ERRATA: SECTION 3.7, BIOLOGICAL AND AQUATIC RESOURCES

Errata No.	Draft EIR/EIS Reference		Errata Final EIR/EIS	
	Section	Page	Correction and Rationale	Errata Page Reference
1	Section 3.7.2.3	3.7-13	Revised Table 3.7-1 to clarify information on Los Angeles County General 2035 Plan SEA Program and to correct the names and dates of certain municipal codes	16-66
2	Section 3.7.4.3	3.7-36	Methods updated to clarify plant surveys conducted	16-68
3	Section 3.7.5.2	3.7-44	Revised to clarify discussion of special-status plant species no longer affected because of the reduction of the project footprint	16-68
4	Section 3.7.5.2	3.7-45 through 3.7-47	Deleted Table 3.7-4; refer to Errata No. 3	16-69
5	Section 3.7.5.1	3.7-70	Corrected arroyo toad scientific name	16-69
6	Section 3.7.5.2	3.7-73	Corrected scrub oak scientific name	16-69
7	Section 3.7.5.2	3.7-73, 3.7-74	Revised Table 3.7-10 to correct the names and dates of certain municipal codes	16-69
8	Section 3.7.6.3	3.7-80	Removed special-status plant species provisions from BIO-MM#79; refer to Errata No. 3	16-70
9	Section 3.7.6.3	3.7-83	Revised to clarify the title of BIO-MM#79	16-70
10	Section 3.7.6.3	3.7-83	Removed special-status plant species and recommended mitigation from Impact BIO-2 analysis; refer to Errata No. 3	16-70
11	Section 3.7.6.3	3.7-87, 3.7-88	Revised Table 3.7-12 habitat acreages with updated data	16-70
12	Section 3.7.7.2	3.7-127	Revised BIO-MM#14 to clarify the survey protocol for nesting birds	16-73
13	Section 3.7.7.3	3.7-127	Revised BIO-MM#15 to clarify the survey protocol for raptors	16-73
14	Section 3.7.7.4	3.7-128	Revised BIO-MM#20 to clarify the surveys for Burrowing Owls	16-73
15	Section 3.7.7.5	3.7-128	Revised BIO-MM#21 to clarify the mitigation requirements if Burrowing Owl is not a candidate or listed species and where an ITP) would not be required	16-74
16	Section 3.7.7.6	3.7-128	Revised BIO-MM#25 to include *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions* (Johnston et al. 2021) as appropriate	16-74
17	Section 3.7.7.7	3.7-128	Revised BIO-MM#26 to include *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions* (Johnston et al. 2021)	16-74
18	Section 3.7.7.8	3.7-129	Revised BIO-MM#27 to include *Caltrans Bat Mitigation: A Guide to Developing Feasible and Effective Solutions* (Johnston et al. 2021) as appropriate and at the discretion of the Qualified Biologist	16-75

Errata No.	Draft EIR/EIS Reference		Errata Final EIR/EIS	
	Section	Page	Correction and Rationale	Errata Page Reference
19	Section 3.7.7.13	3.7-130	Revised BIO-MM#44 to clarify that the Authority will submit an ITP application to CDFW	16-76
20	Section 3.7.7.16	3.7-132	Revised BIO-MM#54 to include Assembly Bill 1788	16-76
21	Section 3.7.7.18	3.7-133	Revised BIO-MM#56 to include reporting to the CNDDB	16-76
22	Section 3.7.7.25	3.7-134	Revised BIO-MM#79 to remove surveys for special-status plant species; refer to Errata No. 3	16-77
23	Section 3.7.7.26	3.7-135	Deleted BIO-MM#80; refer to Errata No. 3	16-77
24	Section 3.7.7.31	3.7-137	Deleted BIO-MM#80; refer to Errata No. 23	16-77
25	Section 3.7.7.31	3.7-138	Deleted BIO-MM#80; refer to Errata No. 23	16-77
26	Section 3.7.8.2	3.7-141	Revised title of BIO-MM#79, refer to Errata No. 3	16-78
27	Section 3.7.8.2	3.7-142	Deleted special-status plant species impact; refer to Errata No. 3	16-78
28	Section 3.7.8.3	3.7-149	Corrected Table 3.7-16, Impact BIO-2	16-78
29	Section 3.7.9	3.7-155	Corrected Table 3.7-17, Impact BIO-2	16-81

CDFW = California Department of Fish and Wildlife; CNDDB = California Natural Diversity Database; EIR/EIS = environmental impact report/environmental impact statement; ITP = Incidental Take Permit; No. = number; SEA = Significant Ecological Area

3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES

3.7 Biological and Aquatic Resources

3.7.1 Introduction

Section 3.7, Biological and Aquatic Resources, of the Los Angeles to Anaheim Project Section (project section) Environmental Impact Report (EIR)/Environmental Impact Statement (EIS) analyzes the potential impacts of the No Project Alternative and the High-Speed Rail (HSR) Project Alternatives, otherwise called Shared Passenger Track Alternative A and Shared Passenger Track Alternative B, and discusses impact avoidance and minimization features (IAMF) to avoid, minimize, or reduce these impacts. Mitigation measures are proposed to further reduce, compensate for, offset, or minimize impacts of the Shared Passenger Track Alternatives. Section 3.7 also defines the biological and aquatic resources in the region and describes the affected environment in the resource study areas (RSA).[1]

PURPOSE

Biological and Aquatic Resources

Construction of infrastructure projects can result in the loss of ecosystems and displacement of wildlife, even in urban settings. Many of these resources are protected by statutes, executive orders, and regulations. The purpose of this section is to evaluate impacts on biological and aquatic resources, including wildlife, fish, plants, and their habitats, and describe ways to avoid, minimize, or mitigate these effects.

Wetlands and other nonwetland aquatic resources have been identified by both the U.S. Congress and the State of California as important resources. The protection of these areas is critical for maintaining the physical, chemical, and biological integrity of waters of the U.S. and waters of the state. As a result, impacts on wetlands and other aquatic resources are closely regulated at both the federal and state levels. The loss of these resources and the concomitant loss of the functions and services they provide is a continuing problem. The development of new linear transportation infrastructure projects has the potential to add to this loss unless appropriate avoidance, minimization, or mitigation measures are implemented.

The following technical reports serve as the basis for the information in this section and are available on request:

- *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a)
- *Los Angeles to Anaheim Project Section Draft Aquatic Resources Delineation Report* (Authority 2025b)
- *Los Angeles to Anaheim Project Section Draft Aquatic Resources Impacts Memorandum* (Authority 2025c)

Additional details on biological and aquatic resources are provided in the following appendices in Volume 2 of this Draft EIR/EIS.

- Appendix 2-A, Impact Avoidance and Minimization Features
- Appendix 2-B, Applicable Design Standards
- Appendix 3.1-A, Regional and Local Policy Inventory and Consistency Analysis

This section includes detailed analysis of environmental resources, affected environment, 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 2017, 2022). Five other resource sections in this Draft EIR/EIS provide additional information related to biological and aquatic resources:

[1] The overall size of the RSAs includes both Shared Passenger Track Alternatives A and B. Specifically, the RSAs include both light maintenance facility sites (26th Street LMF and 15th Street LMF) and both HSR station options (Norwalk/Santa Fe Springs and Fullerton).

- **Section 3.4, Noise and Vibration:** Construction and operational impacts related to noise and vibration that would occur in the project vicinity from construction and operation of the Shared Passenger Track Alternatives.
- **Section 3.8, Hydrology and Water Resources:** Construction and operational impacts from the Shared Passenger Track Alternatives related to surface water hydrology, water quality, groundwater, and floodplains.
- **Section 3.10, Hazardous Materials and Wastes:** Construction and operational impacts from the Shared Passenger Track Alternatives related to hazardous materials, such as the use of hazardous materials or exposure to soil and groundwater contamination.
- **Section 3.18, Regional Growth:** Construction and operational impacts from the Shared Passenger Track Alternatives related to growth-inducing impacts.
- **Section 3.19, Cumulative Impacts:** Construction and operational impacts from the Shared Passenger Track Alternatives and other past, present, and reasonably near-future projects.

Section 3.7.5, Affected Environment, describes the affected environment for biological and aquatic resources, including vegetation communities and land cover types, special-status species, special-status natural communities, aquatic resources, and habitats of concern. Impact summaries and conclusions for the Shared Passenger Track Alternatives are presented in Section 3.7.6, Environmental Consequences. The National Environmental Policy Act (NEPA) Impacts Summary (Section 3.7.8) summarizes the impacts of the Shared Passenger Track Alternatives and compares them to the anticipated impacts of the No Project Alternative. The California Environmental Quality Act (CEQA) Significance Conclusions (Section 3.7.9) provide a summary of CEQA determinations of significance for construction and operational impacts of the project.

3.7.1.1 Definition of Resources

Key definitions of special-status species, special-status plant communities, and jurisdictional waters are provided below. Each of these resources is further defined in the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).

- **Special-Status Species:** Special-status species are plants and animals that are legally protected under the Federal Endangered Species Act of 1973 (FESA) (16 U.S. Code [U.S.C.] 1531 et seq.), California Endangered Species Act (CESA) (California Fish and Game Code [Cal. Fish and Game Code] Sections 2050–2085), species considered sufficiently rare by the scientific community to qualify for listing, the California Native Plant Protection Act (Cal. Fish and Game Code Sections 1900–1913), the California Fully Protected Species statutes, and other regulations, such as those species that meet the definitions of rare, threatened, or endangered under the State CEQA Guidelines Sections 15380 and 15125. The *special-status species* designation does not extend to bird species protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–712) or the corresponding California bird protection statutes (Cal. Fish and Game Code Sections 3503, 3513); however, effects on these species are discussed under special-status wildlife species sections of the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).
- **Non-Special-Status Wildlife:** For the purposes of this analysis, non-special-status wildlife is an umbrella term for wildlife species or species groups that do not meet the definition of a special-status species as defined earlier in this section, but that may still be affected by construction and operations of the project, including native birds protected under the MBTA and California Fish and Game Code Section 3503, as well as species groups of regional or international conservation concern (e.g., waterfowl and shorebirds, roosting bats).
- **Habitats of Concern:** Habitats of concern consist of riparian areas and special-status natural communities.

  - **Special-Status Natural Communities:** Special-status natural communities are determined to be significant or to represent rare vegetation types (California Natural Diversity Database [CNDDB]) (CDFW 2023, 2024a) or to have limited distribution statewide or in a county or region and include riparian areas that are jurisdictional to the California Department of Fish and Wildlife (CDFW) under California Fish and Game Code 1600 et seq. These communities are often vulnerable to the environmental effects of projects (CDFG 2010). A list of Sensitive Natural Communities in California is maintained by CDFW (CDFW 2023). CDFW has evaluated natural communities according to NatureServe's Heritage Methodology, and natural communities are assigned ranks. Natural communities with ranks of S1 to S3 are considered Sensitive Natural Communities and are to be addressed during the CEQA process and its equivalents (CDFW 2023). Additional information can be found in the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).
  - **Riparian Areas:** Riparian areas are regulated under the California Fish and Game Code if there is a substantial alteration of a river, lake, or stream (Cal. Fish and Game Code Section 1600 et seq., Streambed Alteration Agreement). A riparian area consists of the transitional habitat between terrestrial and aquatic ecosystems. For analysis purposes in this section of the EIR/EIS, riparian areas are the vegetated areas between a seasonal riverine feature and the outer dripline of the adjacent vegetation. Riparian vegetation supports a unique set of physical and biological processes, including temperature regulation and wildlife habitat, and provides valuable aquatic food web services (inputs for nutrient cycling and food availability) to adjacent aquatic ecosystems.

- **Critical Habitat:** Critical habitat includes areas identified under Section 7 of the FESA (16 U.S.C. 1531–1544). Designated critical habitats are described in 50 Code of Federal Regulations (CFR) Parts 17 and 226. Specifically, critical habitat includes areas for federally listed species consisting of the specific areas within the geographic area occupied by the species, at the time it is listed in accordance with the provisions of Section 4 of the FESA, on which are found those physical or biological features (constituent elements) that are essential to the conservation of the species and that may require special management consideration or protection; and specific areas outside of the geographical area occupied by the species at the time it is listed in accordance with the provisions of Section 7 of the FESA, on a determination by the Secretary of the Department of the Interior that such areas are essential for the conservation of the species.
- **Essential Fish Habitat:** Essential fish habitat is defined as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." For the purposes of interpreting the definition of essential fish habitat, *waters* include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include areas historically used by fish where appropriate; *substrate* includes sediment, hard bottom, structures underlying the waters, and associated biological communities; and *necessary* means habitat required to support a sustainable fishery and a healthy ecosystem and spawning, breeding, feeding, or growth to maturity. The following characteristics of essential fish habitat must be adequate for spawning, rearing, and migration:
  - Substrate composition
  - Water quality
  - Water quantity, depth, and velocity
  - Channel gradient and stability
  - Food
  - Cover and habitat complexity
  - Space

- Access and passage
- Habitat connectivity

The Magnuson-Stevens Fisheries Conservation and Management Act requires all federal agencies to consult with the National Oceanic and Atmospheric Administration (NOAA) Fisheries on all actions or proposed actions permitted, funded, or undertaken by the federal agency that may adversely affect essential fish habitat. *Adversely affect* means any effect that reduces the quality or quantity of essential fish habitat. Adverse effects may include direct (e.g., contamination, physical disruption), indirect (e.g., loss of prey), site-specific, or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions (PFMC 2014).

- **Conservation Areas:** Conservation areas include areas that have been identified as part of habitat conservation plans (HCP), Natural Community Conservation Plans (NCCP), or other approved local, regional, state, or federal conservation plans. Conservation areas also include recovery plan areas for federally listed special-status species, public lands (refuges and ecological reserves), and conservation and mitigation banks).
  - **Recovery Plan Areas:** Section 4(f) of the FESA directs the Secretary of the Interior and the Secretary of Commerce to develop and implement recovery plans to promote the conservation of endangered or threatened species. The U.S. Fish and Wildlife Service (USFWS) and NOAA Fisheries are responsible for administering the FESA. In some instances, recovery plans identify specific areas and describe what research and management actions are necessary to support recovery but do not themselves commit workforce or funds. Recovery plans are used in setting funding priorities and provide direction to local, regional, and state planning efforts.
  - **Conservation Easements:** A conservation easement is a binding, legal agreement between a landowner and a land trust or government agency that limits use of the land to protect its conservation values and achieve specific conservation objectives. A conservation easement allows landowners to continue owning and using their land. However, certain actions are prohibited, and the landowner agrees to conserve or restore habitat, open space, scenic, or other ecological resource values on the land covered by the easement.
  - **Public Lands:** Public lands are owned and typically maintained by the government, including cities, counties, states, and the federal government.
  - **Conservation Banks:** Conservation banks are permanently protected lands that contain natural resource values. These lands are conserved and permanently managed for special-status species, jurisdictional waters, or other natural resources. Conservation banks function to offset adverse impacts on natural resources that occurred elsewhere; for this reason, these banks are sometimes referred to as off-site mitigation. In exchange for permanently protecting the land and managing it for natural resources, the natural resource regulatory agencies (e.g., USFWS, U.S. Army Corps of Engineers [USACE], or CDFW) approve a specified number of natural resource (habitat, species, or resource) credits that bank owners may sell.
  - **Habitat Conservation Plans:** HCPs are planning documents required as part of an application for an Incidental Take Permit under Section 10 of the FESA. As defined in this document, HCPs also include NCCPs, which identify measures necessary to conserve and manage natural biological diversity in the planning area while allowing compatible and appropriate economic development, growth, and other human uses. Each HCP describes the anticipated effects of the proposed taking, how those impacts would be minimized or mitigated, and how the HCP is to be funded.
- **Protected Trees:** Protected trees are trees or tree communities that have special significance and are afforded protection by, and specifically identified in, county and city ordinances, codes, or general plans. Cities and counties traversed by the project section

include Los Angeles and Orange Counties and the cities of Los Angeles, Bell, Commerce, Montebello, Pico Rivera, Santa Fe Springs, La Mirada, Buena Park, Fullerton, Anaheim, and Orange. The types of trees and specific physical characteristics required to meet the local definitions vary by city and county.

- **Wildlife Movement Corridors:** Wildlife movement corridors are areas defined by wildlife use for movement events on varying scales (e.g., daily foraging, seasonal migration, dispersal). Although these areas are referred to as "wildlife" movement corridors, they also function as linkages for plant species. The wildlife movement corridors referenced in this document refer to areas that have been modeled for specific species based on different physical and biological parameters published in statewide reports. For purposes of this document, the term *habitat linkage* is used synonymously with wildlife movement corridor. Habitat linkages are areas of land used for a variety of purposes that potentially serve as a corridor for the movement or migration of wildlife. Habitat linkages aid in the dispersal and distribution of wildlife and are crucial for maintaining healthy populations of multiple species.

Aquatic Resources

Aquatic resources in the Aquatic RSA are wetlands and nonwetland waters that are potentially jurisdictional under Sections 404 and 401 of the federal Clean Water Act (CWA), collectively called waters of the U.S.; waters of the state regulated under the Porter-Cologne Water Quality Control Act (Porter-Cologne); and aquatic and other related resources regulated under California Fish and Game Code Section 1600 et seq. USACE regulates waters of the U.S., the State Water Resources Control Board (SWRCB) regulates waters of the state, and CDFW regulates the bed, channel, and banks of rivers, streams, and lakes. The project extent crosses areas under the jurisdiction of the USACE Los Angeles District. On July 31, 2018, the USACE Los Angeles District issued a Preliminary Jurisdictional Determination for the project stating that, on review of the mapped aquatic resources, waters of the U.S. may be present in the project section in the locations identified by the California High-Speed Rail Authority (Authority). Confirmation of these resources as jurisdictional by SWRCB and CDFW under their respective authority would be obtained through the regulatory review process. The definitions of the regulatory categories for aquatic resources are presented in this section.

- **Waters of the U.S., including Wetlands (CWA Section 404):** On January 18, 2023, USACE and the U.S. Environmental Protection Agency published a final rule with a revised definition of waters of the U.S. in the *Federal Register* (88 Fed. Reg. 3004), effective on March 20, 2023. This rule replaced the pre-2015 definition of waters of the U.S., which was in effect starting on September 2, 2021.

  On May 25, 2023, the U.S. Supreme Court decided *Sackett v. Environmental Protection Agency*, which considered the jurisdictional extent of waters of the U.S. On August 29, 2023, USACE and the U.S. Environmental Protection Agency issued a final rule to conform the definition of waters of the U.S. to the U.S. Supreme Court's decision. This definition established the scope of USACE and U.S. Environmental Protection Agency authority under the CWA. The conforming rule, *Revised Definition of "Waters of the United States"; Conforming* (33 CFR Part 328.3(a)(1)–(5); USACE and USEPA 2023), became effective September 8, 2023.

  Under the current regulations, Section 404 of the CWA (33 CFR Part 328.3) defines waters of the U.S. as follows:

  (a) The term waters of the United States means:

  (1) Waters which are:

  i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

  ii) The territorial seas; or

iii) Interstate waters;

(2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section;

(3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water;

(4) Wetlands adjacent[2] to the following waters:

i) Waters identified in paragraph (a)(1) of this section; or

ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters;

(5) Intrastate lakes and ponds not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section.

Wetlands are a sub-classification of waters of the U.S., as described below. The terms *other waters of the U.S.* or *nonwetland waters* are used to describe waters of the U.S. exclusive of wetlands. According to the *Corps of Engineers Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (USACE 2008b), three criteria must be satisfied to classify an area as a wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology).

The landward limits of nonwetland waters of the U.S. regulated by USACE or SWRCB under CWA Sections 404 and 401 (excluding wetlands and tidal waters) is based on the ordinary high-water mark, defined in 33 CFR Part 328.3(e) as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas."

- **Waters of the State (Porter-Cologne):** The California Water Boards, consisting of the SWRCB and the Regional Water Quality Control Boards, regulate waters of the state pursuant to Porter-Cologne (Cal. Water Code Section 13050(e)). Waters of the state are broadly defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Cal. Water Code Section 13050(e)). On April 2, 2019, SWRCB adopted its proposed *State Wetland Definition and Procedures for Discharges of Dredge or Fill Material to Waters of the State* (SWRCB 2019). The procedures became effective on May 28, 2020, and were revised on April 6, 2021. The procedures provide a framework for determining aquatic features that meet the definition of state wetlands.

  Under this definition, an area is a state wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation. Similar to USACE, SWRCB uses indicators of wetland hydrology, hydric soils, and wetland vegetation, but also includes features that lack hydrophytic vegetation if hydrology and hydric soils are present. Although the USACE and

[2] The term *adjacent* means having a continuous surface connection, pursuant to 33 CFR Part 328.3(c)(2).

SWRCB definitions differ with respect to the use of vegetation as an indicator, the definitions are otherwise the same, and both use the same USACE technical guidance documents for conducting wetland delineations (USACE 1987, 2008b).

This section uses the definitions for nonwetland waters of the U.S. set forth under Section 404 of the CWA (33 CFR Part 328) and the USACE technical criteria for nonwetland waters of the U.S. (ordinary high-water mark) to characterize potential SWRCB nonwetland waters of the state. For purposes of this discussion, waters of the state include, but may not be limited to, all waters of the U.S.

- **CDFW Jurisdiction:** Under California Fish and Game Code Section 1600 et seq., CDFW has jurisdiction over rivers, streams, and lakes. The state's jurisdiction generally includes the streambed/lakebed to tops of bank. Although not specifically defined in Section 1600 et seq., jurisdiction in some instances may include adjacent riparian vegetation. A *stream* is defined as a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life (California Code of Regulations Title 14, Section 1.72) This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. A *streambed* under Section 1600 et seq. includes the channel of a watercourse, which is generally defined to include the depression between the banks worn by the regular and usual flow of the water. For the purposes of this section, California Fish and Game Code Section 1600 et seq. jurisdiction is identified as lakes, streambeds, and associated riparian vegetation, or collectively identified as areas subject to California Fish and Game Code Section 1600 et seq.

3.7.2 Laws, Regulations, and Orders

Federal, state, and local laws, regulations, orders, and plans relevant to biological and aquatic resources in the geographic area affected by the project are presented below. General NEPA and CEQA requirements for assessment and disclosure of environmental impacts are described in Section 3.1, Introduction, and are therefore not restated in this resource section. NEPA and CEQA requirements specific to the evaluation of biological and aquatic resources are, however, described in this section.

3.7.2.1 Federal

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

Federal Railroad Administration (FRA) procedures state that an EIS should consider possible impacts on ecological systems, wetland areas, and endangered species or wildlife. On May 26, 1999, the 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.C. 4321 et seq.). The FRA *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 impacts on biological and aquatic resources.

Federal Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.)

The FESA of 1973 and subsequent amendments provide guidance for conserving federally listed species and the ecosystems on which they depend. The applicable sections of the FESA are further discussed below.

- **Section 7** requires federal agencies to consult with USFWS or NOAA Fisheries, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered fish, wildlife, or plant species, or result in the destruction or adverse modification of designated critical habitat for any such species. Prior to consultation with USFWS or NOAA Fisheries, the action area must

be defined and must include all areas to be affected directly or indirectly by the federal action. As part of formal consultation, USFWS and NOAA Fisheries issue a biological opinion and an incidental take statement for fish and wildlife species to exempt specified actions from the Section 9 take prohibition.

- **Section 9** and its implementing regulations prohibit the "take" of fish or wildlife species listed under the FESA as endangered or threatened, unless otherwise authorized by federal regulations. The term *take* means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. Current regulations define *harm* to include the modification of a listed fish or wildlife species' habitat when the modification results in actual death or injury. On April 17, 2025, USFWS and NOAA Fisheries proposed a rule to rescind the regulatory definition of *harm* under the FESA. The proposed rule states that the definition of *harm* is not the single best interpretation of the statutory definition of *take,* and that *take* is limited to affirmative acts directed immediately and intentionally against a particular animal, not an act or omission that indirectly and accidentally causes injury to a population of animals (90 *Federal Register* 16102). Finalization of the proposed rule would not affect the analysis set forth in this EIR/EIS because the project would not have any effect on federally listed species. Section 9 and the implementing regulations also prohibit a number of specified activities regarding threatened and endangered plants.
- **Section 10** provides a process by which nonfederal entities may obtain an Incidental Take Permit from USFWS or NOAA Fisheries for otherwise lawful activities that might incidentally result in take of endangered or threatened animal species, subject to specific conditions. The project is a federal agency project and therefore would not use Section 10 to obtain incidental take authorization.

Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.)

The amended Magnuson-Stevens Fishery Conservation and Management Act, also known as the Sustainable Fisheries Act (Public Law 104-297), requires that federal agencies consult with NOAA Fisheries on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect essential fish habitat of commercially managed marine and anadromous fish species.

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

The federal CWA serves as the primary federal law protecting the quality of the nation's surface waters, including wetlands. The applicable sections of the CWA are discussed below.

- Under Section 401, a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the U.S. unless a state where the discharge would originate issues a Section 401 water quality certification verifying compliance with existing water quality requirements or waives the certification requirement.
- Under Section 402 of the CWA, all point-source discharges, including, but not limited to, construction-related stormwater discharges to surface waters, are regulated through the National Pollutant Discharge Elimination System program. Project sponsors must obtain a National Pollutant Discharge Elimination System permit from SWRCB.
- Under CWA Section 404, USACE and the U.S. Environmental Protection Agency regulate the discharge of dredged and fill materials into the waters of the U.S. Project sponsors must obtain a permit from USACE authorizing such discharges. Based on the Authority's analysis of permanent impacts on waters of the U.S. and coordination with USACE, it is anticipated the Shared Passenger Track Alternatives would qualify for coverage under the Nationwide Permit program, specifically Nationwide Permit 14, Linear Transportation Projects.[3] Refer to

[3] Nationwide Permit 14 covers activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, taxiways) in waters of the U.S. For linear transportation projects in nontidal waters, the discharge cannot cause the loss of greater than 0.5 acre of waters of the

the *Los Angeles to Anaheim Project Section Draft Aquatic Resources Impacts Memorandum* (Authority 2025c) for additional detail.

Rivers and Harbors Act of 1899 (33 U.S.C. 401 et seq.)/General Bridge Act of 1946 (33 U.S.C. 525 et seq.)

The Rivers and Harbors Act is a federal law regulating activities that may affect navigation on the nation's waterways, including:

- Section 9 of the Rivers and Harbors Act and Section 9 of the General Bridge Act require a permit for the construction of bridges and causeways over certain navigable waters of the U.S. to ensure marine traffic is not adversely affected. *Navigable waters* are defined as those waterbodies subject to the ebb and flow of the tide and that are utilized currently, potentially, or historically in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. Section 9 bridge permits are only required for waters that are currently or potentially navigable for commerce; general recreational boating is typically not sufficient to establish jurisdiction. Section 9 bridge permits are issued by the U.S. Coast Guard.
- Section 10 of the Rivers and Harbors Act (33 U.S.C. 403) requires authorization from USACE for the construction of a structure in or over navigable waters of the U.S.
- Section 14 of the Rivers and Harbors Act (codified in 33 U.S.C. 408 [Section 408]) requires permission from USACE for the use, including modifications or alterations, of any flood-control facility work built by the U.S. to ensure that the usefulness of the federal facility is not impaired. This requires a determination that that requested alteration is "not injurious to the public interest" and "will not affect the USACE project's ability to meet its authorized purpose." This means that USACE has the authority to review, evaluate, and approve all alterations to federally authorized civil works projects to make sure they are not harmful to the public and still meet the project's intended purposes mandated by congressional authorization. USACE issues these authorizations through the Section 408 permitting process.

U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661–666c)

The U.S. Fish and Wildlife Coordination Act (16 U.S.C. 661–666c) applies to a federal project where a body of water is impounded, diverted, deepened, or otherwise modified. Project proponents are required to consult with USFWS and the appropriate state wildlife agency.

Migratory Bird Treaty Act (16 U.S.C. 703–712)

The MBTA prohibits the take of the nests, eggs, birds, or any parts thereof (listed at 50 CFR Part 10.13, as modified by *Federal Register*, Volume 75, Number 39, page 9281). The MBTA and the Migratory Bird Treaty Reform Act of 2004 are implemented by the USFWS Division of Migratory Bird Management. Section 703 makes it unlawful to take any migratory bird. The Migratory Bird Treaty Reform Act of 2004 amends Sections 703–712 such that 94 nonnative bird species that have been introduced by humans to the U.S. or its territories are excluded from protection. Only species considered native in 1918 are included.

