ERRATA: SECTION 3.19, CUMULATIVE IMPACTS

Errata No.	Draft EIR/EIS Reference		Errata Final EIR/EIS	
	Section	Page	Correction and Rationale	Errata Page Reference
1	Section 3.19.3.5	3.19-14, 3.19-15	Revised Table 3.19-2 to include the Atlas Fullerton Project, the Building Bridges to Transit Project, River Park, and to correct project names	16-162
2	Section 3.19.3.5	3.19-18	Revised Figure 3.19-1 to include the Atlas Fullerton Project, the Building Bridges to Transit Project, and River Park	16-163
3	Section 3.19.3.5	3.19-19 through 3.19-22	Revised Table 3.19-3 to add the BIG Project	16-166
4	Section 3.19.4.1	3.19-29	Revised to add the BIG Project and describe projects that would improve goods movement or regional transportation	16-167
5	Section 3.19.4.1	3.19-30	Revised to add the BIG Project to construction impacts	16-168
6	Section 3.19.4.1	3.19-31	Revised to add the BIG Project to operational impacts	16-168
7	Section 3.19.4.2	3.19-36	Revised to add the BIG Project, describe regional transportation projects, update AQ-MM#4, and summarize a review of potential additional mitigation measures for feasibility	16-169
8	Section 3.19.4.3	3.19-40	Revised to reflect updates to Section 3.4 regarding impacts on noise-sensitive residences during operation	16-170
9	Section 3.19.4.6	3.19-52	Revised to reflect updates to Section 3.7 to remove special-status plants	16-171
10	Section 3.19.4.6	3.19-54	Revised to reflect updates to Section 3.7 to remove special-status plants	16-171
11	Section 3.19.4.6	3.19-57	Revised to reflect updates to Section 3.7 to remove special-status plants	16-172
12	Section 3.19.4.7	3.19-65	Revised to reflect updates to Section 3.8 and to correct the list of floodplains within the cumulative RSA	16-172
13	Section 3.19.4.9	3.19-77	Revised to reflect updates made to Section 3.10 regarding impacts occurring in proximity to PEC sites and within 0.25 mile of a school	16-172
14	Section 3.19.4.9	3.19-78 through 3.19-79	Revised to reflect updates made to Section 3.10 regarding impacts occurring in proximity to PEC sites and within 0.25 mile of a school	16-174
15	Section 3.19.4.11	3.19-89	Revised to update expected employment growth	16-175
16	Section 3.19.4.12	3.19-91	Revised with the updated title of LU-IAMF#1 and to reflect changes to acquisitions anticipated in Buena Park	16-175
17	Section 3.19.4.13	3.19-95	Revised to include OCVIBE	16-175
18	Section 3.19.4.6	3.19-65	Updated citation	16-176

BIG = Barstow International Gateway; EIR/EIS = environmental impact report/environmental impact statement; No. = number; PEC = potential environmental concern; RSA = resource study area

3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

3.19 Cumulative Impacts

3.19.1 Introduction

Section 3.19, Cumulative Impacts, of the Los Angeles to Anaheim Project Section (project section) Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) analyzes the potential cumulative impacts of implementing the Shared Passenger Track Alternatives in combination with other past, present, and reasonably foreseeable future actions and projects, including adjacent high-speed rail (HSR) project sections. This section describes impact avoidance and minimization features (IAMF) that will avoid, minimize, or reduce these cumulative impacts. Mitigation measures are proposed to further reduce, compensate for, or offset the cumulative contribution of impacts of the project. This section also defines the regional context appropriate for each resource area.

This section includes detailed analysis of environmental resources, environmental consequences, and mitigation measures based on the guidance provided in *Project Environmental Impact Report/Environmental Impact Statement Environmental Methodology Guidelines*, Versions 5.9 and 5.11 (Authority 2022) as amended.

The analysis presented in this Draft EIR/EIS section is organized by each environmental topic and includes sections for each resource study area (RSA), cumulative conditions for that RSA, and a discussion of cumulative impacts. California Environmental Quality Act (CEQA) conclusions provide a summary of CEQA determination of significance for construction and operational impacts for each resource area. Section 3.19.5, Mitigation Measures (for Any Newly Identified Significant Cumulative Impacts), discusses proposed mitigation measures and their potential secondary impacts. Furthermore, the analysis considers a list of reasonably foreseeable future planning, transportation, and utility projects listed in Volume 2, Appendix 3.19-A, Cumulative Plans and Nontransportation Projects List, and Appendix 3.19-B, Cumulative Transportation Projects List.

PURPOSE

Cumulative Impacts

Cumulative impacts, from varying sources, accumulate over time and can degrade important resources. By considering cumulative impacts, decision makers can understand how outside sources, in addition to the proposed project, may affect the natural and built environment over time.

3.19.1.1 Definition of Resources

This cumulative impact analysis complies with the National Environmental Policy Act (NEPA) and the State CEQA Guidelines (California Code of Regulations Title 14, Section 15355, California Code of Regulations Title 14, Section 15130), as further described in Section 3.1, Introduction, of this Draft EIR/EIS. The analysis was prepared following guidelines from the California Department of Transportation's *Guidance for Preparers of Cumulative Impact Analysis* (Caltrans 2016), NEPA requirements, and the State CEQA Guidelines.

This section presents an analysis of the cumulative effects of implementing the Shared Passenger Track Alternatives, which, in combination with other past, present, and reasonably foreseeable future projects, may result in cumulative environmental impacts. For the purposes of this analysis, "cumulative impacts" or "reasonably foreseeable projects" are those likely to occur within the 2040 planning horizon for the HSR project. The focus of this cumulative impacts analysis is the project section and the regional context appropriate for each resource area.

3.19.2 Laws, Regulations, and Orders

Federal, state, and local laws, regulations, orders, or plans germane to the assessment of cumulative impacts are presented below. General NEPA and CEQA requirements for assessment and disclosure of environmental impacts are described in Section 3.1.4.3, Consistency with Plans and Laws, and are therefore not restated in this section. However, this section does describe NEPA and CEQA requirements specific to the evaluation of cumulative impacts.

This section summarizes federal and state laws and regulations relevant to the project section cumulative impact analysis; there are no current regional or local laws, regulations, or plans pertaining to cumulative impacts.

3.19.2.1 Federal

Federal Railroad Administration, Procedures for Considering Environmental Impacts (64 *Federal Register* 28545)

On May 26, 1999, the Federal Railroad Administration (FRA) released *Procedures for Considering Environmental Impacts* (FRA 1999). These FRA procedures describe the FRA's process for assessing the environmental impacts of actions and legislation proposed by the agency and for the preparation of associated documents (42 U.S. Code 4321 et seq.). The FRA's *Procedures for Considering Environmental Impacts* state that "the EIS should identify any significant changes likely to occur in the natural environment and in the developed environment. The EIS should also discuss the consideration given to design quality, art, and architecture in project planning and development as required by U.S. Department of Transportation Order 5610.4." These FRA procedures state that an EIS should consider possible cumulative impacts.

NEPA (42 U.S. Code 4321 et seq.)

Pursuant to NEPA implementing procedures, regulations, and guidance, a lead agency must consider cumulative impacts in addition to direct impacts. A cumulative impact is defined as an impact on the environment that results from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

NEPA implementing procedures, regulations, and guidance recommend that cumulative impact analysis include the following steps in scoping those impacts that are worthy of analysis in an EIS:

- Step 1: Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
- Step 2: Establish the geographic scope for the analysis.
- Step 3: Establish the timeframe for the analysis.
- Step 4: Identify other actions affecting the resources, ecosystems, and human communities of concern.

The guidance notes that "scoping is the key to analyzing cumulative effects; it provides the best opportunity for identifying important cumulative effects issues, setting appropriate boundaries for analysis, and identifying relevant cumulative projects. Scoping allows the NEPA practitioner to 'count what counts.'" In this way, the cumulative analysis is focused on those significant cumulative impacts to which the project section could contribute.

National Historic Preservation Act (54 U.S. Code 300101 et seq.)

The regulations implementing Section 106 of the National Historic Preservation Act acknowledge that a project's adverse effects include those that are reasonably foreseeable, even if they may occur later in time, are farther removed in distance, or are cumulative.

Clean Water Act (33 U.S. Code 1251 et seq.)

Section 404 of the Clean Water Act requires the assessment of potential cumulative impacts on jurisdictional waters of the U.S., including special aquatic sites, which are under the jurisdiction of the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency.[1]

Federal Endangered Species Act (15 U.S. Code 1531 et seq.)

The federal Endangered Species Act, Section 7, defines cumulative impacts as those effects of future state or private activities not involving federal activities that are reasonably certain to occur within the action area that is subject to consultation with the U.S. Fish and Wildlife Service or National Marine Fisheries Service, or both.

3.19.2.2 State

CEQA (California Code of Regulations, Title 14, Section 15000 et seq.)

CEQA defines cumulative impacts as two or more individual impacts that, when evaluated together, are considerable or compound or increase other environmental impacts (State CEQA Guidelines Section 15355). Under CEQA, when a project would contribute to a cumulatively significant impact, an EIR must discuss whether the project's incremental effect is cumulatively considerable. *Cumulatively considerable* means that the project's incremental effect is significant when viewed in the context of past, present, and reasonably foreseeable future projects.

Like the approach under NEPA, the State CEQA Guidelines provide that cumulative impact analyses should focus on significant cumulative impacts to which a project would contribute and the magnitude of the project's contribution.

When the combined cumulative impact associated with the project's incremental effect and the effects of other projects is not significant, the EIR shall briefly indicate why the cumulative impact is not significant and is not discussed in further detail in the EIR. A lead agency shall identify facts and analysis supporting the lead agency's conclusion that the cumulative impact is less than significant (State CEQA Guidelines Section 15130(a)(2)).

3.19.3 Methods for Evaluating Impacts

Evaluation of cumulative impacts is a requirement of CEQA and NEPA. The following sections summarize the cumulative impact RSAs and the methods used to analyze cumulative impacts. The Authority followed the steps listed below to determine the contribution of the Shared Passenger Track Alternatives, if any, to cumulative impacts for each resource:

1. Define the RSA for the cumulative impacts for each resource topic.
2. Compile a list and description of, as well as environmental impact information for, planned projects and relevant plans for consideration of cumulative impacts. Check for such projects in adopted plans such as regional transportation plans, regional transportation improvement plans, local long-range transportation plans, local land use general and specific plans, interviews with local and regional planning agencies, and recent environmental documents for other large-scale projects near the project alternatives. Planned projects in this analysis are those that are likely to occur and would add to the impacts on a particular resource. Generally, projects are considered in the analysis if they are part of an adopted plan as described in this section or fall under any of the following conditions:
    a. Applications for project entitlements or construction are pending with a government agency.

[1] 40 CFR Part 230.11(g) (1) defines cumulative impacts as the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges of dredged or fill material. Cumulative effects attributable to the discharge of dredged or fill material in waters of the U.S. shall be documented and considered during the decision-making process of individual permit applications, the issuance of a general permit, and monitoring and enforcement of existing permits.

b. The project is included in an agency's budget or capital improvement program.
c. The project is a reasonably foreseeable future phase of an existing project.
d. The project is reasonably foreseeable to occur within the 2040 planning horizon for the HSR system.

3. Identify and evaluate the cumulative impacts of the planned projects, including the Los Angeles to Anaheim Project Section, that make up the cumulative conditions for each resource topic. Determine as part of this evaluation whether there is a significant cumulative impact.
4. Determine whether the incremental contribution of the project to the significant cumulative impacts for each resource area is cumulatively considerable under CEQA. "Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time" (State CEQA Guidelines Section 15355). The cumulative impacts discussion will only include reasonably foreseeable direct or indirect impacts found to result from the Shared Passenger Track Alternatives; if no impact would result, there is no need to evaluate other projects' similar actions.
5. Identify reasonable, feasible options for avoiding or mitigating the project's contribution to significant cumulative impacts.

The specific resource evaluations in Chapter 3, Affected Environment, Environmental Consequences, and Mitigation Measures, form the basis for analyzing the cumulative impacts for each resource. The cumulative analysis includes resources considered in Chapter 3 (i.e., Sections 3.2 through 3.17). Where applicable, the cumulative analyses note impacts to which the Shared Passenger Track Alternatives would not contribute and explains the rationale.

Please note that Section 3.18, Regional Growth, describes induced growth and indirect effects from growth; that section also identifies cumulative impacts associated with regional growth and future projects. This analysis is not repeated in this section. Similarly, cumulative impacts on minority and low-income communities are not included in this analysis because community impacts are analyzed cumulatively and are therefore addressed in the discussion in Chapter 5, Community Analysis.

3.19.3.1 Determining Resource Study Area

As defined in Section 3.1, Introduction, RSAs are the geographic areas in which the environmental investigations specific to each resource topic were conducted to determine resource characteristics and potential impacts of the Shared Passenger Track Alternatives. The cumulative projects within each respective cumulative RSA are a subset of the reasonably foreseeable projects listed in Appendices 3.19-A and 3.19-B, depending on the cumulative RSA's size and geography for that resource. For cumulative impacts, the RSA also includes the geographic extent of each affected resource within which project impacts would accumulate or interact with the impacts of other reasonably foreseeable projects, including adjacent HSR projects.

Table 3.19-1 identifies the RSA used for each resource evaluated in this cumulative impact analysis and the rationale for selecting the RSA boundary. Throughout the remainder of this section, the term RSA refers to the cumulative RSA for each resource being discussed.

Table 3.19-1 Resource Study Areas for Cumulative Impact Analysis

Resource	Resource Study Area Boundary	Rationale for Choosing Boundary
Transportation		
Transportation	Los Angeles and Orange Counties	The boundary was selected to develop a broad, regional consideration of cumulative transportation impacts, and because it captures impacts on transportation associated with the construction and operation of the project and regional impacts on transportation associated with anticipated development projects affecting the same transportation infrastructure and conditions.
Air Quality and Global Climate Change		
Air quality	Cumulative air quality impacts are evaluated for a regional RSA and localized RSA. The regional RSA is the SCAB. The localized RSA includes areas within 1,000 feet of large construction activities, the proposed stations, the light maintenance facility, and major roadway intersections.	The SCAB is the regional RSA because this section of the HSR system could potentially affect regional air pollutant concentrations in the SCAB. The local air quality impact analysis focuses on the effects of criteria pollutant and mobile-source air toxics emissions from both construction and operations of the project on nearby sensitive receptors.
Global climate change	The state of California for GHG emissions	The statewide scale encompasses most of the area of the project's impact on statewide vehicle miles traveled, aircraft travel, and electrical generation, and is consistent with State of California planning.
Noise and Vibration		
Noise	700 feet from the project section's centerlines	This cumulative analysis uses the same RSA for noise and vibration as described in Section 3.4, Noise and Vibration, because it is sufficiently broad to cover the area in which the potential noise and vibration impacts of the project, in combination with other projects, could result in cumulative impacts.
Vibration	▪ 275 feet from the edge of the project right-of-way ▪ 150 feet from the station boundaries ▪ 1,000 feet from the boundary of maintenance facilities	The RSA is sufficient to encompass vibration-sensitive receptors that could be affected by vibration impacts.

Resource	Resource Study Area Boundary	Rationale for Choosing Boundary
Electromagnetic Interference and Electromagnetic Fields		
EMI/EMF	▪ 500 feet on either side of the Shared Passenger Track Alternatives centerline ▪ 500 feet from the perimeter of the light maintenance facility and traction power facilities (traction power substations, switching stations, and paralleling stations)	This area is broad enough to cover the area in which the potential impacts of the project, in combination with other projects, could result in cumulative impacts.
Public Utilities and Energy		
Public utilities	The service areas of utility providers in Los Angeles and Orange Counties where utility infrastructure would be used by the project	Utility infrastructure throughout Los Angeles and Orange Counties would be affected as a result of the HSR system, in combination with other planned development.
Energy	The entire electricity grid of the state of California and other western states that produce energy and export to California	The boundaries of this RSA are sufficiently broad to cover the area in which the potential impacts of the Shared Passenger Track Alternatives, in combination with other projects, could result in cumulative impacts.
Biological and Aquatic Resources		
Plants and wildlife	Primarily within Los Angeles and Orange Counties and the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, Anaheim, and Orange	The area was identified to allow for a landscape-level analysis of impacts and is based on ecoregion, watershed, and county boundaries.
Aquatic resources	Primarily within Los Angeles and Orange Counties and the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, Anaheim, and Orange	The area was identified to allow for a landscape-level analysis of impacts and is based on ecoregion, watershed, and county boundaries.
Hydrology and Water Resources		
Surface water	Water from the entire Los Angeles River, San Gabriel, Santa Ana, and Seal Beach watersheds	Hydrologic and water quality impacts on surface waters are regional in nature and can affect downstream waters in the watershed. Including the entirety of these watersheds provides a sufficiently broad RSA for addressing cumulative impacts.
Groundwater	The project's cumulative RSA crosses the Central Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin and the Main Subbasin of the Coastal Plain of the Orange County Groundwater Basin.	Hydrologic and water quality impacts on groundwater are regional and can affect the groundwater basin. Including the entire groundwater basin provides sufficiently broad RSA for addressing cumulative impacts.

Resource	Resource Study Area Boundary	Rationale for Choosing Boundary
Floodplains	Federal Emergency Management Agency 100-year and 500-year floodplain boundaries crossed by the project's direct RSA	The geographic boundaries of this RSA are sufficiently broad for evaluating cumulative impacts because floodplain impacts are localized and occur in a specific floodplain where a structure is being proposed.
Geology, Soils, Seismicity, and Paleontological Resources		
Geology, soils, and seismicity	The Los Angeles Basin (within the Peninsular Ranges geomorphic province)	Some geologic and seismic hazards, such as soil failures, settlement, corrosivity, shrink-swell, erosion, and earthquake-induced liquefaction risks, are limited to the immediate project surroundings and do not accumulate across projects; therefore, these issues are not included in the cumulative impacts analysis. However, other issues such as seismicity, faulting, and dam failure inundation would be cumulative across projects if the projects would exacerbate hazardous conditions and damage multiple projects within the same geographic area and timespan. Given this, impacts on these resources are assessed at a broader regional level within the RSA.
Paleontological Resources	Geologic units that are partially overlain by the project footprint in the Los Angeles Basin	This RSA was selected to develop a broad, regional consideration of cumulative impacts, and because it captures impacts on paleontological resources associated with project construction and operations and regional impacts on paleontological resources associated with planned development. Specifically, the project's cumulative RSA allows for the analysis of additional projects that could affect paleontological resources in the region.
Hazardous Materials and Wastes		
Hazardous materials and waste	The project footprint plus a 150-foot buffer to account for hazardous materials on adjacent properties. In addition, the cumulative RSA consists of a 0.25-mile buffer around landfills, oil and gas wells, and educational facilities. Potential environmental concern sites extend up to 1 mile from the project footprint, while the potential environmental concern sites database search area is the project footprint plus up to a 1-mile buffer.	This cumulative RSA was selected to develop a broad, regional consideration of cumulative impacts, and because it captures hazardous materials impacts associated with project construction and operation, planned development, and the potential for large or regionally important sites within reasonable distance of the project.

Resource	Resource Study Area Boundary	Rationale for Choosing Boundary
Safety and Security		
Safety and security	The cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Whittier, Buena Park, Fullerton, and Anaheim, and unincorporated areas of Los Angeles County and Orange County including the West Whittier–Los Nietos communities	The cumulative RSA allows a review of other projects under the cumulative condition that would affect emergency response and evacuation routes through impacts on roadway connectivity to emergency service providers.
Socioeconomics and Communities		
Socioeconomics and communities	Los Angeles and Orange Counties	This area was chosen to develop a broad, regional consideration of cumulative impacts, and because it captures impacts on socioeconomics and communities from construction and operation of the project and regional impacts on socioeconomics and communities associated with planned development.
Station Planning, Land Use, and Development		
Station planning, land use, and development	A 150-foot buffer from the project footprint and a 0.5-mile buffer from each station footprint	The cumulative RSA is a generally dense, urban area in Los Angeles and Orange Counties and the buffers provide a sufficiently broad RSA for addressing cumulative impacts.
Parks, Recreation, and Open Space		
Parks, recreation, and open space	The project footprint and resources within 1,000 feet of the edge of the project footprint, 0.5 mile from an HSR station, 0.5 mile from a maintenance facility site, and 1,000 feet from any road construction required to implement the HSR system and inclusive of both direct and indirect impacts	The area was selected because it captures both the Shared Passenger Track Alternatives–related impacts and the potential regional impacts on parks, recreation, and open space associated with development anticipated under the relevant general plans.
Aesthetics and Visual Quality		
Aesthetics and visual quality	The project's viewshed within 0.25 mile of the track centerline and up to 0.5 mile where the alignment is elevated. The RSA generally consists of three distinct landscape units: Downtown Los Angeles, Gateway Cities, and Fullerton/Anaheim.	The cumulative RSA development planned under general plans of the Counties of Los Angeles and Orange and the involved cities and unincorporated communities as well as adjacent HSR sections and relevant planned and future residential, commercial, industrial, and transportation projects identified in Appendices 3.19-A and 3.19-B provide a sufficiently broad RSA for addressing cumulative impacts.

Resource	Resource Study Area Boundary	Rationale for Choosing Boundary
Cultural Resources		
Archaeological properties	The area of potential ground-disturbance locations during or after construction of the project, including temporary staging areas, utility easements, laydown areas, utility relocations, and newly acquired land. The vertical APE for at-grade construction extends from the existing ground surface to the final depth necessary for the railbed and for footings or foundations of structural components. Depths would be determined during final design but are typically expected to range from only a few feet for at-grade work to no more than 20 feet for waterway crossings or footings. Pile driving could extend to depths beyond 100 feet. Excavation at grade separations and underpasses could be as deep as 40 to 50 feet.	The selected area is sufficiently broad to cover the area in which the potential cultural resources impacts of the project, in combination with other projects, could result in cumulative impacts.
Built resources	The APE for historic built resources includes buildings, structures, or objects 50 years of age or older at the time the intensive-level survey was conducted, as well as properties exempt from evaluation, that may be directly or indirectly affected by the project through construction or operational activities.	The selected area is sufficiently broad to cover the area in which the potential cultural resources impacts of the project, in combination with other projects, could result in cumulative impacts.

APE = area of potential effects; EMI/EMF = electromagnetic interference/electromagnetic fields; GHG = greenhouse gas; HSR = high-speed rail; project section = Los Angeles to Anaheim Project Section; RSA = resource study area; SCAB = South Coast Air Basin

3.19.3.2 Methods for NEPA and CEQA Impact Analysis

Overview of Impacts Analysis

This section describes the sources and methods used by the Authority to consider whether the cumulative condition (including cumulative projects) could result in a cumulative impact associated with the Shared Passenger Track Alternatives. These methods apply to both NEPA and CEQA analyses unless otherwise indicated. Refer to Section 3.1.5.4 in Section 3.1, Introduction, for a description of the general framework for evaluating impacts under NEPA and CEQA.

Identifying Resources for Cumulative Impact Analysis

Resources evaluated in this cumulative impact analysis were determined based on a review of the project effects, including benefits, for each resource (Sections 3.2 through 3.17 of this Draft EIR/EIS). If the project would not directly or indirectly affect a resource, it would not contribute to a cumulative impact on that resource. Therefore, this cumulative impact assessment includes resources that would be substantially affected by the project. It also includes resources that are in poor or declining health or that would be at risk even if project impacts are not substantial.

Resources for which the project has the potential to contribute to cumulative impacts when considered in combination with other past, present, and reasonably foreseeable projects include the following:

- Transportation
- Air Quality and Global Climate Change
- Noise and Vibration
- Electromagnetic Interference and Electromagnetic Fields
- Public Utilities and Energy
- Biological and Aquatic Resources
- Hydrology and Water Resources
- Geology, Soils, Seismicity, and Paleontological Resources
- Hazardous Materials and Wastes
- Safety and Security
- Socioeconomics and Communities
- Station Planning, Land Use, and Development
- Parks, Recreation, and Open Space
- Aesthetics and Visual Quality
- Cultural Resources

3.19.3.3 Methods of Evaluating Impacts Under NEPA

NEPA implementing procedures, regulations, and guidance provide the basis for evaluating project effects (as described in Section 3.1.1). The criteria of context and intensity are considered together when determining the severity of changes introduced by the project. *Context* is defined as the affected environment in which a proposed project develops. *Intensity* refers to the severity of the effect, which is examined in terms of the type, quality, and sensitivity of the resource involved; the location and the extent of the effect; duration of the effect (short- or long-term); and other considerations of context. Beneficial effects are also considered. When no measurable effect exists, no impact is found to occur. For the purposes of NEPA compliance, the same methods used to identify and evaluate impacts under CEQA are applied here.

3.19.3.4 Methods for Evaluating Impacts Under CEQA

CEQA requires that an EIR identify the significant environmental impacts of a project (State CEQA Guidelines Section 15126). One of the primary differences between NEPA and CEQA is that CEQA requires a “significance” determination for each impact using a threshold-based analysis. As discussed above, under NEPA, significance is used to determine whether an EIS

would be required; NEPA requires that an EIS be prepared when the proposed federal action (project) as a whole has the potential to "significantly affect the quality of the human environment."

The CEQA analysis of cumulative impacts involves a two-step process. The first step is a determination of whether the project section, in combination with other projects, creates a significant cumulative effect. If it does not, an explanation is provided and the analysis ends. The second step applies when a project would contribute to a significant cumulative impact, and, if so, considers whether the incremental contribution is cumulatively considerable. This evaluation considers the project's effects after mitigation measures have been applied.

3.19.3.5 Cumulative Projects and Growth Forecasts

Historical Context

This section discusses the historical context of Los Angeles and Orange Counties and how development trends in the past have influenced the environmental character of the area. This section also discusses development trends and describes how future urbanization is projected to change the character of Los Angeles and Orange Counties.

Historical Context of Los Angeles and Orange Counties

Below is an overview of the history of cultural development in Los Angeles and Orange Counties from the Spanish period (1769 to 1822) through the Gold Rush period and the development of railroads that brought settlers to this area. Section 7.2 in the *Los Angeles to Anaheim Project Section Archaeological Survey Report* (Authority and FRA 2017) provides a full discussion of the historical context of Los Angeles and Orange Counties.

Spanish Period through Early American Period

After two previous expeditions, the Spanish arrived in California in 1769.

Spanish settlement in the Los Angeles area began in 1771. After the signing of the Treaty of Guadalupe-Hidalgo at the end of the Mexican-American War in 1848, Mexican land in California transferred to the United States and Mexican land claims were subject to United States land ownership laws. The discovery of gold by James W. Marshall the same year in the Sierra Nevada along the American River triggered a gold rush that brought tens of thousands of newcomers to California (Kropp 2006; Bean and Rawls 2003).

In 1850, California became a state and was subsequently divided into 27 counties, including Los Angeles County. The new county's official boundaries included the land grant ranchos, the pueblo, and unincorporated land that consisted of 4,340 square miles and extended from Santa Barbara to San Diego. As Mexican rule transitioned to American rule, prominent *Californio* landholders were forced to defend their title claims.

The land that now composes Pico Rivera was once called *Sejat* by Native American tribes because it was known to be the area where the world began (County of Los Angeles Public Library 2016). The communities that became the city of Pico Rivera were established in the 1870s as the communities of Pico and Rivera when the Atchison, Topeka and Santa Fe Railroad and Union Pacific Railroad (UPRR) completed rail lines throughout the area.

Pico and Rivera remained small agricultural towns until after World War II. After the war, the demand for housing attracted developers to the peaceful, undeveloped area. In the 1950s, large parcels of land were developed with tract homes. Schools, churches, and commercial enterprises were established to meet the needs of new residents. The subdivisions filled the area and drew the older neighborhoods of Pico and Rivera closer together.

Today more than 10 million people call Los Angeles County home, residing in 88 cities and approximately 140 unincorporated areas (County of Los Angeles 2016). Los Angeles County continues to be an industrial and financial giant, and it is one of the most culturally and ethnically diverse communities in the world.

The first Spanish colonial settlement in what would become Orange County occurred in 1775. Early Spanish missions were founded that would later develop into the cities of Santa Ana and Fullerton. In 1857, a group of German immigrants who came to the region via San Francisco purchased a fertile 1,165-acre portion of the rancho on the west side of the Santa River, and there established the settlement that would evolve into the city of Anaheim.

On August 1, 1889, the California legislature passed the "Act to Create the County of Orange." Residents of the new county chose Santa Ana as the county seat (Armor 1921:33–34).

Railroad Development and the Real Estate Boom

Construction of the first railroads in Los Angeles, the Los Angeles and San Pedro Railroad and the Los Angeles and Independence Railroad, began in the late 1860s to link central Los Angeles with coastal communities to the south and west. The city of Los Angeles's population, which stood at approximately 11,000 before the boom, had increased to 50,395 by the time the real estate bubble burst.

Railroad and other late-nineteenth-century development transformed the area in and around the far northwestern portion of the project area in the city of Los Angeles. Immediately north of the project area, the Southern Pacific and the Atchison, Topeka and Santa Fe built major depots and rail yards, and UPRR would follow suit in 1905 by developing an additional major depot and yards.

Southeast of Los Angeles, the boom generated development mainly in established towns, among which only Anaheim was along the project alignment. No enduring new towns were laid out along the alignment as a result of the boom except for Fullerton.

Twentieth Century

Following the boom of the 1880s, the main drivers of economic activity in the vicinity of the project alignment through World War II were agricultural production and shipping (especially citrus products), oil production, and other industrial development related to the existence of the Atchison, Topeka and Santa Fe line between Los Angeles and Santa Ana.

World War II had a dramatic impact on the Los Angeles area. It accelerated some prewar economic trends and laid the basis for transformative postwar economic and developmental trends. Local federal investment, which first took the form of U.S. Navy facilities at the ports of Los Angeles and Long Beach, increased dramatically with the public works programs of the New Deal. Just prior to World War II, Los Angeles County's aircraft, motion picture, sportswear, oil equipment, and food product industries led the nation in those market sectors.

Cumulative Project Lists and Regional Projections

The cumulative analysis for the Shared Passenger Track Alternatives considers general plan build-out projections and capital improvement plan anticipated improvements identified for Los Angeles and Orange Counties and the cities of Los Angeles, Vernon, Bell, Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, Anaheim, West Whittier–Los Nietos, Orange, and South Whittier. Appendix 3.19-A and Appendix 3.19-B collectively provide detailed information about reasonably foreseeable projects and plans included in the cumulative project list, including transportation projects in the RSA.

Table 3.19-2 and Appendix 3.19-A identify capital improvement plans/general plans and nontransportation projects, with major capital or new land development projects by jurisdiction for the counties and cities in the cumulative RSAs. Land development projects include large-scale planning efforts through the region, county and city general plan updates to accommodate long-term development and urbanization, and smaller-scale mixed-use, residential, agricultural-industrial, and commercial developments planned through 2040. The early action projects described in Section 2.6.5, Early Action Projects, are evaluated as part of the Shared Passenger Track Alternatives and in combination with all listed cumulative projects.

Figure 3.19-1, sheets 1 through 3, maps the reasonably foreseeable land development projects included in the cumulative project list presented in Table 3.19-2 and Appendix 3.19-A. A map identification number corresponding to the mapped project location is provided, where applicable.

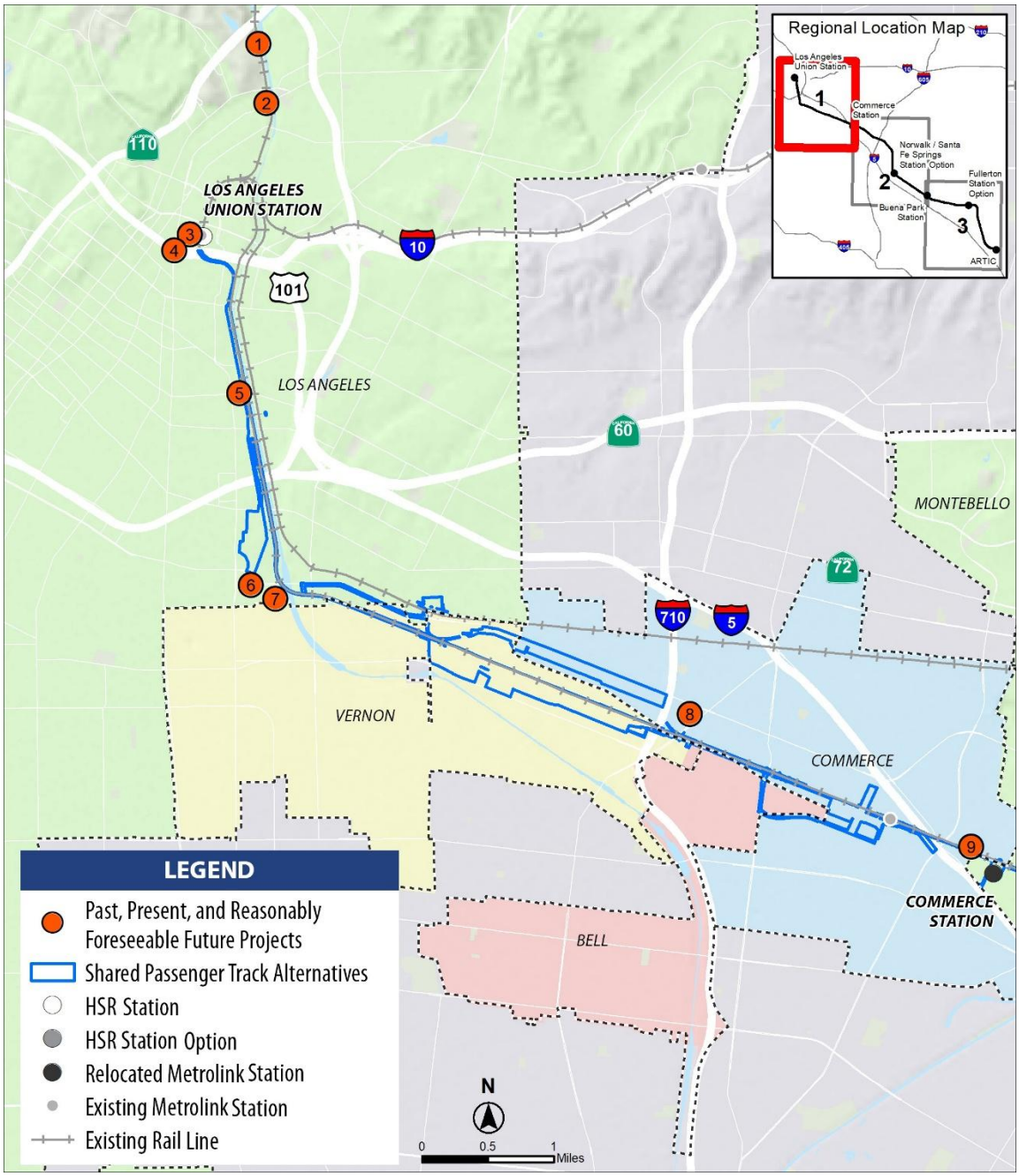
Table 3.19-2 Cumulative Land Development Project List

Label Number	Project Name
1	Los Angeles River Ecosystem Restoration
2	N Spring St Bridge over Los Angeles River
3	Metropolitan Water District (MWD)-Union Station Headquarters Improvement
--	Metropolitan Water District Right-of-Way and Infrastructure Protection
4	Park 101
5	6th St PARC[1] Project
6	Colorado River Aqueduct Distribution System Palos Verdes Feeder – Valley Blvd to 37th St
7	Asphalt Plant No. 1 Phase 2 Project
--	LADWP Downtown – Elysian Park Water Recycling Projects
--	LADWP Facilities Maintenance
--	LADWP Mainline Replacement Program
--	LADWP Trunk Line Replacement Program
8	Commerce Retail Center Project
9	Colorado River Aqueduct Distribution System Middle Feeder – Garvey Reservoir to Victoria St
10	Modelo Project
--	Vernon Westside Zone Change and General Plan Amendment
--	City of Bell 2030 General Plan
--	City of Montebello General Plan Update and Downtown Montebello Specific Plan
--	Pico Rivera 2035
--	County of Orange General Plan Update
11	Rexford Industrial
12	Tall Properties LLC
13	OU2 Water Treatment Plant
14	Breitburn Industrial L.P
15	Greenstone SFS LLC
16	Colorado River Aqueduct Distribution System Lower Feeder
--	Pure Water Southern California
17	Norwalk Transit Village
18	FSFS LLC
19	Bora and Valle Olson 56-Unit Condo Project
20	Gas Station Carwash and Convenience Store
21	Fullerton College Master Plan
22	East Amerige Avenue Project
23	Pathways of Hope

Label Number	Project Name
24	Commonwealth Row
25	Pointe Common
26	South Raymond Cul-de-sac Area Water Main Replacement
27	Union Pacific Trail
28	Parkwest Project
29	Casa Nella – Highland and Valencia
30	Colorado River Aqueduct Distribution System West Orange County Feeder Extension
31	Maplewood Area Water Main Replacement
32	City of Fullerton – streetlights
33	City of Buena Park sewer, water, and street work
--	Complete Streets Master Plan (City of Buena Park)
34	The Invitation Apartments (DEV2019-00087)
35	Carbon Creek Channel (B01)
36	La Palma Village
37	City of Anaheim – sewer and storm drain improvements
38	Service Station/Convenience Store (DEV2022-00081)
39	Anaheim Senior Apartments (completed)
40	Uptown Village (completed)
41	Mixed-use development (DEV2019-00168)
42	4-story apartment building (DEV2019-00179)
43	Lemon Street Industrial
44	Olson S East St Townhomes (completed)
45	Social Biofuel
46	Avon Dakota
47	Electrical infrastructure improvements
48	Colorado River Aqueduct Distribution System Second Lower Feeder
49	La Quinta Inn (DEV2019-00161)
50	Water main infrastructure updates and domestic water improvements
51	Salvation Army Permanent Supportive Housing and shelter (DEV2019-00111)
52	Disneyland Forward
53	Colorado River Aqueduct Distribution System West Orange County Feeder Relocation
54	OCVIBE
55	1700 Lewis (completed)
56	Santa Ana River Project
57	Stadium Towers (DEV2022-00065)

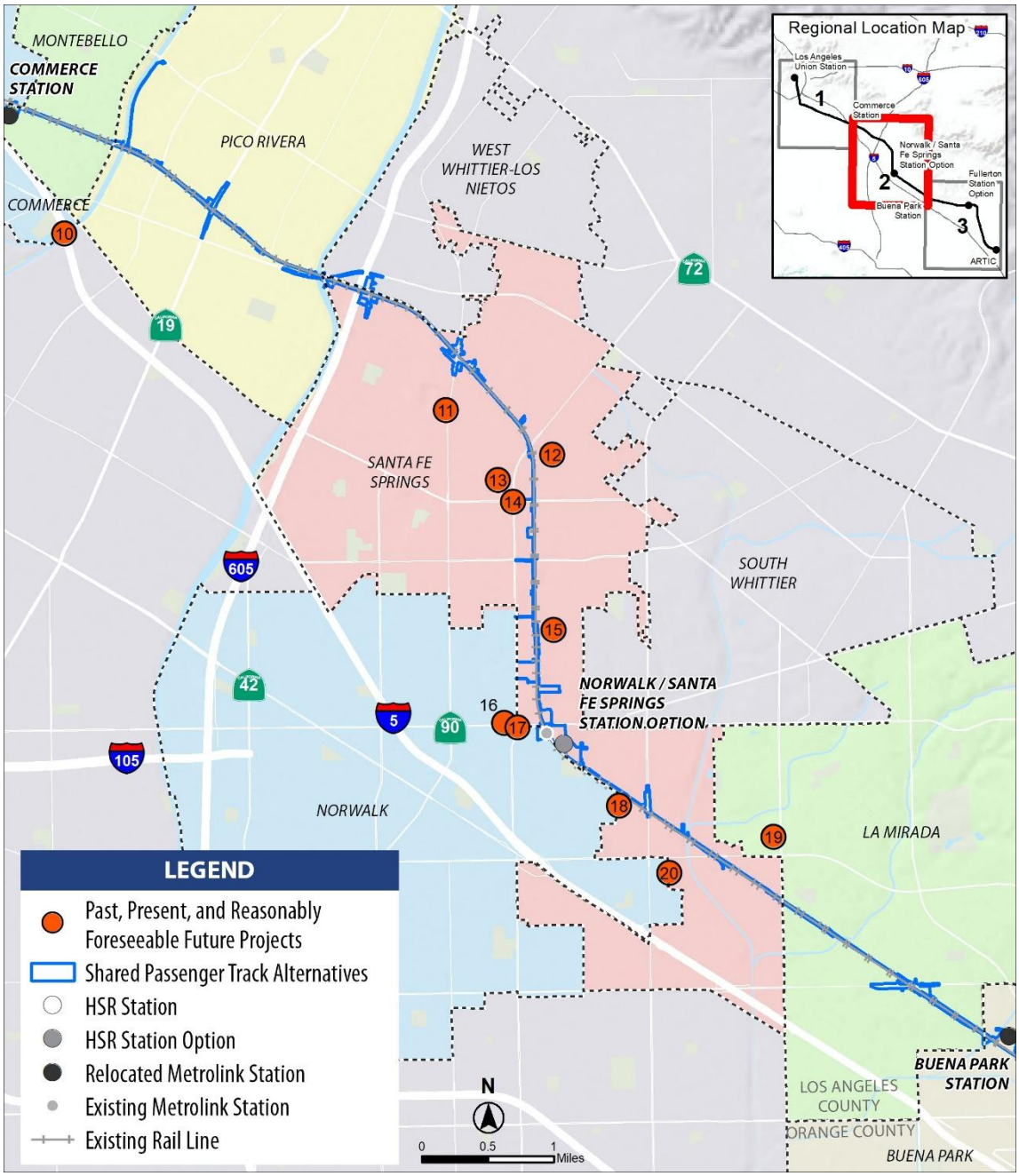
Label Number	Project Name
58	A-Town Metro Amendment (DEV2022-00046)
59	OC River Walk
60	Collins Yard – Utility Undergrounding
61	Collins Logistics Center
62	The Big A
63	Jefferson Stadium Park (built)
64	LT Platinum Center
65	Mixed-use development (DEV2020-00019)
66	The Fox Block

[1] PARC = Park, Arts, River and Connectivity
LADWP = Los Angeles Department of Water and Power



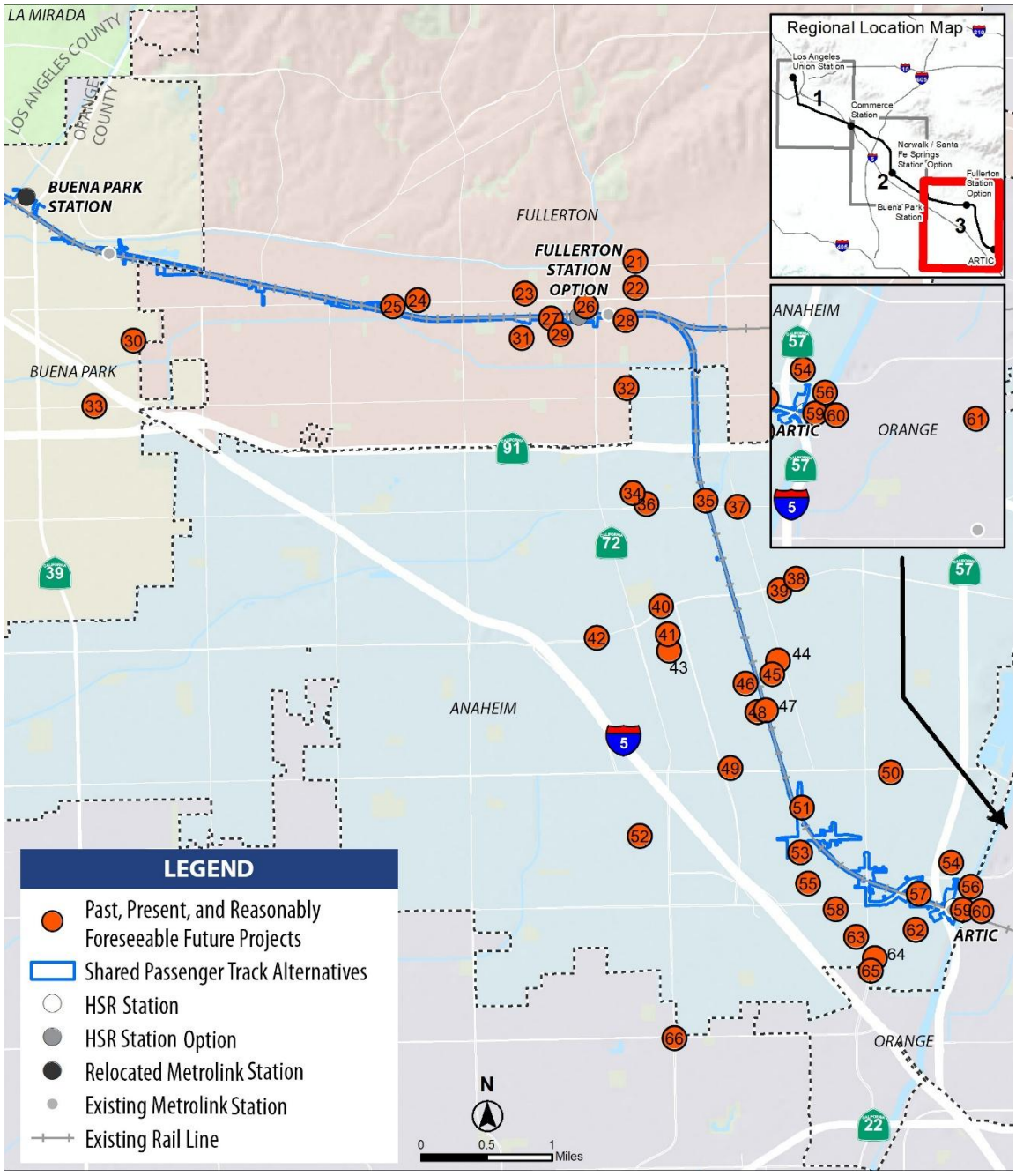
Source: ESRI 2024

Figure 3.19-1 Reasonably Foreseeable Land Development Projects Included in the Cumulative Project List, Sheet 1 of 3



Source: ESRI 2024

Figure 3.19-1 Reasonably Foreseeable Land Development Projects Included in the Cumulative Project List, Sheet 2 of 3



Source: ESRI 2024

Figure 3.19-1 Reasonably Foreseeable Land Development Projects Included in the Cumulative Project List, Sheet 3 of 3

Table 3.19-3 and Appendix 3.19-B reflect consideration of the adjacent Burbank to Los Angeles Project Section and applicable state and local projects and plans, listed primarily in regional transportation plans and general plan transportation elements. The Authority reviewed these plans to identify relevant planned and programmed transportation improvements considered in the cumulative setting and relevant impact analyses. Funded and programmed improvements on the intercity highway network are based on financially constrained regional transportation plans developed by regional transportation planning agencies. The Authority developed these lists after consultation with affected jurisdictions via mailed correspondence containing a description and

map of the project section. The Authority also conducted research on projects proposed in the cumulative RSA by affected jurisdictions via a search of publicly available documents and resources, including conducting an internet search of projects, plans, and proposals. The cumulative RSA differs by resource area and is defined for each resource in Table 3.19-1. The cumulative impacts analysis for each resource area considered only the reasonably foreseeable projects within the cumulative RSA particular to that resource area. Note that the early action projects described in Section 2.5.2.1, Overview and Summary of Project Features, of this Draft EIR/EIS are evaluated as part of the Shared Passenger Track Alternatives, and in combination with listed reasonably foreseeable projects.

