7 OTHER NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)/ CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) CONSIDERATIONS

This chapter identifies significant and unavoidable impacts that implementing one of the Shared Passenger Track Alternatives for the high-speed rail (HSR) system would create. It also describes the relationship between short-term uses of the environment and long-term productivity. Finally, this chapter discusses significant irreversible or irretrievable commitments of resources or foreclosures of future options that implementing one of the Shared Passenger Track Alternatives would create.

This chapter is based on the detailed analysis of environmental resources presented in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures; Chapter 4, Draft Section 4(f) and Section 6(f) Evaluations; Chapter 5, Community Analysis; and the *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Versions 5.9 and 5.11 as amended (Authority 2017, 2022). Chapter 8, Preferred Alternative, discusses the environmentally superior alternative and environmentally preferable alternative.

7.1 Unavoidable Adverse Effects and Significant and Unavoidable Impacts

Chapter 2, Alternatives, explains the efforts the agencies have made through the tiered project development and environmental review process to design the HSR system and the Los Angeles to Anaheim Project Section (project section) in a manner that avoids and minimizes impacts. Section 2.6.2.3, Impact Avoidance and Minimization Features, and Appendix 2-A, Impact Avoidance and Minimization Features, describe the impact avoidance and minimization features (IAMF) incorporated into the Shared Passenger Track Alternatives. Chapters 3 through 5 describe the potential environmental consequences of implementing the project alternatives. The following sections describe adverse effects under NEPA and significant impacts under CEQA that cannot be reduced by mitigation proposed in the resource sections in Chapter 3, Chapter 4, and Chapter 5. Except where otherwise specified, the impacts listed in Section 7.1.1, Adverse Effects that Cannot Be Avoided Under NEPA, and Section 7.1.2, Significant and Unavoidable Impacts Under CEQA, pertain to the project alternatives.

7.1.1 Adverse Effects that Cannot Be Avoided Under NEPA

Section 2.3, Background, and Section 2.5, Alternatives Considered during Alternatives Screening Process, explain how the California High-Speed Rail Authority (Authority) used the tiered project development and environmental review process to design the HSR system and the project section alternatives in a manner that avoids and minimizes adverse effects. Under NEPA, mitigation is prescribed for effects that are identified, but in some cases the mitigation would not reduce the effect's severity enough to avoid the effect. The NEPA implementing procedures, regulations, and guidance require that the discussion of environmental consequences include any adverse environmental effects that cannot be avoided should the proposal be implemented (64 *Federal Register* 28545, 14(n)). Despite implementation of mitigation measures to lessen the effects, the following adverse effects from construction, operations, or both for each resource, as applicable, would remain unavoidable adverse effects under NEPA. Detailed discussion of these impacts, and the applicable mitigation measures available, are provided for each resource in Chapter 3. The effects presented below are similar between the Shared Passenger Track Alternatives unless otherwise stated in the discussion.

- **Section 3.3, Air Quality and Global Climate Change**

  Under Impact AQ-1 and Impact AQ-2, construction emissions of nitrogen oxides would exceed the Environmental Protection Agency General Conformity *de minimis* levels for the South Coast Air Basin and thus impede implementation of ozone plans. **AQ-MM#1, Offset Project Construction Emissions in the South Coast Air Basin through South Coast Air Quality Management District (SCAQMD) Emissions Offsets Program**; **AQ-MM#2,**

Requirements for Use of Zero-Emission or Near-Zero-Emission Vehicles and Off-Road Equipment to Reduce Construction Emissions; and **AQ-MM#3, Reduce the Potential Impact of Stationary Sources**, would be implemented.

Under Impact AQ-15, potential additional diesel particulate matter (DPM) emissions at nearby sensitive receptors would cause a health risk impact. **AQ-MM#4, Requirement of a Future Operational Health Risk Assessment**, would be implemented.

AQ-MM#1 is the purchase of emission reduction credits, or another mechanism approved by SCAQMD to offset emissions. **AQ-MM#2** would reduce the impact of construction emissions from project-related on-road vehicles and off-road equipment. **AQ-MM#3** requires best industry practices for large stationary equipment (e.g., combustion equipment, paint booths, wastewater treatment), or alternative equipment would be used, to the extent practicable, to reduce emissions of criteria pollutants. **AQ-MM#4** requires that a supplemental operational health risk assessment (HRA) for Hobart Yard be conducted prior to commencement of project operations and requires additional feasible on- and off-site mitigation be incorporated to reduce risks to the greatest extent possible. However, even with implementation of mitigation measures, the impact under NEPA would be adverse because the nitrogen oxides emission exceedances would delay SCAQMD from achieving its attainment goals listed in the 2022 Air Quality Management Plan. In addition, because the level of activity for the storage and support track at Hobart Yard is unknown, there is still the potential that nearby sensitive receptors would be exposed to DPM emissions that would result in a health risk impact exceeding the SCAQMD project-level thresholds, even with implementation of **AQ-MM#4**; therefore, impacts under NEPA would be adverse.