Migratory Bird Treaty Reform Act (16 U.S.C. 703 et seq.; Public Law 108–447)

The Migratory Bird Treaty Reform Act amends the MBTA of 1918 to exclude nonnative birds or birds that have been introduced by humans to the U.S. or its territories from protection under the

U.S. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to build or protect the linear transportation project; such modifications must be in the immediate vicinity of the project. This Nationwide Permit also authorizes temporary structures, fills, and work necessary to build the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that would not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate (USACE 2021a).

act. The statute defines a native migratory bird as a species present in the U.S. and its territories as a result of natural biological or ecological processes.

Bald and Golden Eagle Protection Act (16 U.S.C. 668–668(d); 50 CFR Part 22)

The Bald and Golden Eagle Protection Act prohibits anyone from taking, possessing, or transporting Bald Eagles (*Haliaeetus leucocephalus*) or Golden Eagles (*Aquila chrysaetos*) or the parts, nests, or eggs of such birds without prior authorization. The Bald and Golden Eagle Protection Act regulations authorize issuance of incidental take permits of Bald and Golden Eagles under limited circumstances.

Protection of Wetlands (U.S. Presidential Executive Order 11990)

U.S. Presidential Executive Order 11990 aims to avoid direct or indirect impacts on wetlands from federal or federally approved projects when a practicable alternative is available. If wetland impacts cannot be avoided, practicable measures to minimize harm must be included.

Protection of Migratory Bird Populations (U.S. Presidential Executive Order 13186)

U.S. Presidential Executive Order 13186 directs each federal agency taking actions that have or may have adverse effects on migratory bird populations to work with USFWS to develop a memorandum of understanding that will promote the conservation of migratory bird populations.

Invasive Species (U.S. Presidential Executive Order 13112)

U.S. Presidential Executive Order 13112 requires federal agencies to work cooperatively to prevent and control the introduction and spread of invasive plants and animals.

3.7.2.2 State

California Endangered Species Act (California Fish and Game Code Sections 2050–2085)

The CESA prohibits the take of fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under the CESA. *Take* refers to mortality or injury of the listed species itself and not the modification of a listed species' habitat. The CESA contains a procedure for CDFW to issue a Section 2081 Incidental Take Permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions, including that the effects of the take are minimized and fully mitigated.

California Fish and Game Code

Sections 3511, 4700, 5050, and 5515 (Fully Protected Species)

The California Fish and Game Code designates 37 fully protected species and prohibits the take or possession at any time of such species with certain limited exceptions (CDFW 2021). Because of the adoption of Senate Bill 147 in July of 2023, Peregrine Falcon and Brown Pelican will be removed from the fully protected species list, as will the now-extinct thick-tailed chub, bringing the list of fully protected species to 34 rather than 37. Senate Bill 147 includes the ability for certain projects to take fully protected species. Projects must be related to State Water Projects undertaken by the Department of Water Resources; water projects conducted by a regional or local agency; a transportation project undertaken by a state, regional, or local agency that does not increase highway or street capacity for automobile or truck travel; a wind project; or a solar project.

Sections 3503, 3503.5, and 3513 (Bird Protections)

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of a bird, except as otherwise provided by code or regulation made pursuant thereto. Section 3503.5 prohibits the take, possession, or destruction of nests, eggs, or birds in the orders Falconiformes (New World vultures, hawks, eagles, ospreys, and falcons, among others) or Strigiformes (owls). To avoid violation of the regulations, it is generally required that project-related disturbance at active nesting territories be reduced or eliminated during the nesting cycle.

Section 4008 (Mountain Lion Protection)

Mountain lion (genus *Puma*) is a specially protected mammal under the California Fish and Game Code. It is unlawful to take, injure, possess, transport, import, or sell a mountain lion or a product of a mountain lion except as specifically stated in related sections of the California Fish and Game Code (CDFW 2021).

Section 1600 et seq. (Lake and Streambed Alteration)

Section 1600 et seq. requires notifying CDFW prior to a project activity that might (1) substantially divert or obstruct the natural flow of a river, stream, or lake; (2) substantially change or use material from the bed, channel, or bank of a river, stream, or lake; (3) use materials from a river, stream, or lake; or (4) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into a river, stream, or lake.

Although not specifically defined in Section 1600 et seq., jurisdiction in some instances may include adjacent riparian vegetation. If, after notification, CDFW determines that the activity may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement would need to be obtained (CDFW 2021).

Natural Community Conservation Planning Act (Sections 2800–2835)

The Natural Community Conservation Planning Act was enacted to encourage broad-based planning to provide for effective protection and conservation of the state's wildlife resources while continuing to allow appropriate development and growth. NCCPs may be implemented, which identify measures necessary to conserve and manage natural biological diversity within the planning area while allowing compatible and appropriate economic development, growth, and other human uses.

California Native Plant Protection Act (Sections 1900–1913)

The California Native Plant Protection Act requires state agencies to use their power to carry out programs to conserve endangered and rare native plants. The act gives CDFW the authority to designate native plants as "endangered" or "rare" and prohibits the take of such plants, with certain exceptions (CDFW 2021).

Porter-Cologne Water Quality Control Act (California Water Code Section 13000 et seq.)

Porter-Cologne provides for implementation of the federal CWA by SWRCB, including issuance of Section 401 Certifications and Section 402 National Pollutant Discharge Elimination System Permits. Issuance of a Section 401 Certification requires documenting compliance with state water quality standards, including watershed plans, designated beneficial uses, and the total maximum daily load program.

The act regulates discharges that could affect the quality of waters of the state and requires an authorization of waste discharges to all waters of the state, which includes waters not regulated under the federal jurisdiction of the CWA. Applicants seeking to discharge to waters of the state must apply for Waste Discharge Requirements and receive authorization from SWRCB or relevant regional board.

3.7.2.3 Regional and Local

This section discusses relevant regional and local programs, policies, regulations, and permitting requirements. The project section 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. Table 3.7-1 lists local plans and policies that were identified and considered for analysis.

Table 3.7-1 Regional and Local Plans and Policies

Policy Title	Summary
Southern California	
SCAG Regional Comprehensive Plan (2008)	SCAG adopted the *2008 Regional Comprehensive Plan* in 2008. The plan includes the following policies: ▪ Open Space and Habitat – Natural Lands Goals: Ensure a sustainable ecology by protecting and enhancing the region's open space infrastructure and mitigate growth and transportation related impacts to natural lands by: – Conserving natural lands that are necessary to preserve the ecological function and value of the region's ecosystems; – Conserving wildlife linkages as critical components of the region's open space infrastructure; – Coordinating transportation and open space to reduce transportation impacts to natural lands. ▪ Open Space and Habitat – Community Open Space Goals: Enhance the region's parks, trails, and community open space infrastructure to support the aesthetic, recreational and quality-of-life needs, providing the highest level of service to our growing region by: – Improving existing community open space through urban forestry and other programs that provide environmental benefits.
SCAG 2024–2050 Connect SoCal Regional Transportation Plan/ Sustainable Communities Strategy (2024)	SCAG adopted the 2024–2050 Connect SoCal Regional Transportation Plan/Sustainable Communities Strategy in 2024. The plan includes the following policies that are relevant to this project: ▪ **Policy 58.** Prioritize the climate mitigation, adaptation, resilience, and economic benefits of natural and agricultural lands in the region ▪ **Policy 59.** Support conservation of habitats that are prone to hazards exacerbated by climate change, such as wildfires and flooding ▪ **Policy 60.** Support regional conservation planning and collaboration across the region ▪ **Policy 61.** Encourage the protection and restoration of natural habitat and wildlife corridors ▪ **Policy 62.** Encourage the conservation and viability of agricultural lands to protect the regional and local food supply and ensure the sustainability of local agriculture as a vital part of the region's economy ▪ **Policy 63.** Encourage policy development of the link between natural and agricultural conservation with public health

Policy Title	Summary
Los Angeles County	
Los Angeles County 2035 General Plan (2025)	Policies set forth by the county in the general plan are intended to protect significant agricultural resource areas, preserve SEAs, and protect the quality of the coastal environment. The general plan includes a Conservation and Natural Resources Element that addresses open space resources, biological resources, local water resources, agricultural resources, mineral and energy resources, scenic resources, and historic, cultural, and paleontological resources. The general plan also aims to protect watersheds, streams, and riparian vegetation and maintain natural watershed processes by regulating development in tributary watersheds. The County of Los Angeles SEA was established by the *Los Angeles County General Plan* and additionally by the Hillside Management and Significant Ecological Areas Ordinance in 1982. In 2015, the Board of Supervisors approved the Antelope Valley Area Plan and the General Plan 2035, which created the final boundaries and categories for the SEAs. The SEA is intended to aid applicants and staff with implementation of the general plan goals and policies, zoning code regulations, and Department of Regional Planning procedures. The general plan establishes the location of the SEAs, the description of SEAs (e.g., habitat types, unique resources), and program policies. The SEA Ordinance, a component of the county zoning code (Title 22), is the implementation tool of the SEA Program, which establishes the permitting standards and process for development within SEAs. The general plan has identified 21 SEAs and seven Coastal Resource Areas that represent a wide range of biotic communities and have stringent development standards. The Wildlife RSA does not occur in or adjacent to designated County SEAs, Coastal Resource Areas, or other open space–related resources.
LA River Master Plan (2022)	The *LA River Master Plan* was adopted by the Los Angeles County Board of Supervisors in 1996 and revised in 2022 to address the entire 51-mile Los Angeles River. This update is designed to have flexibility in the placement of proposed project elements. The goal of the *LA River Master Plan* is to reimagine the Los Angeles River from a single-use corridor to a tangible, multibenefit resource that connects people, culture, water, open space, and wildlife. The relevant goal is: ▪ Support healthy connected ecosystems Near the Shared Passenger Track Alternatives, which run adjacent to the Los Angeles River from River Mile 22 to River Mile 19.9, the *LA River Master Plan* includes plans for two proposed project sites. At River Mile 21.5, in downtown Los Angeles near the intersection of Santa Fe Ave and 4th St, the First St to Sixth St River Loop project site is proposed. At River Mile 19.9, where E Washington Blvd crosses the Los Angeles River, the E Washington Blvd project site is proposed. Plans for these sites have not been finalized.
Los Angeles County Code of Ordinances Chapter 22.174 Oak Tree Permits (2025)	The Los Angeles County Oak Tree Ordinance applies to all of the unincorporated areas of the county and its goal is to create favorable conditions for the preservation and propagation of healthy oak trees. Under the ordinance, a person shall not cut, destroy, remove, relocate, inflict damage, or encroach into the protected zone of any tree of the oak tree genus (*Quercus*) that is 8 inches or more in diameter (measured at 4.5 feet above mean natural grade) or, in the case of oaks with multiple trunks, a combined diameter of 12 inches or more of the two largest trunks, without first obtaining a permit.

Policy Title	Summary
Los Angeles County Code of Ordinances Chapter 22.126 Tree Planting Requirements (2025)	The County of Los Angeles Tree Planting Requirements are a part of the Urban Greening Program to provide environmental benefits. Planted trees will reduce greenhouse gases by absorbing carbon dioxide, reduce water pollution, and reduce urban heat islands by shading impervious surfaces. This requirement applies to any project that includes a new principal-use building or additions to buildings where the addition adds a cumulative floor area of at least 50 percent of the total existing building floor area or new uncovered surface parking lots with a minimum of 15 parking spaces or existing uncovered surface parking lots expanded to have more than 15 or more parking spaces. For nonresidential or mixed-use projects, a minimum of three trees shall be planted for every 10,000 square feet of developed lot area. Any existing tree within the project site with a minimum trunk diameter of 0.75 inch measured 6 inches above the soil line may count toward meeting the requirement. For parking lots, a shade plan, meeting the specifications in the Tree Planting Guide, is required. The minimum shade coverage will be 50 percent of the uncovered parking area within 15 years of planting the required trees. Tree species will provide adequate shade, are not invasive, and are resistant to local pests and diseases, are adaptable to local climate, and are appropriate for the planting location. The required trees will be a minimum size of 15 gallons and shall have a trunk diameter of 0.75 to 1.5 inches measured 6 inches above the soil line at the time of planting.

Policy Title	Summary
Los Angeles County Code of Ordinances (2025)	The applicable ordinances of the Los Angeles County Code of Ordinances are: ▪ Chapter 12.28, Brush and Vegetation, Section 12.28.030: states that no person shall remove or destroy, or cause the removal or destruction of, natural vegetation on sloping terrain within the unincorporated territory of the County of Los Angeles without first obtaining written approval from the county engineer of the county to do so or in compliance with Section 12.28.040 – Exceptions to chapter applicability. – Section 17.04.340: States that a person shall not dig, remove, destroy, injure, mutilate, or cut any tree, plant, shrub, grass, fruit, or flower, or any portion thereof, growing in a park. Any removal of wood, turf, grass, soil, rock, sand, or gravel from any park is unlawful. – Section 17.04.470: States that a person shall not molest, hunt, disturb, injure, shoot at, take, net, poison, wound, harm, kill, or remove from any park or riding and hiking trail any kind of animal. ▪ Title 22, Planning and Zoning, Section 22.56.2060: States that no person shall cut, destroy, remove, relocate, inflict damage, or encroach into a protected zone of any tree in the oak genus that is 8 inches in diameter or greater measured at 4.5 feet above mean natural grade. ▪ Section 22.126 Tree Planting Requirements – applies to any project that includes new uncovered surface parking lots with a minimum of 15 parking spaces. For nonresidential or mixed-use projects, a minimum of three trees shall be planted for every 10,000 square feet of developed lot area. The number of trees required on that shade plan shall anticipate a minimum of 50 percent shade coverage of the uncovered parking area within 15 years of planting the required trees. Size, species, location, and maintenance will be as described in Section 22.126.030. ▪ The Los Angeles County Oak Tree Ordinance (Section 22.174.010) applies to all areas of the unincorporated areas of the county and its goal is to create favorable conditions for the preservation and propagation of healthy oak trees. A person will not cut, destroy, remove, relocate, inflict damage, or encroach into the protected zone of any tree of the oak tree genus that is more than 8 inches in diameter at 4.5 feet above the mean natural grade (or a combined diameter of 12 inches or more for multiple trunks) without first obtaining a permit. If oak trees are present, an Oak Tree Report per Section 22.174.040 is required. Oak trees are to be protected as much as possible and if removal is needed, replacement will be required.

Policy Title	Summary
City of Los Angeles	
City of Los Angeles General Plan Framework Element, Chapter 6, Open Space and Conservation (2024)	The City of Los Angeles General Plan Framework Element includes the provision, management, and conservation of the city's open space resources, including natural habitats and wildlife. Relevant goals and policies include: Goals: ▪ Protect the City's natural settings from encroachment of urban development Policies: ▪ Protect remaining open space, mitigate for environmental hazards such as flooding, tax incentives for landowners to preserve their lands ▪ Preserving habitat linkages to preserve wildlife corridors, preserving natural viewsheds, water re-use technology ▪ Reassess environmental importance of SEAs and evaluate potential inclusion of other areas ▪ Conserve and manage undeveloped parts of the City's watersheds as open spaces to protect, conserve, and enhance natural resources ▪ On-site evaluation of sites evaluated as sensitive habitats or for wildlife movement in the Framework Element's Technical Background Report and Environmental Impact Report ▪ Preservation of private land open space to the maximum extent feasible ▪ Encourage increase of open space where opportunities exist to protect wild areas such as the Sepulveda Basin and Chatsworth Reservoir ▪ The amount of earth moved in grading operations within desirable open space areas should be limited and closely controlled. Aesthetic consideration should be incorporated into the City's approval of grading plans in these areas. ▪ The designation of an area as either open space land or desirable open space is not intended to preclude the development of needed transportation facilities. Such transportation facilities traversing public park properties are subject to various laws controlling development.
Los Angeles Municipal Code, Chapter VI: Public Works and Property, Article 4.4: Stormwater and Urban Runoff Pollution Control (2025)	Ordinance number 172,176. (b) No person shall discharge, cause, or permit the discharge of untreated runoff from the washing of impervious surfaces into the storm drain system. This provision shall apply unless the washing is specifically required by State or local health and safety codes or unless the discharge is conditionally exempt as street or sidewalk washing as provided in Subdivision 2, Subsection A of Section 64.70.03 of this article. C. Controlling Spills, Dumping or Disposal of Materials to the Storm Drain System. This subsection applies to all persons within the City of Los Angeles and is in addition to any other anti-littering provisions provided in this Code, including, without limitation, Sections 56.08, 57.21.06, 62.54, 66.04 and 66.25. (Amended by Ord. No. 183,833, Eff. 10/3/15.) 1. The following prohibitions apply to all persons within the City of Los Angeles and any violation of this subdivision shall be punishable as a misdemeanor: (a) No person shall throw, deposit, leave, cause or permit to be thrown, deposited, placed, or left, any refuse, rubbish, garbage, or other discarded or abandoned objects, articles, and accumulations, in or upon any street, gutter, alley, sidewalk, storm drain, inlet, catch basin, conduit or other drainage structures, business place, or upon any public or private lot of land in the City so that such materials, when exposed to stormwater or any runoff, become a pollutant in the storm drain system. (b) No person shall intentionally dispose or cause the disposal of leaves, dirt, or other landscape debris into the storm drain system.

Policy Title	Summary
	(c) No person shall spill, dump, or dispose any pesticide, fungicide, or herbicide, into the storm drain system. (d) No person shall leave, dispose, cause or permit the disposal of a hazardous substance in a manner that results or potentially could result in a spill, leak or drainage of such onto any sidewalk, street or gutter that discharges into or flows with any other runoff into the storm drain system. (Amended by Ord. No. 183,833, Eff. 10/3/15.) (e) No person shall store fuels, chemicals, fuel or chemical wastes, animal wastes, garbage, batteries, and any toxic materials in a manner that causes or potentially could cause the runoff of pollutants from these materials or wastes into the storm drain system. (Amended by Ord. No. 183,833, Eff. 10/3/15.) (f) No person shall dispose, discharge, or permit the discharge of any sanitary or septage wastes from any source into the storm drain system. D. Requirement to Prevent, Control, and Reduce Stormwater Pollutants. Any owner or operator of a facility or business within the City of Los Angeles engaged in activities or operations as listed in the Critical Sources Categories, Section III of the Board's Rules and Regulations shall be required to implement Best Management Practices (BMPs) as promulgated in the Rules and Regulations. Any owner/developer of a property under construction within the City of Los Angeles or his designated representative shall be required to implement the stormwater pollution control requirements for construction activities as depicted in the project plans approved by the Department of Building and Safety. In the event a specified BMP proves to be ineffective or infeasible, the Director may require additional and/or alternative, site-specific BMPs or conditions deemed appropriate to achieve the objectives of this ordinance as defined in Subsection B of LAMC Section 64.70. Any violation or failure to implement a BMP in a timely manner shall be punishable as an infraction unless the violation or failure is declared in this Code to be a misdemeanor. (Added by Ord. No. 175,026, Eff. 2/2/03.) E. Controlling Pollutants from Parking Lots. Any owner or operator of industrial/commercial motor vehicle parking lots with more than twenty-five (25) parking spaces that are in areas potentially exposed to storm water shall be required through regular sweeping or other effective measures to remove all debris during the period between October 1 and April 15. Violation of this subsection shall be punishable as an infraction. (Former Subsection D. re-designated Subsection E. by Ord. No. 175,026, Eff. 2/2/03.)
Los Angeles Municipal Code, Chapter I: General Provisions and Zoning, Article 3: Specific Plan – Zoning Supplemental Use Districts, Sec. 13.17: "Rio" River Improvement Overlay District (2025)	The purpose of the River Improvement Overlay District is to support the goals of the *Los Angeles River Revitalization Master Plan* and contribute to the environmental and ecological health of the city's watersheds by establishing a positive interface between river-adjacent property and river parks and greenways and to provide native habitat and support local species.
Los Angeles Municipal Code, Section 41.14i (2025)	Section 41.14i of the City of Los Angeles Municipal Code prohibits any person from cutting, breaking, destroying, removing, defacing, tampering with, marring, injuring, disfiguring, interfering with, damaging, tearing, or altering any tree, shrub, tree stake, or guard in any public street, or affixing or attaching in any manner any other thing whatsoever, including any guy wire or rope, to any tree, shrub, tree stake, or guard, except for the purpose of protecting it.

Policy Title	Summary
Los Angeles Municipal Code Section 41.31 Trees – Injury To (2025)	Section 41.31 of the City of Los Angeles Municipal Code prohibits any person from (a) dumping, pouring, or spilling any oil, salt, or salt water or other deleterious matter upon any tree space in any street, or keep or maintain any sidewalk within ten feet of any such trees space on any street any receptacle from which oil or salt water leaks or drips, or pour oil or salt water onto any parking or concrete gutter so as to injure any tree on any street; and (b) piling building material or other material, about any tree, plant, or shrub in a street in any manner that will in any way injure such tree, plant, or shrub.
Los Angeles Municipal Code, Section 1, Subdivision 12 of Subsection A Protected Tree and Shrub Relocation and Replacement 186873 (2025)	An ordinance amending provisions of the Los Angeles Municipal Code to include Mexican elderberry (*Sambucus mexicana*) and toyon (*Heteromeles arbutifolia*) shrubs in the class of protected trees and update regulations. All existing protected trees and shrubs and relocation of replacement trees and shrubs shall be indicated on a plot plan attached to the building permit. A report prepared by a certified arborist will be required if there are protected trees present. Any of the following protected indigenous tree or shrub species, measuring 4 inches or more in cumulative diameter, 4.5 feet above ground level are protected: Protected Trees (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 (5) Mexican Elderberry (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. A protected tree will only be replaced by protected trees and not protected shrubs. A protected shrub will only be replaced by protected shrubs. When replacement concerns more than two protected trees or shrubs, the permit will be considered at a full public hearing at the Board. Grading may be prohibited in the drip line of a protected tree or shrub.

Policy Title	Summary
City of Los Angeles, Stormwater Program, Department of Public Works, Bureau of Sanitation Requirements (2016)	Where environmentally sensitive areas occur, stormwater BMPs will be required by the City of Los Angeles Department of Public Works. The Los Angeles Municipal Code is effective from October 24, 2016. *Environmentally sensitive area* means any area in which plant or animal life, or their habitats, are either rare or especially valuable because of their special nature or role in an ecosystem and that would be easily disturbed or degraded by human activities and developments. Environmentally sensitive areas include, but are not limited to, areas designated as SEAs by the County of Los Angeles, areas designated as Significant Natural Areas by the CDFW Significant Natural Areas Program and field verified by CDFW, and areas listed in the Basin Plan as supporting the "Rare, Threatened, or Endangered Species" beneficial use. The requirements include: 1. Implement stormwater BMPs to retain or treat the runoff from a storm event producing 1/2 inch of rainfall in a 24-hour period. A signed certificate from California licensed civil engineer or licensed architect that the proposed BMPs meet this numerical threshold standard is required. 2. Post development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increase peak stormwater discharge rate will result in increased potential for downstream erosion. 3. Concentrate or cluster development on portions of a site while leaving the remaining land in a natural undisturbed condition. 4. Limit clearing and grading of native vegetation at the project site to the minimum needed to build lots, allow access, and provide fire protection. 5. Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas and promoting the use of native and/or drought tolerant plants. 6. Promote natural vegetation by using parking lot islands and other landscaped areas. 7. Preserve riparian areas and wetlands. 8. The owner(s) of the property will prepare and execute a covenant and agreement (Planning Department General Form CP-6770) satisfactory to the Planning Department binding the owners to post construction maintenance of the structural BMPs in accordance with the Standard Urban Stormwater Mitigation Plan and or per manufacturer's instructions (obtain clearance letter from Watershed Protection Division, Bureau of Sanitation).

Policy Title	Summary
Los Angeles River Ecosystem Restoration Project (2015)	The City of Los Angeles, in conjunction with USACE, has prepared a Final Integrated Feasibility Report and EIS/EIR (USACE and City of Los Angeles 2015) for the proposed Los Angeles River Ecosystem Restoration Project. This project involves restoring 11 miles of the Los Angeles River from approximately Griffith Park to downtown Los Angeles, while maintaining existing levels of flood risk management. Los Angeles River Ecosystem Restoration Project activity in the vicinity of the Shared Passenger Track Alternatives includes Reach 8 – Union Pacific LATC Intermodal Facility. The Los Angeles River in this area is concrete lined, with existing rail lines adjacent to the channel on both banks. This section of the river would be restored to a historic wash and riparian habitat. The restoration would use existing culverts to allow flows from the ephemeral wash to enter the Los Angeles River under the railroad lines. Invasive vegetation would be removed throughout the project footprint, including the river and tributary channel bottom areas. This plan includes a proposal to restore floodplain functions and create recreation, open space, and residential elements within the 125-acre BNSF Railway Piggyback Yard. Existing railroad tracks would be elevated on trestles to allow flow-through connection of the riparian zone and marsh habitat (also known as Mission Yard or LATC). The Shared Passenger Track Alternatives are approximately 1,500 feet to the west of Piggyback Yard. Farther south, reach 8 is directly adjacent to the northern end of the Shared Passenger Track Alternatives as the reach continues south of E Cesar E. Chavez Ave, past U.S. Highway 101 and to First St.
City of Vernon	
City of Vernon General Plan, Resources Element (2023)	The City of Vernon adopted the Resources Element of the *City of Vernon General Plan* in 2015 and last amended the general plan in 2023. The general plan element contains the following goal: ▪ Goal R-3: Preserve established open spaces and look for opportunities to create new open space areas that can benefit the health and welfare of workers and residents in Vernon.
City of Bell	
City of Bell 2030 General Plan, Resource Management Element (2022)	The City of Bell adopted the Resource Management Element of the *City of Bell 2030 General Plan* in 2020 and last updated the general plan in 2022. The Resource Management Element focuses on five key issue areas: recreational resources, ecological resources, cultural resources, air quality, and water resources. The city of Bell is highly urbanized, and no ecologically sensitive habitat for plants or animals is present in the city. The Los Angeles River has been channelized through the city, which has resulted in a loss of riparian habitat.
City of Commerce	
City of Commerce 2020 General Plan, Resource Management Element (2008)[1]	The *City of Commerce 2020 General Plan* (2008) Resource Management Element seeks to increase the city's plant resources by implementing a definitive street tree program that, at a minimum, calls for landscaping along major rights-of-way and within industrial and commercial developments. This landscaping is to be conducted by the city.

