination that could be disturbed along the project footprint, as well as establish site-specific health and safety protocols to control releases of contaminants or contaminated media during construction.

Given that construction activities would be subject to the same requirements as the component evaluated in the Draft EIR/EIS and would not expand beyond the currently defined project corridor, construction of the refined trench alignment would not have the potential to result in increased impacts related to the transport, use, storage, and disposal of hazardous materials and wastes; accidental

releases of hazardous materials; inadvertent disturbance of unknown hazardous materials and wastes; disturbances of or exposure to PEC or Cortese List sites; asbestos and LBP; handling of hazardous materials, substances, or waste within 0.25 mile of a school; or risks associated with landfills and oil and gas wells. Overall, the refined trench alignment's construction impacts associated with hazardous materials and wastes would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Maintenance activities associated with the refined trench alignment would involve the use of small amounts of hazardous materials like solvents, paints, and cleaners and generation of wastes. However, like the trench alignment evaluated in the Draft EIR/EIS, the refined trench alignment would be subject to the Authority's IAMFs and applicable policies, regulations, and standards. Compliance with the foregoing requirements would prevent the refined trench alignment from resulting in impacts during project operation. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with hazardous materials and wastes compared to the project components evaluated in the Draft EIR/EIS.

3.11 Safety and Security

3.11.1 Light Maintenance Facilities

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1). As discussed in Section 3.2.1, project construction impacts associated with the refined LMFs to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services would be slightly less than those identified by the Draft EIR/EIS. Additionally, as discussed in Section 3.10.1, construction of the refined LMFs would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to the transport, use, storage, and disposal of hazardous materials and wastes; accidental releases of hazardous materials; inadvertent disturbance of unknown hazardous materials and wastes; disturbances of or exposure to PEC or Cortese List sites; asbestos and LBP; handling of hazardous materials, substances, or waste within 0.25 mile of a school; or risks associated with landfills and oil and gas wells. Additionally, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.11.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.11.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, maintain emergency vehicle access, protect the safety and security of construction workers and users of the HSR system, identify hazard risks and reduce such risks to acceptable levels, and prevent adverse effects related to air quality, geological and geotechnical constraints, hazardous materials and wastes, flooding, and traffic. Thus, the refined LMFs' construction impacts associated with safety and security would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Operation of the refined LMFs would be subject to the same requirements as the components evaluated in the Draft EIR/EIS. Such requirements would include establishing procedures, processes, and programs to support safety and security goals and completion of a site-specific preliminary hazard analysis and a threat and vulnerability assessment to identify potential collision hazards and other facility hazards and vulnerabilities. Through compliance with the foregoing requirements, the refined LMFs would not create

conditions that lead to train-to-train collisions, collisions between an HSR train and objects entering the HSR corridor, or HSR derailments. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with safety and security compared to the project components evaluated in the Draft EIR/EIS.

3.11.2 Santa Fe Springs Elevated Structure

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), due to its shorter length. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. As discussed in Section 3.2.2, project construction impacts associated with the refined elevated structure in Santa Fe Springs to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services would be slightly less than those identified by the Draft EIR/EIS. Additionally, as discussed in Section 3.10.2, construction of the refined elevated structure would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to the transport, use, storage, and disposal of hazardous materials and wastes; accidental releases of hazardous materials; inadvertent disturbance of unknown hazardous materials and wastes; disturbances of or exposure to PEC or Cortese List sites; asbestos and LBP; handling of hazardous materials, substances, or waste within 0.25 mile of a school; or risks associated with landfills and oil and gas wells. Additionally, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.11.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.11.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, maintain emergency vehicle access, protect the safety and security of construction workers and users of the HSR system, identify hazard risks and reduce such risks to acceptable levels, and prevent adverse effects related to air quality, geological and geotechnical constraints, hazardous materials and wastes, flooding, and traffic. Thus, the refined elevated structure's construction impacts associated with safety and security would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. Operation of the refined elevated structure would be subject to the same requirements as the component evaluated in the Draft EIR/EIS. Such requirements would include establishing procedures, processes, and programs to support safety and security goals and completion of a site-specific preliminary hazard analysis and a threat and vulnerability assessment to identify potential collision hazards and other facility hazards and vulnerabilities. Through compliance with the foregoing requirements, the refined elevated structure would not create conditions that lead to train-to-train collisions, collisions between an HSR train and objects entering the HSR corridor, or HSR derailments. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with safety and security compared to the project components evaluated in the Draft EIR/EIS.