Figure 3.19-2, sheets 1 through 4, maps the reasonably foreseeable transportation projects included in the cumulative project list presented in Table 3.19-3 and Appendix 3.19-B. A map identification number corresponding to the mapped project location is provided, where applicable.

Table 3.19-3 Cumulative Transportation Projects List

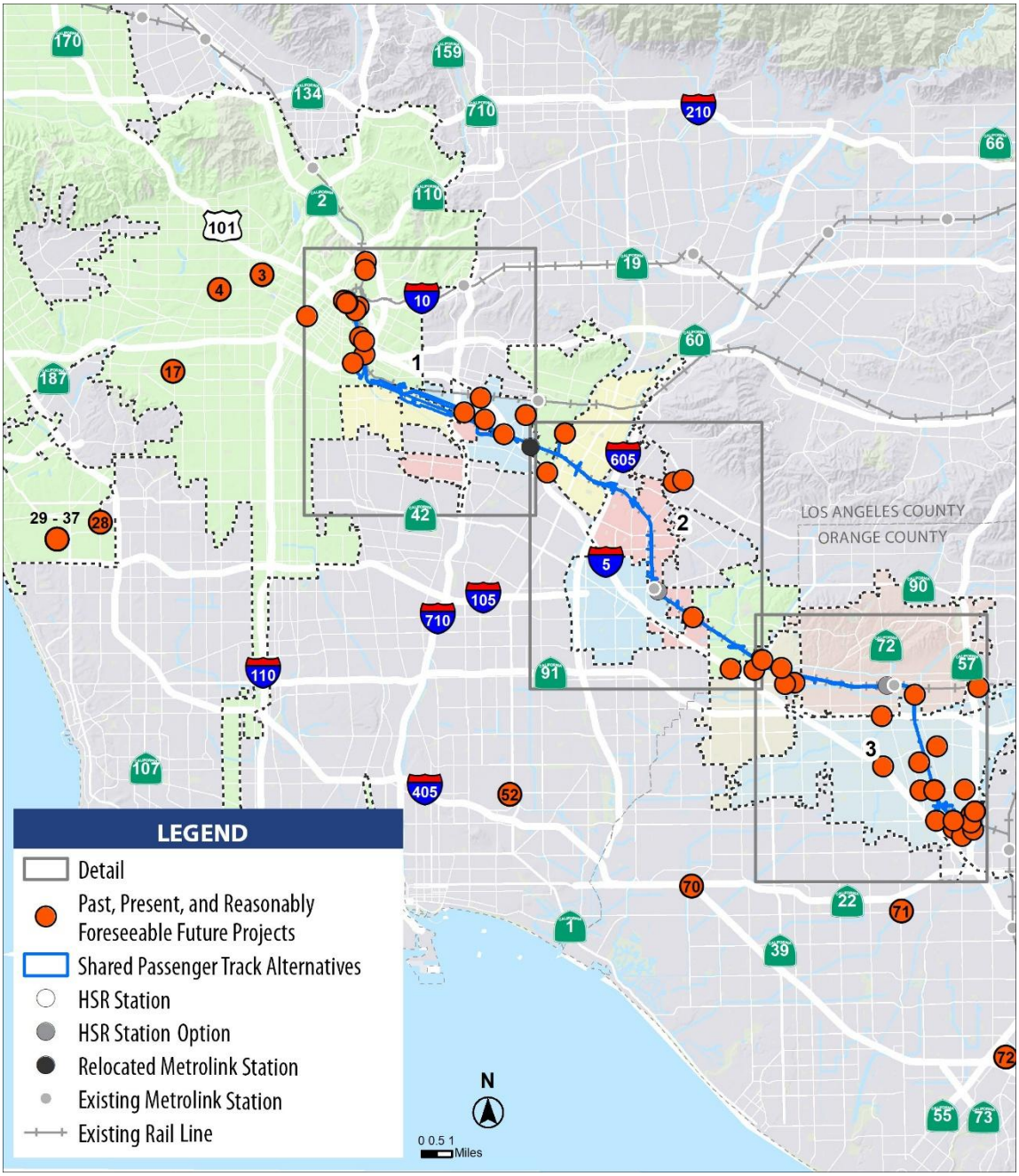
Label Number	Project Name
1	California High-Speed Rail Burbank to Los Angeles Project Section
--	Metrolink Southern California Optimized Rail Expansion (SCORE)
--	Antelope Valley Line Capacity and Service Improvements Program
--	Verdugo Road Improvement Project
2	N Spring St Bridge/Los Angeles River
3	Vermont Transit Corridor
--	Metro G Line Improvements Project
4	Metro Purple (D) Line Extension
--	Metro Red Line Extension
--	Coordinated Plan Development
5	Los Angeles Aerial Rapid Transit Project
6	Link Union Station (Link US)
--	Bike Station Deployment (FTIP ID: LA0G1182)
--	Long Beach-East LA Corridor Mobility Investment Plan
--	I-10 HOT Lanes (FTIP ID: 1HL08D03)
7	Coachella Valley-San Gorgonio Pass Rail
8	Metro 2028 Games Mobility Concept Plan
9	Southeast Gateway Line
10	LA River Path Project
11	Division 20 Portal Widening and Turnback Facility Project
12	Metro Regional Connector (completed)
13	6th St Viaduct Replacement Project (completed)
14	I-5 (FTIP ID: 1AL04-LARE-1701)
--	I-5 (FTIP ID: LAE2577)
--	SR 91: I-5 to SR 57 (FTIP ID: ORA210002)

Label Number	Project Name
--	SR 710 (FTIP ID: S1120082)
15	Los Angeles River Bike Path Gap Closure Project
--	Rosecrans and Alondra Bridge Repairs (FTIP: LAE1228)
16	Olympic Blvd and Mateo St Goods Movement Imp-Phase II (FTIP ID: LAF1205)
--	SR 19 (FTIP ID: S11200095)
17	Crenshaw/LAX Transit Corridor (completed)
18	Atlantic Ave and I-5 Freeway (Project ID: LA9919091)
--	Citywide street improvements – City of Vernon
--	Traffic signal improvements – City of Vernon
--	Citywide street improvements – City of Bell
--	Citywide signage updates (Project ID: LA9919223)
19	Washington Blvd Project (completed)
20	Metro Eastside Transit Corridor Phase 2
21	Sheila St and Commerce Way Intersection Improvements (FTIP ID: LA0G349) (completed)
--	Commerce Goods Movement Atlantic Blvd Washington Blvd to Como St (FTIP ID: LAF7201)
22	Washington Boulevard Pedestrian Improvements (Project ID: LA0G945)
--	Citywide Bicycle Improvements (Project ID: 1NL04-LAF1535)
--	Bridge Preventive Maintenance Program (FTIP: LA0G1108)
23	Washington Blvd Bridge over Rio Hondo Channel (Project ID: LA0G1106)
24	East-West Freight Corridor Segment 1 (RTP ID: 7120014)
25	Telegraph Rd Improvements (FTIP ID: LAF5114)
26	La Curata St Improvements (Project ID: LA0G1688)
--	Citywide Street Improvements – City of Montebello
--	Montebello Bus Lines Short Range Transit Plan
--	Local Roadway Safety Plan
--	I-605 Corridor Improvement Project
--	Imperial Hwy Fiber Optic Traffic Signal Communications Project (FTIP ID: LAF3305)
27	Lambert Rd Metro Rail Station First-Last Mile Plan
--	City of Buena Park Active Transportation Plan
--	Citywide Traffic Signal Upgrades and Safety Enhancements – City of Buena Park
--	Metro C Line (Green) Extension to Torrance
--	Rail Package – Mainline rail capacity expansion (RTIP ID: 2200G001)
28	LAX/Metro Transit Center (completed)
29	Airfield and Terminal Modernization Project
30	Automated People Mover (APM) Train System

Label Number	Project Name
31	Landside Access Modernization Program (LAMP)
32	Midfield Satellite Concourse – North/Baggage Optimization Project
33	Northside Development
34	Receiving Station X
35	Terminals 2 and 3
36	Terminals 4 and 5
37	Terminal 6
38	Rosecrans/Marquardt Grade Separation Project (FTIP ID: LA0G1047)
39	La Mirada View to Valley View track
40	Brea Creek Bike Path Extension (Planned)
41	Coyote Creek Bikeway (OC Loop Segments O, P, Q)
42	Annual Pavement Rehabilitation
--	BNSF Third Main Track and Grade Separation Project
43	Fullerton Airport Terminal Building Expansion
44	Commonwealth Ave Pavement Rehabilitation
45	Placentia Metrolink Station and Parking Structure
46	South Raymond Cul-De-Sac Infrastructure Improvements
47	FTIP ID: ORA000822 (No project name available)
48	Lincoln Ave Street Widening – East to Evergreen
49	Olive St Grade Crossing Improvements (completed)
50	RTP ID: 2M01126 (No project name available)
51	Direct Bury Cable Replacement FY-23/24
52	Phase II Terminal Area Improvements
--	Citywide Street Improvements – City of Anaheim
53	Anaheim Blvd and Ball Rd Intersection Improvements (completed)
54	Ball Road Rehab from Claudina St to State College Blvd
55	West Anaheim to ARTIC Bike Project
56	Wanda 12 kV Electric Line Extension Project Phase II
57	Cerritos Ave Private Street Improvements
--	SR 91 (SR 57 to SR 55) Improvement Project
58	River Rd from Katella Ave to Stanley Cup Way
59	River Rd Public Street Improvements from Stanley Cup Way to Cerritos Ave
61	Katella Ave Phase 1 Development - Public Storm Drain Improvements
60	Katella Ave Phase 1 Public Street Improvements
62	Douglas Rd Improvements

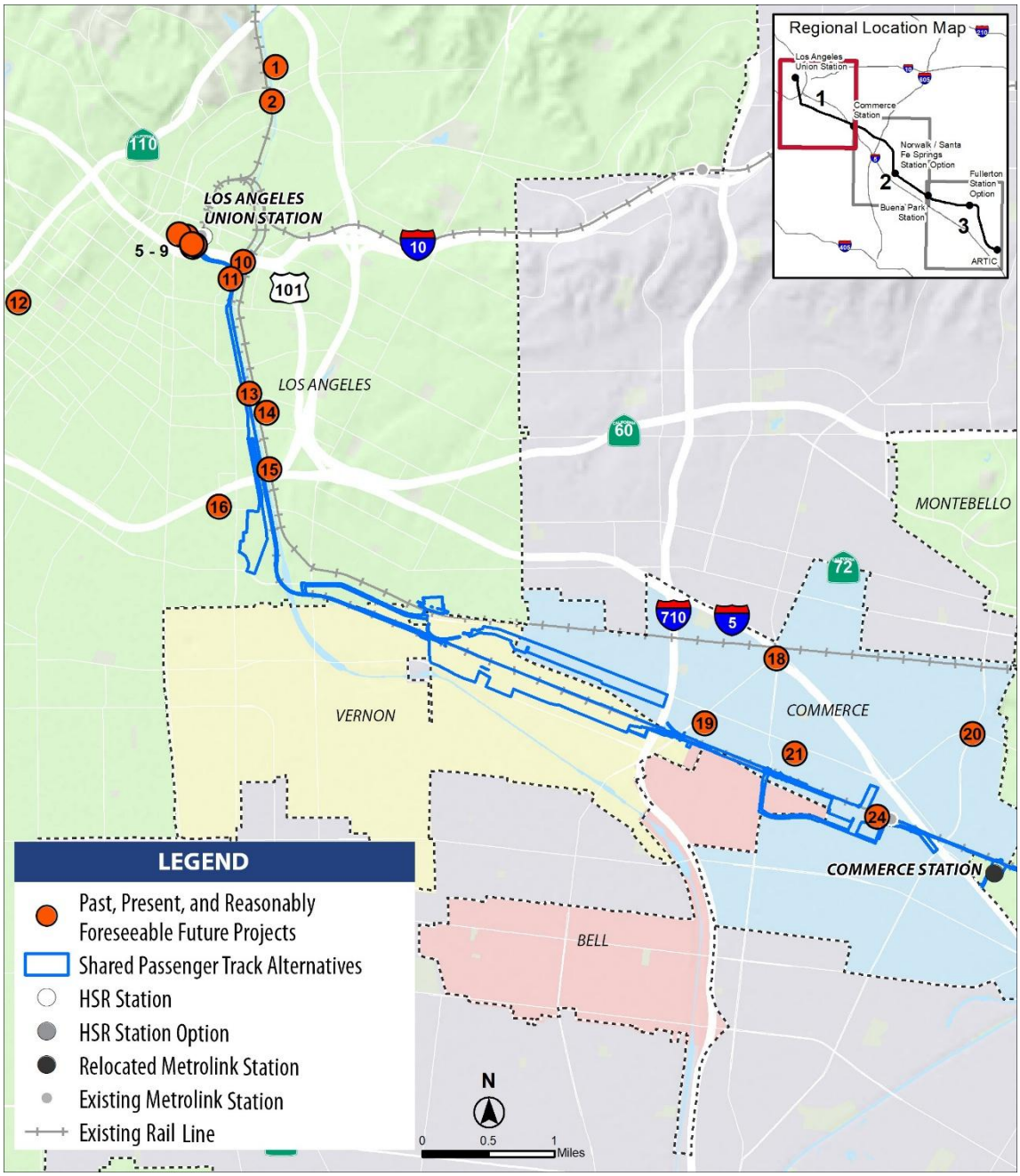
Label Number	Project Name
63	Katella Ave Improvements
64	UPRR Track Removal at Katella Ave
65	Platinum Triangle Line Extension – Phase II
66	ARTIC: Douglas Rd and Katella Ave Improvements
67	Gene Autry Way and State College Blvd (west side) (completed)
68	SR 57 Northbound Improvement Project (FTIP ID: ORA131303)
69	Orangewood Ave Improvements from State College Blvd to the Santa Ana River (CFD 3B-3C)
70	I-405 Improvement Project (SR 73 to I-605)
71	OC Streetcar
--	SR 55 (I-5 to SR 91)
72	John Wayne Airport Capital Improvement Program
--	Cycle 11 Projects
--	Cycle 12 Projects

ARTIC = Anaheim Regional Transportation Intermodal Center; BNSF = BNSF Railway; FTIP = Federal Transportation Improvement Program; FY = Fiscal Year; I = Interstate; HOT = high-occupancy toll; kV = kilovolt; LA = Los Angeles; LAX = Los Angeles International Airport; Metro = Los Angeles Country Metropolitan Transportation Authority; OC = Orange County; RTP = Regional Transportation Plan; SR = State Route; UPRR = Union Pacific Railroad



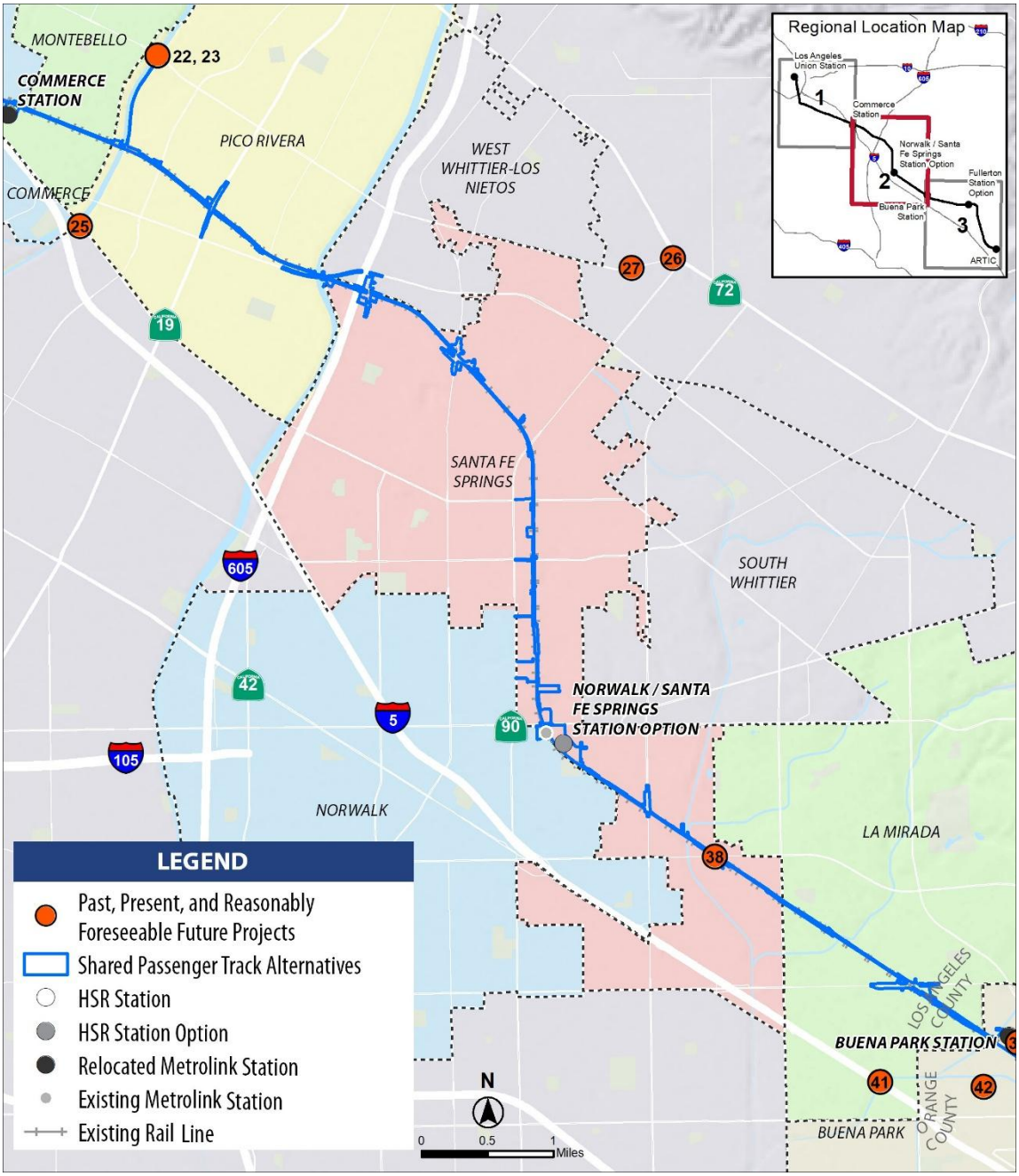
Source: ESRI 2024

Figure 3.19-2 Reasonably Foreseeable Transportation Projects Included in the Cumulative Project List, Sheet 1 of 4



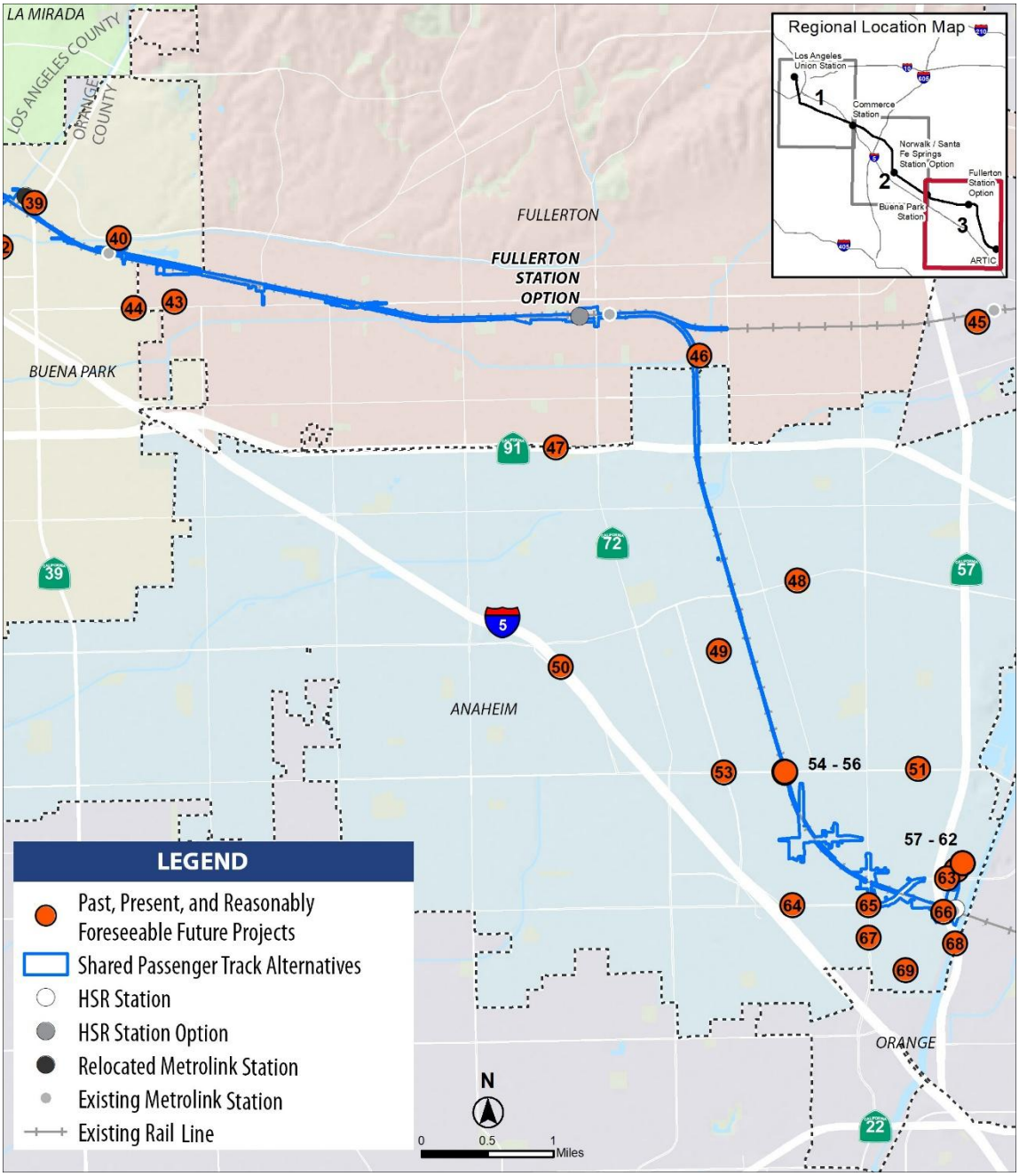
Source: ESRI 2024

Figure 3.19-2 Reasonably Foreseeable Transportation Projects Included in the Cumulative Project List, Sheet 2 of 4



Source: ESRI 2024

Figure 3.19-2 Reasonably Foreseeable Transportation Projects Included in the Cumulative Project List, Sheet 3 of 4



Source: ESRI 2024

Figure 3.19-2 Reasonably Foreseeable Transportation Projects Included in the Cumulative Project List, Sheet 4 of 4

Regional Projections

Population growth also contributes to cumulative development as additional land development would be needed to support growing populations. The Regional Transportation Plan/Sustainable Communities Strategy for the Southern California Association of Governments region covers Los Angeles, Orange, San Bernardino, and Riverside Counties.

Table 3.19-4 presents the population (2010 and 2021) and projections (2040) for the state and Los Angeles and Orange Counties. The average annual growth rate for Los Angeles County was

0.2 percent, which is less than the state average annual growth rate of 0.5 percent from 2010 to 2021. The annual growth rate for Orange County from 2010 to 2021 is the same as the state average (0.5 percent). Refer to Table 3.18-7 and Table 3.18-8 in Section 3.18 for additional details regarding annual growth rates in the cities in the region. Table 3.19-4 indicates that Los Angeles County is projected to experience population decline, whereas Orange County is expected to increase in population. As presented in Table 3.8-8 in Section 3.18, the projected population for the state from 2021 to 2040 is expected to increase by approximately 651,000 or 0.15 percent. General plans and other planning documents in each of the counties and incorporated cities in the region have occurred in preparation for this projected growth. Table 3.19-5 lists the projected 2040 total employment in Los Angeles and Orange Counties individually, and the state of California.

These projections represent the future condition under the No Project Alternative, as discussed in Chapter 2, Alternatives, Section 2.6.1.1, of this Draft EIR/EIS. These projections are considered under individual resource areas, as applicable, throughout the cumulative impacts analysis in Section 3.19.4, Cumulative Impacts Analysis.

Table 3.19-4 Projected Population Growth: Los Angeles and Orange Counties (2010–2040)

County	2010 Total Population	2021 Total Population	Percent Average Annual Growth Rate, 2010–2021	2040 Forecasted Population	Percent Average Annual Growth Rate, 2021–2040
Population					
Los Angeles	9,818,605	10,019,635	0.2	9,306,800	-0.67
Orange	3,010,232	3,182,923	0.5	3,283,800	0.28
California	**37,254,000**	**39,455,300**	**0.5**	**40,106,400**	**0.15**

Sources: U.S. Census Bureau 2010, 2021, Table P1 and DP05; California Department of Finance 2023

Table 3.19-5 Regional Long-Range Employment Projections

Area	Number Employed 2021	Projected Employment 2040	Percent Change (2021–2040)	Annual Average Percent Change
Los Angeles County	4,885,032	5,225,800	7.0	0.37
Orange County	1,596,831	1,898,900	18.9	0.99
California	**17,588,342**	**20,802,000**	**18.3**	**0.96**

Sources: EDD 2025; projected 2040 employment data are from SCAG 2020
Data may appear to not add up correctly because of rounding. The California Employment Development Department does not provide labor market data at the neighborhood level.
Note that city-level employment data are discussed more in detail in Section 3.12.

Future development projects in Los Angeles and Orange Counties include implementation of general and specific plans throughout the counties. Growth in the region and populations within the communities RSA would add residential and business developments and associated infrastructure to the landscape. The counties' forecast population growth would add residential and nonresidential (e.g., commercial, industrial, recreational) developments and associated infrastructure to the landscape. Planned and other reasonably foreseeable projects under the No Project Alternative would include commercial and industrial land developments and utility construction projects. In addition, large residential housing developments consisting of single- and multifamily residential units, condominiums, and apartment projects are planned in the area. Planned and other reasonably foreseeable projects under the No Project Alternative would also include transportation projects such as highway and freeway improvements, grade separations,

street improvements, interchange improvements, airport expansions and improvements, rail and bus improvements, freight rail improvements, and port improvements. A full list of anticipated future development projects is provided in Appendices 3.19-A and 3.19-B.

The residential and nonresidential growth expected in and around Los Angeles and Orange Counties is anticipated to alter land use patterns, convert existing land uses to transportation land uses, and result in incompatibility between adjacent land uses. Residential land uses are the most common sensitive receptors. Other sensitive receptors along the corridor include schools, daycare facilities, medical facilities, and elder care establishments.

3.19.3.6 Cumulative Condition

The combined environmental influence of the past, present, and reasonably foreseeable future actions described in Regional Projections and Appendices 3.19-A and 3.19-B in conjunction with the project is referred to as the "cumulative condition" through 2040. Each cumulative impacts analysis includes a discussion of the cumulative condition relevant to that resource. Projected growth and conversion of land to urban and transportation uses associated with the cumulative condition, as reflective of adopted city and county general plans, regional transportation plans, as well as the reasonably foreseeable project list, is anticipated to have an environmental effect in the area crossed by the project through 2040. Los Angeles County population forecasts project a decrease at 0.67 percent and Orange County's population is forecast to grow at 0.28 percent through 2040. This fluctuation in population will translate into continued conversion of land not currently used for transportation to transportation-focused uses. The urban environment will continue to intensify as a result of anticipated state population growth and redevelopment of land into residential, business, and commercial uses. The relevant adopted general plans for the counties, cities, and unincorporated areas promote dense urban development. Under the cumulative condition, increases would occur concerning traffic, ambient noise levels, energy and water demands, impervious surface areas (which would affect the quantity and quality of stormwater runoff), and demands for public services, public and recreational facilities, and utility and service systems.

3.19.3.7 Contribution of the Shared Passenger Track Alternatives

This analysis first considers the impacts of the Shared Passenger Track Alternatives in combination with other reasonably foreseeable projects listed in Appendices 3.19-A and 3.19-B to determine if it could result in a cumulative impact within a specific resource area (e.g., transportation, noise and vibration, biological resources) and whether the cumulative impact would be significant or less than significant. If a cumulative impact is identified for a resource, then the Authority will determine whether the project's incremental contribution to the cumulative impact would be cumulatively considerable. The analysis then describes additional feasible mitigation measures beyond those already identified, if available, to address the contribution.[2]

The project's contribution to cumulative impacts assumes the incorporation of the Authority's relevant IAMFs (Chapter 2 and Appendix 2-A, Impact Avoidance and Minimization Features) and the application of mitigation measures identified for the Shared Passenger Track Alternatives in the individual resource analyses in Chapter 3 (i.e., Sections 3.2 through 3.18). In addition to including IAMFs and mitigation, the project design and project footprints have been refined during the environmental planning process to avoid or minimize impacts while meeting the project purpose and objectives. Where appropriate, additional feasible mitigation measures are proposed that could reduce the project's cumulatively considerable contribution.

Through the planning horizon of 2040, the project could have environmental impacts that are cumulatively considerable in some areas and would reduce a potential cumulative impact in other areas, as described in the resource-specific sections.

[2] This analysis is included to comply with CEQA, which requires a determination as to whether the project's contribution to cumulative impacts are "cumulatively considerable." Refer to Section 3.19.2.2, State, for further information.

3.19.3.8 CEQA Conclusion

The analysis concludes with a determination of CEQA significance for each resource topic where applicable. This conclusion specifically identifies whether there would be significant cumulative impacts under CEQA and whether the contribution of the project, after applicable mitigation, would be cumulatively considerable.

3.19.4 Cumulative Impacts Analysis

3.19.4.1 Transportation

Cumulative Condition

The cumulative condition relevant to transportation consists of the Shared Passenger Track Alternatives; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Whittier, Buena Park, Fullerton, Anaheim, Orange, South Whittier, and unincorporated community of West Whittier–Los Nietos; the directly adjacent Burbank to Los Angeles Project Section; the Link Union Station (Link US) project; and relevant planned and future residential, commercial, industrial, recreational, and transportation projects listed in Appendices 3.19-A and 3.19-B. Under the cumulative condition, ongoing urban development would be expected to continue within the project's cumulative RSA, outpacing roadway expansion. On September 2, 2020, the Southern California Association of Governments' Regional Council unanimously voted to approve and fully adopt the *Connect SoCal 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy* under Senate Bill 375. This document is a long-range visioning plan that builds on and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. Traffic volumes on roadways in the project's cumulative RSA would be expected to increase because of planned and future development activity, thereby affecting signalized intersections, unsignalized intersections, and roadway segments.

Under NEPA, cumulative impacts relevant to transportation would occur if the effects of these projects and planned development were to combine to cause adverse roadway and freeway level of service impacts. Under CEQA, cumulative impacts would occur if the Shared Passenger Track Alternatives, when considering planned projects, would result in significant cumulative impacts on vehicle miles traveled (VMT), pedestrian, bicycle, or transit conditions; and freight rail and passenger rail operations.

Contribution of the Shared Passenger Track Alternatives

Construction

Local and regionally planned transportation projects such as the Interstate (I-) 5 Freeway Expansion Project, I-10 High-occupancy Toll Lanes Project, Southern California Association of Governments Telegraph Road Improvements, and I-605 Corridor Improvement Project, among multiple other smaller projects, are intended to accommodate the expected increase in traffic related to development in the region. However, if work on multiple projects were to overlap with construction of the Shared Passenger Track Alternatives and the directly adjacent Burbank to Los Angeles Project Section, cumulative impacts related to traffic delays and detours for travel in the region would occur. Planned and future development such as the City of Commerce 142,511-square-foot Commerce Retail Center Project, Modelo Project, City of Fullerton The Fox Block, Casa Nella, Streetlights, City of Anaheim Stadium Towers, Parkwest Development, OCVIBE, Disneyland Forward, and multiple other projects would likely require temporary construction easements and may result in the temporary closure of parking areas and roadway travel lanes. Planned highway projects, or other developments directly adjacent to highways, could require temporary reductions in lane widths and reductions in speed limits, which would contribute to cumulative impacts on traffic circulation and congestion in construction zones. Indirect cumulative impacts would result if these direct cumulative impacts combined and temporarily limited or detoured pedestrian and bicycle access or limited or slowed access of emergency responders.

Pedestrian and bicycle travel in the RSA may be temporarily affected during construction of the Shared Passenger Track Alternatives and cumulative projects. Detoured vehicular traffic would likely result in longer delays at pedestrian and bicycle crossings because of the increase in vehicle demand at traffic signals and other traffic-control devices. Project-related construction staging and traffic would have temporary impacts on bus transit, such as temporary closure and relocation of bus stops, temporary rerouting of bus lines because of roadway closures, and temporary closures and relocation of sidewalks, crosswalks, and curb ramps used to access bus stops. The construction-related activities would lead to temporary delays of buses because of changes in vehicle circulation and increased travel time along roadways and at HSR station areas. Temporary construction easements would require the temporary closure of parking areas, bus stops, or roadway travel lanes. Roadway closures would occur periodically at night or on weekends, as necessary, which would reduce the potential effect on transit service when it is heaviest during the day on weekdays. Bus stops would be temporarily relocated to nearby locations so that service would not be disrupted. The Shared Passenger Track Alternatives include **TR-IAMF#2, Construction Transportation Plan**; **TR-IAMF#4, Maintenance of Pedestrian Access**; **TR-IAMF#5, Maintenance of Bicycle Access**; **TR-IAMF#11, Maintenance of Transit Access**; **TR-IAMF#12, Pedestrian and Bicycle Safety**; and **TR-IAMF#13, Stakeholder Coordination with Transportation Agencies**, as part of the project design to avoid and minimize temporary transportation impacts.

Taken together, the features of the Shared Passenger Track Alternatives, along with the transportation safety measures of other proposed development projects, would minimize temporary construction impacts on the transportation network. On a cumulative basis, while some level of disruption in traffic would be expected if construction schedules of planned development and transportation improvements were to occur simultaneously, this disruption would be temporary, and individual projects would contain measures to avoid major traffic delays, likely similar to the IAMFs and mitigation measures that are part of the project. Therefore, it is anticipated that temporary impacts of construction of multiple projects would combine to result in less-than-significant cumulative impacts. In addition, the Shared Passenger Track Alternatives would not contribute to a cumulatively considerable increase in transportation circulation and access impacts during construction.

Construction of the Shared Passenger Track Alternatives would temporarily disrupt freight and passenger rail service, because tracks would be modified throughout the corridor and a new fourth mainline track would be added from Redondo Junction to Fullerton Junction. A significant cumulative impact would occur if the project, in combination with cumulative projects, would substantially affect freight or passenger rail operations during construction. Shared Passenger Track Alternative A would maintain some of the existing tracks within the corridor, and would shift or realign the existing tracks at some locations. Trains could also be rerouted onto other open tracks where feasible. Construction of HSR station facilities and modifications to existing passenger rail stations would temporarily affect station platform or parking capacity, but passenger rail service could be maintained. The future condition of the BNSF Railway (BNSF) Cajon Subdivision brought by the California Department of Transportation–sponsored High Desert Operational Efficiency Project would provide sufficient staging capacity for freight during HSR project construction. Freight trains held on the High Desert Operational Efficiency tracks would minimize delay for all passenger and freight operators in the corridor. To ensure that construction would not negatively affect existing and planned rail service within the corridor or transit service at passenger rail stations, the Authority will incorporate **TR-IAMF#11** and **TR-IAMF#13**, which require the Authority's contractor to prepare and implement specific Congestion Management Programs and requires the Authority to work closely with all agencies that provide freight or passenger rail services or maintain operating rights within the corridor to avoid service impacts. Because specific work windows for track construction activities have not yet been defined, the avoidance or minimization of potential disruptions to freight and passenger rail weekday services cannot be ensured at this time. The Authority would implement **TRAN-MM#6, Prepare Track Construction Work Window Plan**, to further reduce adverse effects on freight and passenger rail services during project construction by requiring the Authority to coordinate with freight and passenger rail agencies and operators to identify specific work windows for track

construction activities that minimize disruption to freight and passenger rail services within the project corridor to the maximum extent feasible. Therefore, cumulative significant impacts are not anticipated, and the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Operation

In the long term, total VMT would be reduced with operation of the Shared Passenger Track Alternatives, and VMT reductions would be expected to improve each year of operation. Total VMT reductions are included in Tables 3.2-24, 3.2-25, and 3.2-26. The reduction change in VMT represents the total number of vehicle miles driven that would be removed from regional roadways. The project would provide benefits to the regional transportation system by reducing vehicle trips on the freeways through the diversion of intercity trips from road trips to HSR. This is a net benefit to transportation and traffic operations because a reduction in VMT helps maintain or potentially improve the operating conditions of regional roadways. Consistent with the State CEQA Guidelines, the Shared Passenger Track Alternatives would have a less-than-significant impact on transportation as a transportation project that reduces VMT. The Shared Passenger Track Alternatives, in combination with cumulative projects, would result in an overall decrease in VMT throughout the state, resulting in a beneficial impact on VMT. Given the project's overall reduction in VMT, the contribution of the project to cumulative transportation impacts would be less than significant and, in fact, beneficial.