- **Section 3.4, Noise and Vibration**

  Under Impact N&V-4, predicted operational noise levels would exceed severe impact criteria at 59 residences and moderate impact criteria at 443 residences. **N&V-MM#3, Implement California High-Speed Rail Project Noise Mitigation Guidelines**, which requires the installation of an impervious sound barrier with a setback of approximately 12 feet (or less if feasible) from the proposed northbound track centerline, and with a height of 8 feet above the top-of-rail elevation, would reduce impacts. The sound barrier would be approximately 875 feet long, extending from 150 feet south of E Cyprus Street to near E Sycamore Street in Anaheim, and would provide effective noise mitigation for 33 of the 59 affected residences. Because a sound barrier would not meet the mitigation guidelines for the remaining 26 residences with severe noise impacts, these residences would have residual severe noise impacts. For these locations, other measures included in **N&V-MM#3** would include noise abatement at receiver locations (for example, sound insulation of buildings) and easement acquisition. However, some residences would still experience noise exceedances. Therefore, these residences would still experience adverse impacts under NEPA.

  Additionally, as discussed under Impact N&V-5, the assessment of ground-borne vibration effects from HSR operations predicts that operational ground-borne vibration levels would exceed the impact criteria at 517 residences. These include:

  - 28 residences between Rio Hondo Channel and Rosemead Boulevard in Pico Rivera
  - 14 residences in four multifamily buildings between Brea Creek and Dale Street in Buena Park
  - 13 residences between Orangethorpe Avenue and La Palma Avenue in Anaheim
  - 72 residences in 12 multifamily buildings between E La Palma Avenue and E Wilhelmina Street in Anaheim
  - 3 single-family residences and 36 residences in 12 multifamily buildings between E Wilhelmina Avenue and Lincoln Avenue in Anaheim
  - 11 single-family residences and 46 residences in seven multifamily buildings between Lincoln Avenue and Santa Ana Street in Anaheim

- 57 residences in 23 multifamily buildings between E Santa Ana Street and Vermont Avenue in Anaheim

N&V-MM#4, Implement Operational Vibration Mitigation Measures, which requires measures such as vehicle suspension enhancements, special track-support systems, and building modifications, would potentially reduce some impacts, but likely not all. Therefore, some residences would still experience adverse impacts under NEPA.

- **Section 3.10, Hazardous Materials and Wastes**

  Under Impact HMW-4, construction on or near the Orange County North Basin site (HSR Fullerton Station Option only) and the Exide site in Vernon (both alternatives) would potentially cause a significant hazard to the public or the environment from a release of hazardous materials. With implementation of **HMW-MM#2, Coordination of HSR Design and Construction with Remediation of Exide Site and Orange County North Basin Superfund Site**, involving close coordination with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street light maintenance facility [LMF]) and the Fullerton HSR Station Option (if built), and engagement with public interested parties at specific design milestones, the impact would be minimized; however, the project would have an unavoidable adverse effect under NEPA.

- **Section 3.11, Safety and Security**

  Under Impact SS-3, construction on or near the Orange County North Basin site (HSR Fullerton Station Option only) and the Exide site in Vernon (both alternatives) would potentially cause a significant hazard at construction sites from a release of hazardous materials. With implementation of **HMW-MM#2**, involving close coordination with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street LMF) and the Fullerton HSR Station Option (if built), and engagement with public interested parties at specific design milestones, the impact would be minimized; however, the project would have an unavoidable adverse effect under NEPA.

- **Section 3.16, Aesthetics and Visual Quality**

  Under Impact AVQ-1, the construction and operation of the Shared Passenger Track Alternatives would conflict with the visual character of the four historic bridges in the Downtown Los Angeles Landscape Unit and substantially affect the scenic values of the bridges as important visual resources among other resources. **AVQ-MM#1, Minimize Visual Disruption from Construction Activities**, would partially alleviate visual impacts on the historic bridges during construction, but adverse effects would remain.

  Under Impact AVQ-3, visual disturbance affecting viewers, visual character, and visual quality would result from operational activities of both Shared Passenger Track Alternatives. The following mitigation measures would minimize, but not fully eliminate, impacts: **AVQ-MM#3, Incorporate Design Aesthetic Preferences into Final Design and Construction of Nonstation Structures**; and **AVQ-MM#7, Incorporate Design Criteria for Elevated Guideways and Station Elements that Can Adapt to Local Context**, require the contractor to work with local jurisdictions to design structures that fit the local context. As part of **AVQ-MM#4, Provide Vegetation Screening Along At-Grade and Elevated Guideways Adjacent to Residential Areas**, the contractor, prior to the commencement of HSR operations, would provide landscape screening to obscure HSR infrastructure from viewers. The screening would reduce potential effects during operations for the life of the system. **AVQ-MM#5, Replant Unused Portions of Land Acquired for the Los Angeles to Anaheim Project Section**; and **AVQ-MM#6, Screen Traction Power Distribution Stations and Radio Communication Towers**, would also be implemented to reduce visual effects. In addition, **CUL-MM#12, Design Review for Intrusion-Protection Barriers**, would reduce effects related to construction of security features on the historic bridges in the Downtown Los Angeles Landscape Unit. However, the effects would remain for the life of the historic

bridges; therefore, even after mitigation, the project would have an unavoidable adverse effect under NEPA.