Policy Title	Summary
City of Montebello	
City of Montebello General Plan, Our Natural Community, Conservation and Open Space Element (2024)	The *City of Montebello General Plan* (2024) Our Natural Community chapter includes the Conservation Open Space Element, which includes the topics of air and water, greenhouse gases, open space, hillsides, watersheds, riparian areas, and plants and animals. The Rio Hondo and spreading grounds occur in Montebello. To the north of the Shared Passenger Track Alternatives on the west side of the Rio Hondo, there is a plan for enhancement of the existing Rio Hondo connector by adding Bluff Park at the end of Sycamore St at De Paul Center and bluff-top trail. This is a recreational park and will not change the quality of biological resources present.
Montebello Municipal Code 12.08.090 (2024)	The Montebello Municipal Code is current through Ordinance 2475, passed March 27, 2024. Section 12.08.090 prohibits any person from removing, trimming, pruning, or cutting any tree planted or maintained by the city. No person shall injure or destroy any tree planted or maintained by the city, by any means.
City of Pico Rivera	
Pico Rivera Municipal Code (2025)	Section 12.40.020 of the code requires a permit for any person, other than a city officer or contractual agent of the city, intending to plant, cut down, pull up, burn, destroy, remove, trim, skin, deface, or remove the outer trunk surface or bark of any roadside tree, or trim or prune such roadside tree so as to deface, injure, destroy, or endanger the life or uniform growth of such roadside tree. The Public Works Department would issue this permit.
City of Santa Fe Springs	
Re-Imagine Santa Fe Springs 2040 General Plan, Open Space and Conservation Element (2022)	The *Re-Imagine Santa Fe Springs 2040 General Plan* Open Space and Conservation Element sets forth policies to increase the amount of open space throughout the city. The Open Space and Conservation Element lists the rail corridor and area adjacent to the San Gabriel River as potential open space use areas. ▪ Goal COS-1: A Vibrant Park System that Meets Evolving Community Needs – Policy COS 1.1: Parkland Acreage and Access. Strive to maintain a parkland to population ratio of at least 4.0 acres per 1,000 residents and park facilities located so every resident lives within a 10-minute walk to a park or other recreation facility. – Policy COS 1.2: Use of Unique Property. Utilize remnant properties along freeways, utility easements, or other corridors for use as recreational amenities or innovative urban open spaces. – Policy COS-5.1: Native Plants. Encourage the use of native and climate-appropriate tree and plant species. – Policy COS-5.4: Green Buffers: Expand trees and landscaping to build an extensive green buffer between residential neighborhoods and freeways, rail corridors, and industrial zones to help reduce air pollution impacts. Prioritize residential neighborhoods that are designated as disadvantaged communities. – Policy COS-5.5: Environmental Benefits. Expand urban greening to reduce air and noise pollution, reduce and clean urban runoff, increase groundwater recharge, improve ecological diversity, and help cool neighborhoods by minimizing heat island effects. – Policy COS-5.6: Bird Nesting. Protect migratory and native bird nesting sites on trees and landscaping during construction and/or tree removal or trimming, with special considerations during the bird nesting season and within parkland, easements, or flood control areas along the San Gabriel River and tributaries.
Code of Santa Fe Springs (2025)	Section 96.133 of the Code of Santa Fe Springs prohibits cutting, trimming, pruning, planting, removing, injuring, or interfering with any tree, shrub, or plant upon any street, alley, or public right-of-way within the city without a permit. This permit can be acquired from the Director of Public Works and is valid for 30 days from the date of issuance.

Policy Title	Summary
City of La Mirada	
City of La Mirada General Plan, Open Space and Conservation Element (2003)	▪ Addresses existing and future opportunities for improving and maintaining the quality of parks, trails, and the natural environment. ▪ Goal 2.0 is to preserve and enhance trails and passive open space, which includes La Mirada Creek Park as a trail-oriented and natural open space resource for the community, and to work cooperatively with surrounding jurisdictions to create and maintain the Coyote Creek Multi-Use Trail.
La Mirada Code of Ordinances (2024)	Ordinance 556, Section 2 of the La Mirada Code of Ordinances prohibits injuring or destroying any parkway tree by any means without a permit.
Orange County	
County of Orange General Plan, Land Use Element (2025)	The *County of Orange General Plan* Land Use Element, updated in June 2024, includes an Open Space land use category and OSR land use overlays. The Open Space category is most often zoned agricultural and indicates that in the current or near term the land will be used as open space or for agriculture, but there is not a long-term commitment to open space or agricultural uses, except where one of the three overlay categories apply. The OSR overlay identifies lands of scenic or natural attraction and areas of ecological, cultural, historical, and recreational significance that are permanently preserved as and restricted to open space and compatible uses. OSR designation is intended to reflect lands that are prioritized in the Resources and Recreation Elements of the General Plan that are to remain open space in perpetuity. OSR lands may also include recreational trails and similar facilities. The OSR depiction on the General Plan Land Use Element Map presents generalized reserve boundaries that are for informational purposes only and may not include private in-holding land.
County of Orange General Plan, Resources Element (2025)	Wildlife Habitat Areas (Generalized) are mapped in the Resources Element, Figure VI-4 of the general plan.
City of Buena Park	
Buena Park Municipal Code (2025)	Section 12.20.010 of the Buena Park Municipal Code prohibits any person other than a city employee in any public street, alley, parkway, thoroughfare, or place within the city other than a parkway abutting property owned or occupied by such person from planting, or cutting down, injuring, girdling, or removing any tree, shrub, bush or other vegetation; or installing, damaging, or destroying any ornament or improvement. Section 12.20.020 of the Buena Park Municipal Code prohibits any person other than a city employee in any public street, alley, parkway, thoroughfare, or place within the city in and from parkways abutting cutting down, injuring, girdling, destroying, or removing any standing or growing trees or shrubbery or any ornament or improvement in any public park or street of the city without first being issued a permit. The permit for the removal of any tree may require the replanting of another tree after the removal.

Policy Title	Summary
City of Fullerton	
The Fullerton Plan (2025)	*Fullerton Plan* Goal 24: Responsible management of open spaces balanced with the healthy functioning of environmental systems is to be achieved through specific policies. P24.1 includes maintenance of regional open spaces and P24.2 encourages the preservation of significant open spaces within the region. P24.3 supports increasing access to open spaces while respecting the natural environment. P24.7 supports the creation of open space. P24.8 supports the preservation of ESAs in public open space. P24.9 supports the encouragement of diverse environmentally sensitive passive open spaces. P24.10 supports linking open spaces to public areas and neighborhoods. P24.11.1 supports the management of wildfire areas. P24.13 supports the maintenance of ESAs. P24.13.1 supports the increase in resilience of open space and natural areas to increased risk of fire, flood, and geological hazards. P25.1 supports conservation of sensitive natural resources for sensitive species and plant communities. P25.2 supports projects to pursue restoration of channelized portions of Brea Creek and Fullerton Creek. P25.3 supports regulations to promote trees throughout the city. P25.4 supports the promotion of respecting the natural environment and wildlife inhabiting or migrating to the city's open spaces. P25.5 supports management of development in areas containing significant or rare biological resources. P25.7 includes mitigation of impacts for these resources. P25.8 supports mitigation of impacts on waterways.
City of Fullerton Municipal Code (2025)	According to Section 9.06.090 of the City of Fullerton Municipal Code, developers must submit a plot plan of proposed development to the city so the Director of Development Services can determine the tree requirements for site development. Any proposed change in the direction or width of a public street must incorporate a consideration of street trees within the right-of-way as part of the general plan of improvements.
Fullerton Municipal Code (2025)	Section 9.06.100 of the City of Fullerton Municipal Code states that it is also unlawful for any person to alter or remove any tree in Fullerton within a public area or right-of-way without a permit.
City of Anaheim	
City of Anaheim General Plan, Green Element (2025)	The *City of Anaheim General Plan's* 2004 Green Element sets policies for the conservation of biological resources and public landscaping. Public Landscaping and Street Trees Policy 1.1 requires that street trees be preserved where practical.
City of Anaheim General Plan and Zoning Code Update EIR No. 330 (2004) Mitigation Measures 5.3-1 and 5.3-8	The *City of Anaheim General Plan and Zoning Code Update Environmental Impact Report* No. 330 includes mitigation measures for the protection of rare plant and wildlife communities including oak, riparian, wetland, walnut woodland, and coastal sage scrub vegetation communities (Mitigation Measures 5.3-1 and 5.3-8). The City of Anaheim is in the process of updating its general plan.
Anaheim Municipal Code (2025)	The Anaheim Municipal Code Section 13.12.080 states, "no person shall top or in any other manner injure or damage any street tree. No person shall cut, trim, prune, plant, remove, spray, or in any other manner interfere with any street tree within the City of Anaheim without first having secured written permission from the Director of Community Services or his or her designee." Any street tree removed must be replaced if a replacement is deemed possible and in accordance with the Official Tree Species List and Tree Master Plan.

Policy Title	Summary
City of Orange	
Orange General Plan, Natural Resources Element (2025)	The City of Orange adopted the *Orange General Plan* in 2010 and amended it in 2025. The Natural Resources Element contains the following policies: ▪ Goal 1.0: Provide recreational use, scenic enjoyment, and the protection of natural resources and features in open space areas. – Policy 1.1: Conserve open space through various public-private funding mechanisms and management strategies including, but not limited to, conservation easements ▪ Goal 2.0: Protect air, water, and energy resources from pollution and overuse – Policy 2.11: Protect the ecological integrity and overall health of Orange's watersheds – Policy 2.13: Control surface runoff water discharges into the stormwater conveyance system to comply with the City's National Pollutant Discharge Elimination System (NPDES) Municipal Permit and other regional permits issued by the Santa Ana Regional Water Quality Control Board – Policy 2.16: Protect in-stream habitat and natural stream and channel features ▪ Goal 4.0: Conserve and protect wildlife habitat, plant and animal species of concern and general biodiversity. – Policy 4.1: Preserve and protect native and habitat-supporting plant resources throughout the City. – Policy 4.3: Reduce the impact of urban development of important ecological and biological resources. – Policy 4.4: Repair or improve ecological and biological conditions in the urban and natural environments when reviewing proposals for site development and redevelopment, as well as public improvements. – Policy 4.5: Protect the Santiago Creek and Santa Ana River corridors from premature urbanization to ensure the continued availability of important sand and gravel, flood control, water recharge, biological, and open space resources.

Sources: City of Anaheim 2004, 2025a, 2025b; City of Bell 2022; City of Buena Park 2025; City of Commerce 2008; City of Fullerton 2025a, 2025b; City of La Mirada 2003, 2024; City of Los Angeles 2016, 2024, 2025a, 2025b, 2025c, 2025d, 2025e; City of Montebello 2024a, 2024b; City of Orange 2025; City of Pico Rivera 2025; City of Santa Fe Springs 2022, 2025; City of Vernon 2023; County of Los Angeles 2025a, 2025b; County of Los Angeles and Los Angeles County Public Works 2022; County of Orange 2025; SCAG 2008, 2024; USACE and City of Los Angeles 2015

[1] This plan is currently undergoing an update as of January 2025.

BMP = best management practice; CDFW = California Department of Fish and Wildlife; EIR = environmental impact report; EIS = environmental impact statement; ESA = environmentally sensitive area; LAMC = Los Angeles Municipal Code; LATC = Los Angeles Transportation Center; OSR = Open Space Reserve; SCAG = Southern California Association of Governments; SEA = Significant Ecological Area; USACE = U.S. Army Corps of Engineers

3.7.3 Consistency with Plans and Laws

As indicated in Section 3.1.5.3, Consistency with Plans and Laws, CEQA and NEPA require a discussion of inconsistencies or conflicts between a proposed undertaking and federal, state, regional, or local plans and laws. CEQA and FRA NEPA implementing procedures require the discussion of any inconsistency or conflict between a proposed action and federal, state, regional, or local plans and laws. Where inconsistencies or conflicts exist, the Authority must provide a description of the extent of reconciliation and the reason for proceeding if full reconciliation is not feasible under NEPA (64 *Federal Register* 28545, 14(n)(15)) and must discuss the inconsistencies between the proposed project and applicable general plans, specific plans, and regional plans under CEQA (State CEQA Guidelines Section 15125(d)).

Several federal and state laws, listed in Section 3.7.2.1, Federal, and Section 3.7.2.2, State, pertain to biological and aquatic resources. Pursuant to 23 U.S.C. 327, under the NEPA Assignment Memorandum of Understanding between the FRA and the State of California, effective July 22, 2024, the Authority is the federal lead agency for environmental reviews and approvals for Authority Phase 1 and Phase 2 California HSR System projects.

The Shared Passenger Track Alternatives do not require construction, structures, staging, storage, or fill material in the Los Angeles River. The proposed crossing of the Los Angeles River would use the existing railroad bridge, with modifications limited to the bridge deck for walkway construction, overhead catenary system pole installation, and electrification. Accordingly, the Shared Passenger Track Alternatives would neither preclude nor conflict with the restoration activities proposed under the *Los Angeles River Revitalization Master Plan* (City of Los Angeles 2007) or the *Los Angeles River Ecosystem Restoration Final Feasibility Report and Environmental Impact Statement/Environmental Impact Report* (USACE and City of Los Angeles 2015).

The Authority is a state agency and is therefore not required to comply with local land use and zoning regulations; however, it has endeavored to design and build the HSR project so that it is consistent with land use and zoning regulations. The Shared Passenger Track Alternatives would be consistent with all identified regional and local policies related to biological and aquatic resources.

Refer to Appendix 3.1-A for a complete consistency analysis of local plans and policies.

3.7.4 Methods for Evaluating Impacts

The evaluation of impacts on biological and aquatic resources is a requirement of NEPA and CEQA. The following sections define the RSAs and summarize the methods used to analyze impacts on biological and aquatic resources. As summarized in Section 3.7.1, Introduction, several other sections in this Draft EIR/EIS also provide additional information related to biological and aquatic resources.

3.7.4.1 Definition of Resource Study Areas

As defined in Section 3.1.5.4, Methods for Evaluating Impacts, RSAs are the geographic boundaries in which the Authority conducted environmental investigations specific to each resource topic. The RSA for impacts on biological and aquatic resources includes the project footprint and resource-specific buffers surrounding the project footprint. Within the project footprint are the components of the project needed to build, operate, and maintain permanent HSR features. As presented in Table 3.7-2 and mapped on Figure 3.7-1, the RSA for impacts on botanical resources includes the project footprint and resources within 100 feet of the edge of the project footprint and is inclusive of both direct and indirect impacts (described in greater detail in Section 3.7.4.3, Methods for Impact Analysis). Similarly, the RSA for aquatic resources includes the project footprint and resources within 250 feet, the RSA for wildlife resources includes the project footprint and resources within 1,000 feet, and the RSA for supplemental resources includes the project footprint and resources within 3 miles, identified as the Supplemental RSA. Biological resources evaluated in the Supplemental RSA include watershed evaluations for aquatic resources, wildlife movement corridor evaluations, assessments of migration corridors, and other resources. The Supplemental RSA is also used as a boundary for baseline data collection (special-status wildlife and plant species known observations, e.g., CNDDB, California Native Plant Society [CNPS]).

Table 3.7-2 Definition of Biological and Aquatic Resources Study Areas

General Definition	Resource Study Area Boundary
Botanical Resource Study Area (Special-Status Plants and Special-Status Natural Communities Observations and Potential to Occur)	
Direct Effects	Project footprint[1] (includes permanent and temporary effects). The action area for botanical resources.
Indirect Effects	Extending from the edge of the project footprint for 100 feet (buffer)
Aquatic Resource Study Area (Aquatic Resources Under the Jurisdiction of USACE, SWRCB, and CDFW)	
Direct Effects	Project footprint (includes permanent and temporary effects)

General Definition	Resource Study Area Boundary
Indirect Effects	Extending from the edge of the project footprint for 250 feet (buffer)
Wildlife Resource Study Area (Special-Status Wildlife Species Observations and Potential to Occur)	
Direct Effects	Project footprint (includes permanent and temporary effects). The action area for wildlife impacts.
Indirect Effects	Extending from the edge of the project footprint for 1,000 feet (buffer)
Supplemental Resource Study Area (Special-Status Plant/Wildlife Species Known Observations and Wildlife Movement Corridors/Habitat Linkage Evaluation)	
Effects on Wildlife Movement	Extending from the edge of the project footprint for 3 miles (buffer)

[1] The project footprint includes all areas required to build, operate, and maintain all permanent high-speed rail facilities, including permanent right-of-way, permanent utility and access easements, and temporary construction easements.
CDFW = California Department of Fish and Wildlife; SWRCB = State Water Resource Control Board; USACE =U.S. Army Corps of Engineers

Resource Study Area Definitions

The definition of RSAs is included in Section 3.1.5.4. RSAs specific to biological and aquatic resources are described further below.

Botanical Resource Study Area

The Botanical RSA includes the project footprint to evaluate direct effects plus a 100-foot buffer (outward from the project footprint) to evaluate indirect effects on upland sensitive plant resources (including special-status plants and special-status natural communities).

The analysis conducted in the Botanical RSA consisted of an evaluation of the potential for suitable habitat for special-status plants and special-status natural communities. Where feasible, surveys for special-status plants were conducted in the Botanical RSA. Special-status natural communities were mapped in the Botanical RSA.

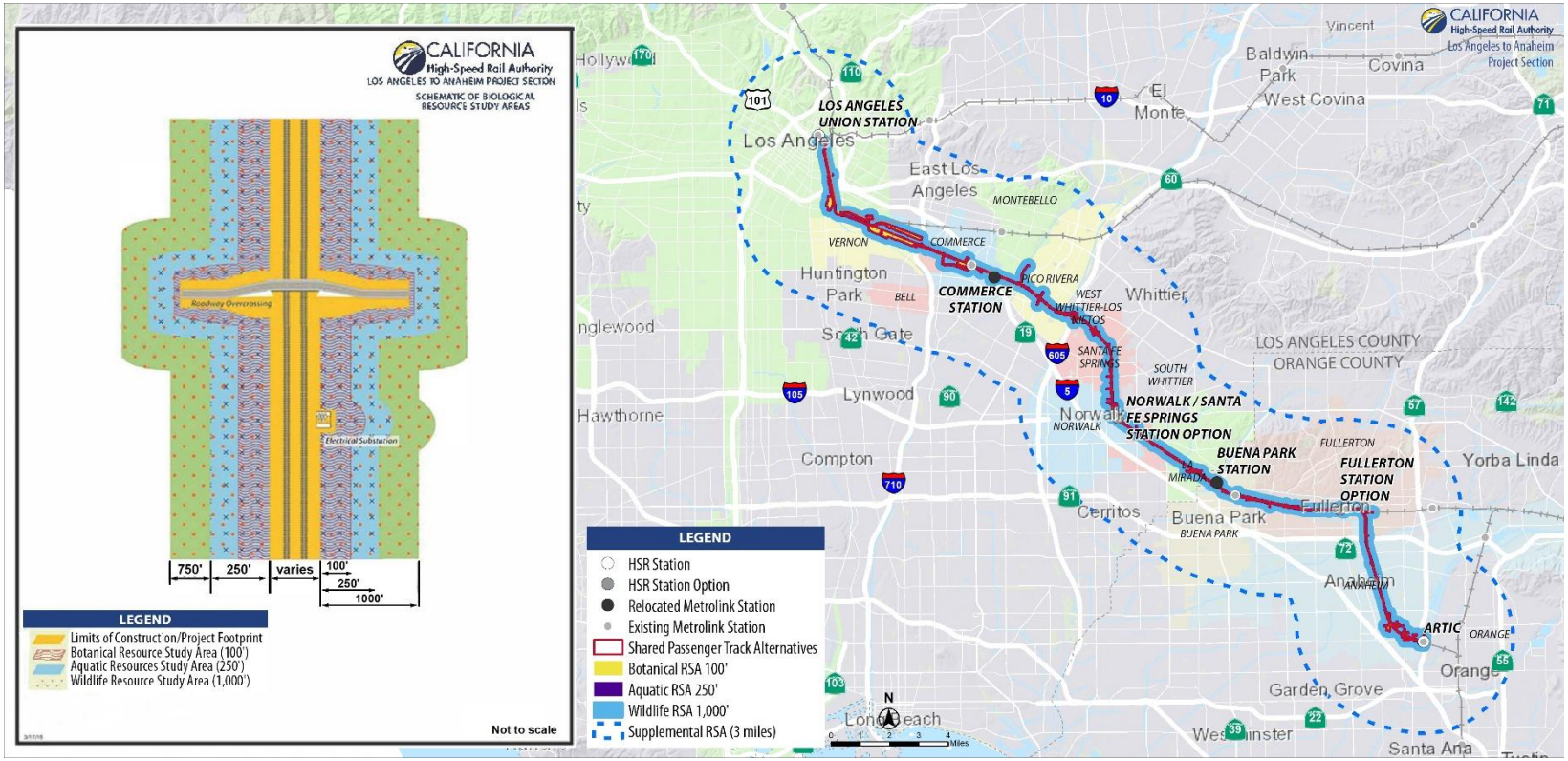
Aquatic Resource Study Area

The Aquatic RSA includes the project footprint to evaluate direct effects plus a 250-foot buffer to evaluate potential indirect effects on aquatic resources considered to fall under the jurisdiction of USACE or SWRCB, and areas subject to California Fish and Game Code Section 1600 et seq. Direct effects on aquatic resources are within the project footprint, and indirect effects are within the 250-foot buffer but outside the project footprint. The analysis conducted in the Aquatic RSA consisted of a jurisdictional delineation of potential aquatic resources and areas subject to California Fish and Game Code Section 1600 et seq.

Wildlife Resource Study Area

The Wildlife RSA includes the project footprint to evaluate direct effects plus a 1,000-foot buffer outward from the project footprint to evaluate indirect effects on habitats and the special-status wildlife species that use or have the potential to use these habitats.

The analysis conducted in the Wildlife RSA includes an evaluation of habitat within the project footprint and 1,000-foot buffer for suitability for special-status wildlife species. Where habitat was determined to be available, in some cases, focused surveys for special-status wildlife species were conducted in the Wildlife RSA.



Sources: Authority 2020; ESRI World Imagery 2024; ESRI World Streetmap 2024

Figure 3.7-1 Biological and Aquatic Resources Study Areas

Supplemental Resource Study Area

The Supplemental RSA includes the project footprint plus a buffer, which is determined by the target species and existing habitat conditions. In this case, because of the heavily urbanized nature of the project section, a Supplemental RSA of 3 miles outward from the project footprint was chosen. The analysis conducted in the Supplemental RSA includes the gathering of known biological information to determine which plant and animal species would have potential to occur in the Wildlife RSA and to conduct an analysis of potential wildlife movement corridors and migration corridors within the watershed.

3.7.4.2 Impact Avoidance and Minimization Features

The Shared Passenger Track Alternatives incorporate standardized HSR features to minimize, reduce, or avoid impacts. These features are referred to as IAMFs and are considered to be part of the project. The Authority would incorporate IAMFs during project design and construction; therefore, the analysis of impacts of the Shared Passenger Track Alternatives in this section factors in all applicable IAMFs. Appendix 2-A provides a detailed description of IAMFs that are included as part of the project design. The IAMFs differ from mitigation measures in that they are part of the project regardless of whether an impact is identified in this document. In contrast, mitigation measures may be available to further reduce, compensate for, or offset project impacts that the analysis identifies under NEPA or concludes are significant under CEQA. For ease of review, shortened versions of the IAMF names have been provided in parentheses and these short versions are used when IAMFs are discussed herein. IAMFs applicable to biological and aquatic resources for the project include:

- **BIO-IAMF#1, Designate Project Biologist, Designated Biologists, Species-Specific Biological Monitors, and General Biological Monitors (Biomonitors),** provides for the approval of qualified biological monitors (Project Biologists) through the appropriate biological regulatory agencies (as appropriate). Project Biologists will ensure that biological IAMFs and mitigation measures are implemented, as outlined in the Biological Resources Management Plan (BRMP).
- **BIO-IAMF#3, Prepare WEAP Training Materials and Conduct Construction Period WEAP Training (WEAP – Construction),** requires Worker Environmental Awareness Program (WEAP) training of construction crews by the Project Biologist prior to working in the project footprint.
- **BIO-IAMF#4, Conduct Operation and Maintenance Period WEAP Training (WEAP – O&M),** requires WEAP training of operations and maintenance (O&M) crews by the Authority prior to working in the project footprint.
- **BIO-IAMF#5, Prepare and Implement a Biological Resources Management Plan (BRMP),** requires development and implementation of the BRMP as a comprehensive document that will include a compilation of the biological resources avoidance and minimization measures applicable to the project, with project environmental plans included as appendices.
- **BIO-IAMF#6, Establish Monofilament Restrictions (Monofilament),** requires that plastic monofilament netting or similar materials will not be used as part of erosion-control activities.
- **BIO-IAMF#7, Prevent Entrapment in Construction Materials and Excavations (Entrapment),** requires excavations, trenches, holes, pipes, culverts, or similar structures that could trap animals to be sloped, screened, covered, or elevated to prevent entrapment. Project Biologists will inspect such structures for trapped animals at the start and end of each workday and prior to moving, burying, or capping such structures.
- **BIO-IAMF#8, Delineate Equipment Staging Areas and Traffic Routes (Demarcate),** requires staging areas, access routes, construction areas, and other designated areas to be flagged and marked prior to ground-disturbing activities.

- **BIO-IAMF#9, Dispose of Construction Spoils and Waste (Waste Storage),** requires excavated materials to be temporarily stored in the project footprint. Excavated materials will be returned to the original location to be used as backfill when possible. Unusable waste materials will be disposed of off site according to state and federal laws.
- **BIO-IAMF#10, Clean Construction Equipment (Equipment Cleaning),** requires equipment entering the work area to be free of mud and plant material.
- **BIO-IAMF#11, Maintain Construction Sites and BMP Training (BMPs),** requires implementation of a best management practices (BMP) field manual containing standard construction site housekeeping practices. The manual will identify BMPs for the following topics: temporary soil stabilization, temporary sediment control, wind erosion control, nonstormwater management, waste management and materials control, rodenticide use, and other general construction site cleanliness measures, including trash control and removal.
- **BIO-IAMF#12, Design the Project to Be Bird Safe (Bird Safe),** provides that, prior to final construction design, the Authority will ensure that the catenary system, masts, and other structures such as fencing, electric lines, communication towers, and facilities are designed to be bird and raptor safe in accordance with the applicable recommendations presented in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) and *Reducing Avian Collisions with Power Lines: State of the Art in 2012* (APLIC 2012).

Other resource IAMFs applicable to impacts on biological and aquatic resources include:

- **AQ-IAMF#1:** Fugitive Dust Emissions (Dust)
- **HMW-IAMF#6:** Spill Prevention (Spills)
- **HYD-IAMF#1:** Stormwater Management (Stormwater)
- **HYD-IAMF#3:** Prepare and Implement a Construction Stormwater Pollution Prevention Plan (SWPPP)
- **HYD-IAMF#4:** Prepare and Implement an Industrial Stormwater Pollution Prevention Plan (SWPPP – Industrial)

3.7.4.3 Methods for Impact Analysis

Overview of Impact Analysis

This section describes the sources and methods the Authority used to analyze potential impacts resulting from implementation of the Shared Passenger Track Alternatives on biological and aquatic resources. These methods apply to both NEPA and CEQA analyses unless otherwise indicated. Refer to Section 3.1.5.4 for a description of the general framework for evaluating impacts under NEPA and CEQA. Laws, regulations, and orders (refer to Section 3.7.2, Laws, Regulations, and Orders) that regulate biological and aquatic resources were also considered in the evaluation of impacts. For project construction and operational actions that would result in impacts, feasible mitigation measures are identified to avoid or minimize impacts or to compensate for impacts.

Potential effects on biological and aquatic resources associated with the Shared Passenger Track Alternatives were analyzed for direct effects and indirect effects consistent with definitions provided in Section 3.1. In determining the potential direct and indirect effects associated with construction and operations on biological and aquatic resources, the following assumptions were applied:

- Direct effects would occur in the project footprint (defined in Section 3.7.4.1, Definition of Resource Study Areas), which includes permanent and temporary disturbance associated with the project.

- Indirect (secondary) effects on biological and aquatic resources would occur beyond the project footprint. The RSA for indirect effects differs based on the resource type and includes a range of distances from the project footprint, based on the appropriate RSA (e.g., in the Wildlife RSA for wildlife resources and in the Botanical RSA for botanical resources).
- Direct and indirect effects would occur during both the construction and operational phases and include both temporary and permanent effects.

Direct and indirect effects on habitat from construction are considered temporary if the habitat would be fully restored to predisturbance conditions no later than 5 years following construction. Project activities and features that would result in temporary effects include construction staging and storage areas; 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 work spaces that would not be occupied by Shared Passenger Track Alternatives facilities during HSR operations. Construction activities are expected to take place over a span of up to 5 years.

Direct and indirect construction effects were considered permanent when they would have lasting effects beyond the construction phase or would not be fully restored following construction. Project activities and features that would result in permanent effects include grading, right-of-way for at-grade track segments, grade separations, stations, watercourse and waterbody (i.e., basin) crossings, road crossings, stormwater drainage facilities, electrical substations, and a light maintenance facility (LMF). To minimize the potential effect of temporal loss of native habitat, if construction activities in a work area that contains aquatic resources subject to USACE, SWRCB, or CDFW jurisdiction last longer than 5 years or if temporarily disturbed aquatic resources have not been fully restored within 5 years from the onset of disturbance, the temporary effect would be considered a permanent effect for compensatory mitigation purposes.

Anticipated permanent and temporary effects on biological and aquatic resources are presented both quantitatively (e.g., acreage, linear feet) and qualitatively (e.g., reduction in habitat quality from the introduction of invasive species, siltation in aquatic resources because of dust). Because desktop analysis and observations from public rights-of-way were often used in lieu of biological surveys, the presence of special-status species is assumed in the absence of surveys where suitable habitat is present. Accordingly, this analysis provides conservative estimates of the magnitude and severity of effects on special-status species.