In the cumulative scenario in Year 2040, the Shared Passenger Track Alternatives and cumulative projects within the RSA would be fully operational. Transit and nonmotorized (i.e., bicycles and pedestrians) trips around the proposed HSR station at the Anaheim Regional Transportation Intermodal Center would increase because of the addition of passengers and HSR workers traveling to station areas. Existing and planned pedestrian and bicycle facilities serving the vicinity of the Anaheim Regional Transportation Intermodal Center under the cumulative scenario are expected to adequately meet service demand from the cumulative projects because Shared Passenger Track Alternative A also provides facilities on site to support these additional trips. The Shared Passenger Track Alternatives would not conflict with adopted policies, plans, or programs regarding pedestrian, bicycle, or transit facilities, or otherwise materially decrease the performance of such facilities. Incorporation of **TR-IAMF#12** would ensure that safe and accessible bike and pedestrian facilities are provided at station areas, which would maintain or enhance nonmotorized access. Facilities would be designed to meet the latest standards and guidance and would provide adequate access. Additionally, incorporation of **TR-IAMF#13** will ensure that the Authority works closely with all agencies that provide bus service to existing and planned rail stations to define roles and responsibilities, inclusive of operational and maintenance responsibilities, to prevent effects on existing and planned bus routes servicing rail stations within the project corridor. Given this, the Shared Passenger Track Alternatives, combined with cumulative projects, would not materially harm the ability of other transit services to serve their customers and impacts under CEQA would be less than significant.

Implementation of HSR would not put any constraints on the current passenger operator agreements within the corridor or preclude plans for growth. Additionally, the project would improve overall efficiency along the corridor by adding a fourth mainline track, building five new grade separations, and modifying tracks at Commerce Yard and Fullerton Junction to separate freight and passenger trains. Although available work windows may be constrained under the cumulative project scenario compared to existing conditions, existing and forecasted 2040 freight levels can be accommodated in the areas where HSR, passenger rail, and freight rail would share tracks because adequate durations of track access would be available to complete track moves to serve freight customers, based on review of data on freight operations in the corridor. The California Department of Transportation–sponsored High Desert Operational Efficiency project would provide sufficient staging capacity for freight during HSR operation. The High Desert Operational Efficiency staging tracks allow freight trains to be staged outside of the Los Angeles – San Diego – San Luis Obispo Rail Corridor, instead of having to stage them on tracks within the constrained project section. Freight trains held on the High Desert Operational Efficiency tracks would be scheduled so they are in the correct operating window when they

reach Fullerton Junction, minimizing delays for all passenger and freight operators in the corridor. Infrequently, it is possible that freight operators may need to use longer trains or additional trains, or stagger deliveries over two nights in the limited situations when deliveries cannot be made in a single night because of somewhat more constrained nighttime work windows. Consequently, the compression of freight service hours would not result in a diversion of freight hauling from freight trains to trucks or other modes and, therefore, would not result in any potential secondary impacts related to air quality, greenhouse gas (GHG) emissions, noise, or traffic congestion. The Authority will incorporate **TR-IAMF#13**, which will further define the roles and responsibilities within the shared corridor, including operational and maintenance responsibilities. HSR operations would not affect the ability of other passenger rail operators' or BNSF's ability to maintain current or planned service levels. Impacts related to freight rail operations would be less than significant because the cumulative projects would not result in impacts on freight capacity or operations. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

CEQA Conclusion

The Shared Passenger Track Alternatives include **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, **TR-IAMF#12**, and **TR-IAMF#13** as part of the project design to avoid and minimize temporary transportation impacts. The temporary impact under CEQA on passenger and freight rail operations during construction of the project would be potentially significant before mitigation. **TRAN-MM#6** would be implemented and requires the Authority to coordinate with freight and passenger rail agencies and operators to identify specific work windows during which track construction activities could occur that will minimize disruption to freight and passenger rail services within the project corridor to the maximum extent feasible. With implementation of **TRAN-MM#6**, the cumulative impact to which the Shared Passenger Track Alternatives would contribute under CEQA related to temporary impacts on passenger and freight rail operations during construction would be less than significant. The Shared Passenger Track Alternatives would result in a cumulative beneficial impact and reduction of VMT and would result in less-than-significant impacts related to pedestrian and bicycle transit facilities and freight rail once operational. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

3.19.4.2 Air Quality and Global Climate Change

Cumulative Condition

Under the cumulative condition, ongoing urban development and construction activities are expected to continue within the cumulative RSA, and planned development and regional growth would continue to contribute to emissions of air pollutants. The cumulative condition relevant to air quality and global climate change consists of the Shared Passenger Track Alternatives; development under general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, and the unincorporated community of West Whittier–Los Nietos; reasonably foreseeable projects identified in the regional transportation plans prepared by metropolitan planning organizations in the South Coast Air Basin (SCAB); and relevant residential, commercial, industrial, recreational, and transportation cumulative projects identified in Appendices 3.19-A and 3.19-B.

Construction of planned transportation improvements, including the directly adjacent Burbank to Los Angeles Project Section, the Link US project, and planned expansion of I-5 Freeway Expansion Project in Norwalk, the Long Beach-East LA Corridor Mobility Investment Plan, and projects associated with the Metro 2028 Games Mobility Concept Plan, would likely result in impacts on air quality from construction emissions. These projects would contribute to increases in vehicle travel associated with long-term growth and worsen air quality. Although there would be cumulative air emissions generated in the region, the Shared Passenger Track Alternatives would help the region attain air quality standards and plans by reducing the amount of regional traffic and providing an alternative mode of transportation.

Regulatory agencies continue to pass more stringent GHG emission standards with the goal of reducing the amount of pollutant emissions in the atmosphere. Although many of these regulations have not yet been implemented, they are anticipated to be in effect prior to the project planning horizon of 2040. Even with these regulatory reductions, the expected growth in the region would result in significant cumulative increases in GHG emissions. To the extent that electricity used by the Shared Passenger Track Alternatives is generated by fossil-fueled power plants, indirect GHG emissions impacts from power generation facilities would occur. However, the project would decrease GHG emissions by reducing vehicle and aircraft trips. This reduction in GHG emissions would more than offset the increase in GHG emissions associated with project energy use.

Contribution of the Shared Passenger Track Alternatives

Air Quality

Construction

The South Coast Air Quality Management District (SCAQMD), which has jurisdiction over the SCAB, recommends that a project's potential contribution to cumulative impacts be assessed using the same significance criteria as those for project-specific impacts. Therefore, the analysis in this section uses the project section's emissions estimates to determine whether emissions of criteria pollutants would exceed SCAQMD's air quality thresholds. The air district thresholds have been adopted based on federal requirements to meet air quality standards and to prevent deterioration of ambient air quality. SCAQMD guidance (SCAQMD 2003) states that if an individual project results in emissions that are less than the significance thresholds, the impact is considered to be less than significant for CEQA purposes. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable increase in emissions for those pollutants that do not exceed the adopted SCAQMD threshold.

Construction of the Shared Passenger Track Alternatives would contribute to temporary cumulative impacts on regional emissions and, when combined with cumulative projects that are built during the same timeframe, could cause or exacerbate an exceedance of air quality standards. The main pollutants associated with construction of the HSR alignment and stations would be fugitive dust (particulate matter smaller than or equal to 10 microns in diameter [PM_{10}] and particulate matter smaller than or equal to 2.5 microns in diameter [$PM_{2.5}$]) from earthmoving and disturbed earth surfaces, and combustion pollutants (particularly nitrogen oxides [NO_X] and reactive organic gases, which are ozone precursors) from heavy equipment and trucks. As discussed in Section 3.3, Air Quality and Global Climate Change, incorporation of **AQ-IAMF#1, Fugitive Dust Emissions**; **AQ-IAMF#2, Selection of Coatings**; **AQ-IAMF#3, Renewable Diesel**; **AQ-IAMF#4, Reduce Criteria Exhaust Emissions from Construction Equipment**; and **AQ-IAMF#5, Reduce Criteria Exhaust Emissions from On-Road Construction Equipment**, will reduce air quality impacts through application of all best available on-site controls to reduce construction emissions. These features include emissions reduction measures, such as watering exposed surfaces twice daily, watering unpaved roads three times daily, reducing vehicle speeds on unpaved roads to 15 miles per hour, ensuring that loads in haul trucks are covered, using low-volatile organic compound paint, using diesel fuel derived from renewable sources, and using diesel engines that meet Tier 4 emission standards.

With incorporation of IAMFs, emissions of reactive organic gases, carbon monoxide, PM_{10}, $PM_{2.5}$, and sulfur dioxide for Shared Passenger Track Alternative A would remain below the SCAQMD daily regional significance thresholds. Emissions of NO_X, however, would still exceed the SCAQMD daily regional significance thresholds, resulting in a significant cumulative impact. The project would result in a cumulatively considerable contribution to a significant cumulative impact associated with emissions of regional air pollutants in the SCAB. Certain individuals residing in areas that do not meet the California Ambient Air Quality Standards or National Ambient Air Quality Standards, including the SCAB, could be exposed to pollutant concentrations that cause or aggravate acute or chronic health conditions.

AQ-MM#1, Offset Project Construction Emissions in the SCAB; **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 to address threshold exceedances. **AQ-MM#1** will offset NO_X threshold exceedances from construction equipment and vehicles. **AQ-MM#2** will reduce the impact of construction emissions from project-related on-road vehicles and off-road equipment. **AQ-MM#3** requires adherence to best industry practices for large stationary equipment (e.g., combustion equipment, paint booths, wastewater treatment), or the use of alternative equipment, to the extent practicable, to reduce emissions of criteria pollutants. However, even after implementation of **AQ-MM#1** through **AQ-MM#3**, NO_X emissions would continue to exceed the SCAQMD daily regional CEQA project-level thresholds and the U.S. Environmental Protection Agency General Conformity *de minimis* levels during construction, and the project would contribute to a cumulatively significant level of regional air pollution in the SCAB.

As presented in Section 3.3, emissions related to hazardous material hauling through the San Joaquin Valley Air Basin would be below San Joaquin Valley Air Pollution Control District significance thresholds and the General Conformity *de minimis* levels. The applicable air quality plans for the project emissions within the San Joaquin Valley Air Basin are the 2022 Plan for the 2015 8-hour Ozone Standard, the 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard, and the 2024 Plan for the 2012 Annual PM2.5 Standard. These different San Joaquin Valley Air Pollution Control District plans will help the San Joaquin Valley Air Basin meet its attainment goals for ozone and $PM_{2.5}$.

The emissions results in Tables 3.3-15 through 3.3-26 assume incorporation of project design features. With incorporation of **AQ-IAMF#1**, **AQ-IAMF#2**, **AQ-IAMF#3**, **AQ-IAMF#4**, and **AQ-IAMF#5**, Shared Passenger Track Alternative A will be consistent with the Transportation Control Measures and the stationary control measures from the SCAQMD 2022 Air Quality Management Plan and will help reduce criteria and toxic air pollutant emissions in the SCAB. Additionally, incorporation of the IAMFs will be consistent with the goals of the Mojave Desert Air Quality Management District 2023 Federal 70 parts per billion Ozone Attainment Plan, because these IAMFs will help reduce ozone emissions. For the San Joaquin Valley Air Pollution Control District, incorporation of **AQ-IAMF#5** will assist in its implementation of the 2022 Plan for the 2015 8-Hour Ozone Standard, and 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard, because **AQ-IAMF#5** requires the use of model year 2020 and up haul trucks, which emit fewer ozone precursors. Project construction would not impede the Mojave Desert Air Quality Management District from implementing its ozone reductions and attainment goals listed in the 2023 Federal 70 parts per billion Ozone Attainment Plan, as project emissions in the Mojave Desert Air Basin would not exceed the applicable Mojave Desert Air Quality Management District thresholds. However, the IAMFs incorporated as part of the Shared Passenger Track Alternatives would not entirely avoid temporary impacts on implementation of the 2022 SCAQMD Air Quality Management Plan. Mitigation measures would further minimize, reduce, avoid, or offset temporary effects. Although **AQ-MM#1**, **AQ-MM#2**, and **AQ-MM#3** would be implemented to minimize impacts, the impact under CEQA would remain significant and unavoidable, because the NO_X emission exceedances would delay SCAQMD from achieving its attainment goals listed in the 2022 Air Quality Management Plan. Localized air quality analysis includes evaluating whether there would be concentrations of certain criteria pollutants and toxic air contaminants that could affect sensitive receptors within 1,000 feet of construction areas.

The principal project-associated emission that could cause health risks would be diesel particulate matter (DPM) emitted by heavy-duty construction equipment and vehicles.

Construction of the Shared Passenger Track Alternatives has the potential to create inhalation health risks and exposure to DPM, which may exceed SCAQMD significance thresholds for increased cancer and noncancer health risk at sensitive receptor locations (residential and worker) adjacent to the project. Construction would result in DPM emissions primarily from diesel-fueled off-road equipment and heavy-duty trucks operating on site at each of the six construction segments. The emissions result in Table 3.3-37 provides the cancer and noncancer maximum risk results from construction of the project at residential and worker receptors, reflecting inclusion of **AQ-IAMF#3**, **AQ-IAMF#4**, and **AQ-IAMF#5**. As presented in Table 3.3-37, cancer risk and noncancer risks were less than SCAQMD thresholds. For projects to combine to result in a

cumulative cancer risk and chronic and acute health hazard, the emissions of these pollutants from construction or operation of multiple projects would have to occur in close proximity to nearby sensitive receptors and would have to overlap in time. Because the detailed construction schedules for the cumulative projects listed in Appendices 3.19-A and 3.19-B are unknown, and the detailed timing of HSR-related construction activities in proximity to each sensitive receptor is also unknown, it cannot be determined with certainty whether potential construction activities associated with these projects would occur within 1,000 feet of a given sensitive receptor concurrently with HSR-related construction activities within 1,000 feet of the same receptor. Therefore, it is conservatively assumed that there may be some overlap with project construction. The Shared Passenger Track Alternatives would not result in or contribute to a cumulative impact during construction that would result in an increase in health risks in the majority of the project section. However, 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 California Ambient Air Quality Standards and National Ambient Air Quality Standards. Lead-based paint and asbestos, if encountered during structure demolitions and relocations, would be handled and disposed of in accordance with applicable standards. Even with implementation of mitigation measures, the Shared Passenger Track Alternatives' contribution to cumulative air quality impacts would be cumulatively significant under CEQA. Therefore, the Shared Passenger Track Alternatives would result in a cumulatively considerable contribution to a significant cumulative impact associated with the increase in NO_X emissions in the SCAB.

The Shared Passenger Track Alternatives would not result in or contribute to a cumulative impact during construction that would result in an increase in health risks in the majority of the project section. However, 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 California Ambient Air Quality Standards and National Ambient Air Quality Standards. Lead-based paint and asbestos, if encountered during structure demolitions and relocations, would be handled and disposed of in accordance with applicable standards. Even with implementation of mitigation measures, the Shared Passenger Track Alternatives' contribution to cumulative air quality impacts would be cumulatively significant under CEQA. Therefore, the Shared Passenger Track Alternatives would result in a cumulatively considerable contribution to a significant cumulative impact associated with the increase in NO_X emissions in the SCAB.

The Shared Passenger Track Alternatives would not introduce a substantial source of odor during construction. All odors would be localized and generally confined to the immediate area surrounding the construction site and cease once construction activities have been completed at a particular location. The Shared Passenger Track Alternatives, along with cumulative projects, would use standard construction techniques, and the equipment odors would be typical of most construction sites. Additionally, SCAQMD has adopted Rule 1108, which limits the amount of reactive organic gas emissions from cutback asphalt, which would also reduce construction-related odors. Therefore, construction odors would be temporary and would not affect nearby sensitive receptors. Consequently, the Shared Passenger Track Alternatives, combined with cumulative projects, would not result in a significant cumulative impact pertaining to construction odors.

Operation

Operation of the Shared Passenger Track Alternatives would benefit regional air quality by reducing VMT and aircraft emissions, which would reduce regional levels of criteria pollutants and mobile-source air toxics. Operation of the Shared Passenger Track Alternatives would not result in direct pollutant emissions from the trains, with the exception of wind-induced dust (i.e., PM_{10} and $PM_{2.5}$) from train movement. Wind-induced dust emissions would not exceed the SCAQMD thresholds (refer to Section 3.3.6.3). Emissions from power plants would increase because the HSR trains would use electricity, but the increases would be much smaller than the decreases from on-road vehicles and aircraft. Therefore, operation of the Shared Passenger Track Alternatives could result in a net reduction in criteria pollutant emissions. Summaries of the

regional criteria pollutant emissions associated with project operations are presented in Table 3.3-31 through Table 3.3-33. The reduction in emissions would help the region attain air quality standards and plans.

As discussed above, if an individual project results in emissions that are lower than the significance thresholds, the impact is considered to be less than significant for CEQA purposes. Because emissions would be lower than threshold levels and could result in an overall reduction in regional emissions, a significant cumulative impact would not occur. Given the project's overall reduction in regional emissions of criteria pollutants and mobile-source air toxics associated with operation, the contribution of the project to cumulative air quality impacts would be less than significant and, in fact, beneficial.

As presented in Table 3.3-46 and Table 3.3-47, the net change in health risks would decrease with implementation of the Shared Passenger Track Alternatives compared to existing conditions, and would not contribute to an incremental increase in project-level health risk impacts that would exceed the SCAQMD project-level threshold. However, as presented in Table 3.3-46, the existing cancer risk from Hobart Yard exceeds the SCAQMD health risk threshold of 10 in a million. Furthermore, the storage and support tracks at Hobart Yard may expose sensitive receptors to additional DPM emissions as part of the project. Because future activity is unknown for this project component, this could result in a potentially significant impact. To reduce this potential project-level impact, the Authority would implement **AQ-MM#4, Requirement of a Future Operational Health Risk Assessment**, which requires that an operational health risk assessment be conducted prior to the commencement of project operations and requires that additional feasible on- and off-site mitigation be analyzed and incorporated to reduce risks to the greatest extent practicable prior to project operations. However, because the level of activity for the 101,094 feet of storage and support track at Hobart Yard is unknown, there is still the potential that nearby sensitive receptors are exposed to DPM emissions that would result in a health risk impact exceeding the SCAQMD project-level thresholds, even with incorporation of **AQ-MM#4**. Therefore, the project-level impacts under CEQA related to permanent exposure of sensitive receptors to DPM generated during project operations would be significant and unavoidable. Cumulative impacts would occur in the event that sensitive receptors are exposed to DPM emissions that would result in an exceedance of SCAQMD thresholds. Given the unknown level of activities at Hobart Yard, a cumulatively significant impact is conservatively anticipated, and the project would result in a considerable contribution to this significant cumulative impact.

Greenhouse Gases

Construction

As discussed previously, SCAQMD, which has jurisdiction over the SCAB, recommends that a project's potential contribution to cumulative impacts be assessed using the same significance criteria as those for project-specific impacts. Therefore, the analysis uses the project's emissions estimates to determine whether GHG emissions would exceed SCAQMD's GHG thresholds. SCAQMD guidance (SCAQMD 2003) states that if an individual project results in emissions that are lower than the significance thresholds, the impact is considered to be less than significant for CEQA purposes, and the project would not result in a cumulatively considerable contribution to GHG emissions.

The emissions results take into account **AQ-IAMF#3**, which requires the Authority to use renewable diesel fuel in equipment and vehicles to reduce exhaust emissions of GHGs as well as **AQ-IAMF#5**, which requires that the average age of heavy-duty construction vehicle will be limited to a model year of 2020 or newer to reduce exhaust emissions. Emission reductions during operations from reduced auto and aircraft trips would offset the short-term construction-related contribution to increased GHG emissions. Construction of the Shared Passenger Track Alternatives, in combination with construction of the planned developments, would result in the temporary generation of GHG emissions for the duration of construction activities. However, the net GHG reductions achieved by project operations would offset the increase in GHG emissions generated during construction in about 1.2 months of operations, depending on the ridership scenario, because of reduced passenger vehicle travel on roadways. Based on this relatively

short offset time period, the overall GHG impacts (construction plus operation) of the Shared Passenger Track Alternatives would not represent a significant contribution to cumulative impacts under CEQA because of the long-term net reduction in GHG emissions from operation of the project.

The project would be consistent with the state's 2017 Climate Change Scoping Plan and 2022 Climate Change Scoping Plan, and the state's Assembly Bill 1279 2045 carbon neutrality goal. The operation of the project would reduce GHG emissions by substantially reducing light-duty passenger VMT in the region. As discussed above, the net GHG reductions achieved by operation of the project would offset the temporary increase in GHG emissions generated during construction in about 1.2 months of operations. Lastly, the operation of the project would help the state achieve its long-term GHG emission reduction goal under Assembly Bill 1279 by reducing GHG emissions in the transportation sector. Considering that the project would contribute to the attainment of statewide goals by reducing GHG emissions overall, cumulative GHG impacts would be less than significant, and the project contribution would be beneficial and not cumulatively considerable.

Operation

The Shared Passenger Track Alternatives would decrease GHG emissions by reducing vehicle trips, as discussed above for air quality and presented in Table 3.3-42 through Table 3.3-47 in Section 3.3. Additional GHG emissions from the light maintenance facility (LMF) and other project facilities or from electrical power generation would be more than offset by the reduction in GHG emissions from passenger travel. As discussed previously, given the project's net reduction in GHG emissions over time, it is consistent with the state's 2017 Climate Change Scoping Plan and 2022 Climate Change Scoping Plan, and the Assembly Bill 1279 2045 carbon neutrality goal, and would not result in a cumulatively considerable contribution to global climate change under CEQA. Therefore, the Shared Passenger Track Alternatives would result in a net decrease in GHG emissions, which would represent a beneficial (rather than cumulatively considerable) contribution to cumulative global climate change impacts.

CEQA Conclusion

The Shared Passenger Track Alternatives include IAMFs to minimize the potential for the violation of air quality standards or contribution to an existing or projected air quality standard violation in the SCAB. Construction activities during the 2031 to 2037 construction period of the project would contribute to cumulative air quality impacts because they would contribute to a violation of air quality standards (i.e., exceedances of the NO_X threshold). **AQ-IAMF#1**, **AQ-IAMF#2**, **AQ-IAMF#3**, **AQ-IAMF#4**, and **AQ-IAMF#5** will reduce or avoid air quality impacts through application of all best available on-site controls to reduce station construction emissions. The temporary impact under CEQA on regional and local air quality during construction of the project would be significant before mitigation. Consequently, **AQ-MM#1**, **AQ-MM#2**, and **AQ-MM#3** would be implemented. **AQ-MM#2** will reduce impacts from project-related on-road vehicles and off-road equipment, and **AQ-MM#3** will reduce impacts from large stationary equipment used in station construction. However, even after implementation of **AQ-MM#1** through **AQ-MM#3**, NO_X emissions would continue to exceed the SCAQMD regional CEQA project-level thresholds and the U.S. Environmental Protection Agency General Conformity *de minimis* levels during construction, and the project would contribute to a significant cumulative impact because of regional air pollution levels in the SCAB. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative air quality impacts in combination with other reasonably foreseeable projects would be cumulatively considerable.

Additionally, the operations health risk assessment demonstrated that cancer risks and noncancer risks would be less than SCAQMD thresholds. However, the results of the operations health risk assessment is based on the best available data provided to the Authority by BNSF, which does not include operational data for the proposed 101,094 feet of storage and staging tracks at Hobart Yard. The additional activity associated with these storage and staging tracks at Hobart Yard could result in increased emissions and associated increases in health risks for residential receptors downwind from the storage and staging tracks. Therefore, the modifications

to the Hobart Yard and BNSF mainline as part of the project could expose residential receptors to additional DPM emissions, and there is a possibility that the associated health risk may result in potentially significant impacts on nearby off-site receptors. The Authority would implement **AQ-MM#4** to reduce this impact but a significant cumulative impact is still conservatively anticipated and the project would result in a considerable contribution.

3.19.4.3 Noise and Vibration

Cumulative Condition

Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA. The cumulative condition relevant to noise and vibration consists of the Shared Passenger Track Alternatives and reasonably foreseeable projects; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, Orange, and South Whittier and the unincorporated community of West Whittier–Los Nietos; as well as the directly adjacent Burbank to Los Angeles Project Section and relevant planned and future residential, commercial, industrial, and transportation projects identified in Appendices 3.19-A and 3.19-B.

Contribution of the Shared Passenger Track Alternatives

Noise

Construction

Cumulatively considerable noise impacts would occur if noise-generating activities related to the Shared Passenger Track Alternatives, combined with the noise generated by other planned development and transportation projects, would expose people to harmful noise levels. Impacts would be cumulatively considerable during construction if the combined noise-generating activities of these projects result in the exceedance of FRA construction noise assessment criteria.

Analysts identified eight typical types of construction activities that would be used during project construction and evaluated a worst-case scenario where all pieces of construction equipment for each activity operate concurrently at a given site over an 8-hour day. As noted in Section 3.4, Noise and Vibration, construction phases for the Shared Passenger Track Alternatives would generally run sequentially, with one phase completing use of the most noise-intensive equipment before equipment for another phase is mobilized. Therefore, it is not anticipated that activities associated with multiple phases of project construction would occur simultaneously such that the noise effects would combine. However, cumulative projects in the vicinity of the Shared Passenger Track Alternatives may require construction activities that temporarily overlap. To a large degree, relatively short construction timeframes would reduce the amount of overlap with project construction, and the low density of sensitive noise receptors directly surrounding the project section would limit the amount of exposure of noise levels that exceed noise thresholds to highly sensitive individuals. Some of the cumulative projects identified in Appendices 3.19-A and 3.19-B are close to both the project section and sensitive receivers in the area. These may have construction schedules that potentially overlap with project construction. These projects include the City of Anaheim Stadium Towers, Parkwest, OCVIBE, Disneyland Forward, and others.

Construction of the Shared Passenger Track Alternatives would involve demolition of existing structures; clearing and grubbing; reduction of permeable surface area; handling, storing, hauling, excavating, and placing fill; possible pile driving; construction of aerial structures and bridges; road modifications; utility upgrades and relocations; and installation of power poles, HSR electrical systems, and railbeds. Construction of the Shared Passenger Track Alternatives would also require the use of mechanical equipment, including hand-held pneumatic tools, scrapers, bulldozers, dump trucks, and tie and rail-handling equipment that could generate temporary increases in noise for various durations at any given location, depending on the construction activity.

In combination with construction of the Shared Passenger Track Alternatives, construction of cumulative projects, would exceed significance thresholds for noise at sensitive receptors. The Shared Passenger Track Alternatives include a project design feature to minimize noise levels (**NV-IAMF#1**, **Noise and Vibration**), which requires the contractor to document how federal guidelines for minimizing noise and vibration would be employed when construction is occurring near sensitive receivers (such as hospitals, residential neighborhoods, and educational facilities). Implementation of FRA guidelines would partially minimize noise and vibration impacts on sensitive receptors; however, noise and vibration generated by construction activities could still exceed thresholds at nearby sensitive receptors during construction of the Shared Passenger Track Alternatives. The Authority would implement **N&V-MM#1, Construction Noise Mitigation Measures**, which requires the contractor to provide noise control measures as necessary to meet the noise limits and to monitor construction noise to verify compliance with the limits, so as to reduce temporary exposure of sensitive receptors to noise during construction. However, construction-period noise impacts associated with temporary exposure of noise-sensitive receptors would remain significant under CEQA.

To the extent that certain reasonably foreseeable projects may be built during the same time period as the Shared Passenger Track Alternatives, noise from construction of the Shared Passenger Track Alternatives, in combination with construction of cumulative projects, would exceed applicable noise thresholds, resulting in a cumulative noise impact during construction. In addition to project-level measures, **CUM-N&V-MM#1, Consult with Agencies Regarding Construction Activities**, will further minimize the potential for overlapping construction activities in the cumulative RSA 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 other cumulative projects, would still have the potential to exceed significance thresholds for noise at sensitive receivers during construction, resulting in a significant cumulative impact. Therefore, the Shared Passenger Track Alternatives would result in a cumulatively considerable contribution to a significant and unavoidable cumulative noise impact.

Construction of the Shared Passenger Track Alternatives would result in temporary road closure of portions of 19 local roads, which would require rerouting traffic and other roadway modifications. Rerouted traffic would minimally affect existing noise levels, increasing existing traffic noise by 0 to 5 A-weighted decibels. A significant cumulative impact would occur if the Shared Passenger Track Alternatives, in combination with cumulative projects, would result in an exceedance of existing worst-hour noise levels of 12 A-weighted decibels or more. Because the estimated increases in traffic noise from the Shared Passenger Track Alternatives are only 0 to 5 A-weighted decibels, impacts would be less than significant, and the project would not result in a cumulatively considerable contribution to a significant impact related to construction-period noise from traffic rerouting.

Operation

During operation of the Shared Passenger Track Alternatives, long-term noise impacts could occur from the introduction of a new transportation system. Based on FRA guidance, noise effects are based on a comparison of noise level impacts associated with the project compared to ambient noise levels in the existing condition and during the year 2040. As established in the California Department of Transportation's Traffic Noise Analysis Protocol, impacts would be cumulatively considerable if the noise emissions from train operations, combined with noise emissions from cumulative projects, would exceed FRA standards for high-speed ground transportation, or if traffic noise levels would exceed Federal Highway Administration standards. According to the *Los Angeles to Anaheim Project Section Noise and Vibration Technical Report* (Authority 2025a), based on the FRA 2012 Guidance Manual, in the existing condition, predicted operational noise levels would exceed severe impact criteria at 59 residences and moderate impact criteria at 443 residences within this project section. No impacts are predicted to occur at institutional land uses. To reduce severe effects on sensitive receivers from operational noise, the Authority would implement **N&V-MM#3, Implement California High-Speed Rail Project Noise Mitigation Guidelines**, which requires an evaluation of where noise barriers or other mitigation

methods are needed. The noise and mitigation guidelines are discussed in Section 3.4. With implementation of **N&V-MM#3**, an impervious sound barrier, extending from 150 south of E Cyprus Street to near E Sycamore Street 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 be installed. The noise barrier would provide effective noise mitigation for 33 of the 59 affected residences. Because a noise 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. Even with these mitigation measures along with vehicle noise specifications and special trackwork, which may reduce noise at the source, a significant cumulative impact would occur. The Shared Passenger Track Alternatives would result in a cumulatively considerable contribution to noise impacts at sensitive receptors during operation that are still considered significant and unavoidable at some locations. Therefore, because cumulative noise impacts would be significant and unavoidable, the Shared Passenger Track Alternatives' contribution to this cumulative noise impact would be cumulatively considerable during operation.

Vibration

Construction

Similar to noise impacts, ground-borne vibration generated by construction of the Shared Passenger Track Alternatives and the adjacent HSR section could combine with vibration from other planned development and transportation projects to affect nearby sensitive receptors. As stated in Section 3.4, operational ground-borne vibration levels would exceed the impact criteria at 517 residences. No ground-borne vibration impacts are predicted to occur at institutional land uses. Vibration level standard exceedances for nearby sensitive receptors could cause damage to structures, annoyance, or interference with sensitive equipment and would be considered a cumulative impact. The construction of reasonably foreseeable projects could cause cumulative vibration impacts on sensitive receptors if construction schedules for these projects overlap and if work that generated high levels of vibration was taking place simultaneously on multiple sites near sensitive receptors. Although there are few construction activities that generate high levels of vibration (refer to discussion in Section 3.4), impact pile driving in particular can result in damaging and annoying ground-borne vibration. To reduce vibration impacts on sensitive receivers, the Authority would implement **N&V-MM#4, Implement Operation Vibration Mitigation Measures**, which includes application of vibration-reduction measures. However, further evaluation of their effectiveness would occur during project design. Therefore, the impact under CEQA on sensitive receivers from operational vibration is conservatively concluded to be significant and unavoidable.

As discussed previously, to the extent that certain reasonably foreseeable projects may be built during the same time period as the Shared Passenger Track Alternatives, vibration from construction of the Shared Passenger Track Alternatives, in combination with construction of other reasonably foreseeable projects, would exceed applicable vibration thresholds, resulting in a cumulative vibration impact during construction. **CUM-N&V-MM#1** will minimize the potential for overlapping construction activities in the RSA 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 still have the potential to exceed significance thresholds for vibration at sensitive receivers during construction, resulting in a significant cumulative impact. Therefore, the Shared Passenger Track Alternatives' contribution to this significant cumulative vibration impact would be cumulatively considerable.

Operation

Operation of the Shared Passenger Track Alternatives and cumulative projects, including the adjacent Burbank to Los Angeles Project Section, Link US project, Parkwest Development, and OCVIBE, have the potential to increase transportation-related vibration levels in the RSA. However, ground-borne vibration generally only travels short distances from the vibration source

and does not readily combine with other sources of vibration to increase in magnitude because of differing frequencies. The Shared Passenger Track Alternatives would result in operational ground-borne vibration impact criteria exceedances at 517 residences. No ground-borne vibration impacts are predicted to occur at institutional land uses. To reduce impacts on sensitive receivers from operational vibration, **N&V-MM#4**, would be implemented, which requires vehicle and track improvement measures such as vehicle suspension enhancements, special track support systems, and building modifications, will reduce potential operational vibration impacts. However, even with this mitigation measure, the Shared Passenger Track Alternatives and cumulative projects would result in a significant cumulative vibration impact at sensitive receptors during operation that are still considered significant and unavoidable at some locations. Therefore, because cumulative vibration impacts during construction would be significant and unavoidable, the Shared Passenger Track Alternatives' contribution to this cumulative vibration impact would be cumulatively considerable.

Impacts related to effects on wildlife and domestic animals as well as traffic noise during operation would be less than significant under CEQA because of the limited nature of impacts within the highly urbanized environment. The project-level increases in traffic noise from roadway modifications are anticipated to be less than the 12-A-weighted-decibel equivalent noise level threshold during peak noise hour conditions. Given this, the Shared Passenger Track Alternatives, in combination with reasonably foreseeable projects, would not result in a significant cumulative impact.

CEQA Conclusion

Temporary cumulative noise and vibration impacts are anticipated during construction because the construction of cumulative projects in the vicinity may temporarily overlap with project construction and would exceed significance thresholds for noise and vibration at sensitive receptors such that they combine to create levels exceeding federal (FRA and Federal Highway Administration) or state standards. However, the project design of the Shared Passenger Track Alternatives includes compliance with FRA and Federal Transit Administration guidelines for minimizing construction noise and vibration when work is conducted within 1,000 feet of sensitive receptors. Nonetheless, even with implementation of **N&V-MM#1** and **N&V-MM#2, Construction Vibration Mitigation Measures**, it is anticipated that the Shared Passenger Track Alternatives, in combination with cumulative projects, would result in a significant cumulative noise and vibration impact under CEQA during construction. The Shared Passenger Track Alternatives' contribution to this cumulative noise and vibration impact would be cumulatively considerable.

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 impacts under CEQA because the combined noise and vibration exposure would exceed FRA criteria. Although **N&V-MM#3** and **N&V-MM#4** will provide effective noise and vibration reduction for some sensitive receivers, noise and vibration effects remain and a significant cumulative impact would occur. The Shared Passenger Track Alternatives' contribution to the cumulative impact would be cumulatively considerable because it would cause the largest change in the baseline ambient noise and vibration conditions among the many planned transportation projects.

With incorporation of IAMFs and mitigation measures, direct and indirect construction and operational impacts related to noise and vibration would be minimized. In addition to the project-level measures, **CUM-N&V-MM#1** will minimize the potential for overlapping construction activities in the RSA by requiring consultation and coordination with agencies regarding construction activities resulting in noise exceedances. However, even with implementation of **CUM-N&V-MM#1**, the Shared Passenger Track Alternatives in combination with cumulative projects would still have the potential to exceed significance thresholds for noise and vibration at sensitive receptors during construction and operation, resulting in significant cumulative impacts. Therefore, the project contribution to the cumulative noise impact would be cumulatively

considerable for both construction and operational impacts and would be considered significant and unavoidable under CEQA.

3.19.4.4 Electromagnetic Fields (EMF) and Electromagnetic Interference (EMI)

Cumulative Condition

Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA. The cumulative condition relevant to EMF and EMI consists of the project; development planned under general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Whittier, Buena Park, Fullerton, Anaheim, and unincorporated community of West Whittier–Los Nietos; as well as the adjacent Burbank to Los Angeles Project Section and relevant planned and future residential, commercial, industrial, and transportation projects identified in Appendices 3.19-A and 3.19-B.

Reasonably foreseeable projects, in combination with the Shared Passenger Track Alternatives, could generate EMF by increasing the intentional use of the electromagnetic spectrum and unintentional generation of EMI. In addition, planned residential and commercial uses, as well as increases in population from planned development, would also slightly increase demand for the electromagnetic spectrum. Electrical power equipment that emits EMF and EMI, including high-voltage electric power lines, would continue to be used in the cumulative RSA. Directional and nondirectional (cellular and broadcast) antennas and radio frequency communication equipment would be used and expanded through the development and transportation projects. Cumulative EMI impacts could occur if the impacts of these projects and the anticipated growth combined to expose people to a documented EMF health risk, including a field intensity over the limit of an applicable standard, or if these EMF interfered with unshielded sensitive equipment such as medical equipment or devices.

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the Shared Passenger and Track Alternatives and cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would require use of heavy equipment, trucks, and light vehicles that, like all motor vehicles, generate EMF. Cumulative projects, in combination with the Shared Passenger Track Alternatives and the directly adjacent Burbank to Los Angeles Project Section, could generate EMF by increasing the intentional use of the electromagnetic spectrum and unintentional generation of EMI. In addition, commercial uses at La Quinta Inn would also slightly increase demand for electromagnetic spectra in that area. Electrical power equipment that emits EMF and EMI, including high-voltage electric power lines, would continue to be used in the cumulative RSA. Directional and nondirectional (cellular and broadcast) antennas and radio frequency communication equipment would be used and expanded through the development and transportation projects. Cumulative EMI impacts could occur if the combined impacts of these projects and anticipated growth combined to expose people to a documented EMF health risk, including a field intensity over the limit of an applicable standard, or if these EMFs interfered with unshielded sensitive equipment such as medical equipment or devices. There is a potential for EMF impacts from construction of the project at sensitive land uses in proximity to the project. In conformance with the Electromagnetic Compatibility Program Plan and Implementation Stage Electromagnetic Compatibility Program Plan, when heavy construction equipment encroaches within 50 feet, the Authority and its designated contractor will coordinate with third-party owners of sensitive facilities and, if found necessary, take specific steps (e.g., controlling EMI/EMF through preparation of a technical memorandum, performing electromagnetic compatibility/EMI safety analyses, implementing HSR standard corrosion protection measures) to avoid or reduce potential interference (**EMF/EMI-IAMF#2, Controlling Electromagnetic Fields/Electromagnetic Interference**). HSR-related EMI may still affect highly susceptible, unshielded sensitive radio frequency equipment such as older magnetic resonance imaging (MRI) systems and other measuring devices common to medical and research laboratories. Implementation of **EMF/EMI-MM#1, Protect Sensitive Equipment**,

will reduce lingering impacts associated with heavy construction equipment by requiring relocation or shielding of sensitive equipment. Impacts from the Shared Passenger Track Alternatives, in combination with cumulative projects, would be less than significant. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

Operation

As described in Section 3.5, Electromagnetic Fields and Electromagnetic Interference, future EMF levels in the cumulative RSA are not expected to interfere with the operation of an electrical, magnetic, or electromagnetic device, increase the corrosion of nearby metal objects, or exceed applicable permanent exposure thresholds in place for passengers, HSR workers, or members of the public. Aside from the electricity required to operate HSR trains, there are no other large or continuous sources of EMF within the cumulative RSA. Impacts from exposure to EMF in interconnection facilities will be avoided through incorporation of **EMF/EMI-IAMF#1, Preventing Interference with Adjacent Railroads**, and **EMF/EMI-IAMF#2**. **EMF/EMI-IAMF#1** requires the Authority to work with the engineering departments of freight railroads that would parallel the project alignment to apply the standard design practices that a nonelectric railroad must use when an electric railroad or electric power lines are installed next to its tracks. **EMF/EMI-IAMF#2,** through the Implementation Stage Electromagnetic Compatibility Program Plan, requires implementation of a safety program that will preclude workers with implanted medical devices from entering facilities with electrical equipment that could endanger them. Signs will be posted to alert employees to avoid the potentially hazardous conditions. A provision in the Implementation Stage Electromagnetic Compatibility Program Plan (**EMF/EMI-IAMF#2**) is to post signs at the traction power substations and switching stations and on tie-line structures warning persons with an implanted medical device of the presence of high levels of EMFs, avoiding the potential for interference and related health risks. Ground currents generated by project operation could result in corrosion of underground pipelines and cables. However, project features (**EMF/EMI-IAMF#2**) discussed above include the grounding of nearby ungrounded linear metal structures or insulating metallic pipes to prevent flow of leakage current, resulting in minor corrosion potential and avoiding nuisance shocks. The potential for interference with high-tech equipment will also be addressed through **EMF/EMI-IAMF#2**, which is intended to prevent EMI with identified neighboring uses. If equipment-specific impacts are identified, appropriate mitigation to avoid these effects would be implemented, including performing tests to confirm equipment is free from impacts (**EMF/EMI-MM#1**). There are no known existing or future locales within the cumulative RSA that would have excessive levels of EMF or EMI because of two or more existing or future projects, including the addition of EMF from the project section. Therefore, a significant cumulative impact related to EMF would not occur, and there would be no significant cumulative impact to which the Shared Passenger Track Alternatives could contribute.