- **Section 3.17, Cultural Resources**

  Under Impact CUL-3, Shared Passenger Track Alternatives A and B would result in an adverse effect on four properties. Four Los Angeles River bridges in the city of Los Angeles would incorporate protection-related bridge barriers (First, Fourth, and Seventh Street Bridges and the Olympic Boulevard Bridge). Incorporation of these protective barriers would result in an adverse effect because the project would introduce a visual element that would be incompatible with their design. Shared Passenger Track Alternative B would result in the same impacts as Shared Passenger Track Alternative A except for the additional impacts on the Olympic Boulevard Bridge, Southern California Gas Company Complex, Southern California Gas Company Administration Building, and Atchison, Topeka and Santa Fe Redondo Junction Yard District that could occur as a result of construction of Shared Passenger Track Alternative B's light maintenance facility. **CUL-MM#12** would reduce impacts on the First, Fourth, and Seventh Street Bridges and Olympic Boulevard Bridge by consulting with the State Historic Preservation Officer and interested parties to achieve a barrier design that meets safety goals while introducing the minimum physical and visual impacts on the historical resources. However, an adverse effect would remain for these properties because the incompatible visual element would remain.

- **Section 3.19, Cumulative Impacts**

  - **Air Quality and Global Climate Change:** The temporary impact under NEPA on regional air quality during construction of the project would be adverse. During construction, nitrogen oxide emissions would continue to exceed the U.S. Environmental Protection Agency General Conformity *de minimis* levels, and the project would contribute to a cumulative air quality impact because it would exceed significance thresholds for regional air pollution in the South Coast Air Basin. The Shared Passenger Track Alternatives would contribute to a significant cumulative impact during construction in combination with other planned projects.

    The following mitigation measures would minimize, but not fully eliminate, impacts: **AQ-MM#1**, **AQ-MM#2**, and **AQ-MM#3**. However, even after implementation of **AQ-MM#1** through **AQ-MM#3**, nitrogen oxide emissions would continue to exceed the U.S. Environmental Protection Agency General Conformity *de minimis* levels during construction, and the project would contribute to an adverse air quality impact.

    Elevated criteria pollutant concentrations from project construction in the project section are considered cumulatively significant, because construction overlaps may affect local air quality and may cause or contribute to exceedances of the short- and long-term National Ambient Air Quality Standards. Therefore, even after mitigation, the Shared Passenger Track Alternatives would result in an adverse cumulative air quality impact during construction.

    As a result of relocated staging tracks near Hobart Yard, there is the potential for additional DPM emissions at nearby sensitive receptors to cause a health risk impact. Although **AQ-MM#4** would be implemented, the outcome of the analysis and feasibility of mitigation are not clear. Accordingly, this operational-period air quality cumulative impact would be considered significant.

  - **Noise and Vibration:** During operations for either of the Shared Passenger Track Alternatives, the project would result in severe noise and vibration impacts at sensitive receptors. Additionally, these noise and vibration impacts would combine with the impacts of other planned rail transit projects to result in adverse cumulative operational noise and vibration impacts because the combined noise and vibration exposure would exceed Federal Railroad Administration criteria for severe noise and vibration impacts. The Shared Passenger Track Alternatives' contribution to the cumulative impact would be

adverse because it would cause the largest change in the baseline ambient noise and vibration conditions among the many planned transportation projects.

In addition to the project-level measures, cumulative mitigation measure **CUM-N&V-MM#1, Consult with Agencies Regarding Construction Activities**, would minimize the potential for overlapping construction activities in the resource study area by requiring consultation and coordination with agencies regarding construction activities. However, even with implementation of **CUM-N&V-MM#1**, the Shared Passenger Track Alternatives in combination with cumulative projects would have the potential to result in excessive noise and vibration at sensitive receivers during construction and operation. Therefore, even with cumulative mitigation, the Shared Passenger Track Alternatives would result in an adverse cumulative noise and vibration impact during construction and operation.

- **Hazardous Materials and Wastes**: Because of the extensive nature of potential impacts associated with the two Superfund sites and because completion of remediation activities at each site is currently unknown, substantial exposure to contaminants associated with these sites could occur during construction of the Shared Passenger Track Alternatives. The Authority would implement **HMW-MM#2**, which requires the Authority to coordinate with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street LMF) and the Fullerton HSR Station Option (if built). **HMW-MM#2** would also require the Authority to engage with public interested parties at specific design milestones. However, even with implementation of mitigation, the project-level impact would remain adverse. Given this, the Shared Passenger Track Alternatives, in combination with reasonably foreseeable projects within the cumulative resource study area, would result in an adverse cumulative impact and the project would have a cumulatively considerable contribution.
- **Aesthetics and Visual Quality**: Adherence to IAMFs would temporarily lessen visual disturbance during construction, but the residual impacts on viewers, visual character, and visual quality would remain adverse in the vicinity of four historic bridges in the Downtown Los Angeles Landscape Unit, causing visual changes for viewers with high sensitivity. Implementation of **AVQ-MM#1** and **AVQ-MM#2, Minimize Light Disturbance During Construction**, which requires that the contractor prepare a technical memorandum verifying how the contractor will shield nighttime construction lighting and direct it downward in such a manner to minimize the light that falls outside the construction site boundaries, would reduce potentially invasive sources of light and glare associated with construction. **CUL-MM#12** would reduce the impact by requiring the contractor consult with interested parties to achieve a barrier design that meets safety goals while introducing the minimum physical and visual effects on the historic property. **AVQ-MM#1**, **AVQ-MM#2**, **AVQ-MM#3**, **AVQ-MM#4**, and **AVQ-MM#7** would address the visual impacts on viewers, visual character, and visual quality during construction. In addition, **AVQ-MM#4** would reduce operational visual impacts, and **AVQ-MM#3** through **AVQ-MM#7** would partially reduce operational visual impacts on the historic bridges. Even with mitigation, construction and operation of the Shared Passenger Track Alternatives and cumulative projects in the vicinity of the four historic bridges would result in adverse cumulative impacts. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on aesthetic and visual quality, in combination with cumulative projects, would be adverse.