3.11.3 Fullerton Trench

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. As discussed in Section 3.2.3, project construction impacts associated with the refined trench alignment in Fullerton to intersection, roadway, freeway, pedestrian, bicycle, and transit facilities and freight and passenger rail services would be slightly less than those identified by the Draft EIR/EIS. Additionally, as discussed in Section 3.10.3,

construction of the refined trench alignment would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to the transport, use, storage, and disposal of hazardous materials and wastes; accidental releases of hazardous materials; inadvertent disturbance of unknown hazardous materials and wastes; disturbances of or exposure to PEC or Cortese List sites; asbestos and LBP; handling of hazardous materials, substances, or waste within 0.25 mile of a school; or risks associated with landfills and oil and gas wells. Additionally, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.11.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.11.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, maintain emergency vehicle access, protect the safety and security of construction workers and users of the HSR system, identify hazard risks and reduce such risks to acceptable levels, and prevent adverse effects related to air quality, geological and geotechnical constraints, hazardous materials and wastes, flooding, and traffic. Thus, the refined trench alignment's construction impacts associated with safety and security would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. The shorter length would result in the refined trench starting approximately 1,000 feet east of Dale Street and returning to grade approximately 150 feet west of Gilbert Street. Even with the reduced length, the refined trench alignment would remain below grade as the alignment proceeds through the Runway Protection Zone (RPZ) of Fullerton Municipal Airport, which is located south of the portion of the project corridor where the refined trench alignment would be installed. Thus, like the trench alignment evaluated in the Draft EIR/EIS, HSR operations along the refined trench alignment would not result in at-grade HSR trains traveling through the airport's RPZ, HSR operations would not generate steam or smoke that could interfere with aircraft operations, and the potential for excessive glare or light emissions or interference with aircraft caused by dust as a result of HSR operations would be minimized through installation of the refined trench alignment. Additionally, operation of the refined trench alignment would be subject to the same requirements as the component evaluated in the Draft EIR/EIS. Through compliance with the foregoing requirements, the refined trench alignment would not create conditions that lead to train-to-train collisions, collisions between an HSR train and objects entering the HSR corridor, or HSR derailments. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with safety and security compared to the project components evaluated in the Draft EIR/EIS.

3.12 Socioeconomics and Communities

3.12.1 Light Maintenance Facilities

As previously discussed, the design refinements have been proposed for the purposes of cost-reducing value engineering strategies; therefore, the cost analysis in Chapter 6, Project Costs and Operations, of the Draft EIR/EIS has been updated to reflect the estimated savings generated by the refinements. Job estimates were scaled to reflect an estimate of savings accrued from value engineering refinements, as it relates to construction costs, so that project-generated job creation estimates are not inflated in the Draft EIR/EIS.

Construction impacts are determined based on the Shared Passenger Track Alternatives' potential to disrupt community cohesion, affect children's health and safety, displace and necessitate relocations of residences and businesses, and result in economic effects. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset

capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1).

The 26th Street and 15th Street LMF sites currently contain existing industrial uses. Pursuant to the Draft EIR/EIS, buildout of the 26th Street LMF would result in 24 business displacements. Construction of the 15th Street would result in 42 business displacements. The refined LMFs would not result in increased business displacements, physical division of communities, or residential displacements because the refined LMFs would be constructed within the areas of disturbance of the LMFs evaluated in the Draft EIR/EIS. Furthermore, like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.12.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.12.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, protect the safety of school children, advise school districts of construction activities, and prevent adverse effects related to air quality, noise and vibration, degradation of visual quality, and traffic. Finally, although the refined LMFs, due to their slightly smaller construction scale, could result in less short-term employment than the LMFs evaluated in the Draft EIR/EIS, such a decrease would be negligible, as the reduction in short-term jobs associated with construction of the refined LMFs would be proportional to the slight decrease in the size of the refined LMFs compared to the LMFs evaluated in the Draft EIR/EIS.

Based on the above, construction of the refined LMFs would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to socioeconomics and communities.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). The refined LMFs would be consistent with the adjacent land uses of the 26th Street and 15th Street sites. Given that the refined LMFs would be consistent with HSR guidelines, the number of ongoing project operation and maintenance jobs created by the refined LMFs are anticipated to be sufficient for providing benefit effects to the local economy. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with socioeconomics and communities compared to the project components evaluated in the Draft EIR/EIS.