CEQA Conclusion

Construction of the Shared Passenger Track Alternatives and cumulative projects in the vicinity, including the adjacent Burbank to Los Angeles project section, would require the use of heavy equipment, trucks, and light vehicles that, like all motor vehicles, generate EMF. This would cause an incremental and temporary increase in EMF within the RSA, in the event that construction activities overlap. The project design includes **EMF/EMI-IAMF#1** and **EMF/EMI-IAMF#2**, which require the Authority to coordinate with engineering departments of freight railroads that would parallel the project alignment and third-party owners of sensitive facilities and equipment in the vicinity of the HSR system and, if necessary, take specific steps to avoid or reduce potential interference. Moreover, implementation of **EMF/EMI-MM#1** will ensure that temporary impacts regarding use of heavy construction equipment and operation of electrical equipment are minimized. Given this, potential interference would be minimal and would not expose people to a substantial EMF health risk. The Shared Passenger Track Alternatives, in combination with cumulative projects, would not result in a significant cumulative impact related to construction-period EMF, and there would be no significant cumulative impact to which the project would contribute.

Operation of the project, in combination with cumulative projects, would not result in a significant cumulative impact. Therefore, the Shared Passenger Track Alternatives would not contribute to a significant cumulative impact.

3.19.4.5 Public Utilities and Energy

Public Utilities and Service Systems

Cumulative Condition

Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA. Urban development stemming from population increases through 2040 would result in the conversion of nontransportation land to accommodate housing, commercial development, offices, transportation, parks, and schools. Additionally, the city of Los Angeles is planning recycled water projects to deliver recycled water to customers. The cumulative condition relevant to public utilities and energy consists of the project; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, and the unincorporated community of West Whittier–Los Nietos; as well as the adjacent Burbank to Los Angeles Project Section, Link US project, Parkwest Development, and OCVIBE and other relevant planned and future residential, commercial, industrial, recreational, and transportation projects identified in Appendices 3.19-A and 3.19-B.

This development and continued population growth anticipated in the cumulative RSA would result in corresponding increases in demand for utility services, storm drain facilities, water use (including irrigation), communications, and gas services. This planned development and growth would also contribute to cumulative increases in demands on the existing utility and electricity infrastructure within the project's cumulative RSA, including increased peak- and base-period electricity demand. New utility infrastructure that would be required to support the new commercial, residential, and industrial development is not anticipated to exceed the capacity of utility and energy service providers because the planned growth is already taking into consideration whether there is a need to upgrade these utilities.

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the Shared Passenger Track Alternatives in combination with other reasonably foreseeable projects, including the adjacent Burbank to Los Angeles Project Section, may require temporary shutdown of utility lines to safely move, extend, or connect to these lines. Construction, including work associated with reconductoring and connection of electrical systems, would require the temporary shutdown of subsurface, aboveground, or overhead electrical transmission lines; natural gas transmission pipeline facilities; petroleum product conveyance facilities; communication facilities; and water infrastructure. Shutdowns would interrupt utility services to industrial, commercial, and residential customers. There would also be a potential for accidental disruption of these utility systems, including overhead utility lines (i.e., electric distribution lines, telephone lines, and cable television lines) and buried utility lines (e.g., water, sewer, natural gas). However, accidental disruptions would be limited in occurrence and impacts would be short term as a result of the established practices for utility identification and notification.

Relocation, extension, expansion, and connection of utilities as a result of development are an everyday practice throughout California. Where necessary, the project design and phasing of construction activities would minimize interruptions. This includes upgrades of existing power lines and poles to connect the HSR system to existing substations as well as the proposed traction power substations in Los Angeles and Anaheim. Additionally, the Los Angeles Department of Water and Power Receiving Station No. 5 would need to be modified, with a new receiving station added to the south of the existing substation. Prior to construction in areas where utility service interruptions are unavoidable, the contractor will notify the public of planned outages no less than 7 days prior to an outage and construction will be coordinated to avoid interruptions of utility services to hospitals and other critical users (**PUE-IAMF#3, Public Notifications**). In addition, prior to construction, the contractor will prepare a technical

memorandum documenting how construction activities will be coordinated with service providers to minimize or avoid interruptions to utility services (**PUE-IAMF#4, Utilities and Energy**). Underground utilities that conflict with the project section right-of-way would be relocated or reinforced underneath the right-of-way inside a casing pipe strong enough to carry the HSR system facilities and allow for utility maintenance access. Reduced access to existing utilities during and after construction would not require expansion of existing or construction of new utility infrastructure. **PUE-IAMF#3** and **PUE-IAMF#4** will also be implemented to address utility owners' access needs, thereby protecting continued access during and after construction by coordinating and scheduling field visits with the property owner in advance. These project features will effectively minimize the utility interruptions or reduced access by requiring coordination with service providers in advance, protecting continued access during and after construction, notifying the public and affected service providers of planned outages, and verifying that new facilities are operational prior to disconnecting the original facility.

In addition, the Authority has been coordinating with utility providers to plan for the protection or relocation of utility crossings and infrastructure in the cumulative RSA for the project section. This coordination would continue to take place throughout the project construction phase. Construction of the project section and other planned development projects in the RSA would adhere to standard practices for the provision and relocation of utilities. In addition to complying with standard practices for utility identification and interruption notification procedures, the Shared Passenger Track Alternatives and other reasonably foreseeable projects would require coordination with the affected utilities to avoid or reduce service interruptions. The construction contractor would coordinate schedules for utility relocations, new connections, and protection in place with the utility owner to ensure that the project section would not result in prolonged disruption of services. If utilities cannot be relocated or modified within the right-of-way or the project section footprint, additional environmental analysis would be conducted. Compliance with standard practices for utility identification and interruption notification procedures is anticipated to reduce the potential for impacts to occur. Therefore, no cumulative impact would occur and there would be no cumulative impact to which the project would contribute.

Construction of the Shared Passenger Alternatives and other planned development and transportation infrastructure within the cumulative RSA would require construction-period water use for activities such as preparing concrete, optimizing soil compaction, controlling dust on site, or reseeding and establishing vegetation in disturbed areas. A cumulatively significant impact would occur if project construction activities accumulate and result in construction-period water demands that exceed availability. Although available data suggest adequate supplies are available from existing water suppliers in the region to supply the quantity of water needed for the Shared Passenger Track Alternatives, given the rapidly and yearly changing climate conditions and unpredictability of water supply in Southern California, the Authority would implement **PUE-MM#1, Water Demand Analysis for Water Supplies for Construction and Operation**, to ensure that there are sufficient water supplies to support project construction. Preparation of this water analysis prior to construction will ensure that the temporary construction demand does not strain local suppliers or require any temporary expansion of existing or construction of new infrastructure that could cause environmental impacts. Each cumulative project would also be required to ensure that water needs by project would be reviewed with and coordinated by representative water districts where new infrastructure would be built to ensure that water demand is met. Therefore, significant cumulative impacts related to increased water demand during construction activities are not anticipated.

Construction of the Shared Passenger Track Alternatives and cumulative projects would require activities such as grading and excavation, which could redirect stormwater runoff by altering the existing drainage pattern. Each cumulative project would ensure effects on stormwater infrastructure would be temporary in nature. The project will incorporate a stormwater pollution prevention plan and construction best management practices (BMP) (**HYD-IAMF#3, Prepare and Implement a Construction Stormwater Pollution Prevention Plan**) to avoid or minimize erosion and sedimentation from increased rates and volumes of flows. Temporary and permanent BMPs including but not limited to sediment traps, velocity dissipation devices, and detention/

retention/infiltration facilities, would be incorporated into the temporary drainage design plans as necessary to reduce short-term increases in sediment transport and minimize temporary changes in alteration of the natural flow during construction. Therefore, the Shared Passenger Track Alternatives would not contribute to a cumulative considerable increase in stormwater runoff.

Construction activities associated with planned development in the project's cumulative RSA, particularly for transportation projects including the I-5 Freeway Expansion Project in Norwalk, and the Long Beach-East LA Corridor Mobility Investment Plan, would result in construction waste including demolished structures and asphalt from removed roadways. Although some of this construction and demolition waste would be diverted from landfills through reuse or recycling, these projects would still require solid waste and debris disposal at regional landfills. Similarly, new residential, commercial, and industrial development projects have the potential to result in cumulatively considerable contributions to significant impacts on the waste stream in the event that additional capacity at regional and local landfills is needed.

In accordance with Senate Bill 1374, construction and demolition waste is required to meet solid waste diversion goals to the extent practicable by reusing or recycling materials. In addition, the 2022 Green Building Standards Code requires cities and counties in California to develop a waste management plan and to divert at least 50 percent of the construction materials generated (Title 24 California Code of Regulations Part 11). The Authority's 2020 sustainability policy specifies that all steel and concrete will be recycled, and a minimum of 85 percent of construction solid and hazardous waste will be diverted from landfills.

As discussed in Section 3.10, implementation of the Shared Passenger Track Alternatives would require construction activities within or near sites of potential environmental concern or Cortese List sites with the potential to generate hazardous waste from excavated soil. **HMW-IAMF#3, Work and Vapor Barriers**; **HMW-IAMF#4, Known, Suspected, and Unanticipated Environmental Contamination**; **GEO-IAMF#3, Gas Monitoring**; **HMW-IAMF#1, Property Acquisition Phase I and Phase II Environmental Site Assessments, Additional Preconstruction Investigations, and Associated Actions to Control Site Contamination**; **HMW-IAMF#6, Spill Prevention**; and **HMW-IAMF#9, Environmental Management System**, are included in the project design and will minimize construction impacts for most potential environmental concern sites, including Cortese List sites. Where work at the two Superfund sites cannot be avoided, coordination with regulatory agencies and the responsible parties would be required (**HMW-MM#2, Coordination of HSR Design and Construction with Remediation of Exide Site and Orange County North Basin Superfund Site**). However, even with implementation of **HMW-MM#2**, impacts would remain significant and unavoidable. Refer to Section 3.19.4.9 for the cumulative analysis associated with potential environmental concern sites.

Of the eight landfills within the RSA that could be used for nonhazardous soil waste disposal, all have adequate capacity to dispose of solid waste during construction of the project. Construction of the Shared Passenger Track Alternatives would generate an estimated 1.7 or 1.64 million cubic yards of solid and hazardous waste in Los Angeles and Orange Counties for Shared Passenger Track Alternatives A and B, respectively. The Shared Passenger Track Alternatives would produce and 557,688 or 752,496 million cubic yards from demolition of buildings and 982,835 or 1.08 million cubic yards from earthwork and excavation, respectively, depending on the alternative selected. As presented in Table 3.6-13 and Table 3.6-14 in Section 3.6, Public Utilities and Energy, the total estimated remaining landfill capacity in the region is 428,106,082 cubic yards for nonhazardous solid waste and 11,626,816 for hazardous waste. Project features promoting reuse and recycling to minimize waste generation are included in the project design (**HMW-IAMF#7, Storage and Transport of Materials**). Reasonably foreseeable projects in the region also have the potential to produce high volumes of solid waste during construction and demolition activities. The Shared Passenger Track Alternatives, in addition to the cumulative projects listed in Appendices 3.19-A and 3.19-B, would each comply with federal, state, and local statutes and regulations related to solid waste. Each cumulative project would also be required to ensure that waste disposal needs would be reviewed to ensure that disposal needs are met. Given the remaining landfill capacity in the region, the Shared Passenger Track Alternatives and

other reasonably foreseeable projects would not result in significant impacts on landfill capacity. In addition, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact on landfill capacity.

Operation

With the projected 2040 population and employment growth in the RSA, which includes numerous planned residential and commercial developments in combination with the Shared Passenger Track Alternatives, there would be increased demand for utilities. Development projects would require coordination with utility providers during the environmental process to verify utility services to support proposed uses. In addition, utility providers as well as the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, and the unincorporated community of West Whittier anticipate growth and account for this in their demand forecasts.

The project section right-of-way would be fenced and secured after construction is completed, and would involve permanent reduced access to utility infrastructure. A significant cumulative impact would occur if the project, in combination with cumulative projects, would result in a substantial reduction in access to utility infrastructure within the RSA. As discussed in Section 3.6 of this Draft EIR/EIS, underground utilities that conflict with the project section right-of-way would be relocated or reinforced underneath the right-of-way and allow for utility maintenance access from outside the project section right-of-way. Underground wet utilities, such as water, sewer, storm drains, gas, and petroleum pipelines, would be conveyed inside a pipeline material with a service life typically of 50 years or more. Dry utilities such as electrical, fiber-optic, and telephone lines would be encased in a durable material. If the utility conveyance pipeline were in need of repair or replacement, the casing pipe would stay in place so that project operations could continue. It is common practice that utility districts coordinate and schedule in advance field visits to their facilities with the owner of the property in which their facilities lie. The Shared Passenger Track Alternatives, combined with cumulative projects, would adhere to standard engineering and utility access practices. Additionally, underground utilities that conflict with the project infrastructure would be relocated or reinforced to retain utility maintenance access. Therefore, there would not be a significant cumulative impact related to utility access.

Operation of the Shared Passenger Track Alternatives would require a project-related increase in water demand at the HSR stations. Although existing projections anticipate that there is sufficient water supply to provide for operation of the project, including stations and facilities, the ongoing uncertainty of water supply in Southern California creates the necessity for additional and regular planning to ensure that water supplies for the project can be secured throughout the operational life of the project. Additionally, planned and future development would result in an increase in water demand that may require new facilities or the expansion of existing facilities in the cumulative RSA. Because the general plans of the Counties of Los Angeles and Orange, and the cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, and the unincorporated community of West Whittier–Los Nietos anticipate planned growth and coordinate this with utility providers, future public utility capacity in the project's cumulative RSA is anticipated to accommodate growth in the region to meet future demand. According to the urban water management plans, cities would have sufficient supply to adequately serve their existing service areas during normal, dry, and multiple dry years.

The Authority would implement **PUE-MM#1**, which requires the Authority to prepare an updated water supply analysis prior to the anticipated start of operations, and subsequent updated water supply analyses for the project every 5 years following the start of operations that identify the detailed water supply needs for operation of the LMF and stations. This will help to manage and prepare for continued operations in normal, dry, and multiple dry years. Therefore, the Shared Passenger Track Alternatives' contribution to the increase in demand for water during operation would be less than significant and there would be no cumulative impact to which the project would contribute.

Operation of the Shared Passenger Track Alternatives in combination with other residential, commercial, and industrial cumulative development projects would generate wastewater, require

storm drain facilities, and generate solid waste and hazardous materials. Implementation of the Shared Passenger Track Alternatives would cause temporary and permanent changes in drainage patterns related to excavation and placement of fill, placement of new embankments, new bridge and overcrossing structures, bridge abutments, support piles, and new impervious surfaces. These changes would affect stormwater runoff during rain events, including changes in runoff volumes or rates and increased pollutant loading, compared to existing conditions. **HYD-IAMF#1, Stormwater Management**, which is included in the project, would require detainment of on-site stormwater runoff, improvement of infiltration rates, and minimization of disruptions to the movement of water. **HYD-IAMF#2, Flood Protection**; **HYD-IAMF#3**; and **HYD-IAMF#4, Prepare and Implement an Industrial Stormwater Pollution Prevention Plan**, will be incorporated to ensure stormwater management practices and measures, including permeable surfaces to retain or detain and treat stormwater on site, will be incorporated into the project design. **HYD-IAMF#1**, **HYD-IAMF#2**, **HYD-IAMF#3**, and **HYD-IAMF#4** will effectively reduce or avoid impacts from stormwater through effective stormwater management practices and measures to manage and treat stormwater, accommodate increased rates of runoff, and improve infiltration and groundwater recharge.

Current service providers in the project's RSA reflect adequate capacity to support the proposed cumulative developments as well as the HSR system. The HSR facilities would not exceed or substantially contribute to the exceedance of the existing capacity of these municipal systems and storm drainage would not be affected because of the Shared Passenger Track Alternatives. The solid waste produced from operation of the project would be minimal compared to construction, and local facilities have adequate capacity for both. Hazardous waste will be planned for, disposed of, and handled in compliance with the Resource Conservation and Recovery Act, as well as by **HMW-IAMF#7**; **HMW-IAMF#9**; and **HMW-IAMF#10, Hazardous Materials Plans**. Cumulative impacts related to wastewater, storm drain, and solid waste facilities would be less than significant during operations. Therefore, the Shared Passenger Track Alternatives' contribution to the increase in demand for municipal systems during operation would be less than significant and there would be no cumulative impact to which the project would contribute.

Energy

Cumulative Condition

The cumulative condition for energy resources involves the statewide electrical grid and is reflected in electricity supply and demand planning documents of the California Energy Commission and California Independent System Operator. As required by state law, new and existing transmission, power, and distribution lines would need to be built or upgraded to serve increased demand and to meet grid reliability requirements. The cumulative condition for energy resources also involves natural gas supply and distribution and petroleum product (diesel fuel, gasoline) supply and distribution.

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the Shared Passenger Track Alternatives, in combination with cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in temporary increases in demand for energy that have the potential to be cumulatively considerable. Although construction of the reasonably foreseeable projects listed in Appendix 3.19-A, in combination with the Shared Passenger Track Alternatives, would result in incremental increases in electricity demand, the energy used would not require significant additional capacity or substantially increase peak- or base-period demands for electricity and other forms of energy. The project will incorporate design elements that minimize electricity consumption (e.g., using regenerative braking, energy-saving equipment on HSR trains and at station and maintenance facilities, and automatic train operations to maximize energy efficiency during operations), such that operations will not overburden utility services (**PUE-IAMF#1, Design Measures**). Most construction activities for the projects evaluated under the cumulative scenario, as well as the Shared Passenger Track Alternatives, would result in the direct use of fuels (primarily gasoline

and diesel) for construction equipment and vehicles, as well as electricity for equipment used to support construction equipment. Construction would also result in indirect use of energy associated with the extraction, manufacturing, and transport of construction materials. Construction of the project would require measurable amounts of energy for construction; however, most of the construction equipment would use liquid fuel and would not require electricity from the electrical grid to operate. Although the energy used for construction of track work, guideways, support facilities, and other structures would be a one-time, nonrecoverable energy cost, the continued operation of the HSR system would result in overall energy savings through the system's use of renewable energy supply during operations. As a result, energy expended on construction would be recovered in about 1 month based on anticipated 2040 ridership. Incremental increases in electricity demand under the cumulative condition would be supplied by existing facilities and would not require the construction of additional energy-related infrastructure. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to an increase in energy use during construction.

Operation

The HSR system would draw power from California's existing electricity grid; power would be distributed to trainsets via an overhead contact system. The Shared Passenger Track Alternatives would include construction of a new receiver station at the power substation in the Los Angeles Department of Water and Power's service territory. This new receiver station would service the Shared Passenger Track Alternatives. Where necessary, the Authority would assist utility providers in complying with California Public Utilities Commission General Order 131-D, including the need for follow-on design and environmental review for transmission line upgrades or construction as part of the California Public Utilities Commission permit application prior to construction. As a result, existing infrastructure and power supplies would not be affected over the long term. Therefore, there would not be a significant cumulative impact related to utilities, and the Shared Passenger Track Alternatives would not contribute to a cumulatively considerable increase in the demand for utilities during operation.

Electrical demand for operation of the HSR system would require approximately 3,550,282.05 million British thermal units per year of electrical energy statewide and approximately 211,697 million British thermal units per year of electrical energy for just the project section with no optional HSR station facilities incorporated. Although the HSR system would result in an increase in electricity demand, the net change in energy use—i.e., after the energy savings from reduction in roadway VMT—would result in an overall energy savings of at least -9,660,265.26 million British thermal units per year, depending on the alternative selected, as discussed in Section 3.6 of this Draft EIR/EIS. The energy demand increase for the Shared Passenger Track Alternatives, when combined with operation of the other reasonably foreseeable projects, would have the potential to be significant, but, taking into account the energy savings within the RSA as a result of the project, the project section would have a beneficial cumulative impact on operational energy use. Although electricity supplies for 2040 are uncertain, given the available planning period and the known demand from the project, energy providers have sufficient information to include the Shared Passenger Track Alternatives and other projects listed as part of this cumulative scenario (including the adjacent Burbank to Los Angeles Project Section) in their demand forecasts, which would inform future decisions regarding new infrastructure necessary to meet energy demand. In addition, to enhance the benefits of the HSR system, the Authority has set a goal of procuring renewable electricity to provide power for HSR operation. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to an increase in energy use during operation.

CEQA Conclusion

The Shared Passenger Track Alternatives and other reasonably foreseeable projects, including the adjacent Burbank to Los Angeles Project Section, would increase demand on utilities and energy supplies. With the exception of water usage for project operations at stations, it is anticipated that the additional demand from the project would be met by existing providers. The Authority will incorporate **PUE-IAMF#1**, **PUE-IAMF#3**, and **PUE-IAMF#4** in the project design, which will minimize potential construction-related effects on public utilities through effective

design measures, coordination, and notification activities. **HYD-IAMF#1**, **HYD-IAMF#2**, **HYD-IAMF#3**, and **HYD-IAMF#4** are incorporated in the project design and will minimize impacts on stormwater and drainage utilities. **HMW-IAMF#7**, **HMW-IAMF#9**, and **HMW-IAMF#10** are included as part of the project to minimize impacts associated with handling, storing, and disposing of hazardous waste.

The Authority would implement **PUE-MM#1**, which requires preparation of an updated water supply analysis for the Shared Passenger Track Alternatives that identifies the detailed water supply needs for operation of the project, effectively mitigating impacts.

The cumulative impact under CEQA on energy resources from energy consumption during construction of the project and other reasonably foreseeable projects would be less than significant. Although energy use would increase temporarily during construction, the design of the project will include the use of energy-saving measures during construction to minimize both electricity and fossil fuel consumption. There are no anticipated significant cumulative impacts related to energy systems, and no mitigation would be required under CEQA. Therefore, the Shared Passenger Track Alternatives would not contribute to a cumulatively significant impact.

3.19.4.6 Biological and Aquatic Resources

Special-Status Natural Communities

Cumulative Condition

Most of the lands within the cumulative RSA are developed. Natural and seminatural vegetation communities are uncommon and are most often found associated with aquatic features such as rivers, built watercourses, and basins (e.g., spreading grounds and detention basins) that support aquatic habitats such as hardstem (*Schoenoplectus acutus*) and California bulrush (*Schoenoplectus californicus*) marshes herbaceous alliance, mulefat (*Baccharis salicifolia*) thickets herbaceous alliance, cattail (*Typha* spp.) marshes herbaceous alliance, Goodding's willow (*Salix gooddingii*) – red willow (*Salix laevigata*) riparian woodland and forest, duckweed blooms (*Lemna* spp., *Spirodela* spp., *Wolffia* spp., *Wolffiella* spp.) and relatives' provisional alliance, salt grass (*Distichlis spicata*) flats herbaceous alliance, and open water. These areas are subject to periodic disturbance for flood control purposes, including eradication and removal of vegetation, removal of accumulated sediment, and tilling of earthen channel bottoms. This routine flood control maintenance prevents the establishment of mature vegetative growth forms (e.g., shrubs, woodlands, forest), and limits the extent and diversity of vegetative communities.

Goodding's willow – red willow riparian woodland and forest (state rank S3) and hardstem and California bulrush marsh (state rank S3S4) are special-status natural communities in addition to being riparian communities. California walnut (*Juglans californica*) woodland, Southern California arroyo chub (*Gila orcuttii*)/Santa Ana sucker (*Catostomus santaanae*) stream, southern coast live oak (*Quercus agrifolia*) riparian forest, southern coastal salt marsh, southern cottonwood (*Populus deltoides*) willow (*Salix* spp.) riparian forest, southern sycamore (*Platanus racemosa*) willow riparian forest, southern willow scrub, and walnut forest were identified as potentially occurring within the Supplemental RSA (within 3 miles of the project) and are special-status natural communities on the list of California terrestrial natural communities recognized by the California Natural Diversity Database. Only one of these communities was mapped within the Supplemental RSA: Southern California arroyo chub/Santa Ana sucker. This area was mapped at the eastern end of the Santa Ana River at the edge of the Supplemental RSA.

Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA. Urban development stemming from the population increase through 2040 would result in the conversion of land to accommodate housing, commercial, office, transportation, parks, and schools. Planned transportation projects, such as the directly adjacent Burbank to Los Angeles Project Section, Link US project, Parkwest Development, and OCVIBE, are within the RSA. The cumulative condition relevant to riparian habitat and special-status natural communities consists of the Shared Passenger Track Alternatives, development planned under land use plans, planned transportation improvements, adjacent HSR sections, and relevant additional future projects identified in Appendices 3.19-A and 3.19-B. However, most county and city general plans

in the region focus on maintaining existing open space and increasing the extent or value of open space wherever possible.

The permanent conversion of existing land uses to residential, commercial, and transportation uses would result in cumulative impacts on riparian habitat and special-status natural communities within the cumulative RSA for these resources. Additionally, construction of these projects could result in land disturbance, increased vehicle traffic, and topography alteration, which could lead to disturbance and destruction of riparian habitat and special-status natural communities.

Operation of these cumulative projects could result in additional cumulative impacts. For example, permanent impacts could occur on riparian habitat and special-status natural communities from incidental tramping or crushing of vegetation, exposure to accidental spills including contaminants or pollutants, the application of herbicides or pesticides, and the spread of invasive weeds. Taken together, these impacts would be considered a cumulative impact on riparian habitat and special-status natural communities.

Contribution of the Shared Passenger Track Alternatives

Construction

The permanent conversion of existing land uses for the Shared Passenger Track Alternatives and cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in impacts on biological resources within the cumulative RSA. Therefore, the Shared Passenger Track Alternatives could result in cumulatively considerable impacts on biological resources. However, because of the nearly complete built environment in the project vicinity and the existing use as a rail corridor, the effects on riparian communities and special-status natural communities from construction of the Shared Passenger Track Alternatives would be limited. Permanent direct impacts of the Shared Passenger Track Alternatives include both shading impacts (0.05 acre) and permanent impacts (0.18 acre) on hardstem and California bulrush marsh herbaceous alliance, which is both a riparian community and a California Department of Fish and Wildlife (CDFW) special-status natural community (S3). Permanent impacts are expected on duckweed blooms and relatives' provisional herbaceous alliance (0.43 acre), a riparian community. Unvegetated channel is considered riverine and there is 0.80 acre of permanent construction impacts anticipated on unvegetated channel. These impacts would be significant because hardstem and California bulrush marsh herbaceous alliance is both a riparian community and a CDFW special-status natural community (S3) and the riparian and riverine vegetation communities have extremely limited availability in the Los Angeles basin.

Direct, temporary effects may result from construction crews removing riparian habitat and special-status natural communities in access roads and staging and storage areas, and from construction vehicles and personnel disturbing vegetation (i.e., trampling, covering, and crushing individual plants, populations, or vegetation communities). Temporary construction impacts on less than 0.01 acre of duckweed blooms and relatives' provisional herbaceous alliance, a riverine community, would occur. Approximately 0.13 acre of temporary construction impacts on unvegetated channels, a riverine community, are anticipated.

Impacts could include permanent indirect construction effects, such as:

- Erosion, siltation, sedimentation, and runoff into native plant communities would alter the soil conditions to make the soil no longer suitable for such communities.
- Construction equipment leaks, if they were to occur, would result in soil and water contamination.
- Increases in habitat fragmentation would lower the dispersal of plant species and lower survival rates and movement of wildlife species, including pollinators or seed dispersers.
- Noxious plant species (i.e., nonnative, invasive species) or pathogens would be introduced from construction equipment, vehicles, and personnel. Noxious plant species would outcompete native plant communities, and pathogens would reduce the survivorship of native plant communities.

Permanent and temporary effects on riparian habitat and special-status natural communities are anticipated. The Shared Passenger Track Alternatives would remove riparian and special-status natural communities.

BIO-IAMF#1, Designate Project Biologist, Designated Biologists, Species-Specific Biological Monitors, and General Biological Monitors; **BIO-IAMF#3, Prepare Worker Environmental Awareness Program (WEAP) Training Materials and Conduct Construction Period WEAP Training**; **BIO-IAMF#5, Prepare and Implement a Biological Resources Management Plan**; **BIO-IAMF#8, Delineate Equipment Staging Areas and Traffic Routes**; **BIO-IAMF#10, Clean Construction Equipment**; **BIO-IAMF#11, Maintain Construction Sites and BMP Training**; **HYD-IAMF#3**; and **AQ-IAMF#1** have been designed to ensure that mitigation measures are applied in a timely manner; and that construction activities comply with regulatory requirements, minimize impacts on resources, reduce impacts on riparian habitat and special-status natural communities.

The IAMFs listed above would not entirely minimize, reduce, or avoid effects on riparian habitat, vegetation communities, land cover, and special-status natural communities. The mitigation measures discussed below will be implemented to further minimize, reduce, avoid, or offset effects on riparian and special-status natural communities during construction.

Mitigation measures are required under CEQA to address impacts on riparian habitat, vegetation communities, land cover, and special-status natural communities, including **BIO-MM#6, Prepare and Implement a Restoration and Revegetation Plan**; **BIO-MM#33, Restore Aquatic Resources Subject to Temporary Impacts**; **BIO-MM#34, Monitor Construction Activities within Aquatic Resources**; **BIO-MM#47, Prepare and Implement a Compensatory Mitigation Plan for Impacts on Aquatic Resources**; **BIO-MM#50, Implement Measures to Minimize Impacts During Off-Site Habitat Restoration, or Enhancement, or Creation on Mitigation Sites**; **BIO-MM#55, Prepare and Implement a Weed Control Plan**; **BIO-MM#56, Conduct Monitoring of Construction Activities**; **BIO-MM#58, Establish Environmentally Sensitive Areas and Nondisturbance Zones**; **BIO-MM#60, Limit Vehicle Traffic and Construction Site Speeds**; **BIO-MM#62, Prepare Plan for Dewatering and Water Diversions**; and **BIO-MM#79, Conduct Presence/Absence Preconstruction Surveys for Special-Status Plant Species and Special-Status Natural Communities**. Mitigation measures will involve the preparation and implementation of a habitat mitigation plan to offset impacts on habitat for special-status species by creating, restoring, enhancing, or preserving habitat that provides the same functions and values as habitat permanently affected by construction. With implementation of this mitigation, the project would not result in a cumulatively considerable contribution to impacts on riparian habitat and special-status natural communities and cumulative impacts would be less than significant.

Operation

As described above, permanent conversion of existing land uses for the Shared Passenger Track Alternatives and other cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in impacts on biological resources within the cumulative RSA. Ongoing operations and maintenance (O&M) activities may have direct effects on riparian habitat and special-status natural communities (e.g., routine inspection and maintenance of the HSR right-of-way). These operational impacts could result from wildfire caused by human error, sparks, or electrical malfunctions. The loss of vegetation could occur from incidental trampling or crushing caused by increased human activity related to the maintenance of equipment and facilities associated with the HSR system. The exposure to accidental spills, such as contaminants or pollutants, including chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks, would contaminate the water column, resulting in degraded riparian habitat and special-status natural communities. Both special-status natural communities and riparian habitats exist within the Botanical RSA adjacent to the project footprint.

O&M requires vegetation and pest control through a variety of methods, including the application of herbicides and pesticides. If O&M requires weed-abatement activities, such as the use of herbicides, these activities would also contribute to chemical runoff and pollution of adjacent suitable habitats, which would result in direct mortality caused by application drift or broadcasting

application. These activities would also result in indirect losses caused by changes in the composition of existing plant communities. For example, loss of vegetation from pesticide use could result in indirect losses of wildlife that serve as pollinators or seed dispersers. There could be an impact on vegetation communities and land cover during operations.

Impacts on riparian areas could also include the spread of invasive weeds into riparian areas because of maintenance activities. There are two special-status natural communities present within the Botanical RSA and both are also riparian communities: hardstem and California bulrush marsh herbaceous alliance, and Goodding's willow – red willow riparian woodland and forest alliance. Other riparian communities present include mulefat thickets shrubland alliance, cattail marshes herbaceous alliance, duckweed blooms and relatives' provisional herbaceous alliance, and salt grass flats herbaceous alliance.

To reduce direct and indirect effects during the operational phase, the Authority will incorporate the following IAMF as a part of the project. WEAP training will be provided on a regular basis for maintenance crews (**BIO-IAMF#4, Conduct O&M Period WEAP Training**) to reduce the potential of unplanned permanent effects such as those from invasive species, unintended fires, inadvertent chemical spills, and the improper use of herbicides and pesticides.

The IAMF listed above would not entirely avoid permanent operational effects on riparian habitat and special-status natural communities. Mitigation measures will be implemented to avoid these effects during operations. Under **BIO-MM#55**, a weed control plan will be prepared that will use environmentally sensitive areas, weed surveys, and fire prevention and other methods to avoid the spread of noxious weeds that could outcompete riparian habitat and special-status natural communities. This plan will minimize and avoid the spread of invasive weeds through O&M. To control invasive weeds, **BIO-MM#54, Prepare and Implement an Annual Vegetation Control Plan**, requires compliance with chemical vegetation control methods and other pest control methods. With implementation of this mitigation, the project would not result in a cumulatively considerable contribution on riparian habitat and special-status natural communities and cumulative impacts would be less than significant.

CEQA Conclusion

The historical trend of land use changes in the cumulative RSA has led to large-scale alteration and removal of riparian habitat and special-status natural communities, and ongoing development continues to degrade remaining habitat. The project would result in the removal of vegetation for the placement of permanent infrastructure during construction, and the removal of vegetation in temporary impact areas and from construction. The mitigation proposed to address impacts on riparian habitat and special-status natural communities includes habitat preservation in combination with restoration and enhancement, which would maintain or result in an improvement over existing conditions within the RSA. The project design includes IAMFs to avoid or minimize the potential for trampling or other destruction of riparian habitats and natural communities. Moreover, with implementation of the mitigation measures identified in Section 3.7.7, the Shared Passenger Track Alternatives, in combination with cumulative projects, would not result in a cumulatively significant impact. Therefore, the Shared Passenger Track Alternatives' contribution to impacts on riparian habitats and special-status natural communities, in combination with cumulative projects, would not be cumulatively considerable.

Special-Status Species

Cumulative Condition

Most of the lands within the cumulative RSA are developed. Natural and seminatural vegetation communities are uncommon, being most often found in associated with aquatic features such as rivers, built watercourses, and basins (e.g., spreading grounds, detention basins) that support aquatic habitats subject to periodic disturbance for flood-control purposes. Upland habitats include wild oats and annual brome grasslands seminatural alliance, eucalyptus – tree of heaven – black locust groves woodlands seminatural alliance, ornamental, and barren land cover, which can provide habitat for special-status species. Developed and disturbed land cover do not

generally provide habitat; however, some special-status bat species roost in bridges and buildings, which are found in this land cover type.

Under the cumulative condition, ongoing urban development because of the population increase through 2040 is expected to continue within the cumulative RSA. This is expected to result in the conversion of land to accommodate housing, commercial, office, transportation, parks, and schools. Planned transportation projects, such as the directly adjacent Burbank to Los Angeles Project Section, Link US project, Parkwest Development, and OCVIBE are within the project RSA. The cumulative condition relevant to special-status plants and wildlife consists of the Shared Passenger Track Alternatives, development planned under land use plans, planned transportation improvements, adjacent HSR sections, and relevant additional future projects identified in Appendices 3.19-A and 3.19-B. However, most county and city general plans in the region focus on maintaining existing open space and increasing the extent or value of open space wherever possible.

Increases in population, fragmentation from roads, and in some cases the permanent conversion of existing land uses to residential, commercial, and transportation uses would result in cumulative impacts on special-status plant and wildlife species within the cumulative RSA for these resources. Additionally, construction of these projects could result in land disturbance, increased vehicle traffic, and topography alteration, which could lead to disturbance, injury, or mortality of various special-status wildlife species and their respective habitats. Conversion of nontransportation used land to linear facilities, highways, state routes, railroad alignments, roadways and canals, and urban uses will continue to fragment habitat, impeding movement of all terrestrial wildlife. Existing linear facilities, highways, state routes, railroad alignments, roadways and canals, and urban uses impede wildlife movement for terrestrial animals. Collision risk is increased near linear facilities, and these are often mortality sinks. As a result, the ability of wildlife species to move freely within the cumulative RSA would continue to be diminished through construction of planned developments.

Operation of these cumulative projects could result in additional cumulative impacts. For example, construction of temporary features (such as staging areas and access roads) would fragment special-status species' habitat, which would temporarily prevent the dispersal of plant species or would temporarily alter movement of wildlife species, including pollinators or seed dispersers. These changes would favor species adapted to disturbance, which would change the species composition in vegetation communities, leading to reductions in native plant communities and increases in nonnative and invasive plant species. Taken together, these impacts would be considered a cumulative impact on special-status species and habitat.

Contribution of the Shared Passenger Track Alternatives

Construction

The permanent conversion of existing land uses for the Shared Passenger Track Alternatives and cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in impacts on special-status species within the cumulative RSA. Therefore, the Shared Passenger Track Alternatives could result in cumulatively considerable impacts on special-status species. However, because of the nearly complete built environment in the project vicinity and the existing use as a rail corridor, the effects on special-status species from the construction of the Shared Passenger Track Alternatives would be limited to specific species in specific areas. Nevertheless, because of the constrained nature of the remaining habitat, the impacts on the remaining species in this fragmented landscape would be considerable.

Special-Status Plants

Direct, temporary effects may result from construction crews removing vegetation in access roads, and staging and storage areas, and from construction vehicles and personnel disturbing vegetation (i.e., trampling, covering, and crushing individual plants, populations, or suitable potential habitat for special-status plant species). These effects could result in the temporary loss of individual plants, resulting in lower population productivity. Temporary effects could also include temporary soil compaction associated with travel routes, temporarily reducing suitable

habitat for special-status plant species. To reduce temporary direct effects, staging and access areas would be sited in designated areas to the maximum extent practicable.

No permanent direct effects on special-status plant species and native plant species are anticipated, because there is no habitat for special-status plant species in any areas where permanent impacts are proposed.

The Shared Passenger Track Alternatives could temporarily remove special-status plants in existing suitable habitat, if they are present within a temporary construction easement on the northern side of Coyote Creek South. It is anticipated that there would be no direct permanent effects on southern tarplant and lucky morning-glory. **BIO-IAMF#1**; **BIO-IAMF#3**; **BIO-IAMF#5**; **BIO-IAMF#8**; **BIO-IAMF#9, Dispose of Construction Spoils and Waste**; **BIO-IAMF#11**; **HYD-IAMF#3**; and **AQ-IAMF#1** have been designed to ensure that mitigation measures are applied in a timely manner and that construction activities comply with regulatory requirements, minimize impacts on resources, reduce impacts on special-status plant species.

The IAMFs listed above would not entirely avoid construction effects on special-status plants. Mitigation measures will be implemented to avoid these effects during construction. With implementation of **BIO-MM#6**, **BIO-MM#55**, **BIO-MM#56**, **BIO-MM#58**, **BIO-MM#60**, **BIO-MM#62**, **BIO-MM#79**, and **BIO-MM#80, Prepare and Implement Plan for Salvage and Relocation of Special-Status Plant Species**, during construction of the Shared Passenger Track Alternatives, temporary direct and indirect impacts on special-status plant species will be reduced. Mitigation measures require surveys to identify individual members of a species that could be avoided, relocated, or propagated. They would also involve the preparation and implementation of a habitat mitigation plan to offset impacts on habitat for special-status species by creating, restoring, enhancing, or preserving habitat that provides the same functions and values as habitat permanently affected by construction. With implementation of this mitigation, cumulative impacts of the Shared Passenger Track Alternatives, in combination with cumulative projects, on special-status plants would be less than significant, and the project would not contribute to a cumulatively considerable significant impact.

Special-Status Birds, Raptors, and Migratory Birds (Including Birds Covered under the Migratory Bird Treaty Act)

Construction of the Shared Passenger Track Alternatives, in combination with cumulative projects including the adjacent Burbank to Los Angeles Project Section, would directly temporarily affect special-status passerine birds, special-status raptors, and migratory birds (protected under the Migratory Bird Treaty Act) if potential nesting habitat would be disturbed during construction (generally by construction occurring during the nesting season near active nests). Temporary construction effects on special-status birds, raptors, and migratory birds may result from construction vehicle traffic; the temporary use of land for staging and access areas; noise and light (affecting local movement) construction activities; and other construction-related activities that are temporary in nature. If ambient noise pollution is of sufficient levels, the addition of small amounts of noise would not appreciably affect wildlife behavior. Because of the noise levels in the existing urbanized environment, it is not expected that construction noise levels would appreciably affect wildlife behavior.

Construction of the Shared Passenger Track Alternatives, in combination with cumulative projects including the adjacent Burbank to Los Angeles Project Section, would directly permanently affect special-status passerine birds, special-status raptors, and migratory birds (protected under the Migratory Bird Treaty Act). Permanent effects may include bird mortality or injury or the permanent conversion and loss of habitat caused by conversion of occupied nesting and foraging habitat of special-status birds, raptors, and migratory birds to project infrastructure; project lighting impacts affecting bird behavior, including movement and foraging; and habitat fragmentation through widening of tracks, adding station sites and maintenance facilities, and adding fencing, which could interfere with seasonal movement and dispersal of migratory and special-status birds. Habitat fragmentation generally reduces the probability of a population survivability, but this is dependent on factors such as the remaining patch size, the dispersal traits of species, and the time-scale of the effects. Suitable habitat for special-status birds, raptors, and

migratory birds with known use, and potential for impacts on these species, occurs. **BIO-IAMF#1**; **BIO-IAMF#3**; **BIO-IAMF#6, Establish Monofilament Restrictions**; **BIO-IAMF#7, Prevent Entrapment in Construction Materials and Excavations**; **BIO-IAMF#8**; **BIO-IAMF#9**; **BIO-IAMF#10**; **BIO-IAMF#11**; and **BIO-IAMF#12, Design the Project to Be Bird Safe** have been designed to ensure that mitigation measures are applied in a timely manner and that construction activities comply with regulatory requirements, minimize impacts on resources, reduce impacts on special-status birds, raptors, and migratory birds.