- **Chapter 5, Community Analysis**
  - **Business Displacements:** Business displacements required for project construction would result in disproportionately high or adverse effects on minority populations in several communities. Shared Passenger Track Alternative A would displace 256 commercial and industrial businesses in the resource study area; Shared Passenger Track Alternative B would displace 18 additional businesses. IAMFs and **SO-MM#1, Implement Measures to Reduce Impacts Associated with the Division of Residential Neighborhoods**, would include relocation assistance and the development

of a relocation mitigation plan, but adverse effects would remain. No additional practicable mitigation measures are available or known at this time to further reduce this impact. Therefore, business displacements would result in a disproportionately high or adverse effect.

- **Operational Noise and Vibration:** Operation of HSR trains would result in operational noise levels exceeding the severe impact criteria at 59 residences in the project section, which are disproportionately in minority and low-income communities. Installing a sound barrier in accordance with **N&V-MM#3** would provide effective noise mitigation for 33 of the 59 residences. Because a noise barrier would not meet the mitigation guidelines for the remaining 26 residences with severe noise impacts, the project would have residual severe noise impacts on minority and low-income neighborhoods. Therefore, operational noise would result in a disproportionately high or adverse effect on minority populations in the McCampbell neighborhood in Pico Rivera, and minority and low-income populations in Central Anaheim. In addition, operational vibration would result in a permanent impact for 517 residences. To reduce impacts, the Authority would implement **N&V-MM#4** for all communities in the resource study area, which includes vehicle suspension enhancements, special track support systems, building modifications, and other measures. Although **N&V-MM#4** will reduce vibration impacts, adverse effects on minority and low-income populations would remain. Therefore, operational vibration would have a disproportionately high or adverse effect in the following communities: minority populations in the McCampbell neighborhood in Pico Rivera and minority and low-income populations in Northeast Buena Park and Central Anaheim.
- **Hazardous Materials and Wastes:** The project involves construction near potential environmental concern sites, including potential impacts associated with the Exide and Orange County North Basin Superfund sites. Because completion of remediation activities at each site is currently unknown, significant exposure to contaminants associated with these sites could occur during construction of either Shared Passenger Track Alternative as well as the Fullerton HSR Station Option. The two Superfund sites are being monitored and remediated under the purview of the California Department of Toxic Substances Control and Regional Water Quality Control Board and, therefore, construction activities in areas affected by these sites would also require coordination with the applicable oversight agency. With implementation of **HMW-MM#2**, ongoing U.S. Environmental Protection Agency remedial actions at a proposed or listed Superfund site would occur, and remediation may also need to be funded by the Authority to be accomplished in accordance with the requirements of the appropriate oversight agency. This measure would be implemented for all communities equally and would reduce but not eliminate adverse effects. Therefore, after implementation of **HMW-MM#2**, there would still be a disproportionately high and adverse effect on minority communities in the Hobart and south-central Fullerton neighborhoods.
- **Operational Air Quality:** The project would add storage and staging tracks adjacent to Hobart Yard. Specific information about future freight activity is unknown and it is possible that project operation, including train movements on the new tracks adjacent to Hobart Yard, could pose health risk from exposure to DPM. Because Hobart Yard is in the low-income and minority communities of Hobart/west Commerce, east Commerce, and Hobart in Vernon, there would be a potential disproportionately high and adverse effect from exposure to DPM emissions. **AQ-MM#4** requires that an operational HRA be conducted prior to the commencement of project operations. **AQ-MM#4** also requires the analysis and incorporation of additional feasible mitigation to reduce risks to the greatest extent practicable prior to project operations. However, because the potential increase in activity at Hobart Yard and on the adjacent tracks is unknown, the effectiveness of **AQ-MM#4** cannot be determined precisely. Without knowing if there is a potential health risk impact, or the level of this impact, the Authority is unable to identify or implement other feasible mitigation measures. In the absence of certainty, exposure to DPM emissions would result in a disproportionately high and adverse effect for purposes of this analysis.