3.12.2 Santa Fe Springs Elevated Structure

As previously discussed, construction impacts are determined based on potential disruption of community cohesion, effects on children's health and safety, displacement and relocations of residences and businesses, and economic effects. The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), due to its shorter length. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. The refined elevated structure would be constructed along the currently defined project corridor and would differ from the elevated structure evaluated in the Draft EIR/EIS only due to the refinement's shorter length and slightly increased grade. Thus, the refined elevated structure would not result in increased residential or business displacements beyond those identified in the Draft EIR/EIS. Additionally, like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.12.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.12.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, protect the safety of school children, advise school districts of construction activities, and prevent adverse effects related to air quality, noise and vibration, degradation of visual quality, and

traffic. Finally, although the refined elevated structure would require slightly less construction activity, any corresponding reductions to the number of short-term jobs created by the Shared Passenger Track Alternatives due to the refinement would be negligible, given that the refined elevated structure is only a small portion of the overall project alignment.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to disruption or division of existing communities; displacements of residences and businesses; physical deterioration of residences, businesses, or public facilities; changes in school district funding; property values; local sales tax; or children's health and safety. Overall, the refined elevated structure's construction impacts associated with socioeconomics and communities would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. The refinement would not affect the maximum height of the elevated structure and would still be consistent with applicable Metrolink standards for shared tracks. Therefore, operation of the refined elevated structure would be consistent with the permitted uses of the project corridor and would not result in increased potential for impacts associated with socioeconomics and communities compared to the project components evaluated in the Draft EIR/EIS.

3.12.3 Fullerton Trench

As previously discussed, construction impacts are determined based on potential disruption of community cohesion, effects on children's health and safety, displacement and relocations of residences and businesses, and economic effects. The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. The refined trench alignment would be constructed along the currently defined project corridor and would differ from the trench alignment evaluated in the Draft EIR/EIS only due to the refined trench alignment's shorter length and slightly increased grades. Thus, the refined trench alignment would not result in increased residential or business displacements beyond those identified in the Draft EIR/EIS. Additionally, like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.12.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.12.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, protect the safety of school children, advise school districts of construction activities, and prevent adverse effects related to air quality, noise and vibration, degradation of visual quality, and traffic. Finally, although the refined trench alignment would require slightly less construction activity, any corresponding reductions to the number of short-term jobs created by the Shared Passenger Track Alternatives due to the refinement would be negligible, given that the refined trench alignment is only a small portion of the overall project alignment.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to disruption or division of existing communities; displacements of residences and businesses; physical deterioration of residences, businesses, or public facilities; changes in school district funding; property values; local sales tax; or

children's health and safety. Overall, the refined trench alignment's construction impacts associated with socioeconomics and communities would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Therefore, operation of the refined Fullerton trench alignment would be consistent with the permitted uses of the project corridor and would not result in increased potential for impacts associated with socioeconomics and communities compared to the project components evaluated in the Draft EIR/EIS.

3.13 Station Planning, Land Use, and Development

3.13.1 Light Maintenance Facilities

Construction impacts associated with station planning, land use, and development are based on the Shared Passenger Track Alternatives' potential to result in land use conversions and incompatible uses. The 26th Street and 15th Street LMF sites are both in industrial areas. Noise and vibration are typically at a higher level than a residential area due to the regularly occurring activities taking place in the industrial facilities and minimal presence of sensitive receivers. Traffic is composed of a high volume of trucks and utility vehicles of different capacities. The aesthetics of the area are dominated by industrial facades, fencing, and large warehouses. The land proposed for acquisition at both sites is along the project corridor.

Pursuant to the Draft EIR/EIS, construction of the LMFs at 26th Street and 15th Street would not result in incompatible uses or permanent alteration of land use patterns. The refined LMFs at 26th Street and 15th Street would be constructed to function in the same manner as the LMFs evaluated in the Draft EIR/EIS. Due to the space provided by the 26th Street and 15th Street sites, the LMFs were initially designed to provide additional trainset capacity for the Los Angeles LMF beyond the Authority's requirements. Although the number of tracks provided by the refined LMFs would be reduced, the overall site footprints would be the same as what were analyzed in the Draft EIR/EIS. The reductions in tracks and building area for the refined LMFs would result in slightly less finish earthwork, but such differences in quantities would be negligible. Therefore, the anticipated total cut and spoil necessary for the refined LMFs is the same as the amounts identified in Table 2-23 of the Draft EIR/EIS for the LMFs (refer to Table 1 and Table 2), and there would not be a change in the acreage of land converted to rail uses. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). Furthermore, like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.13.4.2 of the Draft EIR/EIS) and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to restore lands affected by construction staging to a condition equal to the preconstruction staging condition and prevent adverse effects related to air quality, noise and vibration, and traffic.