Investigations and Consultation with Resource Agencies

The Authority reviewed existing background information to identify potential biological and aquatic resources within the RSAs. The following sections describe the investigation, literature review, and coordination completed for each resource category. Background information reviews continued from 2007 through June of 2025.

Vegetation Communities and Land Cover Types

The botanical, aquatic, and Wildlife RSAs were visually assessed in Google Earth Pro (initially in 2016 and updated in 2024, imagery date 2023) (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024) to create a detailed vegetation community and other land cover type map that could be field verified (May 2016, December 2016, and April 2017). The Wildlife RSA also encompasses the aquatic and Botanical RSAs. When vegetation communities and land cover types are discussed, the RSA associated with those discussions is referred to as the Wildlife RSA, because vegetation communities were mapped to the same extent as the Wildlife RSA.

The goals of vegetation mapping and therefore the methodology used to conduct the vegetation mapping in each RSA were sometimes different, as discussed below.

Botanical Resource Study Area

- **Methodology:** Vegetation communities (alliances) were mapped according to *A Manual of California Vegetation,* Second Edition (Sawyer et al. 2009). When an alliance name could not

suitably represent a land cover type, applicable to urban/disturbed habitats, a standard description for such habitats was used.

- **Goals:** Botanical habitat mapping was conducted to (1) identify suitable habitat for special-status plant species and (2) map vegetation observed to quantify direct effects on special-status plant species and habitat types in the Botanical RSA (vegetation mapping extended to the edge of the Wildlife RSA, which encompasses the Botanical RSA).

Aquatic Resource Study Area

- **Methodology:** Vegetation communities and other land cover types in the Aquatic RSA were mapped and classified consistent with mapping conducted in the Wildlife and Botanical RSAs. Specifically, vegetation communities were classified according to the system described in *A Manual of California Vegetation* (Sawyer et al. 2009). In cases when a land cover could not be suitably represented by an alliance name, applicable to urban/disturbed habitats, an appropriate description was created.
- **Goals:** Vegetation mapping and classification were conducted to satisfy application requirements for CWA Section 404, CWA Section 401, Porter-Cologne, and California Fish and Game Code Section 1600 et seq., including compliance with agency protocols and guidance, where applicable.

Wildlife Resource Study Area

- **Methodology:** Vegetation communities in the Wildlife RSA were mapped in the same manner as described for the Botanical RSA.
- **Goals:** Vegetation mapping was conducted in the Wildlife RSA to (1) identify suitable habitat for special-status wildlife species and (2) quantify direct effects on special-status wildlife species based on habitat mapping. No minimal mapping unit was used to map suitable wildlife habitat, because “patch” sizes were determined based on the potential for target species to use the habitat given the surrounding land uses and known behavior.

Special-Status Plants

A list of special-status plant species known to occur or potentially occurring in the Botanical RSA was generated based on review of existing databases during the literature review. Database queries for special-status plant species included reported occurrences in the Supplemental RSA or in nine U.S. Geological Survey (USGS) 7.5-minute quadrangles (Hollywood, Los Angeles, South Gate, El Monte, Whittier, Los Alamitos, La Habra, Anaheim, and Orange) that overlap with the Shared Passenger Track Alternatives. Database sources and search criteria consisted of the following:

- A list was generated by the USFWS (Information for Planning and Consultation System) website of federal candidate, proposed, threatened, and endangered plant species for the Supplemental RSA. The list was generated on December 20, 2023 (USFWS 2023).
- The CNDDB RareFind 5 database was searched (standard USGS quadrangle search as described above) using the RareFind program (CDFW 2024a) and a manual geographic information system (GIS) mapping process of occurrences in the Supplemental RSA was conducted.
- The CNPS Online Inventory of Rare and Endangered Plants of California was reviewed for special-status plant species using the standard USGS quadrangle search (as described above) (CNPS 2024a), as was the CNDDB State and Federally Listed Endangered and Threatened Plants of California (CDFW 2024b).
- Wildlife and botanical surveys previously conducted in the Supplemental RSA (or in important habitat areas adjacent to the Supplemental RSA) were reviewed to determine habitat use by special-status plants and wildlife in and directly adjacent to the Supplemental RSA.
- CDFW’s state vegetation classification system, VegCAMP (Vegetation Classification and Mapping Program) (CDFW 2023), was reviewed.

- CNPS Vegetation Program Natural Communities rankings (CNPS 2024b) were reviewed.
- CDFW Special Vascular Plants, Bryophytes, and Lichens list (CDFW 2024c) was reviewed.

As a part of the desktop analysis, the Botanical RSA was visually assessed in Google Earth Pro in 2016, 2017, and 2023 (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024) to assess where potential habitat would exist for special-status plants. This assessment was used to determine which areas were needed to field verify if habitat was present.

The California Rare Plant Ranking System categorizes degrees of concern for rare plants. Plants with a California Rare Plant Rank (CRPR) of 1A (presumed extirpated in California and either rare or extinct elsewhere), 1B (rare, threatened, or endangered in California or elsewhere), 2A (presumed extirpated in California, but common elsewhere), and 2B (rare, threatened, or endangered in California but more common elsewhere) must be analyzed during the preparation of CEQA documents (CNPS 2024a).

Special-Status Wildlife

A list of special-status wildlife species known to occur or potentially occurring in the Wildlife RSA was generated based on existing databases during the literature review. Database queries included reported occurrences in the Supplemental RSA or potentially in the relevant USGS 7.5-minute quadrangles. Database sources and search criteria consisted of the following:

- The Information for Planning and Consultation System online database of federal candidate, proposed, threatened, and endangered wildlife species was reviewed. The list was generated on December 20, 2023 (USFWS 2023).
- The CNDDB RareFind 5 database (standard USGS quadrangle search, as described above) was conducted using the RareFind program (CDFW 2024a) along with a manual GIS mapping process of occurrences in a 3-mile radius of the project.
- The CDFW Special Animals List, August (CDFW 2024d), and the CNDDB State and Federally Listed Endangered and Threatened Animals of California (CDFW 2024e) were reviewed.
- eBird—a real-time, online checklist program launched in 2002 by the Cornell Lab of Ornithology and National Audubon Society that provides a data source for bird abundance and distribution—data for bird abundance and distribution in the Supplemental RSA were reviewed (eBird 2024); eBird data can be lacking in location accuracy, because locations are much more generalized than in the CNDDB.
- Published scientific studies of wildlife surveys in the Supplemental RSA were reviewed.

As a part of the desktop analysis, the Wildlife RSA was visually assessed in Google Earth Pro in 2016, 2017 and 2023 (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024) to determine where potential habitat would exist for special-status wildlife. This assessment was used to determine where field verification was required.

Aquatic Resources

As a part of the desktop analysis, desktop investigations of potentially jurisdictional aquatic resources consisted of reviewing the following publicly available resources in the Aquatic RSA:

- USGS 7.5-minute topographic quadrangles occurring in the Aquatic RSA (i.e., Los Angeles, South Gate, Whittier, La Habra, Anaheim, and Orange [USGS 2015, 2024a])
- National Wetlands Inventory maps (USFWS 2016, 2024b)
- National Hydrography Dataset (USGS 2016, 2024b)
- CNDDB Biogeographic Information and Observation System (CDFW 2016, 2024a)
- U.S. Department of Agriculture/Natural Resources Conservation Service Soil Survey Map Units (USDA/NRCS 2011, 2016a, 2016b, 2024a, 2024b)

- Google Earth Pro aerial photographs (February 2016 to September 2024) (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024)
- Climate and precipitation data (WRCC 2016a, 2016b, 2024a, 2024b)

Refer to the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a) for a detailed description of (remote) mapping methods for potential wetland and nonwetland waters of the U.S. and state, and areas potentially subject to California Fish and Game Code Section 1600 et seq.

Habitats of Concern

Special-Status Natural Communities

Special-status natural communities occurring in or with potential to occur in the Botanical RSA or Supplemental RSA were identified based on a review of the following data sources during the literature review:

- Project-specific vegetation mapping and characterization were reviewed using aerial imagery Google Earth Pro aerial photographs (February 2016 to October 2023) (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024).
- A CNDDB RareFind 5 query was conducted for special-status natural communities (standard quadrangle search) using the RareFind program along with a manual GIS mapping exercise of occurrences in the Supplemental RSA (CDFW 2024a).
- CDFW evaluates natural communities according to NatureServe's Heritage Methodology, and natural communities are assigned ranks. Natural communities with ranks of S1 to S3 are considered Sensitive Natural Communities and are to be addressed during the CEQA process and its equivalents (CDFW 2023). During vegetation mapping, any natural communities in the Wildlife RSA with ranks of S1 to S3 were identified. Impact acreages (temporary and permanent) were calculated for impacts on sensitive natural communities.
- Vegetation in the Botanical RSA was mapped according to *A Manual of California Vegetation* (Sawyer et al. 2009). Vegetation communities with a rank of S1 to S3 are Sensitive Natural Communities and were evaluated as Special-Status Natural Communities (CNPS 2024b).

Riparian Areas

A jurisdictional delineation was completed in the Aquatic RSA. Riparian areas were mapped according to those areas regulated by the California Fish and Game Code as the transitional areas between terrestrial and aquatic ecosystems.

Critical Habitat

Federally designated or proposed critical habitat occurring in the quadrangle search around the project section was generated and mapped (USFWS 2024a) in the Supplemental RSA.

Essential Fish Habitat

The Wildlife RSA was evaluated for the presence of habitats essential to the life history of commercially managed fish species (marine and anadromous). The NOAA Fisheries Essential Fish Habitat Mapper (NOAA Fisheries 2023) was reviewed for essential fish habitat and Habitat Areas of Particular Concern in the Supplemental RSA. In addition, CNDDB records for special-status fish species in the Supplemental RSA were reviewed and evaluated (CDFW 2024a).

Conservation Areas

In the Supplemental RSA, searches were conducted for known HCPs, NCCPs (USFWS 2024c), public lands that are refuges or ecological reserves, and conservation or mitigation banks. These searches were completed using known databases such as the USFWS Environmental Conservation Online System (USFWS 2024c), viewing Google Earth Pro (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024) for potential refuges or mitigation banks, and conducting searches of public lands.

Wildlife Movement Corridors

The evaluation of wildlife movement corridors was conducted in the Supplemental RSA based on the Beier and Loe (1992) "checklist" for evaluating corridors. The checklist includes (1) identification of the habitat areas the corridor would connect, (2) determination of the species that would use the corridor, (3) evaluation of the needs of the species that would use the corridor, (4) evaluation of how well the area would accommodate the movement of species, and (5) mapping of the corridor.

The following data sources were used to document the occurrence of wildlife movement corridors in the Supplemental RSA:

- The South Coast Missing Linkages: A Wildland Network for the South Coast Ecoregion (South Coast Wildlands 2008)
- *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California* (Spencer et al. 2010)
- Google Earth Pro aerial photographs (May 1994 to February 2024) (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024)
- CDFW Biogeographic Information and Observation System data from the California Essential Habitat Connectivity project (www.wildlife.ca.gov/Data/BIOS) (CDFW 2024f) to identify interstate connections, natural landscape blocks, and essential connectivity areas (Spencer et al. 2010; Bennett 2003)
- Review of published scientific wildlife surveys in the Supplemental RSA (and adjacent areas)

Protected Trees

Authority biologists reviewed county and city ordinances and codes to identify the requirements for protected trees, as well as available general plans and HCPs as described in the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).

Field Surveys

Field surveys for special-status plants, special-status wildlife, special-status natural communities, aquatic resources (USACE, SWRCB, and CDFW), and habitats of concern were completed between May 2007 and April 2017. The following sections describe the nature and timing of these field surveys.

Reconnaissance-Level Biological Field Surveys

Reconnaissance-level biological field surveys were conducted from May 2007 through February 2010; in August 2010; in June 2015; in February, August, and December 2016; and in April 2017 for the project. Site reconnaissance surveys were conducted to assess habitat for wildlife and plants from the public right-of-way and where access was granted. The accuracy of presurvey (desktop) vegetation mapping was also confirmed during field surveys and refined where necessary based on observations in the field.

Most land cover in the Wildlife RSA does not support biological or aquatic resources because of the highly urbanized nature of the Los Angeles basin and such areas were excluded from further evaluation during the desktop analysis. There are 13,318 parcels in the Wildlife RSA. More than 95 percent of the Wildlife RSA is urbanized; 99.76 percent of the permanent effects of the project would occur on urban land cover types. Based on the desktop analysis, 109 parcels were surveyed for biological and aquatic resources. A habitat assessment from the public right-of-way was conducted at 67 parcels, and the remaining 42 parcels were physically accessed for surveys. At one parcel, a special-status species has been presumed present because of lack of permission to access the site.

Vegetation Communities and Land Cover Type Mapping

Vegetation mapping included a presurvey (desktop) assessment of aerial photographs that informed the field surveys that occurred in June 2015, October 2015, February 2016, March 2016, August 2016, December 2016, and April 2017. Vegetation communities and land cover types were field verified from areas where access was granted and from public right-of-way where access was not feasible. Mapping of vegetation communities and land cover types was conducted by means of meandering transects (when access was available) and driving throughout the Botanical RSA to vantage points that allowed for an expansive view of the vegetation communities using binoculars.

Vegetation communities were classified according to the vegetation classification system described in *A Manual of California Vegetation* (Sawyer et al. 2009; CNPS 2024b). In cases when a land cover could not be suitably represented by an alliance name, applicable to urban/disturbed habitats, an appropriate description was created.

Botanical/Special-Status Plant Surveys

Field surveys were performed to verify existing habitats in areas of the Botanical RSA that had suitable habitat for botanical resources. Surveys were completed in June 2015, October 2015, February 2016, March 2016, August 2016, December 2016, and April 2017. The need for an evaluation to determine habitat suitability for special-status plants was based on the species' range, the presence of known occurrences near the Botanical RSA, analysis of aerial photographs, and the presence of potential habitat (including suitable soils) in the Botanical RSA.

During reconnaissance field surveys, the Authority evaluated habitat to determine potential for special-status plant species. Focused surveys for special-status plant species were not conducted.

Biologists evaluated habitat from the public right-of-way to determine potential for special-status plant species to occur. During the site visits, it was determined that, given the lack of native soils in the few remaining areas with intact habitat, special-status plants should be presumed absent in surveyed areas. In limited areas access was not possible and, based on aerial information, the potential for special-status plant species could not be ruled out. In these rare cases, special-status plant species were presumed present. Habitat mapping for special-status plants was based on the combined desktop analysis and field surveys.

Wildlife Habitat Assessment

The wildlife habitat assessment was conducted by driving in areas where the desktop analysis revealed limited potential for biological resources and walking along existing public right-of-way wherever potential habitat was mapped during the desktop analysis. Field verification was as thorough as possible given access constraints. Vegetation mapping and verification were completed during these field visits and, where suitable habitat was present for special-status species, it was mapped during this exercise. The presence of special-status wildlife species had to be presumed in these areas because focused surveys to determine if species were absent were not possible given the lack of access.

Field verification occurred in those areas that preliminarily had potential habitat for special-status wildlife. Field surveys were conducted in the Wildlife RSA where access was available and, where access was limited, by using binoculars in June 2015, October 2015, February 2016, March 2016, August 2016, December 2016, and April 2017.

Mapping of suitable habitat was performed considering existing site conditions (based on site visits) and aerial and satellite imagery. Known habitat requirements for species were used to both include and eliminate mapped habitat (as appropriate). Included in this assessment were known species ranges and sensitivities to *edge effects* (nearness to unsuitable habitat areas), among other factors. This information was used to form the basis of the habitat mapping.

Wildlife Movement Corridor Assessment

Field survey methodology for wildlife movement/migration corridors included assessing the functionality of corridors identified during the desktop analysis in the Supplemental RSA. The assessment included the evaluation of habitat quality and signs of wildlife use. Items such as physical barriers to dispersal (such as areas devoid of cover depending on the wildlife species, or high-traffic roadways), human activities that would preclude or reduce animal movement (such as large areas that are heavily urbanized with no vegetative cover for small to medium mammals), areas with ongoing light or noise disturbance (such as heavy industrial areas), and other factors were included in this assessment.

The effect of the disturbance is dependent on the species or wildlife group being evaluated for the potential to use the wildlife corridor. Functional wildlife movement at the landscape level requires different corridor types with different crossings because of the variability in requirements for different species and groups of species. For instance, small mammals would prefer to use wildlife crossings that are short culverts in a wildlife corridor, whereas mule deer prefer large, open bridges with a clear line of sight. Mountain lions prefer larger crossings and areas with cover, so when they occur in washes, they prefer areas with shrubs or trees for cover. Given the option, mountain lions prefer to travel along ridgelines rather than in low-lying areas. In the field, wildlife movement corridors were evaluated for functionality and habitat quality in the Wildlife RSA, and the information gathered from the Wildlife RSA was extrapolated to the Supplemental RSA using aerial photographs and GIS information.

Special-Status Wildlife and Plant Species Protocol/Focused Surveys

Bat roost surveys were conducted in accessible areas in August 2010. During this survey, biologists evaluated the accessible undersides of bridges and inside of culverts in the project Wildlife RSA for the presence or signs of bats such as guano, urine staining, smell, and piles of insect remains. An Anabat II bat detector was used to acoustically evaluate the presence of bats at the potential roost sites. Bat surveys designed to determine whether special-status bats were present in the Wildlife RSA were not performed because of the extreme difficulties associated with (1) the length of the Wildlife RSA, (2) the variety of habitats in which the special-status bats would be present, and (3) the difficulty in designing a survey that would adequately capture the species present, because some species are difficult to detect acoustically and with mist nets. Instead, presence of special-status bats is assumed.

No other wildlife surveys (including protocol surveys) were conducted for the project. No suitable habitat for federally or state-listed species (including nesting habitat for avian species) is present in the Wildlife RSA. Suitable habitat for nonlisted special-status species is present, but these habitats are small and fragmented.

Clean Water Act Sections 404/401 Wetland and Nonwetland Field Delineation Methods

Maps prepared under the remote assessment for the Shared Passenger Track Alternatives were field verified from areas where access was granted and from public right-of-way where access was not feasible. Where access was granted, additional fieldwork was conducted to further document the location, type, and extent of potentially jurisdictional aquatic resources. In these circumstances, a handheld global positioning system unit with sub-meter accuracy was used to map the extents of observed wetland and nonwetland aquatic resources. In circumstances where access was not feasible, binoculars were used within public rights-of-way to identify plant species composition and estimate cover for the various applicable vegetation stratum plots (tree, shrub, herb, and vine). Representative photographs of accessible features (including from public right-of-way) were taken to document physical characteristics.

Potentially jurisdictional nonwetland aquatic resources in the Aquatic RSA were delineated in the field using the methods described in *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (Lichvar and McColley 2008) and USACE's *Regulatory Guidance Letter No. 05-05: Ordinary High Water Mark Identification* (USACE 2005), where appropriate. These guidance materials provide an approach for identifying the lateral limits of nonwetland waters based on remote aerial imagery, stream geomorphology,

and vegetation communities (Lichvar and McColley 2008). In circumstances where access was not feasible, binoculars were used within public rights-of-way to identify ordinary high-water mark indicators, estimate ordinary high-water mark widths, and identify plant species composition. Boundaries were mapped as polygons using a global positioning system unit, aerial imagery interpretation, or a combination thereof.

Potentially jurisdictional wetland aquatic resources in the Aquatic RSA of the Shared Passenger Track Alternatives were delineated in the field using the methods described in *Corps of Engineers Wetlands Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b), the National Wetlands Inventory (USFWS 2016), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). These jurisdictional aquatic resource categories are based on vegetative growth form (e.g., herbaceous, emergent, shrub) and hydrogeomorphic category (e.g., riverine, basin), with the exception of built watercourses.

In addition, wetland plant indicator status was based on *Arid West 2016 National Wetland Plant List* (Lichvar et al. 2016) and hydric soils indicator status was based on *Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils, Version 8.2* (USDA/NRCS 2018). Soil chromas were identified in the field according to *Munsell Soil-Color Charts with Genuine Munsell Color Chips* (Munsell Color 2015) and using protocols per *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b). Under certain circumstances, morphologic characteristics normally found in hydric soils may not be visible for certain “problematic” categories of hydric soils (e.g., riverwash) because of prevailing environmental conditions (USACE 2008b).

Similar to the delineation of potentially jurisdictional nonwetland aquatic resources, boundaries of potentially jurisdictional wetlands were mapped as polygons using a global positioning system unit, aerial imagery interpretation, or a combination thereof. Landforms, vegetation, soil characteristics, and hydrology indicators were recorded for each sample point on USACE Wetland Determination Data Forms, Arid West Region (version 2.0) (USACE 2008a:121–122). For large complexes of features, or features exhibiting similar characteristics, paired points were recorded at representative features but not at each individual feature. Wetland boundaries were extrapolated by following topographic contours, wetland vegetation boundaries, and clear hydrologic boundaries. Aquatic features exhibiting both wetland hydrology indicators and hydrophytic vegetation were assumed to also contain hydric soils and therefore were considered jurisdictional wetlands. Wetland hydrology was determined based on visual observation (where feasible), aerial photo interpretation, topography, landscape position, and best professional judgment.

A field verification of delineated features in the Aquatic RSA was conducted with the USACE Los Angeles District on August 16, 2017. On July 31, 2018, USACE issued a Preliminary Jurisdictional Determination for the project stating that, on review of the mapped aquatic resources, waters of the U.S. may be present on this component in the locations identified by the Authority.

Porter-Cologne Water Quality Control Act Wetland and Nonwetland Field Delineation Methods

Potentially jurisdictional nonwetland waters of the state in the Aquatic RSA regulated under Porter-Cologne were delineated based on the definitions for nonwetland waters of the U.S. set forth under Section 404 of the CWA (33 CFR Part 328) and the USACE technical criteria for nonwetland waters of the U.S. (ordinary high-water mark).

Potentially jurisdictional state wetlands in the Aquatic RSA regulated under Porter-Cologne were delineated using the methods described in *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019), supplemented by *USACE Wetlands Delineation Manual* (USACE 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008b) (refer to Section 3.7.1.1, Definition of Resources).

Based on review of the resources that meet the definitions provided in Section 3.7.1.1, the location, type, and extent of aquatic resources considered nonwetland and wetland waters of the state regulated under Porter-Cologne and aquatic resources considered nonwetland and wetland waters of the U.S. regulated under the CWA are the same in the Aquatic RSA and therefore are not described separately in Section 3.7.5 and Section 3.7.6.

California Department of Fish and Wildlife California Fish and Game Code Section 1600 et seq. Field Delineation Methods

Potentially jurisdictional rivers, lakes, streambeds, and associated riparian vegetation in the Aquatic RSA regulated under California Fish and Game Code Section 1600 et seq. were delineated based on CDFW standard practices and the professional judgment of qualified staff biologists. Areas subject to Section 1600 et seq. jurisdiction were delineated by measuring the outer width and length boundaries of potentially jurisdictional areas, consisting of either the top-of-bank measurement or the extent of associated riparian vegetation, whichever was greatest.

Because of the heavily urbanized nature of the project section, the margins of channel and basin features were well defined and associated riparian vegetation did not extend beyond the tops of banks. The limits of aquatic resources subject to California Fish and Game Code Section 1600 et seq. notification requirements were clearly distinguished from other areas. In circumstances where access was not feasible, binoculars were used within public rights-of-way to estimate widths and lengths, identify plant species composition, and estimate cover for the various applicable vegetation stratum plots (tree, shrub, herb, and vine). In the Aquatic RSA, associated riparian vegetation occurs in wetlands (freshwater emergent wetland, freshwater forested/shrub wetland) as well as nonwetland (riverine) conditions. Accordingly, associated riparian vegetation falls within either the “riverine” or the “freshwater emergent marsh” jurisdictional aquatic resource category, depending on the hydrologic, geomorphic, soils, and vegetative conditions.

3.7.4.4 Method for 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:** For the analysis of impacts on biological and aquatic resources, the *context* would be the existing resources within the RSAs: the status of sensitive communities and species that occur or could occur along the project section; the status of aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction within the project section; and the regulatory setting pertaining to biological and aquatic resources.
- **Intensity:** For the analysis of impacts on biological and aquatic resources, the *intensity* or severity of an impact would reflect the magnitude of the change between the existing and projected conditions—specifically, the degree to which construction and operations of the project could affect these resources, as well as the duration of the effect (temporary, permanent, or intermittent).

3.7.4.5 Method for Determining Significance 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 threshold-based impact analysis. Under CEQA, significant impacts are determined by evaluating whether project impacts would exceed the significance threshold established for the resource (Section 3.1.5.4). The Authority is using the following thresholds to determine if a significant impact on biological and aquatic resources, including areas subject to California Fish and Game Code Section 1600 et seq., would occur as a result of the Shared Passenger Track Alternatives. Based on the State CEQA Guidelines, the project would have a significant impact on biological and aquatic resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS
- Have a substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS
- Have a substantial adverse effect on state or federally protected wetlands (including but not limited to marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, indirect or cumulative effects, or other means
- Interfere substantially with the movement of a native resident or migratory fish or wildlife species or with established native resident or migratory wildlife movement corridors, or impede the use of native wildlife nursery sites
- Conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance
- Conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, state, or federal HCP

As discussed above, biological and aquatic resources are regulated by multiple agencies at all levels of government, and there are numerous statutes and regulations that are intended to avoid or minimize impacts on biological resources. Where local governments have developed policies or ordinances for the protection of biological resources within their jurisdictions, a conflict with the policy or ordinance would indicate the potential for a significant impact. Similarly, a conflict with an adopted HCP, NCCP, or other approved local, regional, state, or federal HCP would indicate the potential for a significant impact because NCCPs and HCPs are adopted specifically for the protection of biological resources. Conversely, where there is no conflict with a local policy or ordinance, NCCP, or HCP, that would indicate that the project would not result in a significant impact related to the resources that are protected by the policy, ordinance, or plan.

Mandatory findings of significance in State CEQA Guidelines Section 15065 require the lead agency to determine whether a project may have a significant effect on the environment where substantial evidence indicates that negative impacts on biological or aquatic resources may occur. The negative conditions are defined as (1) the project has the potential to substantially degrade the quality of the environment, reduce habitat of wildlife species, cause wildlife populations to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce or restrict the range of an endangered, rare, or threatened species; (2) the project has the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals; and (3) the project has environmental effects that are individually limited but cumulatively considerable. Under CEQA's mandatory findings of significance, the project would result in a significant impact on biological resources if it would:

- Substantially reduce the habitat of a fish or wildlife species
- Cause a fish or wildlife population to drop below self-sustaining levels
- Threaten to eliminate a plant or animal community
- Substantially reduce the number or restrict the range of an endangered, rare, or threatened species

General indicators of significance, based on guidelines or criteria in NEPA, CEQA, CWA, CESA, FESA, and regulatory guidance from the FRA, include:

- Potential modification or destruction of habitat, movement corridors, or breeding, feeding, and sheltering areas for endangered, threatened, rare, or other special-status species
- Potential measurable degradation of protected habitats, sensitive vegetation communities, wetlands, or other habitat areas identified in plans, policies, or regulations

- Potential loss of a substantial number of a species that could affect the abundance or diversity of that species beyond the level of normal variability
- Potential indirect impacts, both temporary and permanent, from excessive noise that elicit a negative response and avoidance behavior

3.7.5 Affected Environment

This section describes the affected environment for the biological and aquatic resources in the RSAs. This information provides the context for the environmental analysis and evaluation of impacts.

A summary of issues and concerns from public outreach efforts can be found in Chapter 9, Public and Agency Involvement, including comments about biological resources affected during construction, Lake and Streambed Alteration Agreement requirements, nesting birds and bat species impacts, waterbodies and their tributaries impacts, and aquatic and nonaquatic resources impacts.

3.7.5.1 Vegetation Communities and Land Cover Types

Most of the lands in the Wildlife RSA are developed. The Wildlife RSA encompasses the Botanical and Aquatic RSAs, and vegetation mapping occurred in the Wildlife RSA, so this discussion applies to the Wildlife RSA. Urban areas in the Wildlife RSA include (from north to south) the cities of Los Angeles, Vernon, Bell, Commerce, Montebello, and Pico Rivera; unincorporated Los Angeles County (West Whittier); and the cities of Santa Fe Springs, Norwalk, La Mirada, Buena Park, Fullerton, Anaheim, and Orange.