However, the future operational HRA may determine that impacts are below the SCAQMD project-level thresholds and no additional on-site or off-site mitigation measure would be required. In this case, there would not be a disproportionately high and adverse effect from exposure to DPM emissions.

7.1.2 Significant and Unavoidable Impacts Under CEQA

Under CEQA, mitigation is prescribed for significant impacts, but in some cases the mitigation would not reduce the impact to a less-than-significant level. The impacts presented below are similar between the Shared Passenger Track Alternatives unless otherwise stated in the discussion. The following construction and operations impacts from each resource, as applicable, cannot be mitigated to less-than-significant levels and remain significant and unavoidable under CEQA:

- **Section 3.3, Air Quality and Global Climate Change**

  Under Impact AQ-1, the emissions of criteria pollutants would exceed SCAQMD daily significance thresholds. Under Impact AQ-2, the project would generate emissions of criteria pollutants (e.g., exceed SCAQMD and General Conformity thresholds) and as a result could impede implementation of ozone plans in the South Coast Air Basin. **AQ-MM#1**, **AQ-MM#2**, and **AQ-MM#3** would be implemented to reduce impacts.

  Under Impact AQ-15, potential additional DPM emissions at nearby sensitive receptors would cause a health risk impact. **AQ-MM#4** would be implemented.

  AQ-MM#1 is the purchase of emission reduction credits, or another mechanism approved by SCAQMD to offset emissions. **AQ-MM#2** would reduce the impact of construction emissions from project-related on-road vehicles and off-road equipment. **AQ-MM#3** requires best industry practices for large stationary equipment (e.g., combustion equipment, paint booths, wastewater treatment), or alternative equipment would be used, to the extent practicable, to reduce emissions of criteria pollutants. **AQ-MM#4** requires that a supplemental operational HRA for Hobart Yard be conducted prior to commencement of project operations and requires additional feasible on- and off-site mitigation be incorporated to reduce risks to the greatest extent possible. Although these measures would reduce adverse effects, until the contractual agreements between the Authority and SCAQMD called for in **AQ-MM#1** are in place, and the purchase of emission offsets is secured, this represents a significant and unavoidable impact because emissions of nitrogen oxides from construction equipment and vehicles would continue to exceed SCAQMD daily significance thresholds and the project would contribute a significant level of regional air pollution in the South Coast Air Basin. In addition, because the level of activity for the storage and support track at Hobart Yard is unknown, there is still the potential that nearby sensitive receptors would be exposed to DPM emissions that would result in a health risk impact exceeding the SCAQMD project-level thresholds, even with implementation of **AQ-MM#4**. Therefore, even with implementation of mitigation, impacts would remain significant and unavoidable.

- **Section 3.4, Noise and Vibration**

  Under Impact N&V-4, project impacts would have permanent predicted operational noise levels that would exceed severe impact criteria at 59 residences in the project section. **N&V-MM#3**, which requires the installation of an impervious sound barrier with a setback of approximately 12 feet (or less if feasible) from the proposed northbound track centerline, and with a height of 8 feet above the top-of-rail elevation, would reduce impacts. The sound barrier would be approximately 875 feet long, extending from 150 feet south of E Cyprus Street to near E Sycamore Street in Anaheim, and would provide effective noise mitigation for 33 of the 59 affected residences. Because a sound barrier would not meet the mitigation guidelines for the remaining 26 residences with severe noise impacts, these residences would have residual severe noise impacts. For these locations, other measures included in **N&V-MM#3** would be implemented, including noise abatement at receiver locations (for example, sound insulation of buildings) and easement acquisition. However, some

residences would still experience noise exceedances. Therefore, even with implementation of mitigation, impacts would remain significant and unavoidable.

Under Impact N&V-5, project impacts would be potentially significant. The new source of vibration resulting from train operations would substantially degrade the user experience at 517 residences. These include 28 residences between Rio Hondo Channel and Rosemead Boulevard in Pico Rivera; 14 residences in four multifamily buildings between Brea Creek and Dale Street in Buena Park; 13 residences between Orangethorpe Avenue and La Palma Avenue in Anaheim; 72 residences in 12 multifamily buildings between E La Palma Avenue and E Wilhelmina Street in Anaheim; 3 single-family residences and 36 residences in 12 multifamily buildings between E Wilhelmina Avenue and Lincoln Avenue in Anaheim; 11 single-family residences and 46 residences in seven multifamily buildings between Lincoln Avenue and Santa Ana Street in Anaheim; and 57 residences in 23 multifamily buildings between E Santa Ana Street and Vermont Avenue in Anaheim. **N&V-MM#4**, which requires measures such as vehicle suspension enhancements, special track-support systems, and building modifications, would potentially reduce some impacts, but likely not all. Therefore, even with implementation of mitigation, impacts would remain significant and unavoidable.

- **Section 3.10, Hazardous Materials and Wastes**

  Under Impact HMW-4, construction on or near the Orange County North Basin site (HSR Fullerton Station Option only) and the Exide site in Vernon (both alternatives) would potentially cause a significant hazard to the public or the environment from a release of hazardous materials. With implementation of **HMW-MM#2**, involving close coordination with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street LMF) and the Fullerton HSR Station Option (if built), and engagement with public interested parties at specific design milestones, the impact would be minimized; however, it would remain significant and unavoidable under CEQA.