Based on the above, construction of the refined LMFs would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to temporary impacts on land use patterns and incompatibility, including those due to roadway closures or modifications. Thus, the refined LMFs' construction impacts associated with station planning, land use, and development would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Like the LMFs evaluated in the Draft EIR/EIS, operation of the refined LMFs would not permanently alter land use

patterns at 26th Street and 15th Street due to introduction of noise, light, and glare in areas where none currently exist. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with station planning, land use, and development compared to the project components evaluated in the Draft EIR/EIS.

3.13.2 Santa Fe Springs Elevated Structure

Construction impacts associated with station planning, land use, and development are based on the Shared Passenger Track Alternatives' potential to result in land use conversions and incompatible uses. In Santa Fe Springs, 39.35 acres would need to be acquired and converted to transportation uses, with a portion of this acreage due to the Santa Fe Springs elevated structure. These lands are designated primarily for industrial and mixed commercial; commercial, services, and offices; mixed residential; and facilities. The adjacent lands are designated as industrial, mixed commercial, facilities, and offices, and have historically been exposed to transportation uses. All these lands are adjacent to existing tracks and related transportation facilities. Based on this proximity and historical exposure, the Draft EIR/EIS concludes the conversion of land in Santa Fe Springs would not permanently alter land use patterns. The refined elevated structure in Santa Fe Springs would not change the amount of land that would need to be acquired.

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), due to its shorter length. No changes to the horizontal rail alignment would occur because of the refinement, and changes to excavation depths to construct this component are not anticipated. Additionally, the refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Thus, permanent conversions of land caused by the refined elevated structure would be the same as those identified for the elevated structure in the Draft EIR/EIS. Like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.13.4.2 of the Draft EIR/EIS) and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to restore lands affected by construction staging to a condition equal to the preconstruction staging condition and prevent adverse effects related to air quality, noise and vibration, and traffic.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to temporary impacts on land use patterns and incompatibility, including those due to roadway closures or modifications. Thus, the refined elevated structure's construction impacts associated with station planning, land use, and development would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. The refinement would not affect the maximum height of the elevated structure and would be consistent with applicable Metrolink standards for shared tracks. Like the elevated structure evaluated in the Draft EIR/EIS, operation of the refined elevated structure would not permanently alter land use patterns along the project corridor due to introduction of noise, light, and glare in areas where none currently exist. Like the elevated structure evaluated in the Draft EIR/EIS, substantial changes in parking and traffic access demands are anticipated at the modified Norwalk/Santa Fe Springs Metrolink Station as a result of the refined elevated structure. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with station planning, land use, and development compared to the project components evaluated in the Draft EIR/EIS.

3.13.3 Fullerton Trench

Construction impacts associated with station planning, land use, and development are based on the Shared Passenger Track Alternatives' potential to result in land use conversions and incompatible uses. In Fullerton, 7.43 acres would need to be acquired and converted to transportation uses, with a portion of this acreage due to the Fullerton trench alignment. These lands are primarily designated for industrial and mixed commercial and facilities, with lesser amounts of commercial, services and offices, single-family residential, multifamily residential, public facilities, and open space and recreation, and are bounded by lands with similar uses. Because nearby lands would remain compatible with the 7.43 acres of land being converted to transportation use, the Draft EIR/EIS concludes the change would not permanently alter wider land use patterns. The refined trench alignment in Fullerton would not change the amount of land to be acquired.