The Supplemental RSA is in the South Coast subregion of the California Floristic Province's Southwestern California region. This subregion extends along the Pacific Coast from Point Conception to Mexico. Historically, coastal sage scrub and chaparral vegetation characterized this subregion (Jepson Flora Project 2015). The Supplemental RSA is in the Los Angeles basin, bounded by the Santa Monica Mountains and Puente Hills to the north, the Santa Ana Mountains and San Joaquin Hills to the east and south, and the Palos Verdes Peninsula along the coast. The project section falls in a heavily urbanized and industrialized portion of the Los Angeles basin, in the northernmost portion of the Peninsular Ranges Geomorphic Province. Elevation in the Wildlife RSA ranges between 82 and 292 feet above mean sea level.

Over 95 percent of the lands within the Supplemental RSA has been developed. The Wildlife, Botanical, and Aquatic RSAs are highly disturbed by prior development. The only remaining natural areas are the rivers, which are being disturbed by recurrent flood-control maintenance activities and are being constrained by adjacent development. Where riparian habitat is present in the rivers, it is often degraded, fragmented, and constrained by nonnative, invasive vegetation.

Flood-control activities in the rivers in the Wildlife RSA include the removal of vegetation and shoaling for concrete-lined channels (e.g., Los Angeles River), mowing or grading of earthen berms, herbicide application and hand-removal of weedy vegetation associated with earthen-bottom channels for aquifer recharge (e.g., Santa Ana River), and annual soil tilling for optimal percolation for sediment-lined areas (e.g., spreading grounds such as the Rio Hondo). Urban encroachment into the river corridors is common and includes bridges over the rivers, adjacent housing and commercial uses, recreational uses such as bike/jogging paths, and homeless encampments.

Eight vegetation communities and six land cover types were identified in the Wildlife RSA. Vegetation communities included eucalyptus – tree of heaven – black locust woodland seminatural alliance, wild oats and annual brome grasslands seminatural alliance, hardstem (*Schoenoplectus acutus*) and California bulrush marsh herbaceous alliance, mulefat thickets shrubland alliance, cattail marshes herbaceous alliance, Goodding's willow – red willow riparian woodland and forest, duckweed blooms and relatives' provisional herbaceous alliance, and salt grass flats herbaceous alliance. Land cover types include open water, unvegetated channel, developed, barren, disturbed/ruderal, and ornamental (Table 3.7-3).

Vegetation communities and land cover types observed in the Wildlife RSA are mapped in the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a) according to the vegetation classification system described in *A Manual of California Vegetation* (Sawyer et al. 2009). Corresponding jurisdictional aquatic resources categories, as defined by *Corps of Engineers Wetland Delineation Manual* (USACE 1987), USFWS's National Wetlands Inventory (USFWS 2016, 2024b), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979), are provided at the end of each subsection where applicable. These jurisdictional aquatic resource categories are based on vegetative growth form (e.g., herbaceous, emergent, shrub) and hydrogeomorphic category (e.g., riverine, basin), except for built watercourses. A comparison of these different classification systems is provided in Table 3.7-3.

The vegetative cover in the Wildlife RSA is composed mainly of urban areas consisting of developed land cover including residential, commercial, industrial developments with railways, highways, and paved/unpaved roads. Other urban areas present in the Wildlife RSA include disturbed/ruderal land cover that consist of "weedy" areas such as open fields; ornamental land cover consisting of landscaping associated with parks, commercial buildings, and roadsides; and barren land cover, being devoid of vegetation (Table 3.7-3).

Ornamental land cover can include biological resources such as protected trees, nesting bird habitat, and habitat for some special-status wildlife. Ornamental land cover was observed in many areas, but some areas of note include Independence Park (Fullerton), Amerige Park (Fullerton), Fullerton Pooch Park, Adlena Park (Fullerton), Neff Historical Park (La Mirada), and John Zimmerman Park (Norwalk). Disturbed/ruderal land cover can provide habitat for biological resources such as nesting birds and for some special-status wildlife such as Burrowing Owl (*Athene cunicularia*) and Loggerhead Shrike (*Lanius ludovicianus*). Disturbed/ruderal land cover was observed rarely, but some areas of note included areas adjacent to the San Gabriel River, an area next to John Zimmerman Park (Norwalk), and the Fullerton Municipal Airport.

Natural and seminatural vegetation communities are uncommon in the Wildlife RSA. Seminatural areas were often found in association with aquatic features such as rivers, built watercourses, and basins (e.g., spreading grounds, detention basins), with natural vegetation communities only being found in aquatic features.

In the Wildlife RSA, upland habitats that are considered seminatural habitats that were observed include eucalyptus – tree of heaven – black locust woodland seminatural alliance and wild oats and annual brome grasslands seminatural alliance (Table 3.7-3). Neither of these habitat types include mainly native species. Large areas of annual brome grassland were identified in the Rio Hondo spreading grounds, the San Gabriel River, and surrounding open water at the Raymond Basins. Eucalyptus – tree of heaven – black locust woodland was identified on the east side of the San Gabriel River.

The only habitat types in the Wildlife RSA that were observed to contain primarily native species were natural vegetation communities observed in aquatic habitats. These included hardstem and California bulrush marsh herbaceous alliance, mulefat thickets shrubland alliance, cattail marshes herbaceous alliance, Goodding's willow – red willow riparian woodland and forest alliance, duckweed blooms and relatives' provisional herbaceous alliance, and salt grass flats herbaceous alliance. Riverine areas were observed and included open water and unvegetated channel. Aquatic vegetation communities were observed in the Wildlife RSA at the following locations: Los Angeles River (duckweed blooms), Rio Hondo spreading grounds (mulefat thickets, Goodding's willow – red willow riparian woodland and forest), the San Gabriel River (hardstem and California bulrush marsh, mulefat thickets, Goodding's willow – red willow riparian woodland and forest, and salt grass flats), La Mirada Creek (cattail marsh and duckweed blooms), Raymond Basin (open water), Lakeside Community Lake (open water), and Brea Creek (duckweed blooms).

Riparian and riverine habitats are associated with one another, with riparian habitats usually occurring adjacent to riverine areas. Riverine habitats can also be found contiguous to lacustrine (lakes) and fresh emergent wetland habitats. The riverine habitats of duckweed blooms and

unvegetated channels are associated with rivers in the Aquatic RSA. From a wildlife perspective, the open water zones of the rivers (riverine) provide resting and escape areas for waterfowl, with gulls, terns, osprey, and Bald Eagles hunting over open waters. Near-shore waters provide food for waterfowl, herons, shorebirds, and insectivorous birds such as swallows, swifts, and flycatchers finding their prey over water.

Descriptions of the vegetation communities and land cover types observed in the Wildlife RSA are provided in Table 3.7-3. Included in this table is the California sensitive natural community state rarity (CDFW 2023). Hardstem (*Schoenoplectus acutus*) and California bulrush marsh herbaceous alliance and Goodding's willow – red willow riparian woodland and forest are California sensitive natural communities with state rankings of S3S4 and S3, respectively (CDFW 2023). Natural communities with a state ranking of 1 through 3 are considered sensitive.

Native upland communities were not observed in the Wildlife RSA. Limited upland communities are present to provide habitat for wildlife. The aquatic communities that are present are under pressure from many sources such as ongoing human disturbance, invasive species, and development pressures. In some cases, such as in the San Gabriel River, the seminatural upland community provides a buffer for the aquatic community, but in general upland communities were lacking, with aquatic communities rarely having a functioning adjacent upland community. In other cases, the river system was entirely riverine, with no adjacent upland community, such as the Los Angeles River and the Santa Ana River.

Because of the loss of biological resources and the intense developmental pressures, the habitat fragments associated with the aquatic features are the only remaining plant and wildlife habitat refuges in the region. These fragments contain individual plants and seed banks able to colonize the surrounding habitat. Because of the linear nature of rivers, they can provide long, linear connections of suitable habitat, including habitat suitable for special-status species, such as avian species requiring riparian habitats. In some cases, these areas are devoid of riparian vegetation but do provide adjacent upland areas for burrowing and open forage for special-status species such as Burrowing Owls.

Table 3.7-3 Riparian Habitat, Vegetation Communities, Other Land Cover Types, and Special-Status Natural Communities in the Wildlife Resource Study Area

Vegetation Classification Alliance[1] or Land Cover Type	Aquatic Resource Classification[2]	Typical Vegetation	California Sensitive Natural Communities State Rarity (CDFW 2023)
Natural and Seminatural Upland Habitats			
Eucalyptus – tree of heaven – black locust woodland seminatural alliance	N/A	*Eucalyptus*, tree of heaven, black locust, red brome, Bermuda grass	None
Wild oats and annual brome grasslands seminatural alliance	Basins: Rio Hondo spreading grounds and Raymond Retarding Basins Riverine: San Gabriel River	Brome grasses, wild oats, annual forbs	None
Aquatic Habitats			
Hardstem and California bulrush marsh herbaceous alliance[1]	Freshwater emergent wetland	Hardstem, California bulrush, cattail, American bulrush, saltgrass, rush, common reed	S3S4: Sensitive

Vegetation Classification Alliance[1] or Land Cover Type	Aquatic Resource Classification[2]	Typical Vegetation	California Sensitive Natural Communities State Rarity (CDFW 2023)
Mulefat thickets shrubland alliance	Riverine[3]/riparian[4]	Mulefat	S4
Cattail marshes herbaceous alliance	Riverine/freshwater emergent wetland[5]	Cattails, barnyard grass, pale smartweed, bulrush	S5
Goodding's willow – red willow riparian woodland and forest alliance[1]	Freshwater forested/shrub wetland	Goodding's willow, red willow	S3: Sensitive
Duckweed blooms and relatives' provisional herbaceous alliance	Riverine	Duckweed	S4?[1]
Salt grass flats herbaceous alliance	Riverine	Salt grass	S4
Open water	Basin	Greater than 6.6 feet in depth or beyond the depth of floating rooted plants, concrete-lined	N/A
Unvegetated channel	Built watercourses and riverine	Unvegetated or concrete-lined	N/A
Urban Land Cover Types			
Developed	N/A	Residential, commercial, and industrial buildings; paved/unpaved roads, railroads, and highways	N/A
Barren	N/A	Unvegetated, rock, gravel, soil	N/A
Disturbed/ruderal	N/A	Bare ground with disturbed areas that is dominated by less than 20 percent cover of ruderal nonnative forbs such as Russian thistle	N/A
Ornamental	N/A	Presence of ornamental plantings, trees, sometimes shrubs	N/A

Sources: Sawyer et al. 2009; USACE 1987; USFWS 2024b, 2016; Cowardin et al. 1979; CDFW 2023

[1] Wherever possible, alliances are taken from Sawyer et al. 2009. Defined as a California Sensitive Natural Community (CDFW 2023). Natural Communities with a State Rarity of 1 through 3 are considered sensitive. Status of "S4?" Is defined by the California Native Plant Society in the Manual of California Vegetation as the State Rarity and indicates the best estimate of the rank when there are insufficient samples over the full expected range of the type, but the existing information points to this rank.

[2] As defined by USACE 1987, USFWS 2024b and 2016, and Cowardin et al. 1979.

[3] The mulefat thickets habitat identified within the RSA that fall under USACE or SWRCB (CWA Section 404/401) jurisdiction (San Gabriel River) are classified as "riverine."

[4] The mulefat thickets habitat identified within the RSA that fall under California Fish and Game Code Section 1600 jurisdiction (Rio Hondo spreading grounds and San Gabriel River) are classified as "riparian."

[5] The cattail marsh identified within the RSA is classified as "freshwater emergent marsh" under California Fish and Game Code Section 1600 jurisdiction and "riverine" under USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction (La Mirada Creek).

CDFW = California Department of Fish and Wildlife; CWA = Clean Water Act; N/A = not applicable; RSA = resource study area; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers; USFWS = U.S. Fish and Wildlife Service

3.7.5.2 Special-Status Species

Special-Status Plant Species

Based on the background review (refer to Special-Status Plants in Section 3.7.4.3), 50 special-status plant species were initially evaluated for their potential to occur in the Botanical RSA.

A list of the species detected in the CNDDB in the Supplemental RSA is included below. The CNDDB GIS dataset provided by the State of California has restrictions on the data that can be displayed on maps that are publicly available to prevent harm to species or habitat (CDFG 2011). For this reason, no CNDDB element occurrences have been mapped in the Supplemental RSA:

- Parish's brittlescale (*Atriplex parishii*; CRPR 1B.1), observation 1881
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*), observation 1902
- Lucky morning-glory (*Calystegia felix*; CRPR 1B.1), observation 1902
- Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*; federally listed endangered, state-listed endangered, CRPR 1B.1), observation 1924
- Southern tarplant (*Centromadia parryi spp. australis*; CRPR 1B.1), observation 1931
- Many-stemmed dudleya (*Dudleya multicaulis*; CRPR 1B.2), unknown date
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri;* CRPR 1B.1), observations 1932, 1935, 1939
- Prostrate vernal pool navarretia (*Navarretia prostrata,* CRPR 1B.1), observation 1895, 1907
- Greata's aster (*Symphyotrichum greatae*; CRPR 1B.3), observation 1932
- Salt spring checkerbloom (*Sidalcea neomexicana;* CRPR 2B.2), observation from 1902 (CDFW 2024a)

Among the 50 special-status plant species that were initially evaluated for their potential to occur in the Botanical RSA there were 9 federally and state-listed species and 41 other special-status species, with 12 of these species being CRPR 4 (limited distribution, watch list). Appendix A of the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a) presents the evaluation of the potential for these special-status plant species to occur in the Botanical RSA.

No federally or state-listed plant species are known or expected to occur in the Botanical RSA. It was determined that no habitat is present in the Botanical RSA for 47 of the 50 species; therefore, these species are considered to be absent and would not be affected by the project. There are three special-status plant species that were determined to potentially occur in the Botanical RSA: Lewis' evening-primrose (CRPR 3), lucky morning-glory (CRPR 1B.1), and southern tarplant (CRPR 1B). Only plants with CRPR of 1A, 1B, 2A, and 2B are discussed further in the body of the document; therefore, only lucky morning-glory and southern tarplant are discussed below (refer to the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* [Authority 2025a] for an analysis of these two species).

These two special-status plant species with potential to occur in the Botanical RSA, habitat requirements, distance to the project footprint, and a discussion of the findings are included in Table 3.7-4. Each of these species has a low potential to occur. This assessment is based on the lack of native or seminatural habitats present and the lack of native soils present.

Table 3.7-4 Special-Status Plant Species with Low Potential to Occur in the Botanical Resource Study Area

Species and Status	Potential to Occur	Known Observations	Habitat Requirements	Discussion	Approximate Distance to Project Footprint
Lucky morning-glory *Calystegia felix* **Federal Status** -- **State Status**[1] CRPR: 1B.1	Low	CNDDB observation from 1902 in vicinity of Pico Rivera (CDFW 2024a).	This species has historically been associated with wetland and marshy places such as meadows and seeps, riparian scrub (alluvial), and irrigated landscapes, but can be found in drier habitats (CNPS 2024a). Lucky morning-glory was observed in 2011 after no observations of the species for 94 years. This new species is described in the Los Angeles, San Gabriel, and Santa Ana River basins (Provance and Sanders 2013). All current observations have been in Chino and known extant observations were associated with well-watered landscaping in industrial, commercial, and residential developments (Provance and Sanders 2013). Soil disturbance and lack of native soils do not preclude this species, but additional information is needed to be collected and reported based on observations of the species.	Lucky morning-glory may be present in recently developed, irrigated landscaping (as was the case with the 2011 observations) or in other irrigated areas in the Supplemental RSA. Because this species was historically associated with the Los Angeles, San Gabriel, and Santa Ana River basins, irrigated areas in or adjacent to these basins provide habitat for this species. Irrigated ornamental vegetation associated with the San Gabriel River would provide suitable habitat for this species. Because of the limited current range of this species and the lack of observations in the past century, the probability of this species being present is low. Based on current information about this species, extant populations are restricted to Chino and would not be expected in the Los Angeles basin. The only area not excluded from the potential for presence of lucky morning-glory is the same parcel that contains potential habitat for southern tarplant (a small parcel north of Coyote Creek at the Los Angeles/Orange County border). The habitat assessment for southern tarplant at this parcel would include an assessment for other rare plants, including lucky morning-glory.	CNDDB observation is approximately 0.85 mile to the north of the Botanical RSA. The parcel with potential for this species is approximately 4.0 miles to the west of the Fullerton Transportation Center and Fullerton HSR Station Option.

Species and Status	Potential to Occur	Known Observations	Habitat Requirements	Discussion	Approximate Distance to Project Footprint
Southern tarplant *Hemizonia parryi* ssp. *australis* **Federal Status** -- **State Status**[1] CRPR: 1B.1	Low	CNDDB record (1931) near intersection of Garfield Ave and Telegraph Rd within project footprint (in Commerce). Also known upstream in the Rio Hondo in the Whittier Narrows Recreational Area (in Pico Rivera). Observation in Orange Park Acres in city of Orange, along Santiago Creek (2003) in disturbed clay soil on the stream terrace, 5 miles east of ARTIC (CDFW 2024a).	This annual herb is found at the margins of marshes and swamps, valley and foothill grasslands, and vernal pools (CNPS 2024a). Habitat for this species is described in Hickman (1993) as coastal grassland and salt (or alkaline) marshes and as being found near the coast in seasonally flooded grasslands.	Wild oats and annual brome grassland, hardstem California bulrush marsh, mulefat thickets, cattail marshes, and Goodding's willow – red willow thickets are present in the Botanical RSA and provide suitable habitat for southern tarplant. This species is known to be adapted to (and to rely on) disturbance, such as seasonal flooding, and may be extant in the highly disturbed Botanical RSA. During surveys in December, it was determined that the disturbance regime in areas that could be visited had removed native soils, so southern tarplant was not expected in these areas. Ten potential habitat sites were excluded based on the lack of native soils or because the sites had been developed. One area that could not be excluded as potentially containing southern tarplant is a small parcel north of Coyote Creek at the Los Angeles/ Orange County border, because there was no access to this parcel. Presence of southern tarplant is assumed here based on interpretation of aerial photographs, soils, and location (in the historical floodplain of Coyote Creek). Habitat here is mapped as disturbed (which is suitable for southern tarplant), but it could contain wild oats and annual brome grassland, which is also suitable for southern tarplant. A habitat assessment to determine	CNDDB record (1931) is in the Botanical RSA (100 feet of the project footprint), 2.26 miles to the east of the 15th Street LMF, included as part of Shared Passenger Track Alternative B. Whittier Narrow Recreation Area is approximately 4.8 miles to the north of the Botanical RSA Orange Park Acres observation is 5 miles east of ARTIC. The parcel with potential for this species is approximately 4.0 miles to the west of the Fullerton Transportation Center and Fullerton HSR Station Option.

Species and Status	Potential to Occur	Known Observations	Habitat Requirements	Discussion	Approximate Distance to Project Footprint
				habitat present and whether native soils are still present would be required to determine if this site contains suitable habitat. If habitat is present, focused surveys would be required. If this species is present, avoidance, mitigation, or both would be required.	

Sources: CDFW 2024a; CNPS 2024a
1 CRPR
1B: rare, threatened, and endangered in California and elsewhere
3: plants about which more information is needed
Threat ranks
0.1: seriously threatened in California
ARTIC = Anaheim Regional Transportation Intermodal Center; CNDDB = California Natural Diversity Database; CRPR = California Rare Plant Rank; HSR = high-speed rail; LMF = light maintenance facility; RSA = resource study area

Special-Status Wildlife

Based on the background review (refer to Special-Status Wildlife in Section 3.7.4.3), 60 special-status wildlife species were evaluated for their potential to occur in the Wildlife RSA. A full discussion of all species evaluated for the Wildlife RSA is included in Appendix A of the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).

As a part of the evaluation, CNDDB records were reviewed. The CNDDB GIS dataset provided by the State of California has restrictions on the data that can be displayed on maps that are publicly available to prevent harm to species or habitat (CDFG 2011). For this reason, no CNDDB element occurrences have been mapped in the Supplemental RSA (Table 3.7-5). The species in Table 3.7-5 are species with CNDDB records in the Supplemental RSA and include 10 federally and state-listed species and 9 special-status wildlife species.

Table 3.7-5 California Natural Diversity Database Special-Status Wildlife Element Occurrences within the Supplemental Resource Study Area

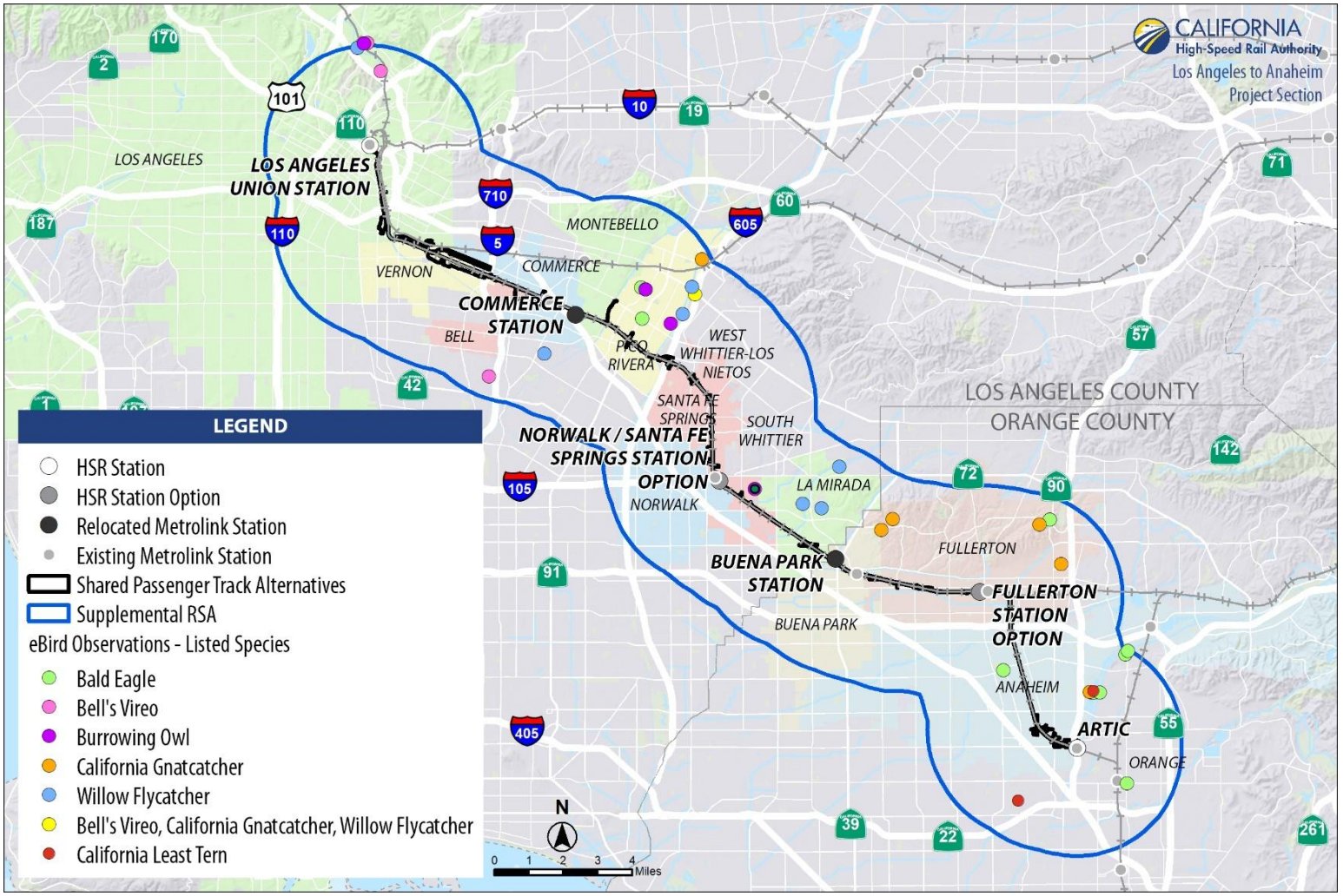
Common Name	Scientific Name	Federal Status[1]	State Status[2]	Potential to Occur in the Wildlife RSA
Federally and State-Listed Species				
Birds				
Burrowing Owl (burrow sites and some wintering sites)	*Athene cunicularia hypugaea*	—	CAN	Moderate
Southwestern Willow Flycatcher (nesting)	*Empidonax traillii extimus*	FE, CH	SE	None
California Black Rail	*Laterallus jamaicensis coturniculus*	—	ST, FP	None
Coastal California Gnatcatcher	*Polioptila californica californica*	FT, CH	SSC	None
California Least Tern (nesting colony)	*Sternula antillarum browni*	FE	SE, FP	Transient (no nesting)
Least Bell's Vireo (nesting)	*Vireo bellii pusillus*	FE, CH	SE	Transient (no nesting)
Invertebrates				
Crotch's bumble bee	*Bombus crotchii*	—	CE	None
Fish				
Steelhead – Southern California Distinct Population Segment	*Oncorhynchus mykiss irideus pop. 10*	FE	CE	None
Reptiles and Amphibians				
Southwestern pond turtle	*Actinemys pallida*	PT	SSC	None
Western spadefoot	*Spea hammondii*	PT	SSC	None
Other Special-Status Wildlife Species				
Reptiles and Amphibians				
Southern California legless lizard	*Anniella stebbinsi*	—	SSC	None

Common Name	Scientific Name	Federal Status[1]	State Status[2]	Potential to Occur in the Wildlife RSA
Coast horned lizard	*Phrynosoma blainvillii*	—	SSC	Low
Birds				
Coastal Cactus Wren (San Diego and Orange Counties only)	*Campylorhynchus brunneicapillus sandiegensis*	BCC	SSC	None
Yellow-Breasted Chat (nesting)	*Icteria virens*	—	SSC	None
Mammals				
Western mastiff bat	*Eumops perotis californicus*	—	SSC	Low
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	—	SSC	Moderate
Big free-tailed bat	*Nyctinomops macrotis*	—	SSC	Low
American badger	*Taxidea taxus*	—	SSC	None

Sources: USFWS 2021, 2023; CDFW 2024a, 2025
[1] Federal Status: FE = Endangered; FT = Threatened; PT = Proposed Threatened; CH = Critical Habitat designated by the U.S. Fish and Wildlife Service
[2] State Status: SE = Endangered; ST = Threatened: CAN = Candidate; CE = Candidate Endangered; SSC = California Species of Special Concern designated by the California Department of Fish and Wildlife; FP = Fully Protected species designated by the California Department of Fish and Wildlife
RSA = resource study area

Observations from eBird for avian species are included on Figure 3.7-2 for six avian species: Bald Eagle, Bell's Vireo (*Vireo bellii*), Burrowing Owl, Coastal California Gnatcatcher (*Polioptila californica californica*), California Least Tern (*Sternula antillarum browni*), and Willow Flycatcher (*Empidonax traillii*).

Of the 60 special-status wildlife species that were evaluated, only 20 were determined to have potential to occur in the Wildlife RSA. A total of 6 were determined to have a moderate potential to occur, and 14 were determined to have a low potential to occur in the Wildlife RSA. Two of the species are federally listed as endangered: Least Bell's Vireo (*Vireo bellii pusillus*) and California Least Tern; three are state-listed as endangered: Least Bell's Vireo, California Least Tern, and Bald Eagle; one as state candidate, mountain lion (CDFW 2021); and three are CDFW fully protected species: White-Tailed Kite (*Elanus leucurus*), California Least Tern, and Bald Eagle (CDFW 2024a, 2025). Special-status wildlife species with potential to occur in the Wildlife RSA are included in Table 3.7-6, and the following subsections describe these special-status wildlife species, divided into special-status reptiles, birds, and mammals. No special-status invertebrates or fishes were found to have potential habitat in the Wildlife RSA. The proposed IAMFs discussed are intended to avoid, minimize, and reduce potential unintentional effects on biological resources. Where specific IAMFs are intended to avoid effects on specific species, they are identified below.