- **Section 3.11, Safety and Security**

  Under Impact SS-3, construction on or near the Orange County North Basin site (HSR Fullerton Station Option only) and the Exide site in Vernon (both alternatives) would potentially cause a significant hazard at construction sites from a release of hazardous materials. With implementation of **HMW-MM#2**, involving close coordination with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street LMF) and the Fullerton HSR Station Option (if built), and engagement with public interested parties at specific design milestones, the impact would be minimized; however, it would remain significant and unavoidable under CEQA.

- **Section 3.16, Aesthetics and Visual Quality**

  Under Impact AVQ-1, construction and operation of the Shared Passenger Track Alternatives would conflict with the visual character of the four historic bridges in the Downtown Los Angeles Landscape Unit and substantially affect the scenic values of the bridges as important visual resources among other resources. **AVQ-MM#1** would reduce construction impacts on the visual quality of the historic bridges in the Downtown Los Angeles Landscape Unit but not to a less-than-significant level. Therefore, even with mitigation, construction in the vicinity of the four historic bridges would result in significant and unavoidable impacts on visual quality in the Downtown Los Angeles Landscape Unit.

  Under Impact AVQ-3, visual disturbance affecting viewers, visual character, and visual quality would result from operational activities of both Shared Passenger Track Alternatives. The following mitigation measures would minimize, but not fully eliminate, impacts: **AVQ-MM#3,** and **AVQ-MM#7**, which require the contractor to work with local jurisdictions to design structures that fit the local context. As part of **AVQ-MM#4**, the contractor, prior to the commencement of HSR operations, would provide landscape screening to obscure HSR infrastructure from viewers. The screening would reduce potential impacts during operations for the life of the system. **AVQ-MM#5** and **AVQ-MM#6** would also be implemented to reduce visual impacts. In addition, **CUL-MM#12** would reduce effects related to construction of

security features on the historic bridges in the Downtown Los Angeles Landscape Unit. However, as a result of unavoidable visual degradation caused by necessary features such as signal lighting, the residual impacts after mitigation from the project's security features on the historic bridges would be significant and unavoidable under CEQA.

- **Section 3.17, Cultural Resources**

  Under Impact CUL-3, Shared Passenger Track Alternatives A and B would result in an adverse effect on four properties. Four Los Angeles River bridges would incorporate protection-related bridge barriers (First, Fourth, and Seventh Street Bridges and the Olympic Boulevard Bridge). Incorporation of these protective barriers would result in a significant impact because the project would introduce a visual element that would be incompatible with their design. Shared Passenger Track Alternative B would result in similar impacts as Shared Passenger Track Alternative A; its construction would result in additional impacts on one historic built resource of the four historic properties and different effects on the other three also affected by Shared Passenger Track Alternative A. **CUL-MM#12** would reduce impacts on the First, Fourth, and Seventh Street Bridges and Olympic Boulevard Bridge by consulting with interested parties to achieve a barrier design that meets safety goals while introducing the minimum physical and visual impacts on the historical resources. However, the impact would remain significant and unavoidable.

- **Section 3.19, Cumulative Impacts**

  – **Air Quality and Global Climate Change:** The temporary impact under CEQA on regional air quality during construction of the project would be significant before and after mitigation. During construction, nitrogen oxide emissions would continue to exceed the SCAQMD regional CEQA project-level thresholds, and the project would contribute to a cumulatively significant level of regional air pollution in the South Coast Air Basin. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative air quality impacts during construction, in combination with other planned projects, would be cumulatively considerable.

    The following mitigation measures would minimize, but not fully eliminate, impacts: **AQ-MM#1**, **AQ-MM#2**, and **AQ-MM#3**. However, even after implementation of **AQ-MM#1** through **AQ-MM#3**, nitrogen oxide emissions would continue to exceed SCAQMD thresholds during construction, and the project would result in a cumulatively considerable increase in nitrogen oxide emissions in the South Coast Air Basin.

    AQ-MM#4 requires that an operational HRA be conducted prior to commencement of project operations and requires additional feasible on- and off-site mitigation be incorporated to reduce risks to the greatest extent possible. However, the outcome of the operational HRA may determine that mitigation is not feasible.

    Elevated criteria pollutant concentrations from project construction in the project section are considered cumulatively significant, because construction overlaps may affect local air quality and may cause or contribute to exceedances of the short- and long-term National Ambient Air Quality Standards. Even with implementation of mitigation measures, the Shared Passenger Track Alternatives' contribution to cumulative air quality impacts would be cumulatively significant. Therefore, the project contribution to the cumulative air quality impact would be cumulatively considerable for construction impacts and would be considered significant and unavoidable under CEQA.

  – **Noise and Vibration:** During operations, the Shared Passenger Track Alternatives would result in severe noise and vibration impacts at noise-sensitive receptors. Additionally, these noise and vibration emissions would combine with those of other planned rail transit projects to result in significant cumulative operational noise and vibration impacts under CEQA because the combined noise and vibration exposure would exceed Federal Railroad Administration criteria for severe noise and vibration impacts. The project alternatives' contribution to the cumulative impact would be considerable because it

would cause the largest change in the baseline ambient noise and vibration conditions among the many planned transportation projects.