The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). No changes to the horizontal rail alignment would occur because of the refinement, and the refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Thus, permanent conversions caused by the refined trench alignment would be the same as those identified for the trench alignment in the Draft EIR/EIS. Like the trench alignment evaluated in the Draft EIR/EIS, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.13.4.2 of the Draft EIR/EIS) and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to restore lands affected by construction staging to a condition equal to the preconstruction staging condition and prevent adverse effects related to air quality, noise and vibration, and traffic.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related to temporary impacts on land use patterns and incompatibility, including those due to roadway closures or modifications. Overall, the refined trench alignment's construction impacts associated with station planning, land use, and development would be the same as those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Like the trench alignment evaluated in the Draft EIR/EIS, operation of the refined trench alignment would not permanently alter land use patterns along the project corridor due to introduction of noise, light, and glare in areas where none currently exist. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with station planning, land use, and development compared to the project components evaluated in the Draft EIR/EIS.

3.14 Agricultural Farmland and Forest Land

The Agricultural Farmland and Forest Land Resource Study Area for the LA-A Project Section does not contain Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, or forest land with a land use category or zoning designation for agriculture that is currently developed as agriculture. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). The refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. The refined trench alignment in Fullerton would

operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Thus, like the LMFs, elevated structure, and trench alignment evaluated in the Draft EIR/EIS, the value engineering refinements would result in no impacts on agricultural farmland or forest land.

3.15 Parks, Recreation, and Open Space

3.15.1 Light Maintenance Facilities

Construction impacts associated with parks, recreation, and open space are based on the Shared Passenger Track Alternatives' potential to result in noise and vibration impacts, fugitive dust, and visual changes on recreational resources, as well as diminish access to or use of recreational resources, including through permanent easements or acquisitions. The 26th Street and 15th Street LMF sites are both in industrial areas. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1). As discussed in Sections 3.4 and 3.16 of this memorandum, the refined LMFs' construction impacts associated with noise and vibration and visual changes, respectively, would not exceed the LMFs' impacts identified by the Draft EIR/EIS. Additionally, like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.15.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.15.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, minimize fugitive dust, as well as demonstrate how project design features would minimize impacts on recreational resources and provide information on how connections to unaffected trail portions, park portions, and nearby roadways will be maintained. Overall, the refined LMFs would not increase construction impacts associated with parks, recreation, and open space beyond those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Like the LMFs evaluated in the Draft EIR/EIS, the refined LMFs' compliance with IAMFs would prevent noise effects from LMF operational activities on recreational resources in the vicinity of the LMFs. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with parks, recreation, and open space compared to the project components evaluated in the Draft EIR/EIS.

3.15.2 Santa Fe Springs Elevated Structure

Construction impacts associated with parks, recreation, and open space are based on the Shared Passenger Track Alternatives' potential to result in noise and vibration impacts, fugitive dust, and visual changes on recreational resources, as well as diminish access to or use of recreational resources, including through permanent easements or acquisitions. The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS due to its shorter length (refer to Section 2.2). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Additionally, as discussed in Sections 3.4 and 3.16 of this memorandum, the refined elevated structure's construction impacts associated with noise and vibration and visual changes, respectively, would be slightly less than those identified by the Draft EIR/EIS. Furthermore, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.15.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.15.7 of the Draft EIR/EIS), and applicable policies, regulations,

and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, minimize fugitive dust, as well as demonstrate how project design features would minimize impacts on recreational resources and provide information on how connections to unaffected trail portions, park portions, and nearby roadways will be maintained. Overall, the refined elevated structure would not increase construction impacts associated with parks, recreation, and open space beyond those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. The refinement would not affect the maximum height of the elevated structure. Like the elevated structure evaluated in the Draft EIR/EIS, the refined elevated structure's compliance with IAMFs would prevent adverse effects due to noise from operational activities on recreational resources in the vicinity. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with parks, recreation, and open space compared to the project components evaluated in the Draft EIR/EIS.

3.15.3 Fullerton Trench

Construction impacts associated with parks, recreation, and open space are based on the Shared Passenger Track Alternatives' potential to result in noise and vibration impacts, fugitive dust, and visual changes on recreational resources, as well as diminish access to or use of recreational resources, including through permanent easements or acquisitions. The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). Additionally, as discussed in Sections 3.4 and 3.16 of this memorandum, the refined trench alignment's construction impacts associated with noise and vibration and visual changes, respectively, would be slightly less than those identified by the Draft EIR/EIS. Furthermore, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.15.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.15.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, minimize fugitive dust, as well as demonstrate how project design features would minimize impacts on recreational resources and provide information on how connections to unaffected trail portions, park portions, and nearby roadways will be maintained.