The IAMFs listed above would not entirely avoid construction effects on special-status birds, raptors, and migratory birds. Mitigation measures will be implemented to avoid these effects during construction. With implementation of **BIO-MM#6**; **BIO-MM#14, Conduct Preconstruction Surveys and Delineate Active Nest Buffers Exclusion Areas for Breeding Birds**; **BIO-MM#15, Conduct Preconstruction Surveys and Monitoring for Raptors**; **BIO-MM#20, Conduct Protocol Surveys for Burrowing Owls**; **BIO-MM#21, Implement Avoidance and Minimization Measures for Burrowing Owl**; **BIO-MM#37, Minimize Effects on Wildlife Movements Corridors During Construction**; **BIO-MM#44, Provide Compensatory Mitigation for Loss of Active Burrowing Owl Burrows and Habitat**; **BIO-MM#55**; **BIO-MM#56**; **BIO-MM#58**; **BIO-MM#60**; **BIO-MM#62**; **BIO-MM#63, Work Stoppage**; **BIO-MM#68, Avoid and Minimize Impacts on White-Tailed Kite**; **BIO-MM#76, Implement Wildlife Rescue Measures**; **BIO-MM#82, Implement Lighting Minimization Measures During Construction**; **N&V-MM#1**; **AVQ-MM#1, Minimize Visual Disruption from Construction Activities**; and **AVQ-MM#2, Minimize Light Disturbance During Construction**, during project construction, temporary and permanent impacts on birds, raptors, and migratory birds will be minimized. With implementation of mitigation, the Shared Passenger Track Alternatives are not expected to considerably contribute to the significant impacts on special-status birds, raptors, and migratory birds.

Special-Status Mammals

Construction of the Shared Passenger Track Alternatives and cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in temporary impacts on special-status mammals including an increase in opportunistic predators (if trash and other attractants are present) and temporary alterations in lighting, dust, and noise that may disrupt foraging and roosting. If ambient noise pollution is of sufficient levels, the addition of small amounts of noise would not appreciably affect wildlife behavior. Because of the noise levels in the existing urbanized environment, it is not expected that construction noise levels would appreciably affect wildlife behavior. **BIO-IAMF#1**, **BIO-IAMF#3**, **BIO-IAMF#7**, **BIO-IAMF#8**, **BIO-IAMF#9**, **BIO-IAMF#10**, and **BIO-IAMF#11** have been designed to ensure that mitigation measures are applied in a timely manner and that construction activities comply with regulatory requirements, minimize impacts on resources, and reduce impacts on special-status mammals.

The IAMFs listed above would not entirely avoid construction effects on special-status mammals. Mitigation measures will be implemented to avoid these effects during construction. With implementation of **BIO-MM#6**; **BIO-MM#25, Conduct Preconstruction Surveys for Special-Status Bat Species**; **BIO-MM#26, Implement Bat Avoidance and Relocation Measures**; **BIO-MM#27, Implement Bat Exclusion and Deterrence Measures**; **BIO-MM#37**; **BIO-MM#55**; **BIO-MM#56**; **BIO-MM#58**; **BIO-MM#60**; **BIO-MM#62**; **BIO-MM#63**; **BIO-MM#76**; **BIO-MM#82**; **N&V-MM#1**; **AVQ-MM#1**; and **AVQ-MM#2** during construction of the Shared Passenger Track Alternatives, temporary and permanent impacts on special-status small mammals will be avoided or minimized. With implementation of mitigation, impacts on special-status mammal species would be less than significant. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to impacts on special-status mammals during construction.

Operation

Special-Status Birds, Raptors, and Migratory Birds (Including Birds Covered under the Migratory Bird Treaty Act)

Operation of the Shared Passenger Track Alternatives in combination with cumulative projects would result in impacts on special-status birds, raptors, and migratory birds including injury or

mortality from bird strikes or bird interactions with fencing and the electrical systems or direct strikes with the train; permanent disturbances caused by noise, wind, and visual stimuli (such as lighting) that would affect movement, foraging, and breeding; poisoning of avian predators through the consumption of poisoned rodents; a reduced prey base for avian predators as a result of rodenticide programs; and night lighting that alters movement patterns. If ambient noise pollution is of sufficient levels, the addition of small amounts of noise would not appreciably affect wildlife behavior. Because of the noise levels in the existing urbanized environment, it is not expected that construction noise levels would appreciably affect wildlife behavior. **BIO-IAMF#4** and **BIO-IAMF#12** have been designed to ensure that mitigation measures are applied in a timely manner and that construction activities comply with regulatory requirements, minimize impacts on resources, and reduce impacts on special-status birds, raptors, and migratory birds.

The IAMFs listed above would not entirely avoid construction effects on special-status birds, raptors, and migratory bird species. Mitigation measures will be implemented to avoid these effects during construction. With implementation of **BIO-MM#54**; **BIO-MM#55**; **BIO-MM#76**; **BIO-MM#83, Implement Lighting Minimization Measures During Operations**; and **BIO-MM#84, Nesting Bird Surveys During Operations**, impacts will be reduced. Operation of the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to impacts on special-status birds, raptors, and migratory bird species.

Special-Status Mammals

Operation of the Shared Passenger Track Alternatives and cumulative projects could result in impacts on special-status mammals including ground disturbance during operational activities where foraging and denning habitat would be directly affected; local shifts in populations caused by increased noise levels and human presence, rodenticides, and trash receptacles; direct injury or mortality from bat strikes or bat interactions with fencing and the electrical systems or direct strikes with the train; permanent disturbances as a result of noise, wind, and visual stimuli (such as lighting) that would affect movement, foraging, and breeding; and the color and type of night lighting that would attract or deter bats and alter movement. If ambient noise pollution is of sufficient levels, the addition of small amounts of noise would not appreciably affect wildlife behavior. Because of the noise levels in the existing urbanized environment, it is not expected that construction noise levels would appreciably affect wildlife behavior. To reduce the potential for direct and indirect effects during O&M, the Authority will conduct WEAP training on a regular basis for maintenance crews (**BIO-IAMF#4**).

The IAMF listed above would not entirely avoid operational effects on special-status mammals. Mitigation measures will be implemented to avoid these effects during operation. With implementation of **BIO-MM#54**, **BIO-MM#76**, and **BIO-MM#83**, impacts will be reduced. With implementation of mitigation, operation of the Shared Passenger Track Alternatives would result in less-than-significant impacts on special-status mammal species. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to impacts on special-status species during operation.

CEQA Conclusion

The historical trend of land use changes in the RSA has led to large-scale alteration and removal of the habitat of numerous special-status plant and wildlife species, and ongoing development continues to degrade remaining habitat. The project would result in the removal of vegetation for the placement of permanent infrastructure during construction, and the removal of vegetation in temporary impact areas and from construction. The mitigation proposed to address impacts on species habitat includes habitat preservation in combination with restoration and enhancement, which would maintain or result in an improvement over existing conditions within the RSA. With implementation of the mitigation measures identified in Section 3.7.7, the Shared Passenger Track Alternatives would not result in cumulatively considerable contributions to significant cumulative impacts because the applicable mitigation measures, as well as IAMFs incorporated into the project design, would avoid or minimize the potential for trampling or other destruction of special-status plant and wildlife species and their habitats.

Aquatic Resources

Cumulative Condition

Aquatic resources considered subject to USACE, State Water Resources Control Board, or CDFW jurisdiction within the cumulative RSA have been heavily modified because of urbanization (e.g., concrete-lined channels) and transportation and rail infrastructure. In addition, these areas are subject to periodic disturbance for flood-control purposes, including eradication and removal of vegetation, removal of accumulated sediment, and tilling of earthen channels and basins. This routine flood-control maintenance[3] prevents establishment of vegetation in the concrete-lined channels and mature vegetative growth forms (e.g., woodlands, forest) in earthen-bottom channels and basins, and severely limits the extent and diversity of natural and seminatural vegetative communities as well as natural biogeochemical functions.

Under the cumulative condition, planned urban development would continue and the conversion of nontransportation uses to transportation uses would occur. These projects could result in the filling, modification, or disturbance of jurisdictional aquatic resources. Potential adverse effects of these future project activities on potentially jurisdictional aquatic resources may include direct and indirect impacts on substrate and vegetation; currents, circulation, and drainage patterns; wetlands; nonwetland riparian areas; and water quality. In addition, O&M activities associated with planned transportation and development projects would consist of periodic inspections, maintenance of structures, use of water diversions or dewatering equipment, and removal of accumulated sediment, debris, and vegetation from the vicinity of structures in and adjacent to aquatic resources. However, as described above, these activities are already conducted on a routine basis, resulting in regular disturbances to these resources within the cumulative RSA.

Accordingly, potentially jurisdictional aquatic resources within the cumulative RSA are generally restricted to a very low level of aquatic ecological functions, based on routine maintenance practices, flood control modifications (e.g., concrete lining), and the heavily urbanized rail corridor.

Contribution of Shared Passenger Track Alternatives

Construction

Construction activities that could result in temporary direct or indirect effects on aquatic resources considered subject to USACE, State Water Resources Control Board, or CDFW jurisdiction include staging and storage; construction laydown; access roads; surface water diversions; dewatering; demolition; falsework and scaffolding; relocation or upgrading of underground utilities; foot, vehicle, and machine traffic; and other workspace that would not be occupied during HSR operations. In addition, construction activities that could result in permanent direct or indirect effects on aquatic resources include modification of watercourse and waterbody crossings, and construction and modification of stormwater drainage facilities and access roads. Collectively, these activities could result in temporary or permanent impacts on substrate and vegetation; currents, circulation, and drainage patterns; wetlands; nonwetland riparian areas; and water quality within the footprint of these activities as well as in downstream receiving waters.

To reduce potential temporary and permanent direct and indirect effects on aquatic resources during the construction phase, the Authority will incorporate the following IAMFs as a part of the project: **BIO-IAMF#1**, **BIO-IAMF#3**, **BIO-IAMF#5**, **BIO-IAMF#8**, **BIO-IAMF#9**, **BIO-IAMF#10**, **BIO-IAMF#11**, **HYD-IAMF#1**, **HYD-IAMF#3**, **HYD-IAMF#4**, and **HMW-IAMF#6**.

[3] Channel maintenance activities conducted by USACE and local flood control agencies (e.g., the Los Angeles County Department of Public Works and Orange County Flood Control District) include removing deposits of sediment, vegetation, and other materials that can inhibit the ability of built flood-control channels to convey floodwaters. Such maintenance activities are authorized under USACE Los Angeles District Regional General Permit 41 and other pertinent regional permits (USACE 2021a) as well as the 2021 USACE Nationwide Permits, General Conditions, District Engineer's Decision, Further Information, and Definitions (USACE 2021b).

The IAMFs listed above would not entirely avoid temporary effects on state and federally protected wetlands, riparian habitat, and nonwetland waters. The following mitigation measures would be implemented to offset temporary and permanent impacts on these resources to less-than-significant levels during construction: **BIO-MM#6**, **BIO-MM#33**, **BIO-MM#34**, **BIO-MM#47**, **BIO-MM#50**, **BIO-MM#55**, **BIO-MM#58**, and **BIO-MM#62**.

With these IAMFs and mitigation measures, project construction would not result in a cumulatively considerable contribution to impacts on aquatic resources.

Operation

O&M activities for the Shared Passenger Track Alternatives would consist of periodic inspections, maintenance of structures, use of water diversions or dewatering equipment, and removal of accumulated sediment and debris from the vicinity of structures sited in and adjacent to aquatic resources. However, these activities are already conducted on a routine basis throughout the project section, resulting in regular disturbances to aquatic resources within the cumulative RSA. Accordingly, aquatic resources within the project section are generally restricted to a very low level of aquatic ecological functions because of routine maintenance practices, flood control modifications (e.g., concrete lining), and the heavily urbanized rail corridor. To reduce the potential for direct and indirect effects during O&M, the Authority will incorporate **BIO-IAMF#4** and **BIO-IAMF#5** as a part of the project.

With these IAMFs, project operation would not result in a cumulatively considerable contribution to impacts on aquatic resources.

CEQA Conclusion

The historical trend of land use changes in the cumulative RSA for the project has led to elimination or substantial degradation of aquatic resources considered subject to USACE, State Water Resources Control Board, or CDFW jurisdiction. Ongoing or foreseeable planned development, as well as ongoing O&M activities, continue to degrade remaining aquatic resources. With incorporation of the IAMFs and implementation of mitigation measures identified above, the impacts of the Shared Passenger Track Alternatives on jurisdictional aquatic resources would be less than significant. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on aquatic resources, in combination with cumulative projects, would not be cumulatively considerable.

Wildlife Movement

Cumulative Condition

The wildlife movement corridors within the RSA include the watercourses including the Los Angeles River, the Rio Hondo and spreading grounds, the San Gabriel River, and the Santa Ana River (Spencer et al. 2010). These corridors could provide movement corridors for wildlife adapted to disturbance, including regionally common mammal species such as coyote (*Canis latrans*), raccoon (*Procyon lotor*), skunk (e.g., *Spilogale gracilis*, *Mephitis mephitis*), and opossum (*Didelphis virginiana*), with the potential for use by bat species associated with bridge areas and palms/trees, including special-status bat species. Avian species include waterfowl (e.g., ducks, geese, gulls, stilt), riparian/shrub species (Yellow Warbler [*Setophaga petechia*], Cassin's Kingbird [*Aimophila cassinii*], Blue Grosbeak [*Passerina caerulea*]), urban species (Hummingbirds, Starlings [*Sturnus vulgaris*], Common Raven [*Corvus corax*], and American Crow [*Corvus brachyrhynchos*]), species that nest under bridges (Swifts and Swallows), and grassland avian species. Mountain lions use both watercourses and ridgelines for movement, because the undercrossings of bridges are movement corridors for mountain lions under roadways. Burrowing Owls (*Athene cunicularia*) are known in the Rio Hondo and spreading grounds and the San Gabriel River. The California Least Tern is known to fly between Burris Basin and Haster Basin Recreation Area, with the Santa Ana River as the connection between these two areas. The Los Angeles River physically connects Least Bell's Vireo occupied habitat to suitable riparian habitat in the headwaters of the San Gabriel River, but the concrete-lined channel of the Los Angeles River and flood-control activities in the San Gabriel River prevent establishment of riparian vegetation.

Rare events in wildlife movement are important for maintaining genetic diversity. Although mountain lion studies over several years may indicate no movement of mountain lions across State Route 91; over a longer period of time, successful crossings are observed, and these crossings are important for the transfer of genetic material across areas that are considered isolated islands. The highly constrained nature of the RSA does not preclude its importance as a wildlife movement corridor. It is important because of the potential to support special-status wildlife and for these rare events to occur.

Long-term planning in the region includes large-scale projects such as the re-establishment of riparian areas adjacent to the Los Angeles River (at Taylor Yard) through the Los Angeles River Ecosystem Restoration Project (USACE and City of Los Angeles 2015), the Los Angeles River Master Plan (County of Los Angeles and Los Angeles County Public Works 2022), and County of Los Angeles Measure A Grant Funds (County of Los Angeles 2023) for natural lands and open spaces. In many cases, the county and city general plans include goals for increased groundwater retention, which includes the removal of concrete-lined channels, which increases the biological value of the existing corridors, including segments of the Los Angeles River and potentially the Rio Hondo, but also smaller watercourses connected to these larger corridors. Most general plans include goals to avoid the loss of open space and increase green space, including trees, bioswales, and overall habitat quality in the Los Angeles basin.

Contribution of the Shared Passenger Track Alternatives

Construction

Wildlife habitat and land cover types in the construction footprint have the potential to support several special-status wildlife species. Construction activities have the potential to disturb the life cycles of these special-status species.

The placement of temporary barriers during construction would impede wildlife movement through areas with restricted crossing opportunities; however, based on the design of the Shared Passenger Track Alternatives, most crossings at the identified wildlife movement corridors would be elevated and would not impede movement.

The temporary impediment in the wildlife movement corridors that are already highly constrained would prevent the corridor from fully functioning for special-status wildlife including mountain lions, bats, and special-status avian species including Burrowing Owl.

Temporary construction activities occurring at or near wildlife movement corridors would result in indirect disruption of wildlife movement through nighttime lighting effects that would disrupt normal behavioral patterns, including foraging behavior and migration. Construction noise would create avoidance behaviors, and temporary physical barriers may exist as well as the temporary disturbance associated with construction from lighting, construction noise, and human presence that may provide a barrier to dispersal along the corridor. Construction trash can attract common predators and increase predator stress for native and special-status wildlife. Trash can also increase prey species availability for rare species such as mountain lions, attracting lions away from wildlife movement corridors and into construction areas, thereby increasing human and mountain lion interaction risks. This is an impact on mountain lions in the wildlife corridor because human and mountain lion interactions are highly risky for mountain lions because of the probability of mountain lions being killed as a result of human fear. Construction traffic creates noise and lighting and increases collision risk. Trenches, pipes, and other similar structures associated with construction can also create traps for wildlife.

Indirect effects on wildlife movement corridors could include shifts in foraging patterns or territories, and decreased reproductive success. Effects could also include the displacement of wildlife species. The inadvertent introduction of invasive (noxious) weeds would reduce habitat suitability in the wildlife movement corridor and would reduce foraging.

Existing linear facilities, highways, state routes, railroad alignments, roadways and canals, and urban uses impede wildlife movement for terrestrial animals. Collision risk is increased near linear facilities, and these are often mortality sinks. As a result, the ability of wildlife species to move freely is diminished. Natural dispersal corridors such as waterways have also become

increasingly constrained as a result of adjacent land use, conversion of infrastructure, and ongoing flood-control activities in the waterways.

It is not expected that any permanent direct effects from the placement of permanent linear barriers to wildlife movement would occur. Most of the wildlife movement corridors are below elevated track, so fencing would not be required across the corridors.

Indirect effects on wildlife movement corridors as a result of permanent habitat conversions through the introduction of invasive (noxious) weeds would reduce habitat suitability in the wildlife movement corridor. Other permanent indirect effects would include changes in movement from construction lighting and noise. Increases in predator populations can occur because of construction trash and this can lead to permanent losses of special-status wildlife species in highly stressed wildlife movement corridors.

To reduce impacts on wildlife movement corridors, the Authority will incorporate IAMFs as a part of the project including **BIO-IAMF#1**, **BIO-IAMF#3**, **BIO-IAMF#7**, **BIO-IAMF#8**, **BIO-IAMF#9**, **BIO-IAMF#10**, and **BIO-IAMF#11**.

The IAMFs listed above would not entirely avoid construction effects on wildlife movement corridors. Mitigation measures would be implemented to avoid effects on wildlife movement corridors during construction including **BIO-MM#6**, **BIO-MM#34**, **BIO-MM#37**, **BIO-MM#44**, **BIO-MM#55**, **BIO-MM#56**, **BIO-MM#58**, **BIO-MM#60**, **BIO-MM#62**, **BIO-MM#63**, **BIO-MM#82**, **N&V-MM#1**, **AVQ-MM#1**, and **AVQ-MM#2**. Accordingly, the Shared Passenger Track Alternatives' contribution to impacts on wildlife movement corridors, in combination with cumulative projects, would not be cumulatively considerable.

Operation

As described above, operation of the Shared Passenger Track Alternatives in combination with cumulative projects would result in impacts on wildlife movement corridors including injury or mortality from bird or bat strikes or bird or bat interactions with fencing and the electrical systems or direct strikes with the train; permanent disturbances caused by noise, wind, and visual stimuli (such as lighting) that would affect movement, foraging, and breeding; poisoning of avian predators or special-status mammals through the consumption of poisoned rodents; a reduced prey base for avian predators as a result of rodenticide programs; and night lighting that alters movement patterns.

Permanent operational activities associated with the project would be intermittent in nature. Sound exposure levels from passing trains (i.e., noise exposure from an individual train passage) that exceed 100 A-weighted decibels are expected to elicit an avoidance response from birds and mammals moving through nearby habitat. As discussed in Section 3.4, operations are not expected to expose wildlife to noise levels that could exceed this sound exposure level. If ambient noise pollution is of sufficient levels, the addition of small amounts of noise would not appreciably affect wildlife behavior. Because of the noise levels in the existing urbanized environment, it is not expected that construction noise levels would appreciably affect wildlife behavior.

Train O&M could result in indirect effects if these operations restrict wildlife movement in wildlife movement corridors. This would restrict gene flow, increase habitat fragmentation, and decrease foraging habitat. Regular maintenance at specific sites near movement corridors would dissuade wildlife movement through these areas because of human presence. There would be an impact on wildlife movement corridors during operations.

To reduce permanent direct and indirect effects on wildlife movement corridors during the O&M phase, the Authority will incorporate IAMFs as a part of the project. These IAMFs include **BIO-IAMF#4** and **BIO-IAMF#12**.

The IAMFs listed above would not entirely avoid operational effects on wildlife movement corridors. Mitigation measures would be implemented to avoid effects on wildlife movement corridors during operations including **BIO-MM#54**, **BIO-MM#55**, and **BIO-MM#83**. Accordingly, the Shared Passenger Track Alternatives' contribution to impacts on wildlife movement corridors, in combination with cumulative projects, would not be cumulatively considerable.

CEQA Conclusion

Wildlife movement corridors in the RSA are highly constrained with ongoing developmental pressure and increasing human use of the wildlife corridors. However, in the Los Angeles basin, the need to increase groundwater retention, reduce GHGs, and reduce sources of anthropogenic heat have led to both projects and city and county goals that will increase the habitat quality in the Los Angeles basin. The project would result in temporary construction impacts in the wildlife corridors associated with increases in noise, lighting, and temporary impediments to wildlife movement. Because of the elevated nature of the tracks, permanent impacts impeding wildlife movement are not anticipated. Operational impacts associated with noise, lighting, invasive species, and the use of herbicides and rodenticides would affect the wildlife corridor. The mitigation proposed to address impacts on the wildlife corridors includes avoidance of impeding the use of the corridor during construction, indirect effects during construction, and indirect effects during operations. With implementation of the mitigation measures identified in Section 3.7.7, the Shared Passenger Track Alternatives would not result in cumulatively considerable contributions to significant cumulative impacts because the applicable mitigation measures, as well as IAMFs incorporated into the project design, will avoid or minimize the potential for impeding movement in the wildlife corridors and degrading the habitat value in the corridors. Therefore, the Shared Passenger Track Alternatives' contribution to impacts on wildlife corridors, in combination with cumulative projects, would not be cumulatively considerable.

Locally Protected Biological Resources (Trees and Shrub Preservation Policies or Ordinances)

Cumulative Condition

The Shared Passenger Track Alternatives would primarily be in Los Angeles and Orange Counties, and the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim. The city of Orange is also within the RSA. Regional and local plans and policies include ordinances and laws regarding trees and shrubs and include requirements for avoidance, preservation, or compensation for direct and indirect impacts. Ornamental trees and shrubs occur within the RSA in the ornamental land cover type, the disturbed land cover type, the developed land cover type, and the disturbed/ruderal land cover type. These communities compose the majority of vegetation communities and land cover types mapped both in the Shared Passenger Track Alternatives and the RSA. The laws related to protected trees are applicable to the Shared Passenger Track Alternatives.

Contribution of the Shared Passenger Track Alternatives

Construction

Direct permanent effects on protected trees and shrubs would occur where permanent impacts or temporary impacts require clearing. Trimming or pruning for stations, tracks, maintenance, and equipment storage would also have permanent impacts on protected trees and shrubs.

Soil compaction, the placement of fill and other material, shading by equipment, and alterations to the microtopography would stress trees and shrubs, causing poor growth and loss of leaves or roots during the construction period. Soil erosion and sedimentation could change the soil conditions of protected trees and shrubs; if hydrological changes are permanent, these changes would be permanent.

Temporary indirect effects from construction activities would result from unintentional contamination, such as chemical leaks and spills, which would affect water or soils that protected trees depend on. These effects would become permanent if the source of the unintentional contamination is not properly removed.

To reduce effects on protected trees and shrubs within the project section, the Authority will incorporate IAMFs as a part of the project including **BIO-IAMF#1**, **BIO-IAMF#3**, and **BIO-IAMF#8**.

The IAMFs listed above would not entirely avoid effects on protected trees and shrubs. Mitigation measures would be implemented to avoid effects on protected trees and shrubs during construction, including **BIO-MM#35, Implement Transplantation and Compensatory Mitigation Measures for Protected Trees or Shrubs**; **BIO-MM#55**; **BIO-MM#56**; **BIO-MM#58**; and **BIO-MM#60**. Accordingly, the Shared Passenger Track Alternatives' contribution to impacts on protected trees and shrubs, in combination with cumulative projects, would not be cumulatively considerable.

Operation

Operations would affect trees and shrubs protected under local policies. Permanent direct effects on protected trees and shrubs from operations would include tree and shrub trimming during operations. Operational effects could include increases in vehicle and foot traffic, leading to increases in soil compaction, which inhibits the ability for tree and shrub roots to function. O&M would increase movements of machinery and people, which increase the ability of invasive species and pathogens to invade. Invasive species are likely to outcompete native trees and shrubs, and pathogens such as sudden oak death would kill protected trees and shrubs. Indirect effects could also result from inadvertent damage to trees and shrubs, including damaging limbs and bark during operational activities.

To reduce effects during the O&M phase, the Authority will incorporate IAMFs as a part of the project including **BIO-IAMF#4** to reduce the potential of unplanned effects.

The IAMF listed above would not entirely avoid effects on protected trees and shrubs. Mitigation measures would be implemented to avoid effects on protected trees and shrubs during operations, including **BIO-MM#35**, **BIO-MM#54**, **BIO-MM#55**, **BIO-MM#56**, **BIO-MM#58**, and **BIO-MM#60**.

CEQA Conclusion

Although implementation of the IAMFs listed above would minimize impacts, construction and operations would conflict with local policies and ordinances protecting trees and shrubs. The local policies regarding protected trees and shrubs are summarized in Table 3.19-6.

Table 3.19-6 Local Policies Regarding Protected Trees in the Shared Track Alternatives and Tree Protections

Lead Agency	Policy	Tree Protections
County of Los Angeles (2025)	Municipal Code Chapter 12.28, Section 17.04.340	No removal of natural vegetation on sloping terrain in the unincorporated territory of the county.
	Municipal Code, Section 17.04.340	Protection of trees, plants, shrubs, grass, fruits, or flowers, or any portion thereof, growing in a park.
	Municipal Code, Chapter 22.126, Tree Planting Requirements	Projects with new uncovered parking lots with at least 15 parking spaces will plant at least 3 trees for every 10,000 square feet of developed lot area. The shade plan should result in a minimum of 50 percent shade coverage within 15 years of planting the trees.
	Oak Tree Ordinance	Protection of oaks in unincorporated areas of the county.
	Native Woodlands Conservation Management Plan	Preserve and restore oak woodlands and other native woodlands, with no net loss.
	Urban Greening Program	Up to 30 percent tree canopy requirements for planting in new developments to reduce urban heat island effect.
City of Los Angeles (2025)	Municipal Code, Section 41.31, Section 1, Subdivision 12 of Subsection A	Protected trees include (1) oak trees including valley oak (*Quercus lobata*), California live oak (*Quercus agrifolia*) or any other oak tree indigenous to Southern California, excluding scrub oak (*Quercus berberidifolia*), (2) Southern California black walnut (*Juglans californica* var. *californica*), (3) western sycamore (*Platanus racemosa*), (4) California bay (*Umbellularia californica*). Protected shrubs include (5) Mexican elderberry, and (6) toyon. The protected tree or shrub will be replaced within the property by at least four specimens of a protected variety except where the protected species is relocated.
	Chapter 6, Article 2	Depict existing protected trees and relocation and replacement trees specified by this code on a plot plan.
City of Montebello (2024)	Municipal Code, Section 12.08.090	Prohibits damage to street trees.
City of Pico Rivera (2025)	Municipal Code, Section 12.040.020	Permit required to damage any street tree.
City of Santa Fe Springs (2025)	Municipal Code, Section 96.133	Permit required to damage any street tree.
City of Buena Park (2025)	Municipal Code, Section 12.20.020	Prohibits damage to street trees.

Lead Agency	Policy	Tree Protections
City of Fullerton (2025)	Municipal Code, Section 9.06.090	Permit required to damage any street tree.
City of Anaheim (2025)	Municipal Code, Section 13.12.080	Permit required to damage any street tree.
	General Plan Green Element	Street trees to be preserved where practical.

Sources: City of Anaheim 2025a, 2025b; City of Buena Park 2025; City of Fullerton 2025; City of Los Angeles 2025; City of Montebello 2024; City of Pico Rivera 2025; City of Santa Fe Springs 2025; County of Los Angeles 2025

Although the IAMFs will minimize impacts on protected trees and shrubs, construction and operations of the Shared Passenger Track Alternatives would conflict with local policies and ordinances protecting these biological resources as specified in Table 3.19-6. This represents a significant impact because construction could include actions that would affect protected trees and shrubs. With implementation of the mitigation measures, the Shared Passenger Track Alternatives would not result in cumulatively considerable contributions to significant cumulative impacts because the applicable mitigation measures, as well as IAMFs incorporated into the project design, will avoid or minimize the potential for removing or affecting (e.g., through chemical spills, compaction in the dripline) protected trees and shrubs. Accordingly, the Shared Passenger Track Alternatives' contribution to impacts on protected trees and shrubs, in combination with cumulative projects, would not be cumulatively considerable.

3.19.4.7 Hydrology and Water Resources

Cumulative Condition

Many waterbodies are channelized, and drainage systems within the RSA have been put in place to accommodate urban development and divert flows. Under the cumulative condition, with inclusion of construction and operation of the project, ongoing urban development would continue, and the conversion of nontransportation uses to transportation uses would occur. Several large-scale planned development projects such as Stadium Towers, OCVIBE, and the LTG Platinum Center in Anaheim would contribute to development in the RSA and could result in impacts on hydrology and water resources. For example, operation and development of these planned and developed projects could result in changes in local hydrology and drainage that could degrade nearby waters including an increase in impervious surfaces resulting in a higher rate and volume of stormwater runoff, thereby increasing the potential risk for flooding. Federal Emergency Management Agency (FEMA)-designated 100-year floodplains identified within the direct floodplains RSA include floodplains associated with the following waterbodies: Los Angeles River, Rio Hondo, San Gabriel River, North Fork Coyote Creek, Brea Creek, Carbon Creek, Southeast Anaheim Channel, and floodplains associated with five storm drains. Development throughout the cumulative RSA would be subject to federal, state, and local regulations designed to control stormwater runoff, require construction-period pollution controls, prevent floodplain development, ensure adequate groundwater recharge, and otherwise protect hydrologic resources and water quality. Additionally, flood protection structures included in capital improvement plans for the cities of Vernon, Buena Park, and Fullerton would provide flood control improvements that would protect residences and businesses during a 100-year flood.

The cumulative RSA crosses the Los Angeles River, San Gabriel River, Santa Ana River, and Seal Beach watersheds in both Los Angeles and Orange Counties. The watersheds primarily consist of urban development, including mixed-use, residential, commercial, and industrial uses, which has resulted in extensive modifications to waterbodies in the RSA, including the introduction of human-made channels and drainage systems. In addition, urban development has generated land use modifications with extensive areas of impervious surface that affect the hydrology and water quality of surface waters (e.g., changes to on-site drainage patterns, decreased infiltration, and increased volumes and rates of runoff during a storm). Additionally, urban activities have increased pollutants in stormwater runoff. The Shared Passenger Track Alternatives, coupled with the planned and present development and transportation projects in the watershed, could result in potentially significant cumulative impacts caused by the excess

amounts of pollutants in receiving waters (e.g., sediment, heavy metals, oil and grease, and nutrients).

The cumulative RSA crosses the Central Subbasin of the Coastal Plain of the Los Angeles Groundwater Basin and the Main Subbasin of the Coastal Plain of the Orange County Groundwater Basin (depicted on Figure 3.8-2 in Section 3.8). Urban development has resulted in increases in impervious surface area that decrease the infiltration potential, thereby decreasing the amount of water that is able to recharge the groundwater basins. The Los Angeles County Department of Public Works maintains spreading grounds throughout the county to percolate water into the groundwater basins to recharge the groundwater basins for later pumping; similarly, Orange County Water District maintains recharge basins to percolate water into the groundwater basins. Urban activities deriving from the Shared Passenger Track Alternatives, combined with reasonably foreseeable projects listed in Appendices 3.19-A and 3.19-B, would result in the introduction of additional pollutants that can infiltrate the soil, affecting the groundwater quality of the underlying aquifers or groundwater basins (e.g., total dissolved solids, inorganic and organic compounds, increased salinity, high nitrates).

Contribution of the Shared Passenger Track Alternatives

Floodplains

Construction

Construction of the Shared Passenger Track Alternatives, in conjunction with construction activities associated with cumulative projects, could temporarily impede or redirect flood flows in the 100-year floodplain as a result of the presence of construction equipment and other materials in concentrated flow paths. Three reasonably foreseeable projects, including the directly adjacent Burbank to Los Angeles Project Section, Los Angeles River Path Project, and Los Angeles River Bike Path Gap Closure Project, would involve construction in the Los Angeles River 100-year floodplain. However, all development occurring within the RSA, including the Shared Passenger Track Alternatives and reasonably foreseeable projects, would be required to implement standard floodplain measures, including BMP, to minimize flow impacts on floodplains. The project includes **HYD-IAMF#3**, **BIO-IAMF#11**, **HMW-IAMF#6**, **HMW-IAMF#9**, and **HMW-IAMF#10** to avoid or minimize the potential for temporary impacts resulting in risk of release of pollutants from inundation. In addition, construction workers would monitor weather conditions for heavy storms and related potential flood flows and would relocate construction equipment that could impede flows and increase flood risks, thereby minimizing the potential flood risk. The Authority will also implement Environmental Management System and hazardous materials monitoring plans to limit the potential for spills and establish cleanup protocols and trained personnel to prevent accidental spills of hazardous materials (as specified in **HMW-IAMF#9** and **HMW-IAMF#10**) during construction. Incorporation of **HYD-IAMF#1**; **HYD-IAMF#2**; **HYD-IAMF#3**; **SS-IAMF#3, Hazard Analyses**; **HMW-IAMF#9**; and **HMW-IAMF#10** and adherence to the requirements set forth in Executive Order 11988 will ensure that the impact from risk of release of pollutants from inundation is minimized and construction of the project includes effective measures to avoid or minimize the potential for exposure of the project to flooding and related risk of pollutant release, and new or additional exposure to flooding risk and hazards from inundation would not occur. With incorporation of these preventive design measures, the Shared Passenger Track Alternatives would not result in cumulative impacts associated with floodplains. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to impacts because of flood flows.

Linear transportation projects contributing to cumulative conditions may cross and place structures in FEMA-designated 100-year floodplains. Of the reasonably foreseeable projects, the directly adjacent Burbank to Los Angeles Project Section is the only project that would potentially place structures in the Los Angeles River floodways and result in an increase in the water surface elevation. Blockage of flood flows by multiple linear projects is not a cumulative issue because increases in flood levels are generally limited to the vicinity of new structures placed in the floodplain. Although temporary structures would be placed in floodplains during construction, there would be no permanent structures placed in regulatory 100-year floodplains by the Shared

Passenger Track Alternatives. The linear facility in the floodplain that has the greatest restriction in floodwater conveyance defines the flood flow for future facilities. Through project design, the capacity of the flood conveyance features for the project would be equal to or greater than the flood conveyance capacity of existing linear facilities. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to impacts because of an increase in flood risk during construction.

Operation

Nonlinear projects, such as mixed-use, residential, and commercial developments, may affect flood flow volume or rates in the project section as a result of increases in impervious surface area. This could be exacerbated if inadequate drainage were provided by the Shared Passenger Track Alternatives near proposed new or existing development areas. Therefore, project operation, in conjunction with other planned and approved projects and plans, could result in a cumulative impact on flood levels. FEMA identified special flood-hazard areas on Flood Insurance Rate Maps for all communities that participate in the National Flood Insurance Program, including Los Angeles and Orange Counties and cities in the counties. State and local governments use these Flood Insurance Rate Maps for administering floodplain management programs, enforcing building codes, and mitigating flooding losses. The 100-year floodplain corresponds to FEMA's special flood-hazard areas. The special flood-hazard areas consist of the land areas covered by the base flood to which the FEMA floodplain management regulations apply. Special flood-hazard areas in the direct RSA include Flood Zones A, AE, AH, and AO from the floodplain crossings. There is no FEMA regulatory floodway mapped at the crossings. Furthermore, the project and reasonably foreseeable projects encroaching on a 100-year floodplain (Los Angeles River Path Project, Los Angeles River Bike Path Gap Closure Project, and the directly adjacent Burbank to Los Angeles Project Section) would be required to comply with FEMA regulations and also the requirements set forth in U.S. Executive Order 11988, which entails a floodplain analysis to prevent projects from increasing the base flood elevation more than 1 foot in floodplains or substantially changing the floodplain limits. Furthermore, city or county general plan policies, programs, and ordinances intended to offset the potential direct and cumulative flooding problems that may arise from development would apply to development projects in the indirect RSA. The project includes **HYD-IAMF#1**, **HYD-IAMF#3**, **HMW-IAMF#9**, **HMW-IAMF#10**, and **SS-IAMF#3** to avoid or minimize permanent impacts resulting from risk release of pollutants from inundation. A spill prevention and emergency response plan (**HYD-IAMF#3**) will be applied to handle potential fuel or hazardous material spills. With proper handling of hazardous materials and proper cleanup of accidental spills, the project would not risk release of pollutants during inundation. The project will include requirements to conduct preliminary hazards analyses during design and construction. These analyses will determine and address facility hazards and vulnerabilities, thereby preventing impacts, such as risks of flooding, that may occur during operations (**SS-IAMF#3**). With incorporation of these measures into the design of the Shared Passenger Track Alternatives, it is not anticipated that there would be a risk of pollutant release from inundation, and impacts would be less than significant. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to impacts because of flood risk during operation.

Surface Waters

Construction

Ground-disturbing activities, such as grading and excavation, could temporarily and permanently alter drainage patterns, redirect stormwater runoff, and increase the potential for erosion. In addition, construction activities could increase the amount of stormwater runoff by removing natural vegetation or compacting soil, thereby decreasing infiltration.

Projects developed under the cumulative condition that are near surface waters, such as transportation projects that cross or involve construction near rivers and channels, could have the greatest construction impacts, because certain infrastructure may require modifying or introducing new topography (i.e., new drainage systems) to a landscape, which could result in permanent, localized effects on existing drainage patterns. The Shared Passenger Track Alternative will incorporate application of a stormwater management and treatment plan (**HYD-IAMF#1**),

preparation of a flood protection plan to minimize development in floodplains and impacts in the 100-year floodplain (**HYD-IAMF#2**), and preparation and implementation of a stormwater pollution prevention plan to minimize short-term increases in sediment transport and runoff (**HYD-IAMF#3**). The Authority will also apply construction BMPs (as detailed in **BIO-IAMF#11**), which require implementation of standard construction sites housekeeping practices. With incorporation of **HYD-IAMF#2**, **HYD-IAMF#3**, and **BIO-IAMF#11**, cumulative impacts related to stormwater runoff, drainage patterns, and hydraulic capacity would be less than significant. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a cumulative significant impact.

Construction in, across, near, or over surface water channels has the potential to temporarily and permanently degrade surface waters directly, and this degradation could be exacerbated by concurrent construction schedules for multiple projects. In-water work during construction of the Shared Passenger Track Alternatives coupled with that of other reasonably foreseeable projects considered in this evaluation would be limited and would most likely be restricted to the dry season, and erosion and sedimentation controls will be incorporated to stabilize disturbed soils and prevent sediments from entering nearby storm drains and waterbodies (**HYD-IAMF#3**). It may be feasible to avoid disturbing contaminants during construction on most off-site potential environmental concern sites by following the stipulations in the Construction Management Plan prepared as part of **HMW-IAMF#4**. The Authority will also apply Environmental Management System and hazardous materials monitoring plans to limit the potential for spills and establish cleanup protocols and trained personnel to prevent accidental spills of hazardous materials (**HMW-IAMF#9** and **HMW-IAMF#10**) and waste management and materials pollution controls (**BIO-IAMF#9** and **HMW-IAMF#7**) during construction. In cases where a waterbody has year-round flows, the Authority would develop a water diversion plan and water crossing plan prior to construction to reduce impacts on surface water (**BIO-MM#62**). Where temporary water diversion is required, the diversion would be removed once construction is complete, and the channel would be restored to its pre-existing condition. The Share Passenger Track Alternatives and cumulative projects that disturb greater than 1 acre of soil would be subject to the requirements of the Construction General Permit during construction. The project would comply with the Construction General Permit and incorporate erosion and sedimentation controls to stabilize disturbed soils and prevent sediments from entering nearby storm drains and waterbodies. In addition, the stormwater pollution prevention plan would describe temporary drainage patterns on construction sites and indicate stormwater discharge locations from those sites to the existing drainage system to maintain the existing drainage pattern to the maximum extent practicable. To minimize or avoid erosion and sedimentation, methods will be applied for controlling water and wind erosion of soils per **HYD-IAMF#3** and **GEO-IAMF#1, Geologic Hazards**, to prevent sediments from entering nearby storm drains and waterbodies. In addition, **HYD-IAMF#3** requires construction activities that involve in-water work to be limited, where feasible, to dry periods when flows in waterbodies are low or absent.