In addition to the project-level measures, cumulative mitigation measure **CUM-N&V-MM#1** would minimize the potential for overlapping construction activities in the resource study area by requiring consultation and coordination with agencies regarding construction activities. However, even with implementation of **CUM-N&V-MM#1**, the project in combination with other planned projects would have the potential to exceed significance thresholds for noise and vibration at sensitive receivers during construction and operation. Therefore, the project contribution to the cumulative noise and vibration impacts would be cumulatively considerable for both construction and operational impacts and would be considered significant and unavoidable under CEQA.

- **Hazardous Materials and Wastes**: Because of the extensive nature of potential impacts associated with the two Superfund sites and because completion of remediation activities at each site is currently unknown, substantial exposure to contaminants associated with these sites could occur during construction of the Shared Passenger Track Alternatives. The Authority would implement **HMW-MM#2**, which requires the Authority to coordinate with the regulatory oversight agencies and the responsible parties on the design of the project alternatives (including the 26th Street LMF) and the Fullerton HSR Station Option (if built). **HMW-MM#2** would also require the Authority to engage with public interested parties at specific design milestones. However, even with implementation of mitigation, the project-level impact would remain significant. Given this, the Shared Passenger Track Alternatives, in combination with reasonably foreseeable projects within the cumulative resource study area, would result in a significant cumulative impact and the project would have a cumulatively considerable contribution.
- **Aesthetics and Visual Quality**: Adherence to IAMFs would temporarily lessen visual disturbance during construction, but the residual impacts on viewers, visual character, and visual quality would remain significant in the vicinity of four historic bridges in the Downtown Los Angeles Landscape Unit, causing visual changes for viewers with high sensitivity. Implementation of **AVQ-MM#1** and **AVQ-MM#2**, which requires that the contractor prepare a technical memorandum verifying how the contractor will shield nighttime construction lighting and direct it downward in such a manner to minimize the light that falls outside the construction site boundaries, would reduce potentially invasive sources of light and glare associated with construction. **CUL-MM#12** would reduce the impact by requiring the contractor consult with interested parties to achieve a barrier design that meets safety goals while introducing the minimum physical and visual effects on the historic property. **AVQ-MM#1**, **AVQ-MM#2**, **AVQ-MM#3**, **AVQ-MM#4**, and **AVQ-MM#7** would address the visual impacts on viewers, visual character, and visual quality during construction. In addition, **AVQ-MM#4** would reduce operational visual impacts, and **AVQ-MM#3** through **AVQ-MM#7** would reduce operational visual impacts on the historic bridges, from a cumulative perspective. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on aesthetic and visual quality, in combination with other planned projects, would not be cumulatively considerable. However, with implementation of **AVQ-MM#1**, **AVQ-MM#2**, **AVQ-MM#3**, **AVQ-MM#4**, and **AVQ-MM#7**, the project's impacts from temporary visual disturbance would be minimized but not to a less-than-significant level. Therefore, even with mitigation, construction in the vicinity of the four historic bridges would result in significant and unavoidable impacts under CEQA.

7.2 Project Benefits

Despite the significant and unavoidable impacts described above under Section 7.1, Unavoidable Adverse Effects and Significant and Unavoidable Impacts, the benefits listed below and identified in Chapter 1, Project Purpose, Need, and Objectives, and in Chapter 3 would result from implementation of the project section as proposed.

7.2.1 Transportation Benefits

The following bullet points address transportation benefits of the project:

- Provides an essential building block to establish very high-speed passenger rail service as part of Phase 1 of the HSR system to meet the state's growing demands on its transportation system
- Adds capacity to the state's transportation infrastructure via the new HSR transportation mode, thereby reducing pressure on the state's existing transportation infrastructure, including highways and airports
- Meets future intercity travel demand that would not be met by current transportation systems, increasing capacity for intercity mobility and helping to increase overall efficiency of California's intercity transportation system
- Improves the intercity travel experience for passengers by providing comfortable, safe, frequent, and reliable high-speed travel, helping resolve transportation safety and reliability issues of intercity travel caused by traffic congestion, weather conditions, and motor accidents
- Improve and optimize operations in the Los Angeles – San Diego – San Luis Obispo Rail Corridor[1] for both freight and passenger rail operators. By separating freight and passenger rail at constrained areas, such as Fullerton Junction, service would be improved for all operators and users of the systems.

7.2.2 Environmental Benefits

The following bullet points address environmental benefits of the project:

- Provides long-term reductions in regional vehicle miles traveled by automobile, including support for the state's goals for reducing vehicle miles traveled and promoting transit-oriented development, as reflected in Senate Bill 743
- Provides long-term improvements in regional air quality by reducing criteria pollutants and greenhouse gases generated by automobiles and aircraft
- Provides long-term reduction in transportation-related energy requirements
- Supports achieving the state's greenhouse gas reduction goals as described in Assembly Bill 32, Senate Bill 32, and the California Air Resources Board's Scoping Plan

7.2.3 Economic and Employment Benefits

The following bullet point addresses economic and employment benefits of the project:

- Provides economic and employment benefits from tax revenue and employment during construction.
- Offers new long-term jobs, creating direct, indirect, and induced jobs associated with operations and maintenance in Los Angeles and Orange Counties and job creation from improvements in accessibility in areas surrounding stations.