Overall, the refined trench alignment would not increase construction impacts associated with parks, recreation, and open space beyond those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Like the trench alignment evaluated in the Draft EIR/EIS, the refined trench alignment's compliance with IAMFs would prevent adverse effects due to noise from operational activities on recreational resources in the vicinity. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with parks, recreation, and open space compared to the project components evaluated in the Draft EIR/EIS.

3.16 Aesthetics and Visual Quality

3.16.1 Light Maintenance Facilities

In the Downtown Los Angeles Landscape Unit, which includes the 15th Street LMF site, visual quality impacts affecting viewers and visual character would result from construction activities and built

features of the project. For the Gateway Cities Landscape Unit, which includes the 26th Street LMF site, visual quality impacts affecting viewers and the overall visual character would result from construction activities and the introduction of permanent built features. Pursuant to the Draft EIR/EIS, construction of the 26th Street LMF would require removal of the Federated Metals Corporation property, which, although not eligible for listing on the National Register of Historic Places, is still considered an important cultural visual resource. Although the removal of this property would introduce a visual change in the area, the Draft EIR/EIS concludes it would not result in a substantial alteration to the overall visual environment, because the 26th Street LMF is adjacent to existing rail infrastructure and the scale and size of the LMF would be consistent with the surrounding visual landscape. Construction of the 15th Street LMF would require that existing big-box warehouses be removed, which the Draft EIR/EIS concludes would not result in substantial alteration to the overall visual environment. Removal of these structures is still necessary with the refined LMFs; the refined LMFs do not change the removal of structures assessed in the Draft EIR/EIS.

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). Reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), resulting in slightly less ground disturbance. Like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.16.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.16.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, minimize visual effects, including, but not limited to, those related to visual disruption, construction lighting, and lack of screening.

Based on the above, construction of the refined LMFs would not have the potential to result in increased impacts to the visual quality of the Downtown Los Angeles and Gateway Cities Landscape Units beyond those identified in the Draft EIR/EIS, nor would the refined LMFs result in increased nighttime construction lighting. Thus, the refined LMFs' construction impacts associated with aesthetics and visual quality would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Security lighting would be designed to be nonintrusive. Train lighting would also be intermittent and of brief duration. As part of compliance with applicable IAMFs, the Authority would implement measures to minimize visual effects, including, but not limited to, those related to visual disruption and lack of screening. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with aesthetics and visual quality compared to the project components evaluated in the Draft EIR/EIS.

3.16.2 Santa Fe Springs Elevated Structure

For the Gateway Cities Landscape Unit, which includes Santa Fe Springs, visual quality impacts affecting viewers and the overall visual character would result from construction activities and the introduction of permanent built features. Additional aspects contributing to impacts include installation of new and relocated tracks, as well as track electrification (both at grade and on aerial structures).

The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS due to its shorter length (refer to Section 2.2), resulting in slightly less earthwork activities and ground disturbance. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined elevated structure would be subject to the Authority's

applicable IAMFs (refer to Section 3.16.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.16.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, minimize visual effects, including, but not limited to, those related to visual disruption, construction lighting, and lack of screening.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased impacts to the visual quality of the Gateway Cities Landscape Unit beyond those identified in the Draft EIR/EIS, nor would the refined elevated structure result in increased nighttime construction lighting. Thus, the refined elevated structure's construction impacts associated with aesthetics and visual quality would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. The refinement would not affect the maximum height of the elevated structure. Security lighting would be designed to be nonintrusive. Train lighting would also be intermittent and of brief duration. As part of compliance with applicable IAMFs, the Authority would implement measures to minimize visual effects, including, but not limited to, those related to visual disruption and lack of screening. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with aesthetics and visual quality compared to the project components evaluated in the Draft EIR/EIS.

3.16.3 Fullerton Trench

For the Fullerton/Anaheim Landscape Unit, which includes the trench alignment, visual quality impacts affecting both viewers and overall visual character would result from project-related construction activities and permanent features. The refined trench alignment in Fullerton would be shorter and would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the trench alignment evaluated in the Draft EIR/EIS, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.16.4.2 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.16.7 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, minimize visual effects, including, but not limited to, those related to visual disruption, construction lighting, and lack of screening.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased impacts to the visual quality of the Fullerton/Anaheim Landscape Unit beyond those identified in the Draft EIR/EIS, nor would the refined trench alignment result in increased nighttime construction lighting. Thus, the refined trench alignment's construction impacts associated with aesthetics and visual quality would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Security lighting would be designed to be nonintrusive. Train lighting would also be intermittent and of brief duration. As part of compliance with applicable IAMFs, the Authority would implement measures to minimize visual effects, including, but not limited to, those related to visual disruption. Therefore, operation of the refined Fullerton trench alignment would not result in

increased potential for impacts associated with aesthetics and visual quality compared to the project components evaluated in the Draft EIR/EIS.