Additionally, the project would require review from USACE under Section 408 where the project would include modifications or alterations of a federal flood control facility to ensure that its usefulness is not impaired. The Los Angeles River is a USACE facility under Section 14 of the Rivers and Harbors Act of 1899, as amended and codified in 33 U.S. Code 408 (Section 408). Therefore, prior to and during the design phase, the Authority would be required to coordinate with the Los Angeles County Flood Control District and USACE to obtain a preliminary and final Section 408 review for the Los Angeles River bridge crossings. Section 408 provides that USACE may grant permission for another party to alter a USACE flood control facility on a determination that the alteration proposed will not be injurious to the public interest and will not impair the usefulness of the facility. Furthermore, the Authority would comply with Clean Water Act Sections 401 and 404, which require permits for fill activities at specific aquatic resources where fill is planned. With incorporation of these measures into the design of the Shared Passenger Track Alternatives, it is anticipated that impacts on surface water quality would be less than significant. Therefore, the Shared Passenger Track Alternatives would not considerably contribute to a cumulative significant impact.

Operation

The project includes **HYD-IAMF#1**, **HYD-IAMF#4**, **HMW-IAMF#6**, and **HMW-IAMF#10** to avoid or minimize the potential for intermittent and continuous permanent impacts on surface waters. O&M of the Shared Passenger Track Alternatives and cumulative projects has the potential to affect the environment and the public through the transport, use, storage, and disposal of hazardous materials into hydrology and water resources for maintenance of the HSR system. Routine maintenance activities, such as repairing overcrossings or bridges, drainage channels, or drainage infrastructure, could temporarily affect drainage patterns and streamflows and could cause temporary increases of suspended sediment and turbidity within a surface waterbody. The project includes **BIO-IAMF#11** as part of the project design, which requires measures to be implemented that avoid or minimize impacts on drainage patterns, stormwater runoff, hydraulic capacity, or additional sources of polluted runoff. With incorporation of project design features, the Shared Passenger Track Alternatives, in combination with cumulative projects, would not substantially alter surface water quality and cumulative impacts would be less than significant. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Groundwater

Construction

Construction of the Shared Passenger Track Alternatives and other reasonably foreseeable projects are in areas of existing development, in the urban areas of the cities of Los Angeles, Vernon, Bell, Commerce, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, and Anaheim. The project would result in an increase in impervious surface area from structures along the alignment as well as structures at the HSR stations, LMF, and Metrolink Station relocations. The other transportation and development projects on the reasonably foreseeable projects list would also increase impervious surface area and result in other land use changes that could increase pollutants in stormwater runoff. However, because the areas primarily consist of impervious surfaces, the potential for groundwater recharge in the RSA is relatively low. As described previously, spreading grounds are in Los Angeles County (Rio Hondo) and Orange County (Raymond Retarding Basin) for groundwater recharge. No spreading grounds or retarding basin would be directly crossed by the project. Therefore, the Shared Passenger Track Alternatives, combined with other reasonably foreseeable projects, would not result in an indirect cumulative impact on spreading grounds or retarding basin within the RSA. The Shared Passenger Track Alternatives would not result in a reduction in infiltration because the project will include project-specific stormwater BMPs, such as infiltration basins. Infiltration basins will promote additional surface water infiltration on site as required by **HYD-IAMF#1**, and will improve runoff quality from new or replaced impervious surfaces. The increase in the total new impervious surfaces would not affect existing groundwater recharge capabilities and would not interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table with the addition of the proposed infiltration facilities. The amount of groundwater withdrawal will be controlled, pursuant to **GEO-IAMF#1**. In addition, the Authority will control the amount of re-inject groundwater at specific locations if necessary, or use alternate foundation designs to offset the potential for groundwater overdraft (as detailed in **GEO-IAMF#1**). During dewatering activities, groundwater quality monitoring would be required prior to disposal, as well as water quality testing prior to disposal to ensure there are no impacts on surface water quality. For contaminated groundwater encountered, the water may be collected and off-hauled to a local sanitary sewer or an active treatment system that may be required to treat the water prior to discharge. Methods will be applied to avoid or minimize the risk of ground failure, such as replacement with competent soils, strengthening with geosynthetics, stone columns and similar approaches, and vertical drains (**GEO-IAMF#1**). The Authority will implement erosion control and stormwater BMPs consistent with the Construction General Permit to minimize the potential for sediment-laden runoff to enter surface water features (**HYD-IAMF#3**). Effects from groundwater dewatering would be temporary, because dewatering would cease once construction has been completed. In addition, because of the implementation of post-construction BMPs, the project and the other reasonably foreseeable projects are not anticipated to affect groundwater quality because pollutants of concern would be

removed from stormwater runoff before it infiltrates the groundwater basin. Therefore, the Shared Passenger Track Alternatives, combined with cumulative projects, would result in less-than-significant cumulative groundwater impacts.

Operation

The RSA is in a highly developed, urbanized area that includes a considerable amount of impervious surfaces. Operational activities and pollutants associated with the project and other reasonably foreseeable projects, including the adjacent Burbank to Los Angeles Project Section, would be similar to those currently occurring in the cumulative RSAs. The project, combined with reasonably foreseeable projects, could permanently increase impervious surfaces, reducing the amount of water that could affect groundwater recharge. However, **HYD-IAMF#1** requires stormwater management measures such as infiltration basins to be incorporated into the design to allow for infiltration, which will avoid or minimize effects on groundwater recharge. The Shared Passenger Track Alternatives would not otherwise substantially degrade groundwater quality, substantially deplete groundwater supplies, or interfere with groundwater recharge. Additionally, new development would be required to comply with National Pollutant Discharge Elimination System requirements and implement operational BMPs to minimize permanent impacts on groundwater and reduce pollutants of concern in stormwater runoff. Therefore, the Shared Passenger Track Alternatives and cumulative projects would result in less-than-significant cumulative groundwater impacts.

CEQA Conclusion

There are no anticipated significant cumulative impacts under CEQA related to floodplains, surface water, and groundwater to which the Shared Passenger Track Alternatives would contribute. The project includes **HYD-IAMF#1**; **HYD-IAMF#2**; **HYD-IAMF#3**; **HYD-IAMF#4**; **HMW-IAMF#6**; **HMW-IAMF#7, Storage and Transport of Materials**; **HMW-IAMF#8, Permit Conditions**; **HMW-IAMF#9**; **HMW-IAMF#10**; **SS-IAMF#3**; **BIO-IAMF#9**; **BIO-IAMF#11**; and **GEO-IAMF#1** to avoid or minimize the potential for intermittent and continuous permanent impacts on floodplains, surface waters, and groundwater. Implementation of **BIO-MM#62** would reduce temporary impacts on surface water during construction to less-than-significant levels. With incorporation of **BIO-IAMF#11**, the project will not substantially alter the existing drainage patterns and result in substantial increases in the rate or amount of runoff during maintenance, causing erosion or siltation off site, flooding, or additional sources of polluted runoff. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative floodplain, surface water, and groundwater impacts, in combination with other planned projects, would not be cumulatively considerable.

3.19.4.8 Geology, Soils, Seismicity, and Paleontological Resources

Cumulative Condition

Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA. The cumulative condition relevant to geology, soils, seismicity, and paleontological resources consists of the Shared Passenger Track Alternatives; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, Orange, South Whittier, and the unincorporated community of West Whittier–Los Nietos; as well as the adjacent HSR section and relevant planned and future residential, commercial, industrial, recreational, transportation, and agricultural projects identified in Appendices 3.19-A and 3.19-B. Most of the planned infrastructure development activities identified in Appendices 3.19-A and 3.19-B could be susceptible to seismic and geologic hazards in the cumulative RSA.

Historical trends in development have increased impermeable surfaces and resulted in erosion and the loss of valuable topsoil in areas of Orange and Los Angeles Counties, including the RSA. In addition, the area has a history of land subsidence in response to water and mineral (oil and gas resources) extraction. Risks to infrastructure and developments include localized deposits of soils that have low bearing support or exhibit excessive settlement under load or involve geologic

hazards from steep slopes near rivers and streams, primary seismic hazards from earthquake ground shaking, and secondary hazards from earthquake-induced liquefaction and slope failures. Future development projects would not affect seismicity. However, the increasing population could result in development in less suitable areas, where the risk of geologic and seismic hazards such as ground shaking, slope instability near rivers, or liquefaction in areas of liquefiable soils is higher than in existing developed areas.

Continued growth in the Los Angeles County and Orange County regions with accompanying construction of other projects, such as housing, business buildings, and highways, could affect paleontological resources. Following existing regulations would protect the great majority of these resources but, inevitably, some fossil resources could be lost. If the impacts of these reasonably foreseeable projects were to combine to create public risk related to geologic, soil, seismic hazards, or paleontological resources this would be considered a cumulative impact.

Contribution of the Shared Passenger Track Alternatives

Geology, Soils, and Seismicity

Construction

Impacts related to planned development and transportation infrastructure projects in the cumulative RSA during construction include geotechnical hazards related to site-specific soil conditions, surface fault rupture or seismically induced ground shaking, seismically induced flooding or slope failure, and difficult excavation or disruption of subsurface oil and gas resources that could temporarily increase the risk of personal injury, loss of life, or property damage. In addition, construction under the cumulative project scenario may reduce the availability of mineral and energy resources within the RSA. Impacts associated with geologic and soil issues are typically confined to a project site or within a localized area around a project site.

Hazards pertaining to geology, soils, and seismicity would be addressed individually for each project developed under the cumulative scenario, including the Shared Passenger Track Alternatives and the adjacent Burbank to Los Angeles Project Section. Foreseeable future transportation and development projects would be subject to environmental review under CEQA and NEPA, as applicable. This project-specific analysis is required because these hazards are particular to each site and to specific design features for that project. Geologic issues are typically addressed through compliance with design standards and building code requirements. Construction procedures for each reasonably foreseeable project would have to adhere to accepted engineering and safety guidelines and standards. Appropriate project design features will be incorporated and mitigation measures would be implemented as part of the adjacent Burbank to Los Angeles Project Section and as needed for the other reasonably foreseeable projects to avoid or reduce construction impacts associated with geology, soils, and seismicity. Design and construction of the Shared Passenger Track Alternatives and the adjacent Burbank to Los Angeles Project Section would conform to construction design standards, construction BMPs, and building code requirements.

Reasonably foreseeable projects listed in Appendices 3.19-A and 3.19-B, including the Shared Passenger Track Alternatives and the adjacent Burbank to Los Angeles Project Section, would be susceptible to surface fault rupture or seismically induced ground shaking and may require aggregate, ballast rock, concrete, and steel reinforcement. Construction of the Shared Passenger Track Alternatives and cumulative projects in the region would be required to comply with applicable building and safety regulations. As discussed in Section 3.9, Geology, Soils, Seismicity, and Paleontological Resources, the Shared Passenger Track Alternatives would not include construction activities with the potential to result in induced seismic faulting, extracting substantial groundwater, or creating unstable seismic ground shaking to occur or increase the potential exposure of people or structures to associated risks. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to increased exposure of people or structures to potential loss of life, injury, or destruction because of surface fault rupture or seismic ground shaking.

The Shared Passenger Track Alternatives and reasonably foreseeable projects in the cumulative scenario may be susceptible to seismically induced flooding and slope failure occurring within the cumulative RSA. Although portions of the Shared Passenger Track Alternatives are within flood inundation zones, construction activities would not have the potential to result in induced seismic flooding. Construction activities associated with the project would also not exacerbate dam failure within the cumulative RSA because construction would not be near dams or reservoirs. The effects of slope failure hazards associated with unstable soils, cut-and-fill slopes, or collapsible soils, including seismically induced landslides, could potentially endanger temporary construction structures, equipment, and employees throughout project construction. However, adherence to federal and state regulations and codes requires that all construction activities account for soil properties during construction (**GEO-IAMF#10, Geology and Soils**). All construction projects within the cumulative RSA would also be required to adhere to these codes. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to increased exposure of people or structures to potential loss of life, injury, or destruction caused by seismically induced flooding or slope failure.

Projects that include excavation that extends below groundwater levels could result in difficult excavations that could temporarily increase the risk of personal injury, loss of life, or property damage. These types of design issues are routinely handled during construction through the use of temporary dewatering with deep groundwater wells and well points that lower the water level; sheet pile walls systems to stabilize the soil; or techniques such as jet grouting and cement deep-soil mixing techniques that add cement to the soil, thereby providing a cement-soil mix that resists hydrostatic forces. Alternatively, excavations can be avoided by using deep foundations that can be driven or drilled into the loose, water-saturated soil. The Shared Passenger Track Alternatives and reasonably foreseeable projects in the cumulative project scenario would be required to adhere to applicable building and safety regulations. As previously described, the Authority will conform to guidelines specified by relevant transportation and building agencies and codes (**GEO-IAMF#10**), requiring the contractor to account for geotechnical properties during the construction phases of the project and thus address risk factors associated with difficult excavation conditions such as hardpan and shallow groundwater. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Construction of the Shared Passenger Track Alternatives and cumulative projects could result in a reduction of available aggregate and mineral resources; however, not all of these materials would originate from inside the RSA. Impacts related to loss of availability of mineral or energy resources during project construction would be less than significant. **SS-IAMF#4, Oil and Gas Wells**, will effectively address risks such that project construction will not make a known petroleum or natural gas resource of regional or statewide value unavailable to extraction through the physical presence of the project either at the ground surface or subsurface. The Shared Passenger Track Alternatives would not cross areas of known geothermal resources. Accordingly, the Authority does not anticipate encountering existing geothermal wells or impeding future geothermal well development in any portion of the RSA. Therefore, project construction would not permanently affect the availability of mineral or energy resources and the project would not result in a cumulatively considerable contribution to a significant impact.

The Shared Passenger Track Alternatives and reasonably foreseeable projects in the cumulative scenario would cause a significant cumulative impact if project construction would result in a substantial risk caused by disrupting subsurface oil and gas resources. Construction of the Shared Passenger Track Alternatives would require construction activities within the Bandini and Santa Fe Springs oil fields. The potential for encountering subsurface gases is considered high where foundation piles would be drilled for elevated structures in the oil fields. Pursuant to **GEO-IAMF#3**, the contractor will conform to guidelines specified by federal and state Occupational Safety and Health Administration regulatory requirements that require the contractor to include gas monitoring during project construction. **GEO-IAMF#3** will effectively address risks such that project construction will not exacerbate the potential for injury, loss of life, or damage to property resulting from encountering subsurface gas hazards. Therefore, impacts

would be less than significant through incorporation of the project design features discussed above, and the Shared Passenger Track Alternatives would not contribute to a cumulatively considerable increase in impacts on mineral resources.

Operation

Impacts related to planned development and infrastructure projects in the cumulative RSA during operation include geotechnical hazards related to site-specific soil conditions, erosion, and ground shaking during earthquakes. Impacts associated with geologic and soil issues are typically confined to a project site or within a localized area around a project site.

Hazards pertaining to geology, soils, and seismicity would be addressed individually for each project developed under the cumulative scenario, including the Shared Passenger Track Alternatives and the adjacent Burbank to Los Angeles Project Section. Foreseeable future transportation and development projects would be subject to environmental review under CEQA and NEPA, as applicable. This project-specific analysis is required because these hazards are particular to each site and to specific design features for that project. Geologic issues are typically addressed through compliance with design standards and building code requirements. Construction procedures for each reasonably foreseeable project would have to adhere to accepted engineering and safety guidelines and standards. Appropriate project design features and mitigation measures would be implemented as part of the adjacent Burbank to Los Angeles Project Section and as needed for the other reasonably foreseeable projects to avoid or reduce effects associated with geology, soils, and seismicity. Design and construction of the Shared Passenger Track Alternatives and the adjacent Burbank to Los Angeles Project Section would conform to construction design standards, construction BMPs, and building code requirements.

The Shared Passenger Track Alternatives would not intersect mapped faults in the cumulative RSA. Additionally, the project would not include operational or maintenance activities that would increase stresses in the Earth's crust and therefore would not accelerate the potential for surface fault rupture or ground shaking (Authority 2025b). Therefore, the Shared Passenger Track Alternatives would not increase exposure of people or structures within the cumulative RSA to potential loss of life, injuries, or destruction from surface fault rupture or ground shaking during operation caused by exacerbation of existing geologic hazards. Reasonably foreseeable projects in the cumulative project scenario would be required to analyze potential impacts related to fault rupture or ground shaking. Cumulative projects would also be required to adhere to relevant state and federal codes and regulations. Potential seismic impacts during operation would be less than significant. Therefore, the Shared Passenger Track Alternatives would not contribute to a cumulatively considerable increase in geology, soils, and seismicity impacts.

Where projects pass near a waterbody or reservoir, operations could be affected by flooding during a seismic event, either as a result of seiche causing overtopping of the dam or dam failure. Seismically induced dam failure could result in flooding in large areas of the cities in the cumulative RSA from the Hansen Dam, Garvey Reservoir, Whittier Narrows Dam, Brea Dam, Fullerton Dam, Carbon Canyon Dam, and Prado Dam. The reasonably foreseeable future projects, including the adjacent Burbank to Los Angeles Project Section, Parkwest Development, and OCVIBE, would increase the number of people exposed to this flood risk. However, because of the distance to the dams, the risk of exposure to flooding as a result of dam failure is no greater than existing conditions and would not directly or indirectly cause potential risk of loss of life, injury, or destruction beyond what people are exposed to currently in the cumulative RSA. Nonetheless, implementation of the relevant transportation and building codes in **GEO-IAMF#10** will minimize risks to people and structures during operation. In the event of an earthquake, operational procedures will address potential hazards from dam failure. The contractor will install a control system to shut down HSR operations temporarily during or after a potentially damaging earthquake to reduce risks (**GEO-IAMF#8, Suspension of Operations During an Earthquake**). Pursuant to **GEO-IAMF#8**, a network of instruments will be installed to provide ground-motion data that will be used with the HSR instrumentation and controls system. Train operation would cease in the event of dam inundation that would endanger train safety through the project site, reducing the risk of personal injury or property damage in the unlikely event of a dam breach.

Therefore, cumulative impacts would be less than significant and the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

The Shared Passenger Track Alternatives would not intersect mapped areas subject to landslides or slope failure and the existing topography in the project vicinity is generally sloping less than a few degrees. The project would not directly or indirectly cause or accelerate the potential for slope failure hazards in the cumulative RSA associated with pre-existing landslides during operation. Where a potential for long-term instability exists from gravity or seismic loading along cut-and-fill slopes, the Authority will incorporate slope monitoring by a registered engineering geologist into the O&M procedures at sites identified in the Construction Management Plan (**GEO-IAMF#2, Slope Monitoring**). Monitoring will provide information to identify and repair ground movement before it can damage track integrity (**GEO-IAMF#8**). In addition, **GEO-IAMF#1**, which is included in the project design, requires the contractor to address geological constraints prior to and during construction. Therefore, the project would not permanently increase the potential for slope failure hazards in the cumulative RSA associated with cut-and-fill slopes. Therefore, cumulative impacts would be less than significant and the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Paleontological Resources

Construction

Future projects in the cumulative RSA involving ground disturbance during construction would involve geologic units that have produced abundant and diverse fossil resources, including vertebrate remains, and are therefore considered highly sensitive for paleontological resources (i.e., likely to produce additional similar finds in the future). Construction of the project in combination with planned and future projects in the cumulative RSA such as the widening of I-405 and addition of Express Lanes, I-5 Freeway Expansion Project, and the BNSF Third Main Track and Grade Separation Project, local street widening, and other transportation and development projects would require ground-disturbing work in areas that could affect the Younger Alluvium where excavation would be at depths more than 6 feet below ground surface, Older Alluvium, Fernando Formation, Repetto Member, and Unnamed Marine Shale (Puente Formation). These projects would have the potential to cumulatively disturb, damage, or destroy scientifically important fossil resources. Once lost, such resources cannot be recovered. IAMFs will minimize these effects by establishing procedures to monitor and halt construction if significant paleontological resources are found (**GEO-IAMF#15, Halt Construction, Evaluate, and Treat if Paleontological Resources Are Found**). In addition, **GEO-IAMF#11, Engage a Qualified Paleontological Resources Specialist**, will require a paleontological resources specialist to direct monitoring during construction activities in paleontologically sensitive sediments; **GEO-IAMF#12, Perform Final Design Review and Triggers Evaluation**, will require a paleontological resources specialist to perform final design review and evaluation; **GEO-IAMF#14, Provide Worker Environmental Awareness Program Training for Paleontological Resources**, will provide Worker Environmental Awareness Program training for project personnel; and **GEO-IAMF#13, Prepare and Implement a Paleontological Resource Monitoring and Mitigation Plan**, will require preparation and implementation of a Paleontological Resources Monitoring and Mitigation Plan. With these project design features in place, construction of the Shared Passenger Track Alternatives would not result in the destruction of unique paleontological resources or sites. The other reasonably foreseeable projects, including the adjacent Burbank to Los Angeles Project Section, Link US project, Parkwest Development, and OCVIBE, would also be required to halt work and recover paleontological resources encountered during construction. Therefore, potential cumulative impacts on paleontological resources during construction would be less than significant. The Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Operation

Operation of the project would not involve ground disturbance in undisturbed, native geologic units. Therefore, project operation would not affect paleontological resources. Similarly, operation of the adjacent Burbank to Los Angeles Project Section, Link US project, Parkwest Development, OCVIBE, or other reasonably foreseeable projects would not require ground disturbance and

impacts would be less than significant. The Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

CEQA Conclusion

Operation of the Shared Passenger Track Alternatives and cumulative projects would entail routine O&M of project infrastructure with little to no ground disturbance of previously unidentified substrate materials. With no ground disturbance in previously undisturbed native geologic units, there would be little to no risk of permanent loss of significant paleontological resources. The Authority will include **GEO-IAMF#1** through **GEO-IAMF#3**; **GEO-IAMF#8**; **GEO-IAMF#9, Subsidence Monitoring**, through **GEO-IAMF#15**; and **SS-IAMF#3** in the project design to address, monitor, and mitigate potential geologic hazards and impacts on paleontological resources. Therefore, there are no anticipated significant cumulative impacts under CEQA on paleontological resources to which the Shared Passenger Track Alternatives would contribute.

3.19.4.9 Hazardous Materials and Wastes

Cumulative Condition

The cumulative condition relevant to hazardous materials consists of the Shared Passenger Track Alternatives; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, Orange, South Whittier, and the unincorporated community of West Whittier–Los Nietos; as well as the adjacent HSR section and relevant additional future projects identified in Appendices 3.19-A and 3.19-B that fall within 1 mile of the project. I-5, I-10, I-710, I-605, State Route 60, State Route 57, and BNSF right-of-way serve as major transportation corridors in the region. Potential concerns related to hazardous materials within the RSA include 305 identified potential environmental concern sites; transportation, use, storage, and disposal of hazardous materials; potential building material hazardous materials such as asbestos and lead in structures; potential road and railway corridor hazardous materials; potential agricultural operation hazardous materials; potential utility corridor hazardous materials; naturally occurring asbestos; landfills; and oil and gas wells.

Hazardous materials and petroleum products are a subset of the types of goods routinely shipped along transportation corridors such as rail and roadways. As indicated in Appendix 3.10-A, many of the existing potential environmental concern sites within the cumulative RSA are associated with industrial facilities and petroleum product storage sites in the project vicinity, which may have past and existing spill and release incidents that resulted in site contamination. Potential disturbance of hazardous materials at such sites by the Shared Passenger Track Alternatives or by cumulative projects may have an impact on worker health and safety, the public, and the environment.

Sensitive land uses within the cumulative RSA include educational facilities, hospitals, and other places of congregation. These facilities could be subjected to risks associated with the routine transport and handling of hazardous materials, including a corresponding increase in the potential for inadvertent releases and associated environmental and public health and safety risks, and the construction and operation of future transportation system improvements. Based on forecast population growth in the region, existing and future transportation systems (including both highway and conventional rail) would experience more traffic and congestion. A higher level of traffic and congestion would likely increase the risk of accidents and other incidents that could result in the release of hazardous materials the environment and threaten or affect these facilities either directly (e.g., causing a structure fire) or indirectly (e.g., contaminating a potable water source).

Accidental spills or releases of hazardous materials could occur with the continued operation of commercial and industrial facilities or during the transportation of hazardous materials. Such accidents might result in new potential environmental concern sites that could affect future improvements; however, implementation of standard BMPs and compliance with existing regulations would minimize potential effects. It is assumed that by 2040, some of the existing

potential environmental concern sites would be investigated further and remediated with appropriate regulatory agency oversight.

Contribution of the Shared Passenger Track Alternatives

Construction

Under the cumulative condition, construction of the Shared Passenger Track Alternatives, in combination with cumulative projects, would temporarily increase the regional generation, use, storage, transport, and disposal of hazardous materials. Such materials commonly used at construction sites include but are not limited to petroleum, diesel fuel, welding materials, lubricants, cement products, and paints and solvents. Other hazardous materials generated on site may include soils contaminated by petroleum hydrocarbons, pesticides, herbicides, asbestos, and heavy metals. This increase would contribute incrementally to the regional transport, use, storage, and disposal of hazardous materials. Although the handling of hazardous materials may increase during construction, this would be temporary in nature, and all projects would be required to comply with federal, state, and local regulations related to the transport, handling, and disposal of hazardous materials, thereby reducing the potential for significant cumulative effects.

Demolition, ground-disturbing, and construction activities associated with the Shared Passenger Track Alternatives or cumulative projects could disturb hazardous materials—such as contaminated soil, soil vapor, or groundwater—that would require removal and off-site disposal. As described in Section 3.10, Hazardous Materials and Wastes, facilities and construction sites that use, store, generate, or dispose of hazardous materials and transporters of hazardous material are required to comply with various federal and state regulations to minimize the risk of a spill or accidental release of hazardous materials. Pursuant to **HMW-IAMF#6** and **HMW-IAMF#7**, Spill Prevention, Control, and Countermeasure plans, and a hazardous materials and waste plan specifying procedures for safe use, storage, and transport of hazardous materials will be developed. Additionally, contractors will develop hazardous materials monitoring plans per **HMW-IAMF#10** and will be required to comply with the conditions of the State Water Resources Control Board Construction General Permit to control the storage and use of hazardous materials during construction in a manner that eliminates or reduces discharges of potential hazardous pollutants to stormwater, to the maximum extent feasible (**HMW-IAMF#8** and **HYD-IAMF#3**). **HMW-IAMF#9**; **HMW-IAMF#4**; **HMW-IAMF#8**; **HMW-IAMF#5, Demolition Plans**; **GEO-IAMF#3**; **HMW-IAMF#1**; **GEO-IAMF#1**; and **HYD-IAMF#1** will also be incorporated to avoid or reduce risks associated with excavation, storage, transport, and release of contaminants or contaminated media during construction. Following mandated BMPs would effectively minimize direct risk to workers and the public as well as indirect risk to off-site resources because they prevent or require quick response to spills or accidental releases of hazardous materials during construction. Planned transportation and railroad projects, such as the I-5 Freeway Expansion Project, Link US project, and the BNSF Third Main Track and Grade Separation Project in the cumulative hazardous materials RSA could contribute to the cumulative transport and potential risk for spills or releases of hazardous materials. Construction of reasonably foreseeable projects listed in Appendices 3.19-A and 3.19-B could disturb undocumented hazardous materials and demolition could expose the environment to lead-based paint, asbestos-containing materials, and aerially deposited lead. Although the Shared Passenger Track Alternatives and cumulative projects would temporarily increase the handling of hazardous materials during construction activities, these projects would be required to comply with federal, state, and local regulations, thereby reducing the potential for significant cumulative impacts to less-than-significant levels.

As discussed above, there is a potential for construction workers to encounter unexpected site contamination during construction activities, such as during demolition and excavation activities. However, the Shared Passenger Track Alternatives are in an urban environment and the potential risk of encountering unexpected site contamination during construction would be the same as for other reasonably foreseeable projects in the cumulative RSA. Incorporation of IAMFs identified above (**HMW-IAMF#7**, **HMW-IAMF#8**, and **HYD-IAMF#3**) will limit discharges of contaminants into the environment via BMPs. In addition, **HMW-IAMF#4** requires the development of construction management and demolition plans, and provides guidelines on how to handle and

dispose of both expected and unexpected site contamination to protect worker health and safety, the public, and the environment. Other reasonably foreseeable projects in the cumulative RSA would be expected to prepare similar construction management and demolition plans to protect worker health and safety, the public, and the environment from encountering expected and unexpected site contamination. Therefore, cumulative significant impacts are not anticipated and the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Construction of the Shared Passenger Track Alternatives would occur within or near 305 potential environmental concern sites. Of these potential environmental concern sites, there is one listed and one proposed Superfund site, which are discussed in detail in Section 3.10.5.6, Superfund Sites. Reasonably foreseeable projects within the cumulative RSA would also likely require construction activities in the vicinity of potential environmental concern sites. **HMW-IAMF#3**, **HMW-IAMF#4**, **GEO-IAMF#3**, **HMW-IAMF#1**, **HMW-IAMF#6**, and **HMW-IAMF#9** are included in the project design and will minimize construction impacts for most potential environmental concern sites, including Cortese List sites, with the exceptions of two potential environmental concern sites warranting listing on the National Priorities List, that would be disturbed and developed as part of project construction. These two sites are the Orange County North Basin Superfund site (groundwater plume covering approximately 8 square miles that overlaps with portions of the project alignment) and Exide site in Vernon (located where the 26th Street LMF would be built), proposed for listing as a Superfund site.[4] These two sites present potentially extensive impacts on the region, including the cumulative RSA, because of the nature of their contamination, lack of full characterization, and complexity of remedial approaches. 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 and the Fullerton HSR Station Option. **HMW-MM#2** also requires 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 and unavoidable.[5] The Shared Passenger Track Alternatives, in combination with reasonably foreseeable projects within the cumulative RSA, would result in a significant cumulative impact associated with construction risks because of the presence of potential environmental concern sites and the project would have a cumulatively considerable contribution.

The use of hazardous materials during construction and operation of transportation and development projects is tightly controlled to protect human health and avoid releases. Similar to the Shared Passenger Track Alternatives, the cumulative projects within the RSA would be required to comply with regulatory requirements that would minimize hazardous materials impacts. The Shared Passenger Track Alternatives would not use unusual amounts of hazardous materials and has IAMFs in place to address hazardous materials use and avoidance of potential environmental concern sites. Additionally, by 2040, some of the existing potential environmental concern sites within the cumulative RSA would be investigated further and, if necessary, remediated with appropriate state regulatory agency oversight. The project has incorporated a measure to limit use of extremely hazardous materials near schools during construction. Furthermore, the project has measures in place to discover and address risks associated with previously undocumented hazardous materials. **HMW-IAMF#4**, **HMW-IAMF#5**, and **HMW-IAMF#7** are included as part of the project design to avoid and effectively minimize creation of a significant hazard to the public or the environment through compliance with regulations for the transport and handling of hazardous materials, and development of construction management and demolition plans that will minimize potential impacts from the inadvertent disturbance of hazardous materials from undocumented sites. With such measures

[4] The Exide site's listing on the National Priorities List has been proposed and is pending.

[5] The Authority is continuing to study both the Orange County North Basin Superfund site and the Exide site, and the CEQA conclusion of a significant and unavoidable project impact may be revised to less than significant in the forthcoming Final EIR/EIS if additional study suggests no reasonable risk of significant impacts.

and restrictions on the use of hazardous materials in place, the potential for the cumulative accumulation or release of hazardous materials will be low.

Construction of the Shared Passenger Track Alternatives and the cumulative projects listed in Appendices 3.19-A and 3.19-B would occur in an urban environment. Given this, construction may require handling of hazardous materials, substances, or waste within 0.25 mile of schools, which are considered sensitive receptors. As discussed in Section 3.10, 40 educational facilities are within 0.25 mile of the Shared Passenger Track Alternatives. This effect would be temporary and limited to the construction period. **HMW-IAMF#7**, **HMW-IAMF#8**, **HMW-IAMF#6**, **HMW-IAMF#4**, and **HMW-IAMF#5** will be incorporated to avoid the potential for an inadvertent release of hazardous materials and minimize the effects should a release occur in proximity to schools. However, even these requirements would not eliminate the possibility of a release of hazardous materials in quantities greater than state thresholds near schools within 0.25 mile of the project footprint. With implementation of **HMW-MM#1, Limit Use of Extremely Hazardous Materials Near Schools During Construction**, the Authority will be required to monitor extremely hazardous materials, develop a spill prevention and response plan, and avoid the handling (e.g., storage, transport, use) of such substances within 0.25 mile of schools, so as to avoid a health or safety hazard to students or employees on the premises. Although the Shared Passenger Track Alternatives and cumulative projects would temporarily increase the handling of hazardous materials during construction activities, these projects would be required to comply with federal, state, and local regulations, thereby reducing the potential for significant cumulative impacts to less-than-significant levels.

Hazards related to potential migration or hazardous gases from oil fields, gas fields, and oil and gas wells or other subsurface sources can be reduced or eliminated by following federal and state Occupational Safety and Health Administration regulatory requirements for excavations, and by consulting with other agencies as appropriate, such as the California Department of Conservation's Geologic Energy Management Division and the California Department of Toxic Substances Control. The project will incorporate **HMW-IAMF#2, Landfill**; **HMW-IAMF#4**; **HMW-IAMF#6**; **GEO-IAMF#3**; and **SS-IAMF#4**. Construction on or near landfills or oil and gas wells would not result in hazardous materials spills or releases that would create a significant hazard to the public, construction workers, or the environment.

Operation

Project O&M and other reasonably foreseeable projects in the cumulative RSA could affect the environment and the public through the transport, use, storage, and disposal of hazardous materials. The Shared Passenger Track Alternatives would use hazardous materials for maintenance of HSR trains, track, LMF, and stations. Storage, handling, and disposal of hazardous materials would be done in accordance with applicable certified unified program agency, state, and federal regulations, which would reduce the potential for accidents and spills. Incorporation of **HMW-IAMF#7**, **HMW-IAMF#9**, **HMW-IAMF#10**, and **HYD-IAMF#1** will reduce or avoid impacts. O&M of the project and other reasonably foreseeable projects, including the adjacent Burbank to Los Angeles Project Section, could result in the accidental release of hazardous materials, presenting health and safety risks to the public and workers, and contamination of the environment. IAMFs include measures that require preparation of a hazardous materials plan, spill prevention, control, and countermeasure plan, and Environmental Management System that will limit the risks of upsets and accident conditions for the project (**HMW-IAMF#7**, **HMW-IAMF#9**, and **HMW-IAMF#10**). **HMW-IAMF#1** and compliance with applicable regulatory requirements are included as part of the project design to minimize potential impacts from operating near sites of potential concern, including Cortese List sites.

As discussed above, O&M of the Shared Passenger Track Alternatives would require transport, use, storage, and disposal of hazardous materials. However, the Shared Passenger Track Alternatives will incorporate IAMFs, which include preparation of a hazardous materials plan and a spill prevention, control, and countermeasure plan to avoid and reduce impacts related to accidental spills and release incidents. In addition, the Shared Passenger Track Alternatives would be required to comply with federal, state, and local regulations related to the transport, use,

storage, and disposal of hazardous materials. Other reasonably foreseeable projects in the cumulative RSA would be expected to prepare similar hazardous material plans and spill prevention plans and would be required to comply with the same federal, state, and local regulations related to the transport, use, storage, and disposal of any hazardous materials. Therefore, the Shared Passenger Track Alternatives would not contribute result in a cumulatively considerable contribution to a significant impact.

O&M of projects within the cumulative RSA could result in long-term risks associated with the handling of hazardous materials or waste within 0.25 mile of a school. As noted above, 40 educational facilities are within 0.25 of the Shared Passenger Track Alternatives. However, handling of hazardous materials for O&M of the HSR system would occur primarily at the LMF and no educational facilities are within 0.25 mile of this project component. Compliance with established state and federal regulations will minimize the potential for improper handling of materials and wastes during routine transport, storage, use, or disposal of hazardous materials (**HMW-IAMF#7**). In addition, adherence to **HMW-IAMF#9** and **HMW-IAMF#10** will limit potential risks associated with potential exposure of students or staff to hazardous materials through preparation and implementation of a Hazardous Materials Business Plan, Spill Prevention, Control, and Countermeasure plan, and Environmental Management System. Other reasonably foreseeable projects in the cumulative RSA would be expected to prepare similar plans and would be required to comply with the same federal, state, and local regulations. Given this, the cumulative impact would be less than significant because effective measures would be in place that limit the risk of a release of hazardous materials during O&M activities within 0.25 mile of the schools.

CEQA Conclusion

The Shared Passenger Track Alternatives in combination with other reasonably foreseeable projects could contribute incrementally to the transport, storage, use, and disposal of hazardous materials within the cumulative RSA. However, these incremental contributions are tightly controlled by existing regulations, and there would not be a significant cumulative impact under CEQA to which the project would contribute. The project will incorporate **HMW-IAMF#1**, **HMW-IAMF#2**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#5**, **HMW-IAMF#6**, **HMW-IAMF#7**, **HMW-IAMF#8**, **HMW-IAMF#9**, **HMW-IAMF#10**, **HYD-IAMF#1**, **HYD-IAMF#3**, **GEO-IAMF#1**, **GEO-IAMF#3**, and **SS-IAMF#4** to minimize impacts from the Shared Passenger Track Alternatives. However, even with adherence to **HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, and **HMW-IAMF#9**, the impact under CEQA from handling hazardous materials within 0.25 mile of a school could still potentially be significant because such materials could pose a health or safety hazard to students or employees in the event of an inadvertent release of hazardous materials. However, with implementation of **HMW-MM#1**, the impact under CEQA will be less than significant because the Authority will be required to monitor extremely hazardous materials, develop a spill prevention and response plan, and avoid the handling (e.g., storage, transport, use) of such substances within 0.25 mile of schools, so as to avoid a health or safety hazard to students or employees. Implementation of **HMW-MM#2** requiring coordination with applicable regulatory agencies would reduce the impact of building near two specific Superfund sites; however, even with mitigation, impacts would remain significant and unavoidable. Given this, the Shared Passenger Track Alternatives would result in a significant cumulative impact under CEQA related to hazardous materials and would result in a cumulatively considerable contribution to a significant impact.

3.19.4.10 Safety and Security

Cumulative Condition

The cumulative condition relevant to safety and security consists of the Shared Passenger Track Alternatives; development planned under cities and counties in the cumulative RSA; as well as the adjacent HSR project section and relevant planned and future residential, commercial industrial, recreational, and transportation projects identified in Appendices 3.19-A and 3.19-B. Under the cumulative condition, ongoing urban development is expected to continue within the cumulative RSA, resulting in the continued demand for emergency response services, law

enforcement, and fire protection. The RSA has experienced continued population growth and urban development over the past few decades. Correspondingly, the demand for emergency services has increased because these services support existing populations as well as new residents moving into the RSA.

Law enforcement is provided by the Los Angeles and Orange Counties Sheriffs' Departments and the Los Angeles, Vernon, Bell, Montebello, Whittier, Buena Park, Fullerton, and Anaheim Police Departments. Law enforcement response times range from approximately 1 to 7 minutes, with variance by department, location, and type of emergency (i.e., emergency or nonemergency calls).

The Los Angeles County Fire Department and Orange County Fire Authority and city of Los Angeles, Vernon, Montebello, Santa Fe Springs, Fullerton, and Anaheim Fire Departments provide emergency fire services in the project section. Response times range from approximately 1 to 8 minutes, with variance by department, location, and type of emergency (i.e., emergency or nonemergency calls).

It is anticipated that increased vehicular traffic volumes from employment growth would correspond with an increase in traffic accidents in which injuries and fatalities could occur. Planned transportation projects in the RSA would expand existing public transportation options, build new bicycle and pedestrian paths, improve existing highways and roadways (including improvements to I-5 and local roads), and link existing facilities to other transportation services. Planned transportation projects would also build a railroad-vehicle underpass bridges in Fullerton and provide other bridge replacements and expansions that would improve vehicle and rail safety. The planned highway projects that would occur under the cumulative condition would improve traffic flow, encourage ridesharing, and decrease surface-street traffic. These improvements are intended to reduce congestion and would therefore cumulatively benefit access for fire protection, law enforcement, and other emergency service vehicles, positively affecting response times.

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the project and other planned transportation and development projects would require temporary road closures and relocations and temporary rerouting of traffic. Therefore, law enforcement, fire, and emergency services would experience increased response times because of construction-related short- or long-term road closures, detours, and increased traffic congestion in some locations. However, projects would be required to ensure emergency vehicle access for police and fire protection services is maintained at all times. Closures may also be phased to prevent concurrent closures limiting emergency access. The Shared Passenger Track Alternatives and cumulative projects within the RSA would configure and coordinate detours with local jurisdictions to maintain emergency vehicle access and provide detour communications including appropriate signage to reduce emergency response time delays. The Shared Passenger Track Alternatives would adhere to the Construction Safety Transportation Management Plan and construction transportation plan included in the project design (**SS-IAMF#1, Construction Safety Transportation Management Plan**) to minimize the impact of construction and construction traffic on emergency response times. The Shared Passenger Track Alternatives include a construction transportation plan in the project design (**TR-IAMF#2**) that will minimize the impact of construction and construction traffic on adjoining and nearby roadways. The Safety and Security Management Plan (**SS-IAMF#1** and **TR-IAMF#2**) included in the project design would avoid impacts on response times for emergency services by maintaining emergency vehicle access for temporary road closures and routes for construction traffic.

TR-IAMF#6, Restriction on Construction Hours, requires the Authority to limit construction hours including materials deliveries between 7:00 a.m. and 9:00 a.m. and between 4:00 p.m. and 6:00 p.m. on weekdays and the number of construction employees arriving or departing the site between 7:00 a.m. and 8:30 a.m. and between 4:30 p.m. and 6:00 p.m. to minimize traffic impacts on roadways. **TR-IAMF#8, Construction During Special Events**, requires the Authority

to provide a mechanism to prevent roadway construction activities from reducing roadway capacity during major athletic or other special events that substantially (by 10 percent or more) increase traffic on roadways affect by project construction. Construction of the project would also not impair implementation of or physically interfere with an adopted emergency response plan. The response times of emergency vehicles would not be substantially increased during construction of the project. These measures would avoid impacts on response times for emergency services by maintaining emergency vehicle access for temporary road closures and routes for construction traffic.