Sources: eBird 2024; ESRI World Imagery 2024; ESRI World Streetmap 2024

Figure 3.7-2 Special-Status Avian eBird Observations

Table 3.7-6 Special-Status Wildlife Species with Potential to Occur in the Wildlife Resource Study Area

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Federally and State-Listed Species								
Birds								
Bald Eagle *Haliaeetus leucocephalus* **Federal Status[1]** Delisted, BGEPA **State Status[2]** SE, FP	Low (foraging), not expected to nest	Former nest sites of Bald Eagles in Southern California that had been inactive for decades are now exhibiting activity. The nearest active nest site (2023) is 6.8 miles east of the Supplemental RSA (CDFW 2024a; eBird 2024) at Irvine Lake in Orange County. Known to forage in Fullerton Creek (in Panorama Nature Preserve), the Rio Hondo, and Pico Rivera (between the Rio Hondo and the San Gabriel River), in the Santa Ana River, often near Anaheim Coves Park/Burris Basin, and Alta Vista Golf Course (near Fullerton Creek and Craig Regional Park) (eBird 2024).	Bald Eagles occur near seacoasts, rivers, swamps, and large lakes where there are abundant supplies of fish and suitable perching structures (large trees or snags with heavy limbs). Bald Eagles are sensitive to human disturbance while nesting (mature trees, cliffs), and prefer to nest away from human disturbance. Human disturbance lowers nest success; most successful nesting occurs at least 0.75 to 1 mile away from human disturbance. Egg laying, incubation, and late nesting are very sensitive periods and human activity may cause nest desertion or nestling flushing from the nest prematurely, resulting in death (USFWS 2025). Wintering Bald Eagles may be found closer to human disturbance and may spend more time in upland habitats, sometimes quite far from large waterbodies. Bald Eagles feed on fish but also consume birds (often water birds), mammals, and other prey.	There is potential for foraging Bald Eagles to occur in the Wildlife RSA (for foraging only; are not expected to nest) associated with the duckweed blooms in the Los Angeles River because these support large populations of water birds, prey for Bald Eagles. Bald Eagles could be associated with any open water, including open water in the rivers. Avian and mammal prey would be available associated with the San Gabriel River and the Rio Hondo and spreading grounds. Potential foraging habitat is present associated with the open water of the Lakeside Residential Community Pond. Bald Eagles have a low potential to occur in the Wildlife RSA and this species is not expected to breed in the Supplemental RSA.	Nesting in 2023 at Irvine Lake, 6.8 miles east of the Supplement RSA (eBird 2024; CDFW 2024a). Foraging in 2023 in the Santa Ana River at Burris Basin, 1.5 miles north; Alta Vista Country Club, 3.0 miles east; and Panorama Nature Preserve, 2.0 miles north of the Wildlife RSA (eBird 2024).	Same as Shared Passenger Track A	None	None
California Least Tern *Sternula antillarum browni* **Federal Status[1]** FE **State Status[2]** SE; FP	Low (transient)	There are records of California Least Tern nesting up until 2023 at Anaheim Coves Park/ Burris Basin the Santa Ana River approximately 1.5 miles north of the Wildlife RSA. California Least Terns have been recorded foraging up until 2023 at Haster Basin Recreation Area, 1.9 miles southwest of the Wildlife RSA, with birds arriving from the west to forage and returning to the east, to nests in Burris Basin (eBird 2024). There are records of California Least Tern in 2016 and 2023 at Anaheim Lake approximately 1.5 miles north of the Supplemental RSA, near the Santa Ana River (CDFW 2024a; eBird 2024).	Breeding visitor that nests colonially on open sandy beaches, sandbars, unvegetated islands, and deposited materials along the coasts of oceans, bays, inland rivers, large lakes, and reservoirs.	The is no potential nesting habitat in the Wildlife RSA. CNDDB records indicate the species is extirpated from both record locations (i.e., mouth of San Gabriel River and Pacific Ocean; Costa Del Sol near Marine Stadium in Long Beach). The nearest coastal nesting colony is present at the Port of Los Angeles. An inland nesting colony exists at Anaheim Coves Park/Burris Basin 1.5 miles north of the Wildlife RSA with nesting observed through 2023 (eBird 2024). There is a low potential for transient California Least Terns to be observed in the Wildlife RSA based on the presence of California Least Terns in the Supplemental RSA with a connection through the Santa Ana River that traverses the Wildlife RSA from Burris Basin to Haster Basin.	Nesting in 2023 at Anaheim Coves/Burris Basin, 1.5 miles north of the Wildlife RSA in the Santa Ana River (eBird 2024). Foraging in 2023 at Haster Basin Recreation Area, 1.9 miles southwest of the Wildlife RSA (eBird 2024).	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Least Bell's Vireo *Vireo bellii pusillus* **Federal Status**[1] FE **State Status**[2] SE	Low (transient); not expected to nest	Observed to be nesting in 2023 in Burris Basin in the Santa Ana River, 1.5 miles to the northeast of the Wildlife RSA. Breeding from 2017 to 2023 in the Santa Ana River 2.5 to 3.0 miles to the northeast of the Wildlife RSA (eBird 2024). Nesting observed from 2007 through 2011 at Coyote Hills Golf Course in Fullerton 1.65 miles to the north of the Wildlife RSA. Breeding observed in 2009 in the San Gabriel River at Whittier Boulevard 2.0 miles to the north of the Wildlife RSA (eBird 2024). Observed in 1897 in Elysian Park in Los Angeles, 4,500 feet to the north of the Wildlife RSA (CDFW 2024a).	Seen in California only in the summer (Sibley 2003), this riparian species nests and forages in willow dominated riparian forests with well-developed understories. Most nest sites are near the edge of riparian thickets (Zeiner et al. 1988–1990). This species is now uncommon, with more than 99 percent of Least Bell's Vireos in California occurring in Southern California, from Santa Barbara County southward (USFWS 2006).	Known nest site and eBird observations are separated from the Wildlife RSA by long stretches of concrete-lined channel without sufficient cover for this species to nest and forage. Least Bell's Vireo is not expected to be associated with the Los Angeles River (concrete lined, no riparian vegetation). The San Gabriel River and the Rio Hondo and spreading grounds do not have sufficient riparian vegetation to support breeding Least Bell's Vireo. Ongoing disturbance in the Santa Ana River in and adjacent to the Wildlife RSA remove potential riparian habitat for this species. There is no potential for breeding Least Bell's Vireo and a low potential for transients.	Nearest nesting in 2023 at Burris Basin at the Upper Santa Ana River, 1.5 miles north of the Wildlife RSA (eBird 2024).	Same as Shared Passenger Track A	None	None
Mammals								
Mountain lion *Puma concolor* **Federal Status**[1] -- **State Status**[2] SC	Low	Mountain lion P-22 (deceased adult male) was observed in Griffith Park and was recorded traveling to within 3,600 feet of the Wildlife RSA. He was euthanized in December of 2022 from vehicle collision injuries (iNaturalist 2022). Mountain lion P-41 (deceased adult male) was observed in Alameda and was recorded traveling to within 4,000 feet of Shared Passenger Track Alternative A and 4,700 feet of Shared Passenger Track Alternative B; previously known in central Alameda (iNaturalist 2022).	Mountain lions may be found anywhere where deer are present because deer are their primary food source. Mountain lions tend to prefer home ranges with rugged terrain but would be found in lowland areas between mountain ranges. Found in a variety of habitats including barren areas, chaparral, coastal sage scrub, riparian areas, woodlands, and grasslands. Tend to avoid areas with agriculture, roads, and urban areas (Zeller et al. 2017).	In the Supplemental RSA, mountain lions are known in the Santa Monica Mountains, the Chino Hills, the Santa Ana Mountains, the eastern Peninsular Range, the Transverse Ranges, and the San Bernardino Mountains (Vickers et al. 2015). The potential for mountain lions in the Wildlife RSA is low because of the lack of rugged terrain and preferred prey base (deer) available. The presence of two adult male mountain lions (P-22 and P-41) in the Supplemental RSA suggests mountain lions may use the Wildlife RSA opportunistically or to navigate to other better habitat.	Griffith Park (P-22) 5.0 miles northwest of the Wildlife RSA (7.5 miles northwest of the 26th Street LMF). Central Alameda (P-41), 1.7 miles from 26th Street LMF near Los Angeles River.	Same as Shared Passenger Track A. Griffith Park (P-22) 5.0 miles northwest of the Wildlife RSA and 9.8 miles northwest of the 15th Street LMF. Central Alameda (P-41), 0.7 mile from the 15th Street LMF near the Los Angeles River.	None	None
Other Special-Status Wildlife Species								
Reptiles								
Coast horned lizard *Phrynosoma blainvillii* **Federal Status**[1] -- **State Status**[2] SSC	Low	Coast horned lizards were detected in 2002 in the Puente Hills 3.0 miles to the northeast of the Wildlife RSA (Haas et al. 2002). This species has been documented in 1974 in Monterey Park in Los Angeles, 2.0 miles north of the Wildlife RSA, in 1960; in Sycamore Canyon (Sycamore Park) in Whittier, 3.0 miles north of the Wildlife RSA (presumed extant); and in the San Gabriel River, south of Whittier Dam, 3.0 miles north of the Wildlife RSA (presumed extant).	This species is found in sandy soils with low vegetation in coastal sage, annual grasslands, forests, woodlands, chaparral, riparian woodland, and open areas with loose soil. Shade (usually shrubs) is important for daily thermal regulation (Jennings and Hayes 1994). Species is insectivorous, and its diet consists mainly of native harvester ants (*Pogonmyrmex* spp.). The key habitat components are loose, fine soils; native ants and other insects; open areas for basking; and low, dense, shrubs for refuge (Jennings and Hayes 1994).	The Wildlife RSA is within the range of coast horned lizard. Sandy soils within suitable habitat (grasslands with some shrubs) are present in the San Gabriel River and the Rio Hondo spreading grounds. This species is tolerant of some forms of human disturbance but is negatively affected by urbanization and requires at least some intact natural shrub community. There is a low potential for this species to occur because of the elevated levels of disturbance.	Known in the Puente-Chino Hills approximately 2.8 miles north and east of the Wildlife RSA. Known in the San Gabriel River to the north, in the Supplemental RSA.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Birds								
Long-Eared Owl *Asio otus* **Federal Status**[1] BCC **State Status**[2] SSC	Low (nesting and foraging)	Occurrences have been documented in nearby Weir Canyon Regional Park, Black Star Canyon in 1968 and 1974 (CDFW 2024a). No observations of this species in the Supplemental RSA in eBird (2024). However, Long-Eared Owls are secretive, nocturnal, and well camouflaged. Therefore, a lack of observations may not mean a lack of presence.	This species occurs in wooded habitats that are open or next to grasslands, meadows, or shrublands. Habitat includes forest with extensive meadows, groves of conifers or deciduous trees in prairies, or streamside groves in the desert (Marks et al. 1994). Key habitat components include dense cover for nesting and roosting with open areas for foraging (Shuford and Gardali 2008). Long-eared Owls forage on small mammals, small birds, bats, lizards, and snakes at night, sometimes before dusk, over fields or open woods (Marks et al. 1994).	The Wildlife RSA is within the current range of this species; however, dense woodlands for nesting and roosting are not present or are rare, consisting of ornamental tree species in parks or landscaped areas. There are some large ornamental trees present adjacent to open foraging habitat at San Gabriel River. Therefore, Long-Eared Owl has a low potential to occur in the Wildlife RSA and would only occur associated with the San Gabriel River and the Rio Hondo and spreading grounds.	Ornamental tree species suitable for this species are near or in the Wildlife RSA. These trees in the San Gabriel River are over 5.0 miles from the 26th Street LMF.	Same as Shared Passenger Track A. These trees in the San Gabriel River are 8.5 miles from the 15th Street LMF.	None	None
Burrowing Owl *Athene cunicularia hypugaea* **Federal Status**[1] BCC **State Status**[2] SC	Moderate (burrow sites and some wintering sites)	Burrowing Owl is a USFWS bird of conservation concern and was listed as a candidate for potential listing as a protected species under the CESA by the California Fish and Game Commission on October 10, 2024 (CDFW 2024g; USFWS 2023). As a candidate for potential listing, Burrowing Owls are temporarily afforded the same protections as state-listed endangered or threatened species. CNDDB records include an observation reported in 2010 in Hellman Wilderness Park approximately 3.0 miles north of the Wildlife RSA and 1.5 miles from the San Gabriel River (CDFW 2024a). Observation in 2008 of a burrow site in Coyote Creek approximately 0.45 mile north of the Wildlife RSA. Recorded in January and February of 2012 at the San Gabriel Coastal Basin Spreading Grounds on the west side of the San Gabriel River. Observed in January through March of 2011, 2012, and 2014 in the Rio Hondo and spreading grounds approximately 0.8 mile northwest of the Wildlife RSA (eBird 2024). Observed in February 2011 at Rio de Los Angeles State Park about 2.75 miles north of the northern end of the Wildlife RSA (eBird 2024).	Burrowing Owls are year-round residents throughout much of California (Shuford and Gardali 2008). Burrowing Owls prefer open, dry, short grassland habitats with few trees and are often associated with burrowing mammals such as California ground squirrels. They occupy burrows, typically abandoned by ground squirrels or other burrowing mammals, but also use artificial burrows such as abandoned pipes, culverts, and debris piles. Burrowing Owls have adapted to landscapes that have been highly altered by human activity. Prey includes arthropods, amphibians, small reptiles, and small mammals (Shuford and Gardali 2008).	The Los Angeles River and adjacent disturbed/ruderal and ornamental habitat would provide nesting and foraging habitat, with possible burrowing opportunities associated with the concrete-lined areas. Suitable open grassland areas are present in the Wildlife RSA. The San Gabriel River and the Rio Hondo and spreading grounds provide long stretches of suitable foraging and nesting/wintering habitat. These linear features also connect to other suitable habitat including golf courses and grasslands. Fullerton Municipal Airport and larger open fields/disturbed areas may provide foraging and burrowing opportunities. Like highly suitable habitat in the Imperial Valley, concrete-lined aquatic features may provide a sufficient prey base through aquatic invertebrates and burrowing opportunities at the edges of the concrete features. Burrowing Owls would overwinter or migrate through habitat in the Los Angeles River, the San Gabriel River, and the Rio Hondo and spreading grounds, as well as in other open areas (such as disturbed fields) with a lower potential to nest in these areas because of the linear and confined nature of the suitable habitat. The Authority anticipates seeking an Incidental Take Permit from CDFW for Burrowing Owl, because this species is currently listed as a candidate species and take of this species may occur as a part of the project, if this species is determined to be present.	The Los Angeles River is directly adjacent to both the 15th Street LMF (Shared Passenger Track Alternative B) and the 26th Street LMF (Shared Passenger Track Alternative A). The San Gabriel River, the Rio Hondo, and the Santa Ana River cross the project footprint.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Mountain Plover *Charadrius montanus* **Federal Status[1]** BCC **State Status[2]** SSC	Low (wintering)	No Mountain Plovers were reported in the eBird (2024) dataset, and none were reported in the CNDDB in the Supplemental RSA. The nearest recent observations for this species were outside the Supplemental RSA in 2015 at the Santa Fe Dam Recreation Area, Seal Beach in 2016, and in 2023 at Playa del Rey Beach (eBird 2024). The Santa Fe Dam is a flood-control dam on the San Gabriel River and is approximately 12.0 miles northeast of the Wildlife RSA. Seal Beach is approximately 10.0 miles southwest of the Wildlife RSA and Playa del Rey Beach is approximately 13.0 miles west of the Wildlife RSA.	This insectivorous bird breeds in the short-grassland prairies including overgrazed pastures and very arid lands of the high plains east of the Rocky Mountains (Sibley 2003). Mountain Plovers prefer habitat with short grass or bare soils and are typically observed far from water (Knopf 2006). Mountain Plovers are a winter resident in California where they are associated with short-grass grasslands (Shuford and Gardali 2008), and their winter habitat includes desert flats and plowed fields (Knopf 2006). Mountain Plovers have disappeared from much of their former breeding range because of the conversion of short-grass prairie to farmland (Knopf 2006).	The Wildlife RSA is within the current wintering range but outside the known breeding range of this species. Potentially suitable habitats are present in the San Gabriel River, the Rio Hondo and its spreading grounds, and the Santa Ana River. Suitable habitat in these areas includes wild oats and annual brome grassland, barren areas, and disturbed habitat. The potential exists for Mountain Plovers to be present in the Wildlife RSA associated with short grass and bare ground in the San Gabriel River, the Rio Hondo, and the Santa Ana River. However, because of ongoing disturbance in these rivers and the rarity of this species, there is a low probability of its presence.	The San Gabriel River, the Rio Hondo, and the Santa Ana River cross the project footprint.	Same as Shared Passenger Track A	None	None
White-Tailed Kite *Elanus leucurus* **Federal Status[1]** -- **State Status[2]** FP	Moderate (nesting and foraging)	Over 20 observations of White-Tailed Kites recorded in the Supplemental RSA in eBird (2024) including observations at the San Gabriel Coastal Basin Spreading Grounds, Orange (unspecified location), Whittier Narrows/Rio Hondo Dam, Los Angeles (unspecified location), Sepulveda Wildlife Basin, Walt Disney Concert Hall, and Taylor Yard Park (eBird 2024). No recent CNDDB observations in the Supplemental RSA (CDFW 2024a).	White-Tailed Kites are found in savanna, open woodlands, river valleys, marshes, desert grasslands, partially cleared lands, and cultivated fields. Required habitat components include trees for perching and nesting with open areas containing high populations of rodents (Dunk 1995).	There is a sufficient small mammal prey base to support this species and suitable nesting habitat (tall trees) throughout the Wildlife RSA Suitable areas observed where adjacent trees (for nesting) or high bridges for perching are present associated with the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, the Santa Ana River, Fullerton Municipal Airport, and open fields with available perches (including transmission towers and tall trees).	The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF. The San Gabriel River, the Rio Hondo, and the Santa Ana River cross the project footprint.	Same as Shared Passenger Track A	None	None
Loggerhead Shrike *Lanius ludovicianus* **Federal Status[1]** -- **State Status[2]** SSC	Moderate	Observations in the Supplemental RSA (eBird 2024) include in the Santa Ana River (1.5 miles north of the Wildlife RSA), Ralph B Clark Regional Park, the San Gabriel River, La Mirada Creek Park, the Los Angeles River (0.4 mile northwest of the Wildlife RSA, south of Atlantic Boulevard), the Los Angeles River 2.7 miles north of the Wildlife RSA, and Los Angeles State Historic Park (0.6 mile north of the Wildlife RSA).	Loggerhead Shrikes are found in semi-open areas with lookout posts such as wires, trees, or shrubs. They breed in semi-open areas such as riparian areas, open woodlands, agricultural areas, grasslands, broken chaparral, desert scrub, and beaches with scattered shrubs, with nesting occurring in dense trees or shrubs, with the nest well hidden by foliage. In the winter, Loggerhead Shrikes may be found in more open areas as long as hunting perches are available (Yosef 1996).	The Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and other disturbed habitat with open areas and shrubs present that could support the species and adjacent open fields (disturbed/ruderal or ornamental vegetation) would provide nesting and foraging habitat.	The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF. The San Gabriel River and the Rio Hondo cross the project footprint.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Yellow Warbler *Setophaga petechia* **Federal Status[1]** -- **State Status[2]** SSC	Moderate	Observed in the Wildlife RSA (eBird 2024) at the Los Angeles River, the San Gabriel River (2016), Neff Park (2023), Fullerton (2014 through 2023), and Anaheim (2010) with an additional over 400 observations in the Supplemental RSA (eBird 2024). Numerous observations associated with parks, drainages (La Mirada Creek, San Gabriel River, Santiago Creek, Santa Ana River, Fullerton Creek, Rio Hondo and spreading grounds, and Los Angeles River), and reservoirs/lakes (Echo Lake and Ivanhoe Reservoir).	Recent evidence suggests that current populations are stable because of their habitat preferences (preferring edge habitats, ornamental landscaping associated with developed areas, regrown areas after disturbance) despite frequent nest parasitism by cowbirds (Lowther et al. 1999). Yellow Warblers prefer edge habitats and second-growth areas and can be found in bushes, swamp edges, riparian areas, streams, and gardens. In the west, they are found in riparian vegetation close to water along streams and wet meadows (Lowther et al. 1999).	Riparian vegetation and bushes sufficient to support this species observed in the Wildlife RSA and noted in the San Gabriel River. Willows and ornamental trees provide "edge" habitat for this species at the Rio Hondo spreading grounds. Ornamental landscaping associated with developed areas, especially city parks, throughout the Wildlife RSA provides habitat for Yellow Warblers. The Los Angeles River provides water; this species is often found close to water. There is a moderate potential for this species to occur.	The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF. The San Gabriel River crosses the project footprint.	Same as Shared Passenger Track A	None	None
Mammals								
Pallid bat *Antrozous pallidus* **Federal Status[1]** -- **State Status[2]** SSC	Low (roosting and foraging)	Two older assumed extirpated occurrences (1932) documented in the El Monte area, 7.0 miles northeast of the Wildlife RSA (CDFW 2024a). Observed in Orange County (Miner and Stokes 2005) in the late 1990s and observed in Puente Hills in 2004 (Remington 2006) just over 3.0 miles to the east of the Wildlife RSA.	Pallid bats are found in many habitats in arid to semi-arid habitats at lower elevations usually strongly associated with oak savanna habitat. They are known to forage along riparian corridors, over grasslands, and in agricultural areas. The colonial species roosts in warm rock crevices, abandoned buildings, bridges, caves, abandoned mines, and tree snags (Wilson and Ruff 1999). Colonies disband in the fall and are inactive over the winter.	This species may occasionally forage above the open water associated with the Wildlife RSA, such as at the Raymond Retarding Basins, San Gabriel River, Rio Hondo and spreading grounds, Lakeside Residential Community Pond, and Los Angeles River. Species also has a low potential to use adjacent bridges or buildings as roosting sites. This species may occasionally forage in areas that attract invertebrate prey (such as areas with night lighting) or over open water, which provides foraging habitat. Bridges in the Los Angeles River provide low-quality roost sites for pallid bats. There is a higher potential for this species to occur where watercourses connect to other occupied habitat in the Puente Hills.	The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF. Raymond Retarding Basins, San Gabriel River, Rio Hondo and spreading grounds, Lakeside Residential Community Pond.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Mexican long-tongued bat *Choeronycteris mexicana* **Federal Status**[1] -- **State Status**[2] SSC	Low (roosting and foraging)	One presumed extirpated occurrence documented in 1995, 3.5 miles southwest of the Wildlife RSA in Orange (CDFW 2023). This species is rare and when found in Southern California is seen in residential areas.	Occurs in scrub, forest, desert, grassland, and woodland areas and roosts near entrances to caves, rock crevices, and buildings. Feeds on pollen and nectar, specializing in agaves and columnar cactus (hummingbird feeders). Roosts usually consist of caves and mines for most of its range, but in California this species has never been documented in native habitats. It is found in residential areas and roosts in such places as garages, sheds, and porches. Observed in Los Angeles, Orange, and Ventura Counties. Not known/expected to breed in California. Uncommon to rare species but appears to have a stable population in the ecoregion. Difficult to detect acoustically and is most often found through public contact.	Mexican long-tongued bats may be present associated with residential nectar sources, such as agave, cactus, or hummingbird feeders, and may roost in the fall and winter in such places as garages, sheds, and porches. In natural systems, this is a cave-roosting species, so would roost only in bridges with cave-like structures. This species is not expected to breed in the Wildlife RSA.	About 3.5 miles southwest of the Wildlife RSA in Orange.	Same as Shared Passenger Track A	None	None
Townsend's big-eared bat *Corynorhinus townsendii* **Federal Status**[1] -- **State Status**[2] SSC	Low (roosting and foraging)	No CNDDB records for Townsend's big-eared bats have been reported in the Los Angeles Basin (CDFW 2024a). Although this species was described as common on the coastal plain and abundant in the inland valleys and foothills in the 1930s and 1940s (Miner and Stokes 2005), no known roosts were described in Los Angeles County in a comprehensive survey conducted from 1987 to 1991 (Pierson and Rainey 1998a). The nearest documented location of a Townsend's big-eared bat population is in San Diego County, including the Santa Ysabel Ranch Open Space Reserve 80.0 miles southeast of the Wildlife RSA (Hathaway et al. 2004).	This colonial species is found in habitats such as desert scrub, sagebrush, chaparral, and deciduous and coniferous forests (Miner and Stokes 2005). Edge habitat between forested and open areas is preferred for this moth-foraging species. Individuals forage low over open pastures or high in crowns of trees (Stokes et al. 2005). Roosting habitat—including caves and cave-like structures such as mines, tunnels, abandoned buildings, and bridges—are an essential component of habitat for this species (Pierson and Rainey 1998a). This species is extremely sensitive to human disturbance.	As with the pallid bat, the highly urbanized nature of the Wildlife RSA reduces the likelihood of this species being present. Suitable roosting habitat (old buildings or cave-like structures in the Los Angeles River bridges and old buildings associated with the San Gabriel River and the Rio Hondo and spreading grounds) and suitable foraging habitat (associated with the San Gabriel River, the Rio Hondo and spreading grounds, and possibly areas with ornamental tree plantings, including associated with the Los Angeles River) are present in the Wildlife RSA. Townsend's big-eared bats have highly visible roost clusters on open surfaces, which makes them extremely vulnerable to disturbance (Pierson et al. 1999). There are few cave-like structures available and there is a high degree of human disturbance, so the potential for this species is low.	The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF. The San Gabriel River and the Rio Hondo cross the project footprint.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Western mastiff bat *Eumops perotis californicus* **Federal Status[1]** -- **State Status[2]** SSC	Low (roosting and foraging)	Occurrences have been documented 1.0 mile west of the Wildlife RSA in Orange (data date 1989), in the Wildlife RSA in Anaheim (data date 1990), and less than 1.0 mile west of the Wildlife RSA in Hollywood, Los Angeles (data date 1990, CDFW 2024a), along with a record from 1987 with an exact location unknown. This last occurrence was documented in Azusa, which is approximately 8.0 miles northeast of the Wildlife RSA (CDFW 2024a).	This species occupies arid/semiarid areas and roosts mainly in crevices in vertical cliffs and in exposed rock faces but would also roost in large boulders or buildings and bridges, palm trees, and tunnels (Siders 2005). This species prefers roosts that are at least 16 to 20 feet above the ground with unobstructed openings, because this species cannot take flight from a flat surface and must free-fall to achieve lift for flight (Wilson and Ruff 1999). This species forages on large moths, often as high as several hundred to 2,000 feet above the ground. Western mastiff bats have been known to travel more than 25.0 miles from roost sites to forage in a variety of habitats (Wilson and Ruff 1999).	This species may forage over the open water (when present) associated with the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and Lakeside Residential Community Pond and over the open areas associated with the Santa Ana River. This high-flying species frequently forages in broad, open areas and is known to forage more than several miles from a roost. It requires high roosts, such as cliffs and tall buildings, but tall palm trees. Although suitable foraging habitat is present, suitable roosts were not noted. This species would be expected to roost elsewhere (or in tall palm trees) and would forage over open water when present, so this species has a low potential to occur.	The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF.	Same as Shared Passenger Track A	None	None
Western red bat *Lasiurus blossevillii* **Federal Status[1]** -- **State Status[2]** SSC	Low (roosting and foraging)	Western red bats were detected in Griffith Park in 2008, about 6.0 miles north of the Wildlife RSA with evidence of roosting in habitat associated with the Los Angeles River (Remington and Cooper 2009). Many parks adjacent to the Los Angeles River in this area and between the Wildlife RSA and Griffith Park would provide suitable roost sites. Western red bats were detected in six different canyons in the western Puente Hills, approximately 3.0 miles east of the Wildlife RSA (Remington 2006). The species was observed in Sycamore Canyon, Turnbull Canyon, Powder Canyon, Arroyo San Miguel (connects to the Wildlife RSA through La Mirada Creek), Ecology Canyon, and La Canada Verde Creek (connects to the Wildlife RSA through La Mirada Creek). Sycamore Canyon is associated with the San Gabriel River and the Rio Hondo and spreading grounds. Turnbull Canyon is northeast of the Wildlife RSA and is associated with the San Gabriel River, and Powder Canyon is about 6.5 miles north of the Wildlife RSA. Powder Canyon connects to the Wildlife RSA via Coyote Creek.	This solitary, migratory bat is typically associated with mature, intact sycamore and cottonwood riparian vegetation. However, individuals are now being detected in urban areas with ornamental trees in Orange and San Diego Counties, with evidence of breeding in Southern California (Remington and Cooper 2009). This species was historically common in Southern California, but is no longer, likely because of extensive habitat loss (Remington 2006). Western red bats roost in foliage and require a range of trees for roosting, because they will move their roost spot from tree to tree. Broad-leaved trees with dense foliage are required and can include orchard trees (avocado, apricots, and citrus). Western red bats also rely on riparian habitats for foraging (Remington and Cooper 2009).	Habitat quality diminishes in and adjacent to the Los Angeles River south of Spring St, and it is unlikely there are suitable roost sites for western red bats in this area. Western red bats are expected to be associated with the San Gabriel River, the Rio Hondo and spreading grounds, and ornamental habitats with large areas of broad-leaved trees. Western red bats are known to both the north and east of the Wildlife RSA and are known to roost in ornamental trees in urban areas. Based on this information, the probability of western red bats being present in the Wildlife RSA is low because this species is uncommon in Southern California and because of the lack of large areas with broad-leaved trees to provide suitable roost sites and the lack of intact mature riparian areas in the Wildlife RSA.	Known in the Puente Hills about 3.0 miles east of the Wildlife RSA. The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Western yellow bat *Lasiurus xanthinus* **Federal Status**[1] -- **State Status**[2] SSC	Moderate (roosting and foraging)	Observed in Sycamore Canyon, Turnbull Canyon, Powder Canyon, Arroyo San Miguel, and La Canada Verde Creek in the western Puente Hills in 2000 (Remington 2006). Sycamore Canyon is associated with the San Gabriel River and the Rio Hondo and spreading grounds. La Canada Verde Creek is about 3.0 miles northeast of the Wildlife RSA, and Arroyo San Miguel is about 3.5 miles northeast of the Wildlife RSA; both have a connection to the Wildlife RSA through La Mirada Creek. Turnbull Canyon is about 3.0 miles northeast of the Wildlife RSA and 2.5 miles east of the San Gabriel River. Powder Canyon is about 6.5 miles north of the Wildlife RSA. Powder Canyon connects to the Wildlife RSA via Coyote Creek.	This noncolonial bat species is often associated with water features such as stock tanks, ponds, streams, and rivers in open grassy areas and scrub, as well as in canyon and riparian habitats. Capture sites are also reported over swimming pools, residential areas (lawns), and orchards (Bolster 1998). Western yellow bat is associated with palms and other desert riparian habitats and would often occur in palm oases but may be expanding its range to include palms in landscaping (Bolster 1998). This bat usually roosts in the skirts of dead palm fronds in both native and nonnative palms. This species is insectivorous and prefers open-water areas for foraging.	Roosting habitat (trees and palms, under fronds) and foraging habitat (open water) for this species are both abundant in the Wildlife RSA. This species is expected to forage over open water, including the Los Angeles River, Lakeside Residential Community Pond, the San Gabriel River, and the Rio Hondo and spreading grounds. Roost sites are present in both residential areas and ornamental land cover types, in association with palm trees, and cottonwoods to a lesser degree. Western yellow bats are a low-flying species, with high mortality risks expected from vehicle and rail collisions. However, because of sufficient roosts and foraging habitat, this species has a moderate potential to occur in the Wildlife RSA.	Known in the Puente Hills about 3.0 miles east of the Wildlife RSA. The Los Angeles River is directly adjacent to both the 15th Street LMF and the 25th Street LMF.	Same as Shared Passenger Track A	None	None
Pocketed free-tailed bat *Nyctinomops femorosaccus* **Federal Status**[1] -- **State Status**[2] SSC	Moderate	Within the Wildlife RSA this species was observed in Sycamore Canyon, approximately 3.2 miles from the Wildlife RSA associated with the San Gabriel River and 3.5 miles from the Wildlife RSA associated with the Rio Hondo and spreading grounds in 2004, 2005, and 2006 (Remington 2006). These observations were less than 1.0 mile from the San Gabriel River (just across Interstate 605) and approximately 2.2 miles from the Rio Hondo spreading grounds. These bats were also observed in Turnbull Canyon in 2004, 2005, and 2006 about 3.0 miles northeast of the Wildlife RSA and 2.5 miles east of the San Gabriel River (Remington 2006) and in Powder Canyon in 2004, 2005, and 2006 about 6.5 miles north of the Wildlife RSA (Remington 2006). Powder Canyon connects to the Wildlife RSA via Coyote Creek.	Pocketed free-tailed bat occurs in desert scrub desert riparian, chaparral, and pine-oak forests (Pierson and Rainey 1998b). This colonial species roosts in crevices in rugged cliffs, high rocky outcrops, buildings, and caves, and under roof tiles. It forages on large moths, pursuing prey on the wing high above the forest canopy or in open areas. During the dry season, this species uses large open sources of water with a large surface area from which to drink. Free-tailed bats are generally far-ranging species and may roost in the foothills but may forage over much larger areas (Miner and Stokes 2005). Water sources tend to concentrate bat activity, and canyons are adjacent to or feed into the Los Angeles River.	This species may forage and drink at the open water of the Los Angeles River, the San Gabriel River, and the Rio Hondo and spreading grounds in the Wildlife RSA. Little is known about the ecology of this species, and it may also roost under bridges and in buildings. This species has a low to moderate potential for roosting in buildings. Water sources tend to funnel bat activity, and canyons are adjacent to or feed into the San Gabriel River, the Rio Hondo and associated spreading grounds, and Coyote Creek. It is most likely that this species forages in the Wildlife RSA and roosts in crevices in areas such as the Puente Hills, but there is the potential for pocketed free-tailed bats to roost in buildings. Because this is a high-flying species, it is less likely than low-flying species to have collisions with vehicles and trains in the existing rail corridor. Based on this information, pocketed free-tailed bats have a moderate potential to occur in the Wildlife RSA.	Known in the Puente Hills about 3.2 miles east of the Wildlife RSA. The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF.	Same as Shared Passenger Track A	None	None