3.17 Cultural Resources

3.17.1 Light Maintenance Facilities

Construction impacts associated with cultural resources are based on the Shared Passenger Track Alternatives' potential to adversely affect archaeological resources, historic built resources, and tribal cultural resources. Construction activities associated with the refined LMFs would include excavation, which could potentially affect unknown archaeological deposits. Unknown archaeological resources might represent the full range of precontact or historic-era activities conducted over time, including precontact lithic scatters and village sites, historic-era homestead remains, and human burials. Construction of the refined LMFs would not adversely affect known archaeological resources.

The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1). With less earthwork activity expected, the refined LMFs may be less likely to encounter subsurface, unknown archaeological resources. Like the LMFs evaluated in the Draft EIR/EIS, construction of the refined LMFs would be subject to the Authority's applicable IAMFs (refer to Section 3.17.5.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.17.8 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, prepare a geospatial layer identifying the locations of all known archaeological resources and built historic resources that require avoidance or protection, conduct worker environmental awareness program training, follow procedures for unanticipated discoveries, and install protective barriers on bridges eligible for listing.

Based on the above, construction of the refined LMFs would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related unknown archaeological resources, historic architectural built resources or settings, historic buildings or structures, or known tribal cultural resources. Thus, the refined LMFs' construction impacts associated with cultural resources would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with cultural resources compared to the project components evaluated in the Draft EIR/EIS.

3.17.2 Santa Fe Springs Elevated Structure

Construction activities associated with the elevated structure would include excavation, which could potentially affect unknown archaeological deposits. Unknown archaeological resources might represent the full range of precontact or historic-era activities conducted over time, including precontact lithic scatters and village sites, historic-era homestead remains, and human burials. The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.2), due to its shorter length. The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the elevated structure evaluated in the Draft EIR/EIS, construction of the refined elevated structure would be subject to the Authority's applicable IAMFs (refer to Section 3.17.5.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.17.8 of the Draft EIR/EIS), and applicable policies, regulations,

and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, prepare a geospatial layer identifying the locations of all known archaeological resources and built historic resources that require avoidance or protection, conduct worker environmental awareness program training, follow procedures for unanticipated discoveries, and install protective barriers on bridges eligible for listing.

Based on the above, construction of the refined elevated structure would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related unknown archaeological resources, historic architectural built resources or settings, historic buildings or structures, or known tribal cultural resources. Thus, the refined elevated structure's construction impacts associated with cultural resources would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. In addition, the refinement would not affect the maximum height of the elevated structure. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with cultural resources compared to the project components evaluated in the Draft EIR/EIS.

3.17.3 Fullerton Trench

Construction activities associated with the trench alignment would include excavation, which could potentially affect unknown archaeological deposits. Unknown archaeological resources might represent the full range of precontact or historic-era activities conducted over time, including precontact lithic scatters and village sites, historic-era homestead remains, and human burials. The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). The refinement would not result in new areas of disturbance beyond those evaluated in the Draft EIR/EIS. Like the trench alignment evaluated in the Draft EIR/EIS, construction of the refined trench alignment would be subject to the Authority's applicable IAMFs (refer to Section 3.17.5.3 of the Draft EIR/EIS), applicable mitigation measures set forth by the Draft EIR/EIS (refer to Section 3.17.8 of the Draft EIR/EIS), and applicable policies, regulations, and standards. As part of compliance with the foregoing requirements, the Authority would implement measures to, among other things, prepare a geospatial layer identifying the locations of all known archaeological resources and built historic resources that require avoidance or protection, conduct worker environmental awareness program training, follow procedures for unanticipated discoveries, and install protective barriers on bridges eligible for listing.

Based on the above, construction of the refined trench alignment would not have the potential to result in increased impacts beyond those identified in the Draft EIR/EIS related unknown archaeological resources, historic architectural built resources or settings, historic buildings or structures, or known tribal cultural resources. Thus, the refined trench alignment's construction impacts associated with cultural resources would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with cultural resources compared to the project components evaluated in the Draft EIR/EIS.