7.3 Relationship between Short-Term Use of the Environment and the Enhancement of Long-Term Productivity

NEPA implementing procedures, regulations, and guidance regulations require that the discussion of environmental consequences include the relationship between short-term uses of

[1] More commonly known as the LOSSAN Rail Corridor.

man's environment and the maintenance and enhancement of long-term productivity (64 *Federal Register* 28545 14(p)). This section describes the use of the environment—natural resources and land—that would lead to the long-term productivity of these resources by providing a transportation system that would expand capacity while increasing safety, generating employment, and reducing emissions.

Developing the Shared Passenger Track Alternatives would require an investment of materials to create new transportation infrastructure. This investment of materials is expected to include natural resources, such as rock and aggregate (e.g., to build HSR structures such as viaducts and other facility foundations), steel (e.g., for rail and overhead contact structures), other building materials, and the various structural components of the HSR trains. Fossil fuels would be consumed for project construction. In addition, the project would require conversion of land to accommodate the new transportation infrastructure. In many cases, the land required is already developed with urban structures, including industrial and commercial buildings, residential structures, passenger rail stations, freight facilities, and roads. The consequences of land conversions are described in Chapter 3.

The project section is approximately 30 miles long and travels through the cities of Los Angeles, Vernon, Bell, Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim, as well as the unincorporated area of Los Angeles County known as West Whittier-Los Nietos. It would share the Los Angeles – San Diego – San Luis Obispo Rail Corridor with existing rail operators. The Shared Passenger Track Alternatives would be primarily within the existing railroad right-of-way, which is generally 100 feet wide along this urban corridor, and would therefore maintain most of the existing adjacent land uses and roadway network, although some roadway modifications would be needed.

The Shared Passenger Track Alternatives would require conversion of land to accommodate the new transportation infrastructure where the project extends beyond the existing railroad right-of-way and as necessary for project operation. This permanent conversion of land that is not currently associated with transportation-related uses would include land designated for industrial, commercial, residential, and facilities. When the remnant portion of an acquired parcel beyond the required right-of-way is too small to sustain current use without other modifications, it would also be acquired. These remnant parcels would be used only temporarily for construction and would be sold after project construction. The Authority's adopted strategy of sharing the existing corridor and blending HSR with other rail systems on shared infrastructure accelerates and broadens benefits, improves efficiency, minimizes community effects, and reduces capital costs.

As indicated in Chapter 1, the capacity of California's intercity transportation system, including in Los Angeles and Orange Counties, is insufficient to meet existing and future travel demand and the current and projected future congestion of the system would continue to result in deteriorating air quality, reduced reliability, and increased travel times. The project would provide benefits such as improved intercity transportation, reduced travel times, reduced pollutant emissions, reduced greenhouse gases, and, in some instances, increased safety from grade crossings. Because the California HSR System would provide a new alternative to regional transportation options that consume fossil fuels (e.g., automotive trips and commercial air travel) and be powered by electricity primarily generated by renewable resources (e.g., solar power, wind power), the project would make an important contribution to greenhouse gas reduction efforts.

As described in Section 3.18, Regional Growth, the proposed California HSR System would provide direct and indirect economic benefits, including short- and long-term employment benefits. The HSR system would improve accessibility to labor and customer markets and accommodate regional job growth by providing a more attractive market for commercial and office development. Regional job growth is expected to be primarily internal to Los Angeles and Orange Counties. Improved accessibility would increase the competitiveness of the project area as well as the state's industries and overall economy. The benefits of the HSR system are described in more detail in Chapter 1.

7.4 Significant Irreversible Environmental Changes or Irretrievable Commitment of Resources

NEPA implementing procedures, regulations, and guidance require that the discussion of environmental consequences include any irreversible or irretrievable commitments of resources that would be involved in the proposal should it be implemented (64 *Federal Register* 28545, 14(n)(11)). Similarly, Section 15126.2(c) of the State CEQA Guidelines requires that an environmental impact report address significant irreversible environmental changes associated with a project.

The project section would require the commitment of energy and material for construction, as well as the irretrievable commitment of resources such as land for HSR facilities and fossil fuels for the generation of energy. The project would require an irretrievable investment of materials such as rock, aggregate, dirt, steel, wood, and other building materials. Fossil fuels would be consumed during construction. In addition, the project would require the conversion of land to accommodate the new transportation infrastructure (including track and systems, stations, electrical system upgrades, and ancillary facilities). These environmental changes would be irreversible. Chapter 3 evaluates the significance under CEQA and effects under NEPA of these impacts. Overall, it is expected that residents and businesses in the region would benefit from the improved quality of the transportation system (e.g., improved accessibility, increased capacity, energy savings) and that these benefits would outweigh the irreversible or irretrievable commitment of resources.