Species and Status	Potential to Occur in Shared Passenger Track Alternative A	Known Observations in Supplemental RSA	Habitat Requirements	Discussion	Approximate Distance from Shared Passenger Track Alternative A	Potential to Occur in Shared Track Alternative B	Potential to Occur in Norwalk/Santa Fe Springs HSR Station Option	Potential to Occur in Fullerton HSR Station Option
Big free-tailed bat *Nyctinomops macrotis* **Federal Status**[1] -- **State Status**[2] SSC	Low (roosting and foraging)	The nearest CNDDB record of big free-tailed bat is from 1985 with an exact location unknown. The observation is noted as occurring in Los Angeles (central), in the Wildlife RSA (CDFW 2024a). Big free-tailed bats were not detected during surveys in the Puente Hills from 2004 through 2006 (Remington 2006).	Big free-tailed bats usually require high cliffs or rocky outcrops for roosting sites, but can roost in buildings, caves, and tree holes (Pierson and Rainey 1998b). This far-ranging rare species may roost in the foothills and is associated with desert scrub, arroyos, and woodlands. These bats have a scattered distribution throughout California and would be expected anywhere (Pierson and Rainey 1998b). Big free-tailed bats forage mainly on moths over large areas high above the forest canopy (Miner and Stokes 2005; Pierson and Rainey 1998b).	This is a far-ranging species that forages over large areas and over the open water that could be associated with the Los Angeles River, San Gabriel River, and the Rio Hondo and spreading grounds in the Wildlife RSA. However, foraging is preferred above a forest canopy rather than over open water. Big free-tailed bats prefer high cliffs as roosting sites, but there is a low potential for these bats to roost in the Wildlife RSA in the high bridges over the Los Angeles River or in tall buildings. Based on the above information, this species has low potential to occur in the Wildlife RSA.	The Puente Hills contain foraging areas with a forest canopy, approximately 3.0 miles east of the Wildlife RSA. The Los Angeles River is directly adjacent to both the 15th Street LMF and the 26th Street LMF.	Same as Shared Passenger Track A	None	None

Sources: CDFW 2024a, 2025; USFWS 2023

[1] Federal Status
BCC = Birds of Conservation Concern designated by the U.S. Fish and Wildlife Service
BGEPA = Protected under the Bald and Golden Eagle Protection Act
FE = Endangered

[2] State Status
FP = Fully protected species designated by CDFW
SC = Candidate
SE = Endangered
SSC = California Species of Special Concern designated by CDFW

Authority = California High-Speed Rail Authority; CDFW = California Department of Fish and Wildlife; CESA = California Endangered Species Act; CNDDB = California Natural Diversity Database; HSR = high-speed rail; LMF = light maintenance facility; RSA = resource study area

Invertebrates

The California overwintering population of monarch butterfly (*Danaus plexippus plexippus*) was proposed as threatened under the FESA on December 12, 2024 (USFWS 2024d). Monarch butterflies are present in the Wildlife RSA during annual migrations; however, there are no documented overwintering roosting sites in the Wildlife RSA. Suitable habitat containing monarch butterfly host plants (i.e., milkweed) and overwintering roosting habitat are absent from the Wildlife RSA, so no impacts are anticipated on this species. Because no direct or indirect impacts are anticipated on invertebrates, monarch butterfly and other invertebrates will not be discussed further in this document.

Birds

Nine special-status bird species have a low to moderate potential to occur in the Wildlife RSA, including four listed species: Least Bell's Vireo (federally and state-listed as endangered), California Least Tern (federally and state-listed as endangered, state fully protected), Bald Eagle (federally delisted, state-listed as endangered and fully protected), and Burrowing Owl (state-listed candidate) (CDFW 2024g; USFWS 2023) (Table 3.7-6). With few exceptions, any bird present in the Wildlife RSA would also be protected under the MBTA and California Fish and Game Code Section 3503.

Mammals

Nine special-status mammals (eight are California species of special concern) have potential to occur in the Wildlife RSA, and all but one, mountain lion (state candidate), are bat species: pallid bat (*Antrozous pallidus*), Mexican long-tongued bat (*Choeronycteris mexicana*), Townsend's big-eared bat (*Corynorhinus townsendii*), western mastiff bat (*Eumops perotis californicus*), western red bat (*Lasiurus blossevillii*), western yellow bat (*Lasiurus xanthinus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), and big free-tailed bat (*Nyctinomops macrotis*) (Table 3.7-6).

Mountain lions may be found wherever deer are present, because deer are their primary food source in most areas. Mountain lions tend to select home ranges with rugged terrain, naturally barren areas, chaparral, coastal sage scrub, riparian areas, woodland, and grassland and avoid areas with agriculture, desert, roads, and urban areas (Zeller et al. 2017). The Wildlife RSA is urbanized but is adjacent to known occupied habitat (Griffith Park). Mountain lions may occur in drainages such as stormwater-control channels opportunistically or to navigate to other suitable habitat areas and may occur in drainages such as the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River.

The main risks to mountain lions include barriers that restrict connectivity with other mountain lion populations (reducing genetic diversity in the population and increasing intraspecific mortalities), mortalities on roads, losses through human conflicts, and widespread presence of anticoagulant rodenticides (rat poisons) (Benson et al. 2019).

Crucial habitat elements for bats include riparian trees, nectar and pollen sources, upland woodland tree species (such as oaks and conifers), grasslands, scrub vegetation, leaf litter, perennial water, natural rock caves, rocky outcrops, artificial caves (mines), and human-made structures such as buildings and bridges (Hathaway et al. 2004), with specific species requiring specific habitat elements. Of these habitat elements, in the Wildlife RSA perennial water, small stretches of grassland and disturbed scrub vegetation, and human-made (potential roost) structures are present. The special-status bats with potential to occur in the Wildlife RSA are discussed in Table 3.7-6.

Studies in areas with higher habitat quality such as the Puente Hills (Remington 2006) and Griffith Park (Remington and Cooper 2009) have had positive survey results for western red bat (Griffith Park and Puente Hills), western yellow bat (Puente Hills), pallid bat (Puente Hills), pocketed free-tailed bat (Puente Hills), hoary bat (*Lasiurus cinereus*) (Puente Hills, Griffith Park, Santa Monica National Recreation Area), and western mastiff bat (Puente Hills). Habitat in the Wildlife RSA would provide habitat elements for species present in the area. For instance, Sycamore Canyon in the Puente Hills, although 3.2 miles from the Wildlife RSA, is less than 1 mile from good-quality

habitat in the San Gabriel River that connects to the habitat in the Wildlife RSA. Sycamore Canyon is just over 2.0 miles from habitat in the Rio Hondo spreading grounds, and this habitat is continuous with the Rio Hondo spreading grounds in the Wildlife RSA. Similarly, some arroyos in the Puente Hills connect to habitat (and golf courses) associated with drainages such as La Mirada Creek that are a part of the Wildlife RSA. These connections would link special-status bat species to important or limiting habitat elements that would be important for the species or during certain times of year.

In the Wildlife RSA, urban areas are likely to provide limited or lower-quality foraging habitat for most of the potentially occurring special-status bat species. Some bat species are tolerant of human disturbance and may roost in structures associated with urban land use; however, bats roosting in urban areas are often at risk of roost disturbance and disruption.

Potential roost sites are expected to be scattered and limited to areas where suitable trees, snags, buildings, bridges, and culverts are present; however, there are areas in the Wildlife RSA, such as bridges along drainages, where concentrations of roost sites for one or more bat species are possible. Dead and dying trees can provide roosting opportunities for crevice- and cave-dwelling species (Hathaway et al. 2004).

Reptiles and Amphibians

The herpetofauna (reptiles and amphibians) of the south coast ecoregion are remarkably diverse because of the region's range of habitat, topography, history, and climate (Stebbins 2003). However, the lack of open space and the fragmentation and disturbance of the remaining open space in the Wildlife RSA have precluded the presence of almost all of the special-status herpetofauna. No special-status amphibians are expected in the Wildlife RSA and amphibians will not be discussed further in this document. Only one special-status reptile was determined to have potential to occur in the Wildlife RSA and the potential for this species was determined to be low: the coast horned lizard (*Phrynosoma blainvillii*), a CDFW species of special concern (CDFW 2025) (Table 3.7-6).

Fish

Steelhead – Southern California Distinct Population Segment Pop. 10 (*Oncorhynchus mykiss irideus*; Federally Listed as Endangered)

There is no potential for the Southern California distinct population segment of steelhead, which is federally listed as endangered (CDFW 2025), to occur in the Wildlife RSA. Although historically present in the Santa Ana River, this species is extirpated from this specific segment of the Santa Ana River because of anthropogenic barriers (NOAA Fisheries 2012). Therefore, this species has no potential to occur in the Wildlife RSA and will not be discussed further in this document.

3.7.5.3 Aquatic Resources

Aquatic resources in the Aquatic RSA have been heavily modified as a result of urbanization of the project section (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[4] prevents establishment of vegetation in 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.

[4] Channel maintenance activities conducted by USACE and local flood control agencies (e.g., the Los Angeles County Department of Public Works 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 the USACE Los Angeles District Regional General Permit 41 and other pertinent regional permits (USACE 2021a), as well as the 2021 Nationwide Permits, General Conditions, District Engineer's Decision, Further Information, and Definitions (USACE 2021b). Additional information can be found on the USACE Los Angeles District website (www.spl.usace.army.mil/Media/Fact-Sheets/Article/920482/los-angeles-river-frequently-asked-questions/).

Based on current conditions, aquatic resources in the Aquatic RSA throughout the project section are expected to perform an extremely limited range of aquatic ecological functions.

Aerial imagery interpretation and field investigations in the 3,612.73-acre Aquatic RSA identified a total of 99.04 acres of aquatic resources considered subject to USACE or SWRCB jurisdiction. This acreage consists of 97.15 acres of nonwetland waters of the U.S. (basin, built watercourse, and riverine features) and 1.89 acres of wetlands (freshwater emergent wetland, freshwater forested/shrub wetland). No Section 9 (33 U.S.C. 401) or Section 10 navigable waters of the U.S. (33 U.S.C. 403) were identified in the Aquatic RSA. Based on a comprehensive evaluation of the aquatic resources identified pursuant to the *Revised Definition of "Waters of the United States"; Conforming* (USACE and USEPA 2023), the Authority has determined that the location, type, and extent of waters of the U.S., including wetlands, are entirely consistent under both pre- and post-*Sackett* definitions of waters of the U.S. Accordingly, the Authority will not request a new or amended Preliminary Jurisdictional Determination from USACE.

A total of 153.86 acres of areas potentially subject to California Fish and Game Code Section 1600 et seq. were identified in the Aquatic RSA.[5] This acreage consists of 151.94 acres of predominantly unvegetated lakes and streambeds in the form of basins (including Lakewood Residential Community pond), built watercourses, and riverine features; and 1.92 acres of associated riparian vegetation (freshwater emergent wetland, freshwater forested/shrub wetland, and riparian scrub).

Table 3.7-7 presents a summary of the aquatic resources mapped within the project section.

Table 3.7-7 Aquatic Resources Considered Waters of the U.S., Waters of the State, or Subject to California Department of Fish and Wildlife Section 1600 et seq.[5]

Aquatic Resource Category[1]	USACE or SWRCB Wetland	USACE or SWRCB Nonwetland Waters of the U.S.	CDFW Streambed	CDFW Lakes	CDFW Associated Riparian Vegetation[2]
Wetlands					
Freshwater emergent wetland[3]	1.83	—	—	—	1.84
Freshwater forested/ shrub wetland	0.06	—	—	—	0.06
Wetlands subtotal	1.89	—	—	—	1.90
Nonwetlands					
Basin	N/A	20.81	—	36.96	<0.01
Built watercourse	N/A	0.43	0.57	—	—
Riverine[4]	N/A	75.91	114.43	—	0.02
Nonwetland waters subtotal	N/A	97.15	115.00	36.96	0.02
Total wetlands and nonwetland waters	**1.89**	**97.15**	**115.00**	**36.96**	**1.92**

[1] As defined by *Corps of Engineers Wetland Delineation Manual* (USACE 1987), U.S. Fish and Wildlife Service's National Wetlands Inventory (USFWS 2024b, 2016), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).

[5] Aquatic resources potentially subject to California Fish and Game Code Section 1600 et seq. identified in the Aquatic RSA are generally inclusive of aquatic resources considered subject to USACE or SWRCB jurisdiction (i.e., overlapping).

[2] In the Aquatic RSA, California Fish and Game Code Section 1600 "associated riparian vegetation" occurs in wetlands (freshwater emergent wetland, freshwater forested/shrub wetland) as well as nonwetland (basin, riverine) conditions.
[3] The bulrush marsh identified in the San Gabriel River (Feature 12, Wetlands 02 and 03) portion of the RSA is classified as "freshwater emergent wetland" for USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction and "associated riparian vegetation" for CDFW Section 1600 jurisdiction. The cattail marsh identified in the La Mirada Creek (Feature 19) portion of the RSA is classified as "freshwater emergent wetland" for purposes of CDFW Section 1600 jurisdiction and "riverine" for purposes of USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction, because this feature does not meet the USACE or SWRCB wetland definitions.
[4] The mulefat thickets habitat identified in the Rio Hondo (Feature 9, Basin #3) and San Gabriel River (Feature 12) portions of the RSA is classified as "riverine" for purposes of USACE or SWRCB (CWA Section 404/401) jurisdiction and as "associated riparian vegetation" for purposes of CDFW Section 1600 jurisdiction.
[5] Aquatic resource acreages are based on the project footprint dated December 2024 and include both Shared Passenger Track Alternatives A and B. Specifically, the Aquatic RSA includes both LMF options (26th Street LMF and 15th Street LMF) and both the Norwalk/Santa Fe Springs and Fullerton HSR Station Options. In summary, there is no difference in the location or extent of aquatic resource acreages or aquatic resource impacts between Shared Passenger Track Alternatives A and B.
CDFW = California Department of Fish and Wildlife; CWA = Clean Water Act; HSR = high-speed rail; LMF = light maintenance facility; N/A = not applicable; RSA = resource study area; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers

The following sections provide narrative descriptions of aquatic resources identified and mapped in the Aquatic RSA. These resources meet the statutory definitions and technical criteria for USACE or SWRCB wetland and nonwetland waters of the U.S. and SWRCB wetland and nonwetland waters of the state, and the statutory definition for areas subject to California Fish and Game Code Section 1600 et seq.

Wetland Aquatic Resources

In the Aquatic RSA, delineators identified and mapped two types of wetland aquatic resources considered subject to USACE, SWRCB, and CDFW jurisdiction, consisting of freshwater emergent wetland and freshwater forested/shrub wetland.

Freshwater emergent wetlands were identified at three locations. One moderate-sized (1.73-acre) freshwater emergent wetland (hardstem and California bulrush marsh herbaceous alliance) was identified in the San Gabriel River near the existing railroad crossing and the dominant low-flow channel. A smaller (0.10-acre) freshwater emergent wetland (mulefat thickets shrubland alliance) was also identified in the San Gabriel River along the left descending (eastern) bank in the vicinity of a large (approximately 7.5-foot-wide) stormwater outlet. Lastly, a small (0.01-acre) freshwater emergent wetland (cattail marshes herbaceous alliance) was identified in La Mirada Creek near the existing railroad crossing. Dominant hydrophytic species in the San Gabriel River consisted of California bulrush, willow smartweed, southern cattail, Goodding's willow – red willow, barnyard grass, curly dock, and African umbrella sedge. Dominant hydrophytic species in La Mirada Creek consisted of southern cattail, African umbrella sedge, willow smartweed, barnyard grass, and dense-flowered sprangletop. The aquatic feature in La Mirada Creek did not meet the wetland definitions for USACE or SWRCB and therefore has been classified as riverine USACE or SWRCB nonwetland waters of the U.S.

A small (0.06-acre) freshwater forested/shrub wetland (Goodding's willow – red willow riparian woodland and forest alliance) was identified in the San Gabriel River along the right descending (western) bank in the vicinity of a small (approximately 3-foot-wide) stormwater outlet. Dominant vegetation in this stand consisted of Goodding's willow – red willow overstory and an understory of barnyard grass, willow smartweed, and rough cocklebur.

Associated Riparian Vegetation

In the Aquatic RSA, associated riparian vegetation considered subject to California Fish and Game Code Section 1600 et seq. occurs in one of the Rio Hondo spreading grounds basins, the San Gabriel River, and La Mirada Creek. In the Rio Hondo spreading grounds basin No. 3, associated riparian vegetation consists of a single 0.006-acre mulefat thicket. In the San Gabriel River, associated riparian vegetation consists of a 1.73-acre hardstem and California bulrush marsh, a smaller 0.10-acre hardstem and California bulrush marsh, a single 0.06-acre Goodding's willow – red willow, and two small stands of mulefat thickets, 0.004 acre and 0.009 acre in size. In La Mirada Creek, associated riparian vegetation consists of an 0.01-acre cattail marsh.

Nonwetland Aquatic Resources

Three types of nonwetland aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction were identified in the Aquatic RSA, consisting of basins, riverine features, and built watercourses. With the exception of the mulefat thickets identified in the Rio Hondo spreading grounds (falling in CDFW jurisdiction and outside USACE or SWRCB jurisdiction), the features likely fall under the jurisdiction of USACE, SWRCB, and CDFW. Table 3.7-8 provides a brief description of each type of nonwetland aquatic resource with respect to jurisdictional aquatic resource category, channel design, and type of substrate.

Table 3.7-8 Description of Nonwetland Aquatic Resources in the Aquatic Resource Study Area

Aquatic Resource	Description of Feature
Features 1 (Los Angeles River in the city of Los Angeles), 5 (Rio Hondo in Pico Rivera), 14 (North Fork Coyote Creek in Santa Fe Springs), 15 (Milan Creek in Santa Fe Springs), 19 (La Mirada Creek in La Mirada), 20 (Coyote Creek in South Buena Park and La Mirada),[1] 28 (Fullerton Creek in Fullerton)[1]	Riverine: Concrete bed and bank, trapezoidal channel
Features 18 (La Mirada Creek in La Mirada), 20 (Coyote Creek in South Buena Park and La Mirada), 30 (Fullerton Creek in Fullerton), 38 (Carbon Creek in Anaheim), 41 (Brea Creek in Buena Park)	Riverine: Concrete bed and bank, box channel
Features 12 (San Gabriel River in Pico Rivera), 40 (Santa Ana River in Anaheim and Orange)	Riverine: Earthen bed and concrete/riprap bank, trapezoidal channel
Features 29 and 31 (unnamed features in Fullerton and Anaheim)	Built watercourse: Concrete bed and bank, trapezoidal channel
Features 7–10 and 55–58 (Rio Hondo spreading grounds in Pico Rivera),[2] 23 (Lakeside Residential Community Pond in Buena Park), 37 (Raymond Retarding Basin northwest in Anaheim), 39 (Raymond Retarding Basin southeast in Anaheim)	Basin: Earthen bed and bank, basin

[1] Feature 20 (Coyote Creek) and Features 28/30 (Fullerton Creek) transition between a concrete bed and bank box trapezoidal channel and a concrete bed and bank box channel in the Aquatic RSA.
[2] USACE or SWRCB Clean Water Act Section 404/401 jurisdiction for basin features was mapped laterally between the toes of bank, whereas CDFW 1600 jurisdiction was mapped between the tops of bank. The portion of Feature 55 (Rio Hondo Basin #5) occurring in the Aquatic RSA includes only the eastern bank of the basin; therefore, this feature falls in CDFW Section 1600 jurisdiction but outside of USACE or SWRCB Clean Water Act Section 404/401 jurisdiction.
CDFW = California Department of Fish and Wildlife; RSA = resource study area; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers

Basins

A total of 11 basins was identified in the Aquatic RSA, encompassing 20.81 acres of USACE or SWRCB jurisdiction and 36.95 acres of CDFW jurisdiction. The basins consist of eight spreading grounds associated with the Rio Hondo, the Lakeside Residential Community Pond, and the two Raymond Retarding Basins. The Rio Hondo spreading ground basins (Features 7 through 10 and 55 through 58) are dry throughout most of the year. The Lakeside Residential Community Pond is inundated throughout the year for recreational boating and aesthetics. The Raymond Retarding Basins (Features 37 and 39) are periodically inundated throughout the year.

The Rio Hondo spreading grounds support Bermuda grass and sparse, isolated patches of mulefat along bank slopes and landward of the ordinary high-water mark. The Raymond Retarding Basins support sparse patches (less than 5 percent cover) of hydrophytic vegetation such as dense-flowered sprangletop, willow smartweed, and rough cocklebur, but are dominated by upland vegetation consisting of ruderal native and nonnative species, including common horseweed, Bermuda grass, Russian thistle, and annual sunflower. Based on aerial photograph

interpretation, the Lakeside Residential Community Pond supports only ornamental vegetation along its margins.

Riverine

A total of 16 riverine features were identified in the Aquatic RSA, encompassing 75.91 acres of USACE or SWRCB jurisdiction and 114.43 acres of CDFW jurisdiction. These features consist of (north to south): Los Angeles River (two mapped features), Rio Hondo, San Gabriel River (three mapped features), North Fork Coyote Creek, Milan Creek, La Mirada Creek (two mapped features), Coyote Creek, Brea Creek, Fullerton Creek (two mapped features), Carbon Creek, and Santa Ana River. These watercourses exhibit perennial or intermittent surface water flows and have less than 5 percent cover of hydrophytic vegetation.

Riverine features in the Aquatic RSA consist of concrete-lined, unvegetated channels. These include the Los Angeles River, Rio Hondo, North Fork Coyote Creek, Milan Creek, La Mirada Creek, Coyote Creek, Brea Creek, Fullerton Creek, and Carbon Creek. The most common physical indicators of an ordinary high-water mark consisted of water stains and debris wrack. However, pioneer wetland and riparian vegetation was observed in a subset of these channels, as described below.

The concrete-lined portions of the Los Angeles River and Brea Creek falling in the Aquatic RSA periodically support duckweed blooms in still or slow-moving water or on ground surfaces where water levels have dropped. Access constraints prohibited delineators from identifying species supported at these locations; common species found in such blooms include water fern, Mexican mosquito fern, and Brazilian waterweed. Species falling in the duckweed blooms herbaceous alliance are hydrophytic. However, based on the absence of soils and the presence of an (artificial) restrictive barrier to the underlying substrate, as well as the landscape position of these blooms (uniform, flat riverbed), the Authority has preliminarily determined these features would not meet the three-parameter wetland definition for USACE and SWRCB or qualify as CDFW associated riparian vegetation.