3.18 Regional Growth

3.18.1 Light Maintenance Facilities

Construction impacts associated with regional growth are based on the Shared Passenger Track Alternatives' potential to impact short-term employment. The refined LMF components would not result in installation of new tracks or shop building components outside of the areas of disturbance evaluated in the Draft EIR/EIS (refer to Figure 1 and Figure 2). In addition, reductions to the trainset capacities of the LMFs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS (refer to Section 2.1), ensuring construction activities under the refinements do not necessitate increased employee numbers. Construction of the refined LMFs could result in slightly less regional growth from short-term employment, given that the refined LMFs could potentially require slightly less employees. Slightly less employees would prevent the refined LMFs from generating more competition for traditional owner-occupied or rental housing units compared to the demand for such units identified by the Draft EIR/EIS. Thus, the refined LMFs' construction impacts associated with regional growth would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined LMFs at 26th Street and 15th Street would function in the same manner as the LMFs evaluated in the Draft EIR/EIS (refer to Table 1 and Table 2). Given that the refined LMFs would be consistent with HSR guidelines, the number of ongoing project operation and maintenance jobs created by the refined LMFs are not anticipated to induce substantial population growth. Therefore, operation of the refined LMFs would not result in increased potential for impacts associated with regional growth compared to the project components evaluated in the Draft EIR/EIS.

3.18.2 Santa Fe Springs Elevated Structure

Construction impacts associated with regional growth are based on the Shared Passenger Track Alternatives' potential to impact short-term employment. The refined elevated structure in Santa Fe Springs would require slightly less construction activity than what is evaluated in the Draft EIR/EIS due to its shorter length (refer to Section 2.2), ensuring construction activities under the refinement do not necessitate increased employee numbers. Construction of the refined elevated structure could result in slightly less regional growth from short-term employment, given that the refined elevated structure could potentially require slightly less employees. Slightly less employees would prevent the refined elevated structure from generating more competition for traditional owner-occupied or rental housing units compared to the demand for such units identified by the Draft EIR/EIS. Thus, the refined elevated structure's construction impacts associated with regional growth would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined Santa Fe Springs elevated structure would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length and slightly increased grade. Therefore, operation of the refined elevated structure would not result in increased potential for impacts associated with regional growth compared to the project components evaluated in the Draft EIR/EIS.

3.18.3 Fullerton Trench

Construction impacts associated with regional growth are based on the Shared Passenger Track Alternatives' potential to impact short-term employment. The refined trench alignment in Fullerton would require slightly less construction activity than what is evaluated in the Draft EIR/EIS, due to the shorter transitional structure that would be necessary to transition from grade to the braced trench (refer to Section 2.3). Slightly less construction activity would prevent construction activities under the refinement from resulting in increased employee numbers. Construction of the refined trench alignment

could result in slightly less regional growth from short-term employment, given that the refined trench alignment could potentially require slightly less employees. Slightly less employees would prevent the refined trench alignment from generating more competition for traditional owner-occupied or rental housing units compared to the demand for such units identified by the Draft EIR/EIS. Thus, the refined trench alignment's construction impacts associated with regional growth would be slightly less than those identified by the Draft EIR/EIS.

With respect to project operation, the refined trench alignment in Fullerton would operate along the currently defined project corridor in the same manner as the component evaluated in the Draft EIR/EIS, just with a shorter length. Therefore, operation of the refined Fullerton trench alignment would not result in increased potential for impacts associated with regional growth compared to the project components evaluated in the Draft EIR/EIS.

4 Conclusion

As detailed above, the value engineering design refinements would not result in ground-disturbing activities in new areas outside of the project footprint evaluated in the Draft EIR/EIS. The refinements would also not include structural components that exceed the heights of the project components evaluated in the Draft EIR/EIS, nor require deeper excavation for construction of foundations or trenching.

The value engineering design refinements are an overall reduction in the size of the LMF trackwork, and a reduction in the total lengths of the Santa Fe Springs elevated track structure and the Fullerton trench alignment. Therefore, while the value engineering design refinements would result in minor differences from how the project components are described in the Draft EIR/EIS, the refinements would not result in new environmental effects or increases in magnitude, duration, or frequency of impacts already identified. Thus, the Draft EIR/EIS' impact conclusions and supporting technical reports of the LA-A Project Section would remain accurate with the incorporation of these design refinements.