The Shared Passenger Track Alternatives would also require permanent roadway changes during project construction including road closures, realignments, and grade-crossing separations. A cumulative significant impact would occur if cumulative projects would substantially increase response times for fire, rescue, and emergency services from permanent road closures or roadway changes or would impair implementation of or physically interfere with an adopted emergency response plan. However, the permanent roadway changes would not affect emergency response times, because the existing roadway network would mostly be maintained. Closed roads would become part of the maintenance facility or modified BNSF yards, and grade separations would provide a benefit to emergency vehicles.

Construction of the Shared Passenger Track Alternatives and cumulative projects would be required to address accidents resulting from temporary or permanent detours implemented by the project. The Authority has included **SS-IAMF#1**, **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#11**, and **TR-IAMF#12** as part of the project design to minimize construction-period impacts that may affect pedestrians, bicyclists, or transit passengers associated with sidewalk closures, crosswalk closures, or pedestrian rerouting at intersections; bike lane closures or narrowing; closure or narrowing of streets that are designated bike routes; closure or narrowing of streets that are designated transit routes; bus stop closures; and bridge closures related to construction. **TR-IAMF#12** requires the Authority to provide a technical memorandum describing how pedestrian and bicycle accessibility will be provided and supported and how safety will be maintained across the HSR corridor, to and from stations, and on station property. Other planned transportation and development projects would also be subject to preparing construction safety management plans and coordinating with local authorities related to construction safety and maintaining access. The impact under CEQA related to accidents associated with construction-related and temporary and permanent detours and traffic hazards would be less than significant. Impacts of the Shared Passenger Track Alternatives, in combination with cumulative projects, would be less than significant. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

Construction of the Shared Passenger Track Alternatives and other planned transportation and development projects would require several thousand construction workers per year. These construction sites would involve heavy equipment on site, earthwork, and other major construction activities, including the transport of overweight and oversized materials. **HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, **HMW-IAMF#9**, and **GEO-IAMF#3** are included in the project design to minimize impacts related to releases of hazardous materials and wastes on or near sites of potential environmental concern. The localized temporary increase in population as a result of the influx of construction workers could temporarily increase the demand for fire protection, law enforcement, and other emergency response services in the RSA. Similarly to the Shared Passenger Track Alternatives, the reasonably foreseeable projects identified in Appendices 3.19-A and 3.19-B would be required to follow Occupational Safety and Health Administration and California Division of Occupational Safety and Health regulatory requirements and safety practices. They would also be required to implement standard construction and safety plans, construction transportation plans, and traffic control plans, as necessary, to reduce the need for emergency services. However, because most of the planned development and transportation projects would occur over time, local agencies would have time to plan for increased demand during construction activities and impacts would be less than significant. Projects may reduce the risk of criminal activity on construction sites by storing equipment and materials in secured areas and using security personnel and security lighting to monitor

equipment after work hours. The Shared Passenger Track Alternatives include a Safety and Security Management Plan implemented by the contractor prior to commencing construction (**SS-IAMF#2, Safety and Security Management Plan**), which includes security lighting, fencing, and monitoring measures to provide security to construction sites and protect the security of construction workers and equipment. These security measures would minimize the potential for theft and vandalism. Therefore, criminal activity at project construction sites would not be a safety hazard for people residing or working in the RSA. The cumulative impact under CEQA related to temporary exposure to construction site hazards and criminal activity at construction sites would be less than significant. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

As discussed in Section 3.10, implementation of the Shared Passenger Track Alternatives would require construction activities within or near sites of potential environmental concern with the potential to generate hazardous waste from excavated soil. Worksite safety in California, including construction worksite safety, is regulated by provisions of Title 8 of the California Code of Regulations and overseen by the California Occupational Safety and Health Administration. Title 8 requires compliance with standard procedures to prevent construction workplace accidents and requires a written workplace injury and illness prevention program to be in place (Cal. Code Regs., tit. 8, Section 1502 et seq.; Cal-OSHA 2019). Given this, the Shared Passenger Track Alternatives, in addition to reasonably foreseeable projects in the cumulative scenario, would be required to adhere to applicable regulations including but not limited to compliance with requirements for fire safety measures per California Public Resources Code Title 14 and Title 19, as well as other applicable fire code regulations. **HMW-IAMF#3**, **HMW-IAMF#4**, **GEO-IAMF#3**, **HMW-IAMF#1**, **HMW-IAMF#6**, and **HMW-IAMF#9** are included in the project design and will minimize construction impacts for most potential environmental concern sites, including Cortese List sites. **SS-IAMF#2** and **SS-IAMF#5, Aviation Safety**, are also included as a part of the project during construction to effectively minimize impacts from exposure to construction site hazards. In addition, 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. With implementation of this mitigation measure, impacts would be reduced, but not avoided. However, because temporary exposure to construction site hazards are site specific, this impact from construction of the Shared Passenger Track Alternatives would not combine with temporary exposure to construction site hazards from cumulative projects. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

HMW-IAMF#2 will effectively minimize impacts of landfill hazards. Community safety related to temporary exposure to oil and gas wells during construction of the project would be less than significant. **SS-IAMF#4** will effectively minimize impacts associated with proximity of oil and gas well hazards. The Authority will identify and inspect active and abandoned oil and gas wells within 200 feet of the HSR track prior to commencing construction, thereby reducing the potential for accidents such as fires or explosions associated with encountering oil or gas wells. With **GEO-IAMF#3**, the contractor will be required to submit a Construction Management Plan to the Authority for review and approval addressing how gas monitoring will be incorporated into construction BMPs. Construction would increase the potential for exposure of construction workers to construction equipment and activity hazards that could result in workplace accidents, potentially resulting in accidental injuries to and deaths of construction workers and also potentially the public in the event a workplace accident such as a fire or explosion results in off-site consequences. Construction activities could also result in exposure of construction workers to hazardous chemicals, fall hazards, and electrical hazards. Construction of Shared Passenger Track Alternative A could potentially release hazardous materials on or near potential environmental concern sites. However, the Shared Passenger Track Alternatives will incorporate **HMW-IAMF#1**, **HMW-IAMF#3**, **HMW-IAMF#4**, **HMW-IAMF#6**, and **HMW-IAMF#9**, which will minimize impacts.

SS-IAMF#2 and **AQ-IAMF#1** will effectively minimize impacts of exposure to the fungus that leads to Valley fever. **SS-IAMF#2** requires the contractor to develop a Safety and Security Management Plan, a Valley Fever Action Plan, a Site-Specific Health and Safety Plan, and a Site-Specific Security Plan that identify the local conditions and requirements unique to the construction site and work to be performed. **AQ-IAMF#1** requires construction work area fugitive emissions control plans to be developed prior to construction to prevent the spread of Valley fever. The project is incompatible with the Airport Environs Land Use Plan for the Fullerton Municipal Airport because implementation of the project would place new passenger rail within the Fullerton Municipal Airport Runway Protection Zone. The Shared Passenger Track Alternatives would not conflict with height restrictions of the Runway Protection Zone or introduce conflicts associated with height restrictions, sources of glare, light emissions, or steam/smoke. Operations of the above airports and heliports would be assessed during the Federal Aviation Administration review and approval process. Under **SS-IAMF#5**, the Authority will ensure Federal Aviation Administration requirements are met. The Safety and Security Management Plan developed under **SS-IAMF#2** will also include procedures for protection of high-risk facilities within the project footprint. Therefore, cumulative impacts would be less than significant. Therefore, the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Operation

Accommodating the population growth expected by 2040 would result in a cumulative increase in demand for fire protection, law enforcement, and other emergency response services. The operation of the project including HSR trains, stations, and maintenance facilities, along with a large number of proposed residential projects and mixed-use residential and commercial development (such as the Parkwest Development, Commerce Retail Center Project and Modelo Project, and Stadium Towers in Anaheim), would contribute to increased demand for emergency services. Transportation and new or expanded development projects would be designed and built to be consistent with local land use plans and would comply with agencies' approval conditions, including "fair-share" development fees to pay for additional emergency services required to maintain service standards.

Operation of the Shared Passenger Track Alternatives would not affect emergency response access. The project would include at-grade, below-grade, and elevated sections of track, as well as a station and maintenance facility, which emergency services (e.g., medical, fire, police) would need to access in the event of a rail accident, rail incident, or other emergency situation. Delays in emergency response could occur if access is needed to the portions of elevated and below-grade tracks during an emergency event because of the limited number of accessibility points to these elevated and below-grade locations. Project design includes provisions for emergency service access to the access-controlled portions of the right-of-way including at-grade, below-grade, and elevated portions of the track to allow for emergency access and evacuation in the event of an emergency. In addition, the Shared Passenger Track Alternatives include safety and security IAMFs as design features to avoid or reduce risk of permanent interference with emergency response access and evacuations in the event of an emergency during operations. Emergency operating procedures, a safety system program plan, a Security and Emergency Preparedness Plan, and a fire and life-safety program (**SS-IAMF#2**) will be included as part of the project. **SS-IAMF#2** will effectively minimize impacts related to permanent interference with emergency response access and evacuations in the event of an emergency.

Operation of the Shared Passenger Track Alternatives would introduce up to four new gate-down events each hour and could result in delays in response times at existing at-grade crossings, resulting in permanent interference with emergency response times. For impacts related to queuing, incorporation of **TR-IAMF#13** will ensure that future passenger rail schedules are coordinated so that there would not be traffic queues from combined passenger rail gate-down sequences. To ensure that delays in response times are minimized so the city can meet its local response standards, the Authority would implement **SS-MM#1**, **Implement Emergency Response Time Mitigation Strategies**, which includes monitoring and coordination with the City of Anaheim Fire and Rescue to develop and implement targeted improvements. With

implementation of **SS-MM#1**, delays would be reduced and the impact would be less than significant under CEQA. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on emergency response access from operation of the project, in combination with cumulative projects, would be less than significant, and impacts would not be cumulatively considerable.

Operation of the project would result in a less-than-significant impact on the potential for railroad-related accidents and incidents. **SS-IAMF#2** and **SS-IAMF#3** require operational rail design and safety features, including the automatic train control and positive train control systems, that will reduce the potential for permanent exposure to rail-related hazards including incidents and accidents including derailments and collisions. **SS-IAMF#4** requires the contractor to identify and inspect all oil and gas wells within 200 feet of the HSR tracks prior to any ground-disturbing activities. **SS-IAMF#4** will effectively minimize impacts of oil and gas well hazards. **SS-IAMF#3**, **GEO-IAMF#8**, and **GEO-IAMF#10** will also reduce permanent safety hazards to schools. Planned transportation projects, including the State College Boulevard Grade Separation Project and BNSF Grade Separation Project, would improve rail safety. The Shared Passenger Track Alternatives' proposed grade separations and grade separations implemented by other projects would have a beneficial effect on rail safety and would decrease the potential for rail accidents and incidents. Transportation projects to expand local and regional rail service, including the projects included in the Metrolink Southern California Optimized Rail Expansion capital improvement program could also result in the potential for railroad-related accidents and incidents. Design characteristics of the project would include effective measures to reduce the potential for rail-related accidents and incidents including derailments and collisions on passengers, crew, residences, and other properties outside of the right-of-way. Other rail-related transportation projects would be subject to design features to reduce the potential for accidents and incidents. Community safety related to permanent exposure to high-risk facilities during operation of the project would be less than significant. Pursuant to **SS-IAMF#3**, the Authority will develop a preliminary hazard assessment that will identify hazards and assess associated risk. Control measures such as **GEO-IAMF#10** and **GEO-IAMF#8** are included in the project design to avoid or minimize identified risks. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on rail safety from operation of the project, in combination with cumulative projects, would be less than significant, and impacts would not be cumulatively considerable.

Security risks such as the potential for crime, violence, and acts of terrorism for rail facilities and system operations could increase because of reasonably foreseeable projects, including the directly adjacent Burbank to Los Angeles Project Section, and as a result of other planned urban and transportation developments that would increase population within the cumulative RSA. However, increased security procedures and HSR improvements to deter crime and terrorism include vulnerability assessments, barriers, security lighting, and security and training procedures. Furthermore, the goals and policies contained in the general plans for the Counties of Los Angeles and Orange contain elements for the efficient expansion or upgrading of law enforcement, fire protection, and emergency medical services to accommodate future growth in the safety and security RSA. With these measures in place, the Shared Passenger Track Alternatives would not result in increased crime, violence, and acts of terrorism. Therefore, there would not be a cumulative impact. The project includes **SS-IAMF#2** that will avoid an impact. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on security risks, in combination with cumulative projects, would be less than significant, and impacts would not result in a considerable cumulative impact.

Community safety from wildfire hazards during construction and operation of the project would be less than significant. The project would not be built in a fire hazard severity zone within State Responsibility Areas, a very high fire hazard severity zone within Local Responsibility Areas, or a wildland-urban interface fire area, and the risk of fires during construction of the project would be minimized. Construction of the project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Operation of the project would not include combustible fuels or flammable materials. Paired with project design features, the Shared

Passenger Track Alternatives would not increase the potential for wildfires and wildland fires. **SS-IAMF#2**, which is included in the project design, would include fire and life safety programs and coordination of the Fire and Life Safety and Security Committee. Therefore, impacts would be effectively minimized and operation of the project would not elevate fire risks or expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving fire or wildland fires. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on fire hazard from operation of the project, in combination with cumulative projects, would be less than significant, and impacts would not be cumulatively considerable.

CEQA Conclusion

The projected increase in population and development are anticipated to contribute incrementally to demand for emergency services within the cumulative RSA. However, these increases in service demand are planned for locally, and it is therefore not anticipated that these increases would combine to result in a significant cumulative impact on adopted emergency plans or on emergency access. Projected planned and anticipated transportation and nontransportation projects are anticipated to contribute incrementally to traffic and transportation hazards within the cumulative RSA. However, these planned and anticipated projects would be distributed throughout the RSA, and it is not anticipated that these projects would combine to result in a significant cumulative impact on safety and security. Permanent road improvements including signalization of intersections, road reconfigurations, and construction of grade-separated road-rail underpasses and overpasses would be implemented as part of the project design to improve traffic flow and reduce emergency response time. The Shared Passenger Track Alternatives will incorporate the following IAMFs to minimize the potential for construction and operational impacts: **SS-IAMF#1** through **SS-IAMF#5**; **TR-IAMF#1, Protection of Public Roadways During Construction**; **TR-IAMF#2**; **TR-IAMF#4**; **TR-IAMF#5**; **TR-IAMF#6**; **TR-IAMF#8**; **TR-IAMF#11**; **TR-IAMF#12**; **TR-IAMF#13**; **HMW-IAMF#1**; **HMW-IAMF#2**; **HMW-IAMF#3**; **HMW-IAMF#4**; **HMW-IAMF#6**; **HMW-IAMF#9**; **AQ-IAMF#1**; **GEO-IAMF#3**; **GEO-IAMF#8**; and **GEO-IAMF#10**. With implementation of **SS-MM#1**, which includes monitoring, coordination with Anaheim Fire and Rescue, and targeted operational improvements (e.g., signal preemption upgrades, real-time gate status communication, enhanced dispatch protocols), impacts on emergency response time in Anaheim would be reduced. With implementation of **HMW-MM#2** involving ongoing agency coordination, the impact from temporary exposure to site hazards during construction would be reduced. In addition, this impact would be site specific and would not combine with construction site hazards from cumulative projects. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on safety and security, in combination with cumulative projects, would be less than significant under CEQA, and impacts would not be cumulatively considerable.

3.19.4.11 Socioeconomics and Communities

Cumulative Condition

The cumulative condition relevant to socioeconomics and communities consists of the Shared Passenger Track Alternatives; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Whittier, Buena Park, Fullerton, Anaheim, Orange, South Whittier, and unincorporated community of West Whittier–Los Nietos; as well as adjacent HSR sections and relevant planned and future residential, commercial, industrial, and transportation projects identified in Appendices 3.19-A and 3.19-B. Recent development trends are anticipated to continue, potentially resulting in the disruption or division of communities. Displacements and relocations of residences, businesses, community facilities, and industrial operations would result in contributions to changes in the economy. Population growth and associated development pressures would result in the conversion of nontransportation uses to transportation uses and the intensity of urban development in the cumulative RSA. Planned development and transportation projects would also continue to increase urban density. These projects include bridge replacement, highway expansion, grade separation, and utility improvement projects that could result in temporary construction impacts (e.g., noise, vehicle

delay, traffic detours) and property or easement acquisition. Improvements would occur at different locations and the degree of impacts would vary. Property acquisitions for new developments that displace residences and businesses could have impacts on local government revenue that lead to the physical deterioration of public facilities. In addition, commercial developments for new business, residential, or mixed-use development could provide new housing and job opportunities and additional tax revenues to communities in the project section. These development and infrastructure projects could disrupt or divide established communities as a result of increased traffic congestion, increased noise and vibration, air quality deterioration, degradation of visual quality, and increased health and safety risks. Overall, under the cumulative condition, construction of the Shared Passenger Track Alternatives and cumulative projects could result in socioeconomics and community impacts in the RSA from temporary construction impacts, permanent operational impacts, and alterations to traffic patterns, noise, vibration, and air quality.

Contribution of the Shared Passenger Track Alternatives

Construction

Communities and Neighborhoods

Construction of the Shared Passenger Track Alternatives in combination with cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in temporary and permanent impacts on communities, such as parking loss, increased noise, increased traffic, increased response times for emergency responders, disruption of access, pedestrian safety hazards, changes in visual quality or aesthetics, disruption of established patterns of interaction among community members, and alteration of community character and function of communities and neighborhoods. These impacts would occur primarily adjacent to an existing railroad corridor; they would not physically divide communities or isolate established communities. However, the temporary impacts on communities from construction of the Shared Passenger Track Alternatives would represent a short-term disruption to the surrounding communities and would temporarily degrade community cohesion and character.

Incorporation of **SOCIO-IAMF#1, Construction Management Plan**; **NV-IAMF#1**; **AQ-IAMF#1**; **AQ-IAMF#2**; **AQ-IAMF#3**; **AQ-IAMF#4**; **AQ-IAMF#5**; **LU-IAMF#3, Restoration of Land Used Temporarily During Construction**; **AVQ-IAMF#1, Aesthetic Options**; **AVQ-IAMF#2, Aesthetic Review Process**; **TR-IAMF#2; TR-IAMF#4**; **TR-IAMF#5**; **TR-IAMF#6**; **TR-IAMF#8**; **TR-IAMF#11**; **TR-IAMF#12**; and **SS-IAMF#1** will reduce the project's temporary construction impacts on communities from increases in noise and dust, changes in visual quality, traffic congestion, changes to access, impacts on parking, and impacts on emergency response times. **SO-MM#1, Implement Measures to Reduce Impacts Associated with the Division of Residential Neighborhoods**; and **SO-MM#2, Implement Measures to Reduce Impacts Associated with the Division of Communities**, would be implemented to address impacts from grade separations on community division and access. The adjacent Burbank to Los Angeles Project Section would require similar IAMFs and mitigation measures because they are standard features and measures for the HSR system. Because projects requiring discretionary action under the cumulative condition would be subject to environmental review, many of the other reasonably foreseeable projects would also include measures to reduce these impacts. However, temporary cumulative impacts on communities could still occur, because some level of disruption to communities would be expected because of the potential for the construction schedules of the Shared Passenger Track Alternatives, the adjacent Burbank to Los Angeles Project Section, Parkwest Development, OCVIBE, and other reasonably foreseeable projects to overlap. Therefore, with incorporation of these measures, as listed above, the Shared Passenger Track Alternatives' contribution to cumulative impacts to community character and cohesion during construction, in combination with cumulative projects, would not be cumulatively considerable.

Residential Displacements and Relocations

Construction of the Shared Passenger Track Alternatives would result in property acquisitions and residential displacements throughout the cumulative RSA. Property acquisitions for the construction of the Shared Passenger Track Alternatives would result in displacement of 3

single-family residential units in West Whittier–Los Nietos Census-Designated Place. Provision of individualized relocation assistance outlined in **SOCIO-IAMF#2, Compliance with Uniform Relocation Assistance and Real Property Acquisition Policies Act**; and **SOCIO-IAMF#3, Relocation Implementation Plan**, will reduce impacts on displaced residents. In addition, there is a surplus of suitable replacement sites in West Whittier–Los Nietos Census-Designated Place. With incorporation of these IAMFs and implementation of these project design features, as listed above, the Shared Passenger Track Alternatives and cumulative projects impacts related to residential displacements and relocations would not be cumulatively considerable.

Physical Deterioration

Physical deterioration occurs when residential properties are abandoned, commercial districts lose viability because of store closures, or the condition of public facilities declines from a lack of government resources. Physical deterioration could be caused the Shared Passenger Track Alternatives, in combination with cumulative projects, from residential migration out of the community, extensive changes to the business environment of the community, or substantial reductions in property and tax revenue sources for local governments. Because of the small number of residential displacements and availability of housing, residential displacements are not expected to have a cumulatively considerable impact on physical deterioration. Business displacements in Commerce and Vernon could threaten the long-term viability of business districts because there is a deficit of replacement sites in these cities. However, suitable replacement sites exist in nearby cities, and **SOCIO-IAMF#3** will provide tailored relocation assistance to minimize closures and economic disruption that may lead to physical deterioration. In addition, tax changes from businesses displacements in Commerce and Vernon are unlikely to cause a decline in the condition of public facilities because the estimated tax losses in each city are a small percentage of overall tax revenues. Therefore, in combination with cumulative projects, impacts on physical deterioration from a change in business environment or lack of government resources would not be cumulatively considerable.

Operation

Communities and Neighborhoods

Operation of the Shared Passenger Track Alternatives, combined with other reasonably foreseeable future projects, including the adjacent Burbank to Los Angeles Project Section, would have permanent effects on communities and neighborhoods in the immediate vicinity of the project. Operation of the Shared Passenger Track Alternatives with cumulative projects could create physical barriers that isolate parts of a community. Even if a project does not create a new barrier, the exacerbation of existing divisions would generally weaken community cohesion. These development and infrastructure projects could temporarily or permanently disrupt or divide established communities as a result of decreased air quality, increased noise and vibration, degradation of visual quality, traffic disruptions, and changes to community access and cohesion.

As discussed in Section 3.19.4.2, Air Quality and Global Climate Change, the contribution of the project to cumulative air quality impacts would be less than significant and, in fact, beneficial. These effects, in combination with cumulative projects, would not disrupt or physically divide any established communities.

Operational noise levels of the Shared Passenger Track Alternatives are predicted to exceed noise impact criteria at residential locations along the project section. In combination with cumulative projects, this could cause annoyance and result in an indirect impact on community cohesion. However, historical land use patterns around the corridor suggest that existing, ongoing train noise does not curtail the continued use of residential, commercial, or recreational land uses. Consequently, although communities would experience residual noise and vibration impacts, the cumulative contribution from the Shared Passenger Track Alternatives would not disrupt the existing community. In addition, because these impacts would occur along the existing rail corridor that already divides these communities, noise and vibration impacts would not create a new physical barrier that divides communities. Therefore, the project would not have a considerable contribution to cumulative impacts on physical division from noise and vibration.

Visual changes from the Shared Passenger Track Alternatives would result in substantial aesthetic degradation from operational activities and the moving and stationary security features (protective barriers, signage, and signal lights) on four historic bridges. Although the visual changes to the historic bridges would result in aesthetic degradation, the operational elements causing the visual changes would not obstruct established travel routes and therefore would not physically divide existing communities. In addition, the project and reasonably foreseeable projects in the cumulative RSA would comply with applicable state statutes and guidelines concerning visual quality and aesthetics to ensure that the visual changes would be compatible with the existing visual character and that visual resources are not substantially altered or damaged. Therefore, the project would not have a considerable contribution to cumulative impacts on physical division from visual changes.

The Shared Passenger Track Alternatives would improve the regional transportation system, but would also result in delays at some intersections and roadway segments along the project alignment and near HSR stations. These effects would be caused by the additional trips to and from the station areas related to HSR station operations, and ambient growth of permanently relocated trips that would result from changes in the roadway network. Access between communities would be maintained, but delays could disrupt or slow down paths of travel for community residents. However, because the existing rail corridor already divides communities, added delays from HSR operations or other reasonably foreseeable projects in the cumulative RSA would not create a new physical division of established communities. Therefore, the project would not have a considerable contribution to cumulative impacts on physical division from traffic impacts.

Shared Passenger Track Alternatives operation would have a beneficial effect on regional access and cohesion, especially for communities with a station. Therefore, the contribution of the project to cumulative community access and cohesion would be less than significant and, in fact, beneficial.

Unplanned Population Growth

As discussed in Section 3.18, project O&M would result in small, incremental increases in population growth along the project corridor or in localized areas within the region. A significant cumulative impact would occur in the event that project-induced population growth, in combination with reasonably foreseeable projects within the cumulative RSA, directly or indirectly result in substantial unplanned growth in the region.

The Shared Passenger Track Alternatives would contribute to long-term population growth resulting from the increased accessibility and mobility that the project would bring to the cumulative RSA. As discussed in Section 3.18, even with the necessary conversion of residential land use, communities in the region have adequate space to accommodate HSR-induced growth in their current spheres of influence. The land use patterns prescribed in the Southern California Association of Governments' *2024–2050 Regional Transportation Plan/Sustainable Communities Strategy* have the capacity to accommodate 2 million more residents and 1.6 million more households in the Southern California Association of Governments region by 2050 (SCAG 2024). Furthermore, the Regional Transportation Plan/Sustainable Communities Strategy, which encompasses the cumulative RSA, assumes the presence of HSR. This planned capacity is sufficient to support the increase of 715,000 and 100,000 residents in Los Angeles County and Orange County, respectively, between 2021 and 2040, when considering anticipated growth without the project.

Project operation would result in a 0.07 percent (direct and indirect) employment growth effect compared to the forecasted growth under the No Project Alternative. Unplanned population growth indirectly or directly attributed to the project or other reasonably foreseeable projects within the cumulative RSA would also occur. There is also a possibility that the project could induce population growth in exurban counties by offering a faster and more efficient means for commuters to travel from exurban communities to jobs in urban centers in Los Angeles and Orange Counties. If population increases were to occur, they would occur slowly because they would be driven by growth in indirect employment, which is spread out over time. Although the

Shared Passenger Track Alternatives and other cumulative projects could attract some new residents to the region, they would not lead to a wholesale shift in residential locations from outside major metropolitan areas to Los Angeles and Anaheim because relocation and housing choices are more complex, driven by many factors beyond long-distance transportation accessibility. Moreover, the cumulative RSA is heavily urbanized and largely built out; therefore, high growth rates are not anticipated. Developments in these urbanized areas are generally limited to infill and redevelopment projects, because housing affordability in urban centers throughout California is low and workers often choose to commute longer distances or buy housing in suburban and exurban communities. The number, magnitude, and distribution of households that may make this decision as a result of this project are difficult to estimate because of the many economic factors and individual preferences involved.

Population growth directly and indirectly resulting from the Shared Passenger Track Alternatives and other reasonably foreseeable projects in the cumulative RSA would be primarily determined by land use decisions made at the local jurisdiction level. Therefore, these changes would not induce substantial unplanned growth in the region, and no significant cumulative impact would occur.

CEQA Conclusion

Within the context of CEQA, the analysis of construction impacts focuses on the potential for the Shared Passenger Track Alternatives to result in the physical division of communities. Construction of the project in combination with cumulative projects in the RSA, including the adjacent Burbank to Los Angeles Project Section, could result in temporary and permanent impacts associated with the division of communities and residential displacements. Incorporation of **SOCIO-IAMF#1**, **SOCIO-IAMF#2**, **SOCIO-IAMF#3**, **NV-IAMF#1**, **AQ-IAMF#1**, **AQ-IAMF#2**, **AQ-IAMF#3**, **AQ-IAMF#4**, **AQ-IAMF#5**, **LU-IAMF#3**, **AVQ-IAMF#1**, **AVQ-IAMF#2**, **TR-IAMF#2**, **TR-IAMF#4**, **TR-IAMF#5**, **TR-IAMF#6**, **TR-IAMF#8**, **TR-IAMF#11**, **TR-IAMF#12**, and **SS-IAMF#1** will reduce the project's temporary construction impacts on communities from increases in noise and dust, changes in visual quality, traffic congestion, changes to access, impacts on parking, impacts on emergency response times, and residential displacements. **SO-MM#1** and **SO-MM#2** would be implemented to address impacts from grade separations on community division and access. The adjacent Burbank to Los Angeles Project Section would require similar IAMFs and mitigation measures because they are standard features and measures for the HSR system. With implementation of these measures, the Shared Passenger Track Alternatives' contribution to cumulative impacts related to division of communities and residential displacements, in combination with cumulative projects, would not result in a cumulatively considerable contribution to a significant impact.

Operation of the Shared Passenger Track Alternatives with cumulative projects could create physical barriers that isolate parts of a community. These development and infrastructure projects could temporarily or permanently disrupt or divide established communities as a result of decreased air quality, increased noise and vibration, degradation of visual quality, traffic disruptions, and changes to community access and cohesion. The Shared Passenger Track Alternatives would improve the regional air quality and transportation system, which would have a beneficial effect on community access and cohesion. Traffic impacts during project operation on adjoining and nearby roadways would be direct and continual, but would not physically divide an established community because they would be in an existing rail corridor. Operational noise levels of the Shared Passenger Track Alternatives are predicted to exceed noise impact criteria at residential locations along the project section, but these impacts would not create a new physical barrier that divides communities. Although there would be substantial aesthetic degradation of historic bridges as a result of project operation, there would be no physical division of an established community as a result of these visual changes. Overall, Shared Passenger Track Alternatives operation would have a beneficial effect on regional access and cohesion, especially for communities with a station. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts related to socioeconomics and communities during operation, in combination with cumulative projects, would not be cumulatively considerable.

3.19.4.12 Station Planning, Land Use, and Development

Cumulative Condition

Under the cumulative condition, ongoing growth trends within the cumulative RSA are expected to continue, resulting in dense urban and suburban areas where established railroad and transportation corridors exist. The cumulative condition relevant to station planning and land use consists of development of the Shared Passenger Track Alternatives; development planned under general plans of the Counties of Los Angeles and Orange and the cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Whittier, Buena Park, Fullerton, Anaheim, Orange, and unincorporated community of West Whittier–Los Nietos; as well as adjacent HSR sections and relevant planned and future residential, commercial, industrial, and transportation projects identified in Appendices 3.19-A and 3.19-B. Under the cumulative condition, ongoing growth trends within the cumulative RSA would continue, which would result in temporary and permanent changes in land use patterns, including the conversion of land to transportation use, and there would be disruptions or conflicts to planned land use patterns, such as from noise. Under the cumulative condition, temporary construction-related project impacts could occur on various land uses if they become part of a temporary construction easement, such as a staging area. Temporary impacts, which could include noise, air quality (dust), and increased traffic, would be limited to the construction activities and would therefore be short term. Cumulative projects, including the adjacent Burbank to Los Angeles Project Section and Link US project, would also convert existing nontransportation land uses to transportation use, alter land use patterns, or change the intensity of land uses, creating potential conflicts with other adjacent land uses. Overall, under the cumulative condition, construction of the Shared Passenger Track Alternatives and cumulative projects could result in incrementally significant land use impacts in the RSA from the temporary use of land during construction, permanent conversion of existing and planned land uses to transportation use, alteration of land use patterns, and conflicts with existing and planned land uses.

As described in Chapter 1, Project Purpose, Need, and Objectives, the population of Los Angeles and Orange Counties is projected to increase 0.4 percent per year through 2040, with 12.5 million inhabitants in this area by 2040. This growth would result in the continued conversion of existing nontransportation land uses to transportation use or a change in the density of land uses. Planned development in the cumulative RSA including new or expanded transportation facilities, such as the Metro C Line Extension to Torrance and Link US project, and new residential and commercial development in the cities listed above would convert additional nontransportation land to transportation use and intensify urbanization of surrounding land.

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the Shared Passenger Track Alternatives and cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in changes to pattern and density of land uses. Construction of the Shared Passenger Track Alternatives and projects listed in Appendices 3.19-A and 3.19-B would require the temporary use of land for construction activities and would likely result in temporary impacts on adjacent land uses, such as increases in noise levels and dust on nearby residential uses and certain types of public facilities (e.g., schools and parks) within the RSA if construction schedules potentially overlap with project construction. Construction schedules of projects such as the City of Anaheim Stadium Towers, Parkwest, OCVIBE, Disneyland Forward, and others could have the potential to overlap with construction of the Shared Passenger Track Alternatives. However, these impacts would be temporary and land used for construction staging, laydown, and fabrication of the Shared Passenger Track Alternatives would be unavailable for existing uses during the 18- to 36-month construction period. **LU-IAMF#3** requires that construction and staging areas used temporarily during construction would be returned to a condition equal to the preconstruction staging condition.

The HSR alignment's temporary impacts related to noise will be reduced through compliance with **NV-IAMF#1**, which requires documentation of how federal guidelines for minimizing noise and

vibration would be employed during construction near sensitive receptors. The temporary impacts related to air quality will be reduced through compliance with **AQ-IAMF#1**, which requires the preparation of a fugitive dust control plan identifying the minimum features that would be implemented during ground-disturbing activities. **TR-IAMF#2**, which requires the preparation of a Construction Transportation Plan, will minimize access disruptions for residents, businesses, customers, delivery vehicles, and buses by limiting road closures to the hours that are least disruptive to access for the adjacent land uses and making detours available to affected motorists. In addition, the Authority-designated contractor will prepare and apply a Construction Management Plan that includes maintaining customer and vendor access to local businesses throughout construction by using signs to instruct customers about access to businesses (**SOCIO-IAMF#1**). These IAMFs will address temporary construction impacts, including hardship on adjacent businesses and residences resulting from increases in noise and dust or changes in traffic patterns, minimizing the potential for altered land use patterns or adjacent incompatible land uses.

The HSR alignment tracks would be entirely within the existing Los Angeles – San Diego – San Luis Obispo Rail Corridor and would therefore maintain most of the existing roadway network within the cumulative RSA. A significant cumulative impact would occur in the event that impacts from the Shared Passenger Track Alternatives, in combination with other reasonably foreseeable projects in the cumulative RSA, accumulate and result in a significant change to land use patterns that are incompatible with land use development. The majority of the proposed roadway modifications under the Shared Passenger Track Alternatives (e.g., undercrossings, overcrossings) would be implemented to accommodate the project while maintaining grade separations and crossings. Given this, the project would not directly or indirectly result in altered land use patterns or adjacent incompatible land uses, and access would be maintained following permanent roadway closures or modifications.

Along much of the project alignment, construction of the project would occur within the existing rail right-of-way. However, project construction would require acquisition and permanent conversion of some lands that are not currently in transportation use.

As presented in Table 3.13-5, implementation of the Shared Passenger Track Alternatives would permanently convert approximately 240.17 acres and 278.85 acres of existing and planned land uses to transportation use under Shared Passenger Track Alternatives A and B, respectively. With inclusion of the Norwalk/Santa Fe Springs HSR Station Option or the Fullerton HSR Station Option, additional conversion to transportation use would be necessary. This has the potential to result in altered land use patterns and incompatibility with other nearby land uses, especially in the event that project-specific impacts accumulate with acquisitions and conversions from other reasonably foreseeable projects in the cumulative RSA. However, the vast majority of land that would be permanently converted by the project is in industrial or mixed-commercial uses, typical for lands along the Los Angeles – San Diego – San Luis Obispo Rail Corridor. Because there would be a relatively small amount of land acquired, the land to be acquired is along the Los Angeles – San Diego – San Luis Obispo Rail Corridor, and the land to be acquired is bounded by land use types that are generally compatible with transportation uses, there would be little to no potential for land use conversion to result in any permanent alteration of land use patterns. Construction of the Shared Passenger Track Alternatives, in combination with cumulative projects, may require permanent land acquisition but would not indirectly result in permanent altered land use patterns or incompatible land uses. Construction of the project would minimize, but not avoid, changes to existing land uses. Incorporation of **LU-IAMF#1, HSR Station Area Development**; and **LU-IAMF#2, Station Area Planning and Local Agency Coordination**, as part of the project will ensure that station area planning development principles and guidelines, and local agency coordination, have been applied to station area planning prior to HSR operations. Impacts related to roadway closure or modifications from the Shared Passenger Track Alternatives and cumulative projects would be less than significant under CEQA.

Operation

The Shared Passenger Track Alternatives would add scheduled passenger train service in an established rail corridor with passenger and freight uses. Such additional service, when considered with cumulative projects, would result in changes in noise and light/glare that could potentially change land use patterns. Because existing land uses adjacent to the rail corridor are exposed to rail noise and transportation lighting features, and the adjacent land uses would be largely similar to what has historically existed adjacent to the corridor, implementation of the Shared Passenger Track Alternatives would not result in permanent impacts that would alter existing and planned land use from noise, lighting, and glare. Cumulative projects in the RSA include highway expansion, grade separation, and utility improvement projects, which would not substantially contribute to land conversion because they are improvements to existing infrastructure. Therefore, cumulative impacts would be less than significant and the Shared Passenger Track Alternatives would not result in a cumulatively considerable contribution to a significant impact.

Although implementation of the Shared Passenger Track Alternatives would improve the regional transportation system, it would also result in impacts on some signalized and unsignalized intersections and roadway segments along the project alignment and near the HSR stations. These effects would be caused by the additional trips related to HSR station operations and ambient growth of permanently relocated trips that would result from changes in the roadway network. As discussed in Sections 3.13 and 3.2 of this Draft EIR/EIS, the Authority would implement **TRAN-MM#1, Modify Traffic Signal Controls**, to modify traffic signal phasing sequence; **TRAN-MM#2, Restripe Intersections**, to restripe specific intersections; **TRAN-MM#4, Add Exclusive Turn Lanes to Intersections**, to add exclusive turn lanes at specific intersections to improve level of service and intersection operations; and **TRAN-MM#3, Add Signal to Intersection to Improve Level of Service/Operation**, to add traffic signals to affected unsignalized intersections to improve level of service and intersection operation. **TRAN-MM#5, Add New Lanes to Roadway**, will add roadway lanes to improve level of service and intersection operation where there are impacts on roadway segments. With implementation of **TRAN-MM#1** through **TRAN-MM#5**, delays at intersections and roadway segments would be reduced to less-than-significant levels and no adverse impacts would result on vehicle circulation (including transit operation), such that there would be no resulting impacts on land use. Operation of the project would also result in most at-grade rail crossings becoming grade separated, which would benefit transit facilities. This would be a beneficial effect of the project. In addition, **LU-IAMF#2** is included in the project design, which plans for long term coordination with local transit agencies and addresses operations and delays in the vicinity of the HSR station option areas. During operation, adequate parking would be provided at HSR station sites to meet the projected daily parking demand. **LU-IAMF#2** will address the impact of increased traffic access demands at HSR stations like the proposed HSR station platform and facilities at the Anaheim Regional Transportation Intermodal Center and the HSR station options because adequate parking would be provided at the stations to meet the forecasted daily parking demand and alternative methods of station access would reduce traffic at the stations. Therefore, increased demand for parking from operation of the Shared Passenger Track Alternatives would not contribute to a cumulative impact related to land use conflicts that would be cumulatively considerable.

CEQA Conclusion

Construction of the Shared Passenger Track Alternatives in combination with cumulative projects, including the adjacent Burbank to Los Angeles Project Section, would result in temporary or permanent conversion of land. The acreage of land that the Shared Passenger Track Alternatives, including station areas, would permanently convert as a result of construction activities is minimal when compared to the total acreage of land uses in the overall RSA. In addition, the Shared Passenger Track Alternatives would not result in permanent land use conflicts with unique land uses with incorporation of **LU-IAMF#1**, **LU-IAMF#2**, **LU-IAMF#3**, **SOCIO-IAMF#1**, **AQ-IAMF#1**, **NV-IAMF#1**, and **TR-IAMF#2**. Therefore, the Shared Passenger Track Alternatives would not contribute to a significant cumulative impact under CEQA related to station planning, land use, and development, and the Shared Passenger Track Alternatives'

contribution to these cumulative impacts, in combination with cumulative projects, would not be cumulatively considerable.

Operation of the Shared Passenger Track Alternatives in combination with operation of the adjacent Burbank to Los Angeles Project Section, Parkwest Development, OCVIBE, and cumulative projects would not result in noise or light/glare conflicts with existing and planned land uses adjacent to the rail corridor. **LU-IAMF#2** is included in the project design to minimize operational impacts associated with transit and traffic access demands. Implementation of **TRAN-MM#1** through **TRAN-MM#5** would further reduce impacts to less-than-significant levels. Therefore, the Shared Passenger Track Alternatives would not contribute to a significant cumulative impact under CEQA related to station planning, land use, and development, and the Shared Passenger Track Alternatives' contribution to these cumulative impacts, in combination with cumulative projects, would not be cumulatively considerable.

3.19.4.13 Parks, Recreation, and Open Space

Cumulative Condition

The cumulative condition relevant to parks, recreation, and open space consists of the Shared Passenger Track Alternatives; development planned under the general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Montebello, Norwalk, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, Orange, and the unincorporated community of West Whittier–Los Nietos; and relevant planned and future residential, commercial, industrial, recreational, and transportation projects identified in Appendices 3.19-A and 3.19-B. Under the cumulative condition, ongoing population growth and proposed development would continue within the cumulative RSA and would contribute to impacts on parks, recreation, and open space. There are no open space resources in the RSA for the Shared Passenger Track Alternatives. Therefore, there would be no cumulative impacts on open space resources from implementation of the Shared Passenger Track Alternatives, and they are not discussed in the cumulative analysis.

Construction of the Shared Passenger Track Alternatives and other reasonably foreseeable projects would require the use of heavy equipment during grading and construction activities, which would result in temporary cumulative noise and vibration, air quality, and visual impacts and interfere with pedestrian and vehicle access to park and recreational resources. As discussed in Section 3.15, Parks, Recreation, and Open Space, the following estimated impact distances were established to capture potential noise, air quality, and visual impacts from construction activities:

- A distance of 250 feet was used as the estimated impact distance threshold for evaluating construction-related fugitive dust and visual changes. This is a conservative estimate because the recreational resources are in an existing, urban rail corridor rather than a new rail corridor; therefore, any properties outside the 250-foot threshold would be unlikely to be affected by construction-related fugitive dust or visual impacts from the Shared Passenger Track Alternatives.
- A distance of 645 feet was used as the estimated impact distance threshold for construction-related noise. This is a conservative estimate and is based on the maximum distance at which daytime construction noise could exceed FRA criteria for sensitive residential land uses, which also applies to recreational resources with sensitive receptors.
- A distance of 230 feet was used as the estimated impact distance threshold for evaluating construction-related vibration. This estimated impact distance was used to assess temporary construction vibration effects on recreational resources, because this threshold reflects the maximum range within which vibration-induced human annoyance or interference may occur, based on equipment type and the presence of sensitive receptors.

Operation of the Shared Passenger Track Alternatives and other reasonably foreseeable projects proposed under the cumulative condition include but are not limited to transportation

infrastructure improvements and recreational trail extensions with the potential to introduce visual changes or increase ambient noise levels:

- A minimum screening distance of 500 feet from the track centerline was applied to evaluate visual operational impacts on recreational resources in urbanized areas, based on the presence of intervening physical barriers such as housing blocks, roadways, and industrial buildings, which substantially limit direct views and visual connectivity, thereby reducing the potential for perceptible changes to the character or use of these resources.
- A distance of 700 feet estimated from the centerline of the rail corridor of the alignment was used as the estimated impact disturbance distance threshold for noise effects based on the FRA estimated impact distance for projects with steel-wheeled vehicles operating on a new or existing track in a suburban or nonsuburban setting with an unobstructed view (FRA 2012).

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the Shared Passenger Track Alternatives in combination with planned and future infrastructure and development projects in the cumulative RSA, including the adjacent Burbank to Los Angeles Project Section, could temporarily increase noise, vibration, or fugitive dust emissions; degrade visual resources; diminish access or use of park, recreation, and open space resources; or require acquisitions of property from park and recreation areas. The presence of HSR construction equipment and activity would temporarily detract from regular use of the resources. Construction of the Shared Passenger Track Alternatives would temporarily diminish access to several parks, recreation, and open space resources. There would also be one permanent easement or property acquisition related to recreational resources.

The project has incorporated **AQ-IAMF#1**, **AVQ-IAMF#1**, and **AVQ-IAMF#2** to minimize fugitive dust and effects related to visual resources. These impacts would be less than significant during project construction and would not prevent the use of an existing park, recreational facility, or open space resource, nor would they diminish user experience or create a barrier to the use of resources within the cumulative RSA. As a result, these impacts would not combine with cumulative projects to result in a cumulative impact with respect to noise, fugitive dust, or visual resources. Construction of the Shared Passenger Track Alternatives could temporarily diminish access to recreational facilities. Consequences would be reduced facility usage, as well as possibly increased usage of other facilities, potentially leading to faster deterioration of those facilities because of increased use. However, project construction would generally result in temporary and intermittent disruptions to access, such that these impacts would not combine with cumulative projects to result in a cumulative impact with respect to access. Adherence to **PK-IAMF#1, Parks, Recreation, and Open Space**, which requires the contractor to prepare and submit a technical memorandum to minimize impacts on recreational resources, would minimize temporary impacts. Implementation of **PR-MM#1, Temporary Restricted Access to Park Facilities During Construction**; and **PR-MM#2, Providing Park Access**, will further reduce the impact by ensuring connections to resources will be maintained during and after construction. In order to accommodate the Shared Passenger Track Alternatives, permanent acquisition of a small portion of the Union Pacific Trail Phase II would be acquired (0.18 acre). This would constitute a permanent change to its planned configuration that could reduce the capacity, function, or value of the resource. With implementation of **PR-MM#4, Replacement of Property Acquired from Existing or Planned Multiuse Trails and Paths**, construction-period impacts on the resource will be minimized. None of the cumulative projects identified in Appendices 3.19-A and 3.19-B would result in the permanent acquisition of parkland, recreation, or open space resources, or have a direct impact on parks, recreation, and open space resources. Therefore, construction of the Shared Passenger Track Alternatives, in combination with cumulative projects, would not result in a significant cumulative impact on parks, recreation, and open space resources.

Operation

Operations of planned and future infrastructure and development projects in the cumulative RSA could increase use of park, recreation, and open space facilities. However, the projected population growth without the project is minor, and once the project is operational, the alternative in Los Angeles County total projected population growth is only approximately 0.13 percent, and in Orange County only approximately 0.7 percent by 2040. As a result, these impacts would not combine with planned development projects to result in a cumulative impact with respect to increased use of a recreational resource leading to deterioration of the resource.

During project operation, noise from passing trains and maintenance activities would be audible. However, because the park resources have high baseline noise levels through active recreation, users of the resources would not be highly sensitive to changes in external noises. Additionally, the noise from passing trains would be intermittent and short in duration. Also, there are physical barriers between the project alignment and some of the resources (e.g., busy streets, rows of homes or businesses). Given the distance of these resources from the alignment and their location in an urban area with current noise sources and existing physical structures serving as barriers to noise, it is anticipated that noise from passing trains would not be perceptible to users of most resources. The Shared Passenger Track Alternatives, when considering reasonably foreseeable projects, would not increase the use of existing neighborhood and regional parks or other recreation facilities such that substantial physical deterioration of the facility would occur. Impacts of the Shared Passenger Track Alternatives, in combination with cumulative projects, would be less than significant. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

Permanent visual changes would occur as a result of operations of the Shared Passenger Track Alternatives at some park resources less than 500 feet from the alignment. Once operational, built elements that would be introduced in the project include the trains; tracks; grade-separated rights-of-way; support structures; landform alterations associated with grading or realignment; lighting and signage; fencing, roadway realignments for at-grade crossings, undercrossings, and overcrossings; removal of vegetation; removal of existing structures; and new landscaping and revegetation. The existing visual quality, proposed visual quality, overall visual change, and viewer sensitivity at most resources are considered moderate to moderate-low. **AVQ-IAMF#1** and **AVQ-IAMF#2** are included in the project design to substantially avoid or minimize impacts on viewers, visual characters, and visual quality. The Shared Passenger Track Alternatives, combined with cumulative projects in the RSA, may influence some users of the resources to instead use nearby recreational resources that do not experience visual changes. However, the temporary increase in use of nearby recreational resources would not be such that substantial physical deterioration of the resources would occur. Therefore, project operation would not result in permanent changes to these resources' character or use as a result of visual changes and would not result in cumulatively considerable aesthetic impacts on recreational resources.

As discussed in Section 3.18, the Shared Passenger Track Alternatives would not result in substantial permanent increases in resident or worker population in the general area of the project corridor or localized areas in the project vicinity. Although operation of the Shared Passenger Track Alternatives would attract some new residents to the region, this population growth would be small compared to the projected growth in the region and could be accommodated under existing plans. Because the anticipated increase in population from the Shared Passenger Track Alternatives would be minor and spread throughout Los Angeles and Orange Counties, it is not anticipated that the Shared Passenger Track Alternatives would result in substantial physical deterioration of recreational resources. Operation of the Shared Passenger Track Alternatives, in combination with cumulative projects, would introduce additional growth. This growth would be distributed throughout the region and there would be a less-than-significant cumulative impact under CEQA.

CEQA Conclusion

Construction activities associated with the Shared Passenger Track Alternatives in combination with the other cumulative projects, including the adjacent Burbank to Los Angeles Project

Section, would result in temporary cumulative noise and vibration, air quality, and visual impacts and would interfere with pedestrian and vehicle access to park and recreational resources. However, these impacts would be temporary and localized. Neither the Shared Passenger Track Alternatives nor the cumulative projects would result in substantial permanent impacts on park and recreational resources within the cumulative RSA that have the potential to interfere with or diminish their use. Furthermore, the project would not change the character or functions and values of the park and recreational resources. **AQ-IAMF#1**, **AVQ-IAMF#2**, and **PK-IAMF#1** are included in the project design to avoid or minimize impacts with the potential to change the character or functions and values of a recreational resource. With implementation of mitigation measures **PR-MM#1**, **PR-MM#2**, and **PR-MM#4**, there would not be a significant cumulative impact under CEQA related to parks and recreational resources to which the project would contribute.

Operation of the Shared Passenger Track Alternatives in combination with the cumulative projects, including the adjacent Burbank to Los Angeles Project Section, could increase use of park and recreational resources. However, the project would result in a minor increase in population that would in turn lead to a minor increase in use of park and recreational resources throughout the RSA. Therefore, the Shared Passenger Track Alternatives would not contribute to significant cumulative impacts from increased use of parks or recreational facilities, and the Shared Passenger Track Alternatives' contribution to cumulative impacts on parks or recreational facilities, in combination with cumulative projects, would not be cumulatively considerable.

Operation of the Shared Passenger Track Alternatives in combination with the cumulative projects, including the adjacent Burbank to Los Angeles Project Section, could result in permanent noise and visual impacts on park and recreational resources. Noise and visual impacts from the passing trains for the project and the adjacent Burbank to Los Angeles Project Section would be short in duration and would not contribute to cumulative impacts. Therefore, the Shared Passenger Track Alternatives would not contribute to significant cumulative impacts on parks and recreational facilities related to noise, visual impacts, or deterioration. In addition, the Shared Passenger Track Alternatives' contribution to cumulative impacts on parks and recreational facilities related to noise and visual impacts during operation, in combination with cumulative projects, would not be cumulatively considerable.

3.19.4.14 Aesthetics and Visual Quality

Cumulative Condition

The visual character of the cumulative RSA is in a developed and urbanized area. Under the cumulative condition, planned and future development would continue in an urban setting and would intensify the area's urban visual character. Growth trends within the cumulative RSA would likely result in additional conversion of existing nontransportation uses to transportation uses along transportation corridors. Projects would increase sources of evening light and glare, which could degrade nighttime views and additional structural development may reduce the visibility of scenic landscapes. The cumulative condition relevant to aesthetics and visual quality consists of development of the Shared Passenger Track Alternatives; development planned under general plans of the Counties of Los Angeles and Orange and the Cities of Los Angeles, Vernon, Commerce, Bell, Montebello, Pico Rivera, Santa Fe Springs, Norwalk, La Mirada, Whittier, Buena Park, Fullerton, Anaheim, Orange, South Whittier, and unincorporated community of West Whittier–Los Nietos; as well as adjacent HSR sections and relevant planned and future residential, commercial, industrial, and transportation projects identified in Appendices 3.19-A and 3.19-B. Construction of the reasonably foreseeable projects, including the Shared Passenger Track Alternatives, would create temporary visual changes and introduce new visual elements from construction staging, equipment, lighting, and spoils. Although construction activities for the Shared Passenger Track Alternatives would be temporary, these activities could overlap and combine with the construction period of other reasonably foreseeable projects to create a cumulative visual impact on certain views caused by the scale and proximity of the reasonably foreseeable projects.

Contribution of the Shared Passenger Track Alternatives

Construction

Temporary construction activities from development and other transportation projects such as I-5 Freeway Expansion Project Construction, Parkwest Development, and OCVIBE would result in construction activities that would create temporary visual changes and introduce new visual elements from construction staging, equipment, lighting, and spoils. The Shared Passenger Track Alternatives would contribute to these cumulative impacts in locations where HSR structures would be built in the same areas as other development is expected. Construction staging areas would generally be surrounded by commercial or industrial lands, away from high-sensitivity viewer groups. Other projects may be under construction within the RSA at the same time, and visible by the same viewers. Therefore, construction of the Shared Passenger Track Alternatives, in combination with cumulative projects, may cause a significant cumulative impact on visual quality.

Visual quality impacts associated with project construction would be temporary and occur during the 1- to 8-year construction period. The most intensive phases of project construction, which would have the greatest potential to result in temporary impacts on aesthetics and visual quality, are expected in the first 5 years. Throughout the three landscape units, the presence of construction materials, equipment, on-site workers, and other associated improvements, such as roadway/track realignments, would alter the existing visual environment. Several construction staging areas have been identified for the project, although they may change during construction. Construction of the Shared Passenger Track Alternatives would introduce substantial visual intrusions and discordant visual changes in the immediate vicinity of temporary construction staging areas and construction activities. Similarly, cumulative projects undergoing construction within the RSA would also require the temporary establishment of a staging area and other construction activities. Construction of maintenance and storage facilities would also require the establishment of a staging area and other construction activities, which would be temporary. Staging areas will be managed in accordance with the contractor's plan to minimize any potential adverse effects on adjacent sensitive uses. The contractor's plan will be based on city, state, and federal regulations and standards. For example, project construction staging areas could be enclosed and screened. Concrete batch plants, used to produce concrete for project construction, would be located within the project section right-of-way during construction. Given their extended use, they could create noticeable visual impacts near sensitive receptors such as residents and recreationists. Construction activities may also involve the use of temporary structures (e.g., trailers, fencing, parking). However, because there are no designated scenic vistas (including protected views) or scenic highways within the RSA or visible from the RSA, construction activities would not affect a scenic vista or highway.

Contractors will use BMPs to reduce or avoid aesthetic effects during construction, including preparing a fugitive dust control plan that identifies measures such as covering all materials transported on public roads, watering exposed graded surfaces, and stabilizing all disturbed graded areas (**AQ-IAMF#1**). Site managers would conduct regular site inspections to ensure that staging areas are clean and orderly, to the extent practicable, and that construction debris is removed from public rights-of-way and adjacent properties/roadways.

Adherence to **AVQ-IAMF#1**, **AVQ-IAMF#2**, and **AQ-IAMF#1** will temporarily lessen visual quality impacts during construction. **BIO-IAMF#11** will also be incorporated, requiring site managers to conduct regular site inspections to ensure that staging areas are clean and orderly, to the extent practicable, and that construction debris is removed from public rights-of-way and adjacent properties/roadway. Once construction is complete, construction equipment would be removed, and construction staging areas and temporary structures would be dismantled. However, the areas disturbed by construction would require remediation to prevent substantial changes to views, visual character, and visual quality and the diminishment of natural harmony, cultural order, and project coherence. Therefore, **AVQ-MM#1** includes remediation requirements for areas disturbed during project construction. Even with mitigation, construction of the Shared Passenger Track Alternatives and cumulative projects in the vicinity of the four historic bridges

would result in significant and unavoidable cumulative impacts under CEQA. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on aesthetic and visual quality, in combination with cumulative projects, would be cumulatively considerable.

Within the Gateway Cities and Fullerton/Anaheim Landscape Units, development of the Shared Passenger Track Alternatives and cumulative projects would be in an urbanized area. The Authority has designed and would build the Shared Passenger Track Alternatives consistent with land use and zoning regulations. Incorporation of **AVQ-IAMF#1**, **AVQ-IAMF#2**, and **AQ-IAMF#1** in the project's design would reduce anticipated visual quality impacts related to disruption or division of existing communities during project construction. With implementation of **AVQ-MM#1**, impacts on viewers, visual character, and visual quality associated with the Shared Passenger Track Alternatives and cumulative projects in the Gateway Cities and Fullerton/Anaheim Landscape Units would be less than significant under CEQA.

Construction of the Shared Passenger Track Alternatives and cumulative projects would potentially affect viewers, visual character, and visual quality from temporary light and glare. The Shared Passenger Track Alternatives include **AVQ-IAMF#1** and **AVQ-IAMF#2** as part of the project design to lessen nighttime lighting impacts and residual impacts on viewers, visual character, and visual quality during construction. Construction of the Shared Passenger Track Alternatives would introduce substantial new sources of light to the cumulative RSA. Implementation of **AVQ-MM#2** will reduce potentially invasive sources of light and glare associated with construction activities. This mitigation requires that the contractor shield nighttime construction lighting, minimize light spill outside the construction site boundaries, and document its compliance in a technical memorandum. Impacts of the Shared Passenger Track Alternatives, in combination with cumulative projects, would be less than significant. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

Operation

Once built and operational, built elements would be introduced into the RSA throughout the three landscape units as part of the proposed project and would include trains (rolling stock), tracks, grade-separated rights-of-way, and support structures (including radio towers, which may be up to 100 feet tall). Project train and maintenance facility operational activities would alter the existing visual environment. These alterations would include increased activity along the rail corridor, new and expanded stations with greater transit and commuter activity, and signal lights. Effects of the project will be partially alleviated through incorporation of **AVQ-IAMF#1** and **AVQ-IAMF#2** to substantially avoid or minimize impacts on viewers, visual character, and visual quality. **CUL-MM#12, Design Review for Intrustion-Protection Barriers**, requires consulting with interested parties to achieve a barrier design that meets safety goals while introducing the minimum physical and visual effects on historic properties. The Authority would also implement **AVQ-MM#5, Replant Unused Portions of Land Acquired for the Shared Passenger Track Alternatives**, which requires planting of vegetation in land acquired for the project (e.g., shifting roadways) that are not used for the project or related supporting infrastructure, or other higher or better use; **AVQ-MM#6, Screen Traction Power Distribution Stations and Radio Communication Towers**, which requires screening the traction power substations (at approximately 30-mile intervals along the HSR guideway) from public view, including radio towers where required, through the use of landscaping or solid walls/fences; and **AVQ-MM#7, Incorporate Design Criteria for Elevated Guideways and Station Elements that Can Adapt to Local Context**, which requires incorporation of design criteria for elevated guideways and station elements that can adapt to local context. These mitigation measures will reduce the effects of the main visual changes anticipated in the Downtown Los Angeles Landscape Unit (e.g., train movements, train lighting, activities at the LMF, security lighting, signal lights) by blocking the changes from view and ensuring that the changes have been considered in the design criteria. **AVQ-MM#4, Provide Vegetation Screening Along At-Grade and Elevated Guideways Adjacent to Residential Areas**, will reduce operational visual impacts and **AVQ-MM#3, Incorporate Design Aesthetic Preferences into Final Design and Construction of Nonstation Structures**, through **AVQ-MM#7** will reduce visual impacts for the Gateway Cities

and Fullerton/Anaheim Landscape Units and partially reduce operational visual impacts on the four historic bridges in the Downtown Los Angeles Landscape Unit. Accordingly, even with mitigation, operation of necessary security features on four historic bridges, would result in significant and unavoidable impacts for visual quality under CEQA. With incorporation of the project design features and implementation of the mitigation measures listed above, the Shared Passenger Track Alternatives, combined with cumulative projects, would result in a significant and unavoidable cumulative impact. The Shared Passenger Track Alternatives would have a cumulatively considerable contribution to cumulative impacts on aesthetics and visual quality during operation.

Because the Shared Passenger Track Alternatives are being introduced into an operational railway with substantial ambient illumination, and because it does not include substantial lighting components or surfaces and materials that would introduce glare, no operational impacts would occur. The Shared Passenger Track Alternatives will incorporate **AVQ-IAMF#1** and **AVQ-IAMF#2** to avoid and minimize visual impacts, including those associated with light and glare. With incorporation of the project design features listed above, the Shared Passenger Track Alternatives, combined with cumulative projects, would not result in a significant and unavoidable cumulative impact.

CEQA Conclusion

There are no aesthetic and visual quality impacts associated with the Shared Passenger Track Alternatives, in combination with cumulative projects, that would result in significant cumulative impacts to which the Shared Passenger Track Alternatives would contribute, except in the location of four historic bridges in Los Angeles. Although adherence to **AVQ-IAMF#1**, **AVQ-IAMF#2**, and **AQ-IAMF#1** will reduce visual change impacts and lessen nighttime lighting impacts, residual impacts on viewers, visual character, and visual quality during construction of the project could occur. Implementation of **AVQ-MM#1** and **AVQ-MM#2** will further reduce visual disruption and potentially invasive sources of light and glare associated with construction. Implementation of **CUL-MM#12** and **AVQ-MM#3** through **AVQ-MM#7** will also partially reduce operational visual impacts associated with the four historic bridges within the Downtown Los Angeles Landscape unit. 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 significant and unavoidable cumulative impacts under CEQA. Therefore, the Shared Passenger Track Alternatives' contribution to cumulative impacts on aesthetic and visual quality, in combination with cumulative projects, would be cumulatively considerable.

3.19.4.15 Cultural Resources

Cumulative Condition

Under the cumulative condition, ongoing urban development and transportation projects are expected to continue within the cumulative RSA. Large portions of the RSA for archaeological resources are urbanized areas that have been subject to development; therefore, it is anticipated that archaeological resources would have been disturbed by previous development projects. However, in a dense urban area such as Los Angeles, where the entire landscape has been used historically, historic archaeological deposits can be expected to occur anywhere in that landscape in both disturbed and intact contexts.

Several historical trends contributed to the types of historic built resources found within the RSA. As the greater Los Angeles area changed over time, trends in population growth, railroad development, bridge and highway construction, governmental infrastructure and services, and river channelization played a role in the built resources of the region. The majority of resources, being near pre-existing right-of-way, are industrial properties, and include railroad yards and other rail-related infrastructural properties. Multiple depots and train stations, some listed on the National Register of Historic Places (NRHP), are present. As the project section continues southward, common property types include additional industrial properties, plus post-World War II era housing tracts and older commercial and residential architecture, including a NRHP-listed historic district of single-family houses in Anaheim. Moving farther south, the architecture is more

recent, including hundreds of industrial properties that are not yet 50 years old. Aside from the railroad depots, the vast majority of a given type of built environment resources are commonplace, ubiquitous, and frequently altered examples of their type that are not historically significant against important contexts, and do not possess a high likelihood of NRHP eligibility.

Residential, commercial, and industrial development projects in Los Angeles and Orange Counties, including residential development and commercial uses at La Palma Village and at the LTG Platinum Center in Anaheim and general plans throughout both counties, are planned. Construction activities related to continued urbanization and development projected under the cumulative condition could result in exposure and disruption of cultural resources, including archaeological resources and traditional cultural properties, and could result in removal of or damage to historic built resources of the built environment. The significance of such resources is unknown until analyzed; therefore, potential impacts on these resources caused by reasonably foreseeable projects could collectively contribute to an incremental loss to the aggregate of cultural and archaeological resources. Significant and unavoidable losses of unique resources (as defined in California Public Resources Code Section 21083.2) or historical resources (as defined in Section 21083.2 of CEQA and Section 15064.5 of the State CEQA Guidelines) could occur under either of the Shared Passenger Track Alternatives if excavation exposes archaeological deposits that cannot be effectively removed or recovered because of the circumstances of their exposure (e.g., in railroad rights-of-way or urbanized settings), or if recovery would not be sufficient to prevent the loss of significant archaeological resources.

There are 14 archaeological resources that have been previously recorded in the area of potential effects. One of the fourteen archaeological resources has been evaluated and found to be eligible for listing in the NRHP, five are exempt under Attachment D of the Section 106 Programmatic Agreement, and the remaining eight archaeological resources are unevaluated. The eight unevaluated resources are presumed eligible for listing in the NRHP for the purposes of this undertaking. They are, therefore, treated as Section 106 historic properties, NEPA cultural resources, and CEQA historical resources. Twenty-seven historic built resources listed in or eligible for listing in the NRHP are within the area of potential effects. All 27 historic built resources are historic properties for the purposes of Section 106 of the National Historic Preservation Act, cultural resources for the purposes of NEPA, and historical resources under CEQA. Eight additional historic built resources qualify as CEQA historical resources only. Four Los Angeles River bridges would incorporate protection-related bridge barriers (First, Fourth, and Seventh Street Bridges and the Olympic Boulevard Bridge). These resources are historic properties for the purposes of Section 106 of the National Historic Preservation Act, cultural resources under NEPA, and historical resources under CEQA. Adverse effects/significant impacts are expected on four properties: four bridges spanning the Los Angeles River, which are NHPA historic properties and CEQA historical resources. IAMFs have been incorporated into the design and engineering of the Shared Passenger Track Alternatives.

The Authority would develop a Memorandum of Agreement for each Section 106 undertaking where the Authority determines there would be an adverse effect on historic properties or when phased identification is necessary and adverse effects could occur. The Authority and State Historic Preservation Officer would use the Memorandum of Agreement to enforce the implementation of required actions that arise from the Section 106 consultation.

The Authority would apply standardized mitigation measures to further minimize the potential impacts on cultural resources, historic properties, and historical resources, as appropriate. Resource-specific mitigation measures have also been developed.

Impacts on cultural resources, including built-environment historic built resources, prehistoric- and historic-era archaeological resources, and traditional cultural properties, tend to be individual in nature and specific to the context of the resource and to the aspects of integrity that contribute to a resource's eligibility for listing in the California Register of Historical Resources or the NRHP. Nevertheless, because their individual significance is unknown until analyzed, potential impacts on cultural resources caused by reasonably foreseeable projects, including the adjacent HSR project sections, can collectively contribute to loss of cultural resources, often a nonrenewable

resource, in the environment. In addition, implementation of multiple projects can result in cumulative impacts on particular resources, such as historic districts or landscapes that have not yet been recorded or discovered. Cumulative development in the RSA may contribute to the loss of, or have an impact on, resources such as districts or landscapes that are currently unknown or that may be affected by other foreseeable projects. Indirect cumulative noise and vibration impacts on cultural resources, especially historic built resources, could combine to result in cumulative impacts if the reasonably foreseeable projects are close enough that noise and vibration generated during construction or operation overlap (e.g., the adjacent HSR project sections).

Contribution of the Shared Passenger Track Alternatives

Construction

Construction of the Shared Passenger Track Alternatives has the potential to affect 8 archaeological resources and 27 historic built resources listed in or eligible for listing in the NRHP. The project would not have an effect on one archaeological resource (P-19-001575) because no project-related ground disturbance would occur within the resource boundary. All 27 historic built resources are historic properties for the purposes of Section 106 of the National Historic Preservation Act, cultural resources for the purposes of NEPA, and historical resources under CEQA. Eight additional historic built resources qualify as CEQA historical resources and may be affected by the project. A narrative analysis is provided for effects on archaeological and historic built resources below.

Ground-disturbing construction associated with the Shared Passenger Track Alternatives and cumulative projects in the region could potentially affect known and previously unidentified archaeological resources. Construction of the project could affect eight archaeological resources and potentially affect unknown or unrecorded resources, resulting in destruction, damage, alteration, or relocation. A significant cumulative impact would occur if construction activities of the Shared Passenger Track Alternatives or reasonably foreseeable projects in the cumulative RSA would accumulate, resulting in the destruction, relocation, or alteration of known or unknown archaeological resources. The Shared Passenger Track Alternatives include project design features to address accidental damage to cultural resources during construction. These include inclusion of a geospatial layer on construction drawings that identifies cultural resources (**CUL-IAMF#1, Geospatial Data Layer and Archaeological Sensitivity Map**), mandatory training for the Authority to protect cultural resources during construction (**CUL-IAMF#2, WEAP Training Session**), archaeological surveys prior to any ground-disturbing activities (**CUL-IAMF#3, Preconstruction Cultural Resource Surveys**), relocation of access areas and laydown sites if archaeological sites are discovered during survey (**CUL-IAMF#4**, **Relocation of Project Features when Possible**), and preparation of and adherence to an archaeological monitoring plan (**CUL-IAMF#5, Archaeological Monitoring Plan and Implementation**), limiting the potential for impacts, but not avoiding potential impacts on archaeological resources entirely. The Authority would implement **CUL-MM#1, Mitigate Adverse Effects on Archaeological and Built Environment Resources Identified During Phased Identification and Comply with the Stipulations Regarding the Treatment of Archaeological and Historic Built Resources in the Programmatic Agreement and Memorandum of Agreement**; **CUL-MM#2**, **Halt Work in the Event of an Archaeological Discovery and Comply with the Programmatic Agreement, Memorandum of Agreement, Archaeological Treatment Plan, and All State and Federal Laws, as Applicable**; and **CUL-MM#3, Other Mitigation for Effects on Precontact Archaeological Sites**, to further reduce potential impacts on known and unknown archaeological sites. Implementation of these mitigation measures will reduce project impacts on known and unknown archaeological resources to less-than-significant levels during project construction. Cumulative projects occurring within the RSA would also be required to minimize or avoid construction-period impacts, where feasible. Therefore, no cumulative significant impact would occur, and the Shared Passenger Track Alternatives' incremental contributions to cumulative impacts on archaeological resources would not be cumulatively considerable.

Construction impacts of the Shared Passenger Track Alternatives related to the permanent disturbance of historic built resources or their setting from demolition, destruction, relocation, or alteration could affect 35 resources within the area of potential effects. Construction activities associated with the Shared Passenger Track Alternatives and cumulative projects in the region could include staging of materials and equipment, use of equipment, and blockage of property features from view or viewsheds from properties that may or may not have the potential to temporarily affect historic properties, and movement of materials and use of equipment that may create increased noise or vibration levels that could temporarily affect historic properties. A significant cumulative construction-period impact would occur in the event that short-term construction impacts associated with the Shared Passenger Track Alternatives or other reasonably foreseeable projects in the cumulative RSA accumulate, resulting in adverse effects on a historic property. Such impacts could occur should construction activities overlap or occur concurrently close to a historic resource. For all resources within the project's area of potential effects, the Shared Passenger Track Alternatives include design features to address accidental or inadvertent damage to cultural resources during construction, including a geospatial data layer depicting the location of cultural resources on construction drawings (**CUL-IAMF#1**) and mandatory training for the Authority to protect cultural resources during construction (**CUL-IAMF#2**). HSR construction associated with 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 project-specific and cumulative impact because the Shared Passenger Alternatives would introduce a visual element that would be incompatible with their design. **CUL-IAMF#6**, **Preconstruction Conditions Assessment, Plan for Protection of Historic Built Resources, and Repair of Inadvertent Damage**; **CUL-IAMF#7**, **Built Environment Monitoring Plan**; and **CUL-IAMF#8, Implement Protection or Stabilization Measures**, will be incorporated as part of the project design to ensure that accidental damage, inclusive of temporary vibratory impacts, does not occur to the bridges. The Authority would also implement **CUL-MM#12**, which will reduce construction-period permanent destruction or alteration 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 project would still result in a significant and unavoidable impact on the four historic bridges (First, Fourth, and Seventh Street Bridges and Olympic Boulevard Bridge).

Shared Passenger Track Alternative B would result in the same effects on the 35 historical built resources as Shared Passenger Track Alternative A, except for the additional impacts on the Olympic Boulevard Bridge, and different impacts on the Southern California Gas Company Complex, the Southern California Gas Company Administration Building, and the Atchison, Topka and Santa Fe Redondo Junction Yard District that could occur as result of the construction of Shared Passenger Track Alternative B's LMF facility. Because impacts would be the same for Shared Passenger Track Alternative A and B for most properties, the same IAMFs and mitigation measures are also applied for all resources affected (**CUL-IAMF#1** and **CUL-IAMF#2**). **CUL-IAMF#6**, **CUL-IAMF#7**, and **CUL-IAMF#8** are also included as part of the project design to avoid and minimize effects on the Olympic Boulevard Bridge. The Authority would implement **CUL-MM#12** to further reduce impacts on the Olympic Boulevard Bridge; however, implementation of **CUL-MM#12** would not reduce impacts on the Olympic Boulevard Bridge to less-than-significant levels under CEQA. Therefore, even after mitigation, the project-specific and cumulative impact would be significant and unavoidable under CEQA.

Although the Shared Passenger Track Alternatives would contribute to the significant cumulative impact on the historic bridges, the project includes project design features and mitigation measures to reduce project contributions. Furthermore, reasonably foreseeable projects would be required to implement similar measures to minimize impacts on the resources. With implementation of mitigation measures, incremental contributions of the Shared Passenger Track Alternatives to cumulative significant impacts on cultural resources, in combination with cumulative projects, would not be cumulatively considerable.

Operation

Operation of the Shared Passenger Track Alternatives and cumulative projects in the region could affect historic built resources if increased visual, noise, or vibration impacts from implementation rise to the level of an adverse effect on historic properties or result in a substantial adverse change to the significance of historical resources. In tandem, a significant cumulative impact would occur in the event that project-specific impacts on historic built resources accumulate, resulting in a substantial adverse effect or change to the significance of a historic property. Because no historic resources would incur visual, noise, or vibration impacts with the potential to affect their significance or ability to convey that significance, operational impacts of the Shared Passenger Track Alternatives would be less than significant under CEQA. Therefore, there would be no significant cumulative impact to which the Shared Passenger Track Alternatives would contribute.

CEQA Conclusion

Construction of the Shared Passenger Track Alternatives and cumulative projects in the vicinity, including the adjacent Burbank to Los Angeles Project Section, would require ground-disturbing construction activities that would potentially affect known and previously unidentified archaeological resources. However, with adherence to project design features (**CUL-IAMF#1**, **CUL-IAMF#2**, **CUL-IAMF#3**, **CUL-IAMF#4**, and **CUL-IAMF#5**) and implementation of **CUL-MM#1, CUL-MM#2**, and **CUL-MM#3**, construction-period impacts on known and unknown archaeological resources would be reduced. Therefore, impacts would be less than significant under CEQA, and no significant cumulative impact would occur.

Construction activities associated with the Shared Passenger Track Alternatives in combination with cumulative projects, including the adjacent Burbank to Los Angeles Project Section, could result in construction-period noise, vibration, visual impacts, or physical destruction, alteration, or relocation of historic built resources within the cumulative RSA. With adherence to **CUL-IAMF#1**, **CUL-IAMF#2**, **CUL-IAMF#6**, **CUL-IAMF#7**, and **CUL-IAMF#8**, most construction-period impacts would be reduced. However, even with implementation of **CUL-MM#12**, residual impacts on four historic bridges would remain significant and unavoidable under CEQA, resulting in a significant cumulative impact. With incorporation of project design features and implementation of mitigation measures discussed above, the Shared Passenger Track Alternatives' incremental contribution to cumulative impacts on historic built resources, in combination with cumulative projects, would not be cumulatively considerable.

Operation of the Shared Passenger Track Alternatives in combination with cumulative projects in the region would not result in significant visual, noise, or vibration effects on a historic building or structure that have the potential to result in a substantial adverse change to the significance of historic resources. Therefore, no significant cumulative impact would occur during operation.

3.19.5 Mitigation Measures (for Any Newly Identified Significant Cumulative Impacts)

As described above, noise and vibration are determined to have cumulatively considerable impacts. Section 3.19.4.3, Noise and Vibration, provides mitigation measures identified in Chapter 3 that would be implemented to reduce impacts of the Shared Passenger Track Alternatives. Although these mitigation measures would also reduce the Shared Passenger Track Alternatives' contribution toward cumulative impacts, further mitigation would be needed to reduce the Shared Passenger Track Alternatives' contribution to significant cumulative impacts.

CUM-N&V-MM#1: Consult with Agencies Regarding Construction Activities

To minimize the potential overlapping noise- and vibration-generating construction activities in the same area, the Authority or its contractors would consult with local city and county planning departments and other agencies prior to and during the construction phase. Consultation would entail notifying the departments and agencies regarding the anticipated HSR construction schedule and types of activities expected during the construction period.

3.19.6 Impacts Summary

Table 3.19-7 and Table 3.19-8 summarize cumulative impacts for all resource areas for construction and operational impacts, respectively.

Table 3.19-7 Summary of Cumulative Construction Impacts

Resource	NEPA Determination (Construction)	CEQA Conclusion (Construction)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Construction)	CEQA Conclusion (Construction: Post Mitigation)
Transportation					
Transportation	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Air Quality and Global Climate Change					
General conformity	Adverse effect	Significant and unavoidable impact (for nitrogen oxides only): cumulatively considerable	Similar for all project alternatives	No feasible mitigation measures	Significant and unavoidable impact (for nitrogen oxides only): cumulatively considerable
Air quality CEQA thresholds	Adverse effect	Significant and unavoidable impact (for nitrogen oxides only): cumulatively considerable	Similar for all project alternatives	No feasible mitigation measures	Significant and unavoidable impact (for nitrogen oxides only): cumulatively considerable
Localized construction effects	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures required	Not applicable
Noise and Vibration					
Noise	Adverse effect	Significant and unavoidable impact: cumulatively considerable	Similar for all project alternatives	CUM-N&V-MM#1	Significant and unavoidable impact: cumulatively considerable
Vibration	Adverse effect	Significant and unavoidable impact: cumulatively considerable	Similar for all project alternatives	CUM-N&V-MM#1	Significant and unavoidable impact: cumulatively considerable

Resource	NEPA Determination (Construction)	CEQA Conclusion (Construction)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Construction)	CEQA Conclusion (Construction: Post Mitigation)
Electromagnetic Interference and Electromagnetic Fields					
Electromagnetic fields and electromagnetic interference	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Public Utilities and Energy					
Public utilities and service systems	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Energy	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Biological and Aquatic Resources					
Biological and aquatic resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Hydrology and Water Resources					
Hydrology and water resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Geology, Soils, Seismicity, and Paleontological Resources					
Geology, soils, seismicity, and paleontological resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Hazardous Materials and Wastes					
Hazards materials and wastes	Adverse	Significant and unavoidable; cumulatively considerable	Similar for all project alternatives	No feasible mitigation measures are available	Significant and unavoidable; cumulatively considerable

Resource	NEPA Determination (Construction)	CEQA Conclusion (Construction)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Construction)	CEQA Conclusion (Construction: Post Mitigation)
Safety and Security					
Safety and security	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Socioeconomics and Communities					
Community and neighborhoods	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Residential displacements and relocations	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Physical deterioration	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Station Planning, Land Use, and Development					
Station planning, land use, and development	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Parks, Recreation, and Open Space					
Parks, recreation, and open space	Not adverse	Less than Significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Aesthetics and Visual Quality					
Aesthetics and visual quality	Adverse effect	Significant and unavoidable for Downtown Los Angeles Landscape Unit: cumulatively considerable	Similar for all Project alternatives	No feasible mitigation measures are available	Significant and unavoidable for Downtown Los Angeles Landscape Unit: cumulatively considerable

Resource	NEPA Determination (Construction)	CEQA Conclusion (Construction)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Construction)	CEQA Conclusion (Construction: Post Mitigation)
Cultural Resources					
Archaeological resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Historic built resources	Adverse effect	Significant and unavoidable: not cumulatively considerable	Similar for all project alternatives	No mitigation measures are required	Not applicable

[1] This column lists all cumulative mitigation measures and does not preclude project-specific mitigation measures proposed for the Los Angeles to Anaheim Project Section. Please refer to Sections 3.2 through 3.19 of this Draft Environmental Impact Report/Environmental Impact Statement to review all proposed mitigation measures.
CEQA = California Environmental Quality Act; NEPA = National Environmental Policy Act

Table 3.19-8 Summary of Cumulative Operational Impacts

Resource	NEPA Determination (Operations)	CEQA Conclusion (Operations)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Operations)	CEQA Conclusion (Operations: Post Mitigation)
Transportation					
Transportation	Not adverse	Less than significant Beneficial impact from VMT reductions	Similar for all project alternatives	No mitigation measures are required	Not applicable
Air Quality and Global Climate Change					
Air quality and greenhouse gas emissions	Not adverse	Less than significant Beneficial impact from net reduction in emissions	Similar for all project alternatives	No mitigation measures are required	Not applicable
Health risk	Adverse	Significant and unavoidable impact: cumulatively considerable	Similar for all project alternatives	No feasible mitigation measures are available	Significant and unavoidable impact: cumulatively considerable

Resource	NEPA Determination (Operations)	CEQA Conclusion (Operations)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Operations)	CEQA Conclusion (Operations: Post Mitigation)
Noise and Vibration					
Noise	Adverse effect	Significant and unavoidable impact: cumulatively considerable	Similar for all project alternatives	No feasible mitigation available	Significant and unavoidable impact: cumulatively considerable
Vibration	Adverse effect	Significant and unavoidable impact: cumulatively considerable	Similar for all project alternatives	No feasible mitigation available	Significant and unavoidable impact: cumulatively considerable
Electromagnetic Interference and Electromagnetic Fields					
Electromagnetic fields and electromagnetic interference	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Public Utilities and Energy					
Public utilities and service systems	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Energy	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Biological and Aquatic Resources					
Biological and aquatic resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Hydrology and Water Resources					
Hydrology and water resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable

Resource	NEPA Determination (Operations)	CEQA Conclusion (Operations)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Operations)	CEQA Conclusion (Operations: Post Mitigation)
Geology, Soils, Seismicity, and Paleontological Resources					
Geology, soils, seismicity, and paleontological resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Hazardous Materials and Wastes					
Hazards materials and wastes	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Safety and Security					
Safety and security	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Socioeconomics and Communities					
Community and neighborhoods	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Unplanned population growth	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Station Planning, Land Use, and Development					
Station planning, land use, and development	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Parks, Recreation, and Open Space					
Parks, recreation, and open space	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable

Resource	NEPA Determination (Operations)	CEQA Conclusion (Operations)	Comparison of Build Alternatives	Cumulative Mitigation[1] (During Operations)	CEQA Conclusion (Operations: Post Mitigation)
Aesthetics and Visual Quality					
Aesthetics and visual quality	Adverse effect	Significant and unavoidable for Downtown Los Angeles Landscape Unit: cumulatively considerable	Similar for all project alternatives	No feasible mitigation measures are available	Significant and unavoidable for Downtown Los Angeles Landscape Unit: cumulatively considerable
Cultural Resources					
Archaeological resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable
Historic built resources	Not adverse	Less than significant	Similar for all project alternatives	No mitigation measures are required	Not applicable

[1] This column lists all cumulative mitigation measures and does not preclude project-specific mitigation measures proposed for the Los Angeles to Anaheim Project Section. Please refer to Sections 3.2 through 3.19 of this Draft Environmental Impact Report/Environmental Impact Statement to review all proposed mitigation measures.
CEQA = California Environmental Quality Act; NEPA = National Environmental Policy Act; VMT = vehicle miles traveled