Modest sediment accumulation in La Mirada Creek has allowed the establishment of sparse patches of hydrophytic vegetation over the grouted riprap lining, consisting of pioneer species adapted to disturbance including southern cattail, barnyard grass, and dense-flowered sprangletop. Based on the results of field surveys, this wetland feature did not meet the three-parameter wetland definition for USACE and SWRCB because of the thin soil profile, the confirmed absence of redoximorphic features, and the presence of an (artificial) restrictive barrier to the underlying substrate. Accordingly, this particular wetland feature is included in this section for purposes of USACE or SWRCB jurisdiction (under the general statutory definition for “nonwetland waters”), and under the definition for “associated riparian vegetation” for purposes of CDFW jurisdiction.

The earthen-bottom San Gabriel River supports two separate freshwater emergent wetlands (hardstem and California bulrush marsh herbaceous alliance), and one stand of freshwater forested/shrub wetland (Goodding’s willow – red willow riparian woodland and forest alliance), as described above. In addition, two small stands of mulefat thickets shrubland alliance are along the toe of the western bank of the San Gabriel River, approximately 384 square feet and 187 square feet in size. Both features support an overstory of mulefat and an understory of upland species, consisting of tocalote, foxtail brome, and wild radish. Based on the vegetative composition, these stands did not meet the three-parameter criteria for USACE-defined wetlands. The remaining portion of the San Gabriel River in the Aquatic RSA is composed of unvegetated channel interspersed with salt grass, wild oats and annual brome grassland, and curly dock.

The earthen-bottom portion of the Santa Ana River in the Aquatic RSA is denuded of vegetation but does support some nonnative annual grasses.

Upland vegetation along the margins of these channels is composed of nonnative, invasive species including castor bean, shortpod mustard, fountain grass, London rocket, Mexican fan palm, rough cocklebur, Russian thistle, tree of heaven, and Bermuda grass.

Built Watercourses

Two built watercourses in the Aquatic RSA, encompassing 0.43 acre of USACE or SWRCB jurisdiction and 0.57 acre of CDFW jurisdiction, were identified (features 29 and 31). These two features are concrete-lined, unvegetated channels excavated in uplands for stormwater drainage and nuisance flows. Based on the results of presurvey investigations and reconnaissance-level field surveys, these built watercourses exhibit relatively permanent surface water flows[6] and have faint indicators of an ordinary high-water mark observable from public rights-of-way (water stains along concrete banks). Access restrictions limited further field investigation. Features 29 and 31 discharge to Fullerton Creek approximately 1,959 linear feet and 56 linear feet from the RSA, respectively. Fullerton Creek is a tributary to North Fork Coyote Creek, which in turn is a tributary to the San Gabriel River. The San Gabriel River discharges to the Pacific Ocean (a traditionally navigable water) approximately 4.2 miles downstream from the North Fork Coyote Creek confluence.

Based on the Preliminary Jurisdictional Delineation methodology (USACE 2016), the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (USACE and USEPA 2007), revised guidance (USACE and USEPA 2008), the *Revised Definition of "Waters of the United States"; Conforming* (USACE and USEPA 2023), and the preamble to the USACE Regulatory program operating regulations (USACE 1986), built watercourse features 29 and 31 are considered jurisdictional under CWA Sections 404 and 401.

3.7.5.4 Habitats of Concern

Habitats of concern evaluated in the regional area include special-status natural communities and riparian areas.

Special-Status Natural Communities

Special-status natural communities on the list of California terrestrial natural communities recognized by the CNDDB (CDFG 2010; CDFW 2023; CNPS 2024b) were identified as potentially occurring in the Supplemental RSA within the project section based on CNDDB search results (CDFW 2024a). These communities include California walnut woodland, Southern California arroyo chub (*Gila orcuttii*)/Santa Ana sucker (*Catostomus santaanae*) stream, southern coast live oak riparian forest, southern coastal salt marsh, southern cottonwood willow riparian forest, southern sycamore willow riparian forest, southern willow scrub, and walnut forest. Only one of these communities was mapped in the Supplemental RSA: Southern California arroyo chub/Santa Ana sucker. This area was mapped at the eastern end of the Santa Ana River and includes an exceedingly small area. There is no suitable habitat for Southern California arroyo chub or Santa Ana sucker in the Wildlife RSA.

Two special-status natural communities were mapped in the Botanical RSA (in 100 feet of the project footprint): Goodding's willow – red willow riparian woodland and forest (state rank S3) and hardstem and California bulrush marsh (state rank S3S4).

Riparian Areas

Riparian vegetation in the Wildlife RSA includes hardstem and California bulrush marsh herbaceous alliance, mulefat thickets shrubland alliance, Goodding's willow – red willow riparian woodland and forest alliance, and cattail marshes herbaceous alliance (Table 3.7-9). Two of these riparian vegetation types are also California Sensitive Natural Communities: hardstem and California bulrush marsh herbaceous alliance has a state rank of S3S4 and Goodding's willow – red willow riparian woodland and forest alliance has a state rank of S3.

[6] Relatively permanent waters are defined as nonnavigable tributaries of traditionally navigable waters that typically flow year-round or have continuous flow at least seasonally, and can include built ditches and canals (*U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* [USACE and USEPA 2007], revised guidance [USACE and USEPA 2008], the *Revised Definition of "Waters of the United States"; Conforming* [USACE and USEPA 2023], and the preamble to the USACE Regulatory program operating regulations [USACE 1986]).

Table 3.7-9 Riparian Areas in the Wildlife Resource Study Area

Aquatic Resource	Vegetation Classification Alliance (Sawyer et al. 2009)	Feature Number	Aquatic Resource Classification		Description
			USACE/SWRCB	Cal. Fish and Game Code Section 1600 et seq.	
San Gabriel River	Hardstem and California bulrush marsh herbaceous alliance[1]	Feature 12, San Gabriel River: Freshwater Emergent Wetland #3	Freshwater emergent wetland	Associated riparian vegetation	Dominant species included California bulrush, willow smartweed southern cattail, barnyard grass, curly dock, and African umbrella sedge.
	Mulefat thickets shrubland alliance	Feature 12, San Gabriel Riparian #2, Mulefat	Freshwater emergent wetland	Riparian	Small stand of mulefat along the toe of the western bank, 187 square feet, with an overstory of mulefat and an understory of upland species such as tocalote, foxtail brome, and wild radish.
		Feature 12, San Gabriel Riparian #3, Mulefat	Freshwater emergent wetland	Riparian	Similar to Feature 12, #2 mulefat, but 384 square feet in size.
	Goodding's willow – red willow riparian woodland and forest alliance[2]	Feature 12, San Gabriel Freshwater Emergent Wetland #1, 2, and 3	Freshwater forested/shrub wetland	Freshwater forested/shrub wetland	Three stands consisting of Goodding's willow overstory with an understory of barnyard grass, willow smartweed, and rough cocklebur.
		Not in Aquatic RSA	N/A	N/A	Six small stands present outside of the Aquatic RSA. Goodding's willow with an understory of Bermuda grass, saltgrass, and California bulrush.
La Mirada Creek	Cattail marshes herbaceous alliance	Feature 19, La Mirada, Freshwater Emergent Wetland	Riverine	Freshwater emergent wetland	Southern cattail, umbrella plant, willow smartweed, barnyard grass, and dense-flowered sprangletop observed in sparse patches in the grouted riprap lining.

Aquatic Resource	Vegetation Classification Alliance (Sawyer et al. 2009)	Feature Number	Aquatic Resource Classification		Description
			USACE/SWRCB	Cal. Fish and Game Code Section 1600 et seq.	
Rio Hondo Spreading Grounds	Mulefat thickets shrubland alliance	Feature 9, Basin #3 (Mulefat thickets)	Riverine	Associated riparian vegetation	Patches of mulefat observed along slopes of the bank, with dense-flowered sprangletop, willow smartweed, and rough cocklebur, but dominated by common horseweed, Bermuda grass, Russian thistle, and annual sunflower.
	Goodding's willow – red willow riparian woodland and forest alliance	In Wildlife RSA, Rio Hondo Basin #3	N/A	N/A	Two small patches of Goodding's willow present with an understory of Bermuda grass and other nonnative grasses.
Unnamed drainage, Fullerton Municipal Airport	Cattail marshes herbaceous alliance	In Wildlife RSA	N/A	N/A	Southern cattail, umbrella plant, willow smartweed, barnyard grass, and dense-flowered sprangletop.

Source: CDFW 2023
[1] California Sensitive Natural Communities state rank of S3S4 (CDFW 2023)
[2] California Sensitive Natural Communities state rank of S3 (CDFW 2023)
Cal. Fish and Game Code = California Fish and Game Code; N/A = not applicable; RSA = resource study area; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers

3.7.5.5 Critical Habitat

Federally designated critical habitat is not present in or adjacent to the Wildlife RSA (Figure 3.7-3). Within the 3-mile Supplemental RSA, critical habitat for the federally listed as threatened Coastal California Gnatcatcher is present. This includes critical habitat just over 1 mile northeast of the Wildlife RSA, in the Supplemental RSA near State Route 39 and just under 2 miles northeast of the Supplemental RSA in the Fullerton area. Coastal California Gnatcatcher critical habitat is also present along a wide corridor approximately 3 miles northeast of the Supplemental RSA, and this corridor extends from Montebello through Whittier, La Habra Heights, and north of Brea. No suitable habitat for Coastal California Gnatcatcher exists in the Wildlife RSA and the nearest critical habitat is over 1 mile from the Wildlife RSA. Coastal California Gnatcatchers are not expected to enter the project area and no direct or indirect effects are anticipated for this species. For these reasons, critical habitat is not discussed further in this document.

3.7.5.6 Essential Fish Habitat

There is no essential fish habitat in or adjacent to the Wildlife RSA within the project section. No areas that provide habitat for marine or anadromous fish for spawning, breeding, feeding, or growth to maturity were identified. For these reasons, essential fish habitat is not discussed further in this document.

3.7.5.7 Conservation Areas

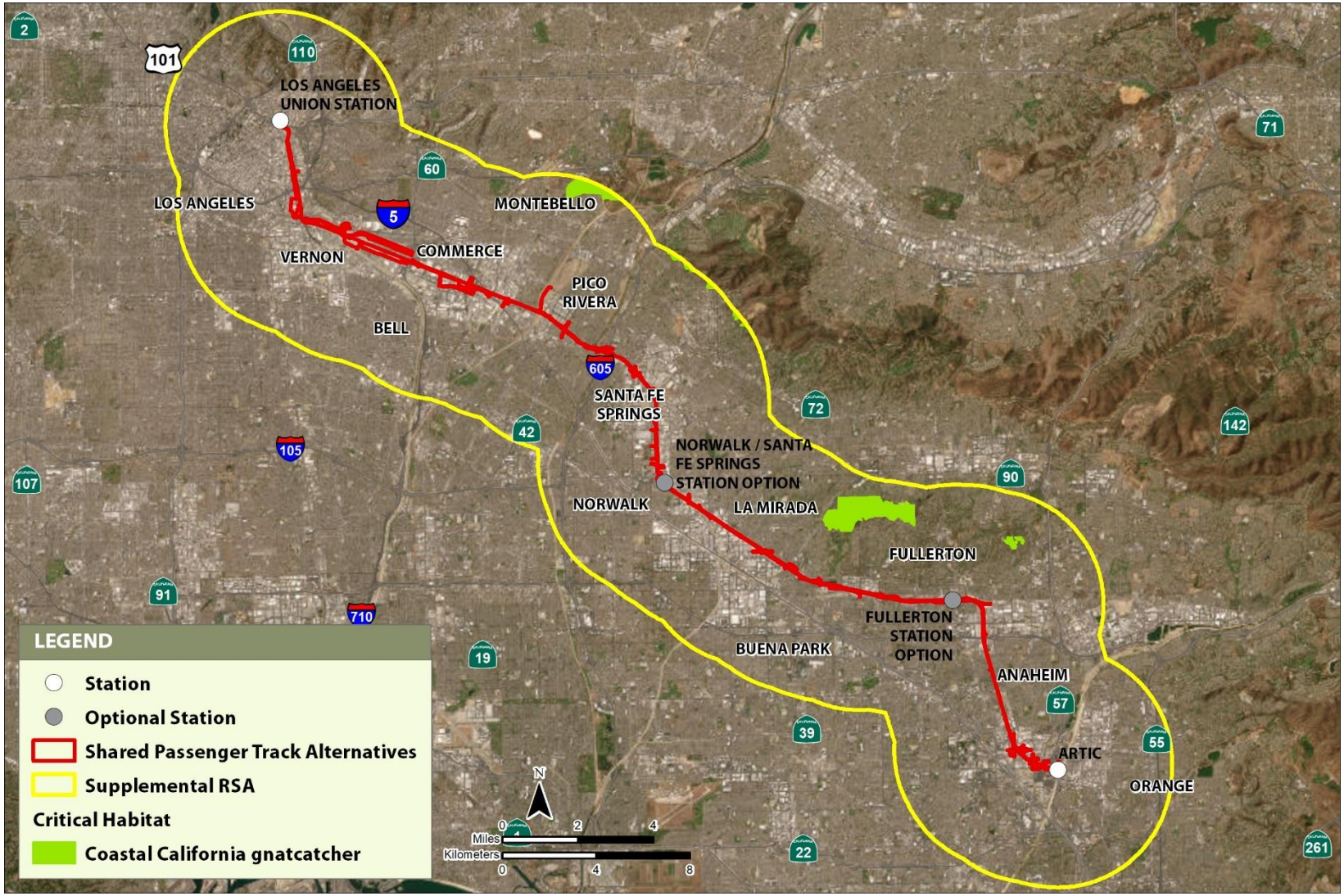
No HCPs or NCCPs were found in the Wildlife RSA (USFWS 2024c). East of the Supplemental RSA (over 3 miles away) is the Orange County Central Coast NCCP. For these reasons, conservation areas are not discussed further in this document.

3.7.5.1 Wildlife Movement Corridors

Wildlife movement corridors are essential to the long-term viability of native flora and fauna because isolated habitat remnants are highly unstable. Wildlife corridors connect intact blocks of habitat (such as nature preserves or other undeveloped areas) and this connection reduces the effects of habitat fragmentation and instability by allowing species to both travel through these corridors between habitat blocks and, in some cases, inhabit the wildlife corridors. Wildlife corridors provide connections for not only wildlife, but connections for the species in the vegetation communities that the wildlife are dependent on. Landscape connectivity enhances population viability with a large amount of evidence that wildlife movement corridors allow for the movement of many species (Penrod et al. 2001).

Riparian habitat and waterways are often identified as primary habitat conduits in linkages and, where semicontiguous or contiguous habitat is present in the linkages, the habitat allows for wildlife movement in the linkage. Linkage barriers are often impediments to movement such as roads, urbanized areas, habitat gaps, agricultural areas, water diversions (dams, diversions, or channelization), and railroads (Penrod et al. 2001).

The connectivity provided by wildlife corridors is important for mammals, birds, herpetological species, fish, and seed dispersers and pollinators, with seed dispersers and pollinators aiding in the maintenance of the linkages for vegetation on which the wildlife rely. Flying species such as birds, bats, and insects use wildlife corridors (Penrod et al. 2001). Avian species identified in the South Coast Missing Linkages include Golden Eagle, Le Conte's Thrasher (*Toxostoma lecontei*), Least Bell's Vireo, Coastal California Gnatcatcher, Southwestern Willow Flycatcher, Snowy Plover (*Charadrius nivosus*), and California Least Tern. Fish include southern steelhead trout, three-spined stickleback (*Gasterosteus aculeatus*), and Santa Ana sucker. Reptiles and amphibians include southwestern pond turtle (*Actinemys pallida*), western spadefoot (*Spea hammondii*), and arroyo toad (*Bufo microscaphus californicus*). Invertebrates include quino checkerspot butterfly (*Euphydryas editha quino*).



Sources: USFWS 2024a; ESRI World Imagery 2024; ESRI World Streetmap 2024

Figure 3.7-3 United States Fish and Wildlife Service Designated Critical Habitat

Keystone species and keystone interactions are maintained through wildlife corridors. Keystone species are the ecological governors of ecosystems and are required to exist in the ecosystem to maintain functionality. Large, undisturbed core areas are often required for keystone species; however, even with large core areas, without connectivity habitat fragmentation leads to instability. Large carnivores such as mountain lion are considered to be a keystone species in Southern California and are found to use wildlife movement corridors for dispersal, avoiding the urban matrix for dispersing (Penrod et al. 2001). Other large carnivores identified for the South Coast Missing Linkages (Penrod et al. 2001) include coyote (*Canis latrans*) and bobcat (*Lynx rufus*).

Based on the desktop analysis in the Supplemental RSA, including a review of the Spencer et al. (2010) and South Coast Wildlands (2008) studies, the only wildlife movement corridors present are those associated with the Los Angeles River, the San Gabriel River, and the Santa Ana River. Theoretically, wildlife could disperse, forage, and breed in open spaces in and beyond the Los Angeles basin. The Los Angeles and San Gabriel Rivers connect the foothills of the San Gabriel Mountains to the northeast, the Santa Monica Mountains to the northwest, and the California coast to the west.

The South Coast Missing Linkages were evaluated during the desktop analysis (Penrod et al. 2003). No linkages occur in the Supplemental RSA within the project section. However, linkage 28 occurs directly adjacent to the Supplemental RSA and connects the Santa Monica Mountains to the Verdugo Hills/San Rafael Hills to the east.

The wildlife movement corridors in this document refer to habitat in watercourses, including the Los Angeles River, the Rio Hondo and spreading grounds, the San Gabriel River, and the Santa Ana River. These watercourses have been identified as having wildlife connectivity (Spencer et al. 2010). With the Rio Hondo and spreading grounds being a major tributary of the Los Angeles River and having greater intact habitat and connections to intact habitat than the Los Angeles River, it has been included as a corridor. These corridors could provide movement corridors for wildlife adapted to disturbance, including regionally common mammal species such as coyote, 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 are known to occur in the Rio Hondo and spreading grounds and the San Gabriel River. 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 seen as 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 include 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.

3.7.5.2 Protected Trees

Los Angeles County has an Oak Tree Ordinance, and the City of Los Angeles Municipal Code provides for the protection of oaks (*Quercus* spp.) (other than scrub oak [*Quercus dumosa*]), Southern California black walnut (*Juglans californica* var. *californica*), western sycamore (*Platanus racemosa*), and California bay (*Umbellularia californica*).

No oak woodlands were mapped in the Botanical RSA during field visits and none were observed in Google Earth Pro (Google Earth Pro 2016, 2017, 2023) and ArcGIS (ESRI World Imagery 2024) imagery for Los Angeles County or the city of Los Angeles.

Codes or ordinances for the cities of Fullerton and Anaheim include requirements to either avoid injuring, damaging, or removing trees (in public rights-of-way) or to obtain a permit for such activities. A summary of the local policies regarding protected trees within each local jurisdiction is included in Table 3.7-10.

Table 3.7-10 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.
County of Los Angeles (2025)	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.

Lead Agency	Policy	Tree Protections
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.
City of Los Angeles (2025)	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 12.08.090	Prohibits damage to street trees.
City of Pico Rivera (2024)	Section 12.040.020 Municipal Code	Permit required to damage any street tree.
City of Santa Fe Springs (2025)	Section 96.133 of the Municipal Code	Permit required to damage any street tree.
City of Buena Park (2025)	Section 12.20.020 of the Municipal Code	Prohibits damage to street trees.
City of Fullerton (2024)	Section 9.06.090 Municipal Code	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 2024; City of Los Angeles 2025d, 2025e; City of Montebello 2024b; City of Pico Rivera 2024; City of Santa Fe Springs 2025; County of Los Angeles 2025c, 2025d

3.7.6 Environmental Consequences

3.7.6.1 Overview

This section discusses the potential impacts on biological and aquatic resources from construction and operation of the project alternatives and HSR station options. Each resource category addresses potential impacts from the No Project Alternative and the Shared Passenger Track Alternatives. There are three types of impacts: temporary construction, permanent construction, and operational impacts. For this resource topic, any differences in the impacts for the HSR station options are described in the analysis.

The project design includes several features (IAMFs) to minimize, avoid, or reduce impacts during construction and operation. The IAMFs are part of the project and are a binding

commitment by the Authority as a part of the project. Mitigation measures, while also binding, may be available to further reduce, compensate for, or offset project impacts that the analysis identifies under NEPA or concludes are significant under CEQA. The impacts of the Shared Passenger Track Alternatives are described and organized as follows.

Construction Impacts

- Impact BIO-1: Construction Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities
- Impact BIO-2: Construction Impacts on Special-Status Plant Species
- Impact BIO-3: Construction Impacts on Special-Status Birds, Raptors, and Migratory Birds
- Impact BIO-4: Construction Impacts on Special-Status Mammals
- Impact BIO-5: Construction Impacts on Aquatic Resources
- Impact BIO-6: Construction Impacts on Wildlife Movement Corridors
- Impact BIO-7: Construction Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)

Operational Impacts

- Impact BIO-8: Operational Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities
- Impact BIO-9: Operational Impacts on Special-Status Birds, Raptors, and Migratory Birds
- Impact BIO-10: Operational Impacts on Special-Status Mammals
- Impact BIO-11: Operational Impacts on Wildlife Movement Corridors
- Impact BIO-12: Operational Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)

3.7.6.2 No Project Alternative

Under the No Project Alternative, recent development trends and infrastructure maintenance in the highly urbanized project section are anticipated to continue, leading to ongoing biological and aquatic resources impacts. Capital improvements to existing highway, airport, conventional rail systems, flood-control facilities, and aquifer-recharge facilities, described in adopted regional transportation plans and municipal general plans, would be implemented (pending availability of funding). In addition, industrial, residential, and associated infrastructure development projects (e.g., shopping centers, wastewater conveyance upgrades) are planned. These planned improvements and growth initiatives would result in associated direct and indirect effects on biological and aquatic resources during construction and operation.

Future improvements would have comparable effects on biological and aquatic resources as similar past and ongoing improvement projects, such as habitat loss and degradation, thereby potentially reducing special-status species populations and water quality. However, these development and improvement projects would be subject to environmental impact analysis, regulatory and resource agency permits and approvals, and incorporation of mitigation measures sufficient to avoid, minimize, and compensate for impacts on biological and aquatic resources. In addition, it is assumed that existing infrastructure would continue to be subject to routine O&M activities, including inspections, repairs, and removal of vegetation, debris, and sediment from channels and basins.

Based on forecasted population growth in the region, existing and future transportation systems (including both highway and conventional rail) would experience more traffic and congestion under the No Project Alternative. Increased traffic and congestion would have a negative impact on wildlife resulting from increased direct mortality on wildlife through collisions and increased indirect mortality of wildlife through pollution. Similarly, increased traffic and congestion would

lead to indirect mortality of botanical resources through pollution, including dust. Both wildlife and plants would experience direct effects because of habitat loss through the conversion of habitat to roads to reduce congestion. However, the other transportation and development projects and planned projects under the No Project Alternative would undergo environmental review, and the effects on biological resources would be analyzed and mitigated.

3.7.6.3 Project Impacts

Construction and operations of the Shared Passenger Track Alternatives would result in temporary and permanent impacts on biological and aquatic resources.

The Authority has incorporated IAMFs into the project design and construction that would reduce effects on these resources (refer to Appendix 2-A). For ease of review, shortened versions of the IAMF names have been provided, and these shortened versions are used when IAMFs are discussed below.

Construction Impacts

Impact BIO-1: Construction Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities

Temporary
Shared Passenger Track Alternative A

Temporary direct construction effects on riparian habitat, vegetation communities, land cover, and special-status natural communities would result from construction crews removing vegetation (including through trimming) in access roads and staging and storage areas, and from construction vehicles and personnel disturbing vegetation (i.e., trampling, covering, and crushing individual plants or populations) and could have an adverse effect on riparian habitat, vegetation communities, land cover, and special-status natural communities. These effects would result in the temporary disturbance of intact special-status natural communities or riparian habitat where temporary impacts are planned to be restored to preproject conditions of equal or greater habitat value (i.e., the impact area is not converted to a different habitat type). After a temporary disturbance of a special-status natural community, riparian habitat, or vegetation community, recolonization tends to occur by plant species adapted to disturbance. In Southern California, nonnative, invasive species often colonize areas after disturbance, which can result in the conversion of native habitat to disturbed/ruderal habitat or nonnative grassland habitat. Temporary direct effects would also include temporary soil compaction associated with travel routes, temporarily reducing suitable habitat for native plant species.

Temporary direct effects of the Shared Passenger Track Alternatives are quantified in Table 3.7-11. The impact would be potentially adverse because of the temporary impacts on riparian and riverine communities. Less than 0.01 acre of duckweed blooms and relatives' provisional herbaceous alliance, a riparian community, would be lost because of temporary construction activities. Approximately 0.13 acre of temporary construction impacts on unvegetated channels, a riverine community, are anticipated.

Table 3.7-11 Direct Effects on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities in the Project Section

Vegetation Classification Alliance	Direct Effects, Shared Passenger Track Alternative A			Direct Effects, Shared Passenger Track Alternative B			Difference Between Shared Passenger Track Alternatives A and B (acres)			Norwalk/Santa Fe Springs High-Speed Rail Station Option			Fullerton High-Speed Rail Station Option		
	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)
Natural and Seminatural Upland Habitats															
Eucalyptus – tree of heaven – black locust woodland seminatural alliance	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
Wild oats and annual brome grasslands seminatural alliance	0.42	0.20	0.03	0.42	0.20	0.03	0	0	0	--	--	--	--	--	--
Aquatic Habitats															
Hardstem and California bulrush marsh herbaceous alliance	0.18	--	0.05	0.18	--	0.05	0	0	0	--	--	--	--	--	--
Mulefat thickets shrubland alliance	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
Cattail marshes herbaceous alliance	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
Goodding's willow – red willow riparian woodland and forest alliance	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
Duckweed blooms and relatives' provisional herbaceous alliance	0.43	<0.01	--	0.43	<0.01	--	0	0	0	--	--	--	--	--	--
Salt grass flats herbaceous alliance[1]	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
Open water	--	--	--	--	--	--	0	0	0	--	--	--	--	--	--
Unvegetated channel	0.80	0.13	--	0.80	0.13	--	0	0	0	--	--	--	--	--	--
Urban Habitats															
Developed	698.52	121.18	0.02	746.03	121.44	0.02	-47.51	-0.26	0	--	--	--	8.55	0.12	--
Barren	3.27	3.53	--	3.27	3.53	--	0	0	0	--	--	--	--	--	--
Disturbed/ruderal	12.65	11.55	0.07	12.66	11.55	0.07	0.01	0	0	--	--	--	0.03	--	--
Ornamental	14.61	13.32	--	15.51	13.32	--	-0.90	0	0	--	--	--	1.32	--	--
TOTAL	**730.88**	**149.92**	**0.17**	**779.30**	**150.18**	**0.16**	**-48.42**	**-0.26**	**0**	**0**	**0**	**0.00**	**9.90**	**0.12**	**0.00**

Sources: Sawyer et al. 2009 and calculations generated using ESRI World Imagery 2024 from data generated by field surveys and aerial photo interpretation
[1] Salt grass flats were not mapped separately from wild oats and annual brome grasslands and were observed in the San Gabriel River, so this effect was not calculated.
-- = No effect

Temporary effects on riparian habitat, vegetation communities, land cover, and special-status natural communities could occur in the project, and could include the following:

- Construction of temporary features (such as staging areas and access roads) could fragment special-status species' habitat, which could temporarily prevent the dispersal of plant species or would temporarily alter movement of wildlife species, including pollinators or seed dispersers.

The Authority has incorporated IAMFs into the project design to avoid and minimize project effects. To reduce temporary effects on riparian habitat and special-status natural communities, the following IAMFs are incorporated as a part of the project.

- **BIO-IAMF#1, Biomonitors:** Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented.
- **BIO-IAMF#3, WEAP – Construction:** The Authority will implement a WEAP so that construction crews are aware of and can abide by the environmental requirements of the project.
- **BIO-IAMF#5, BRMP:** The project biologist will develop a BRMP that will include a compilation of the biological resources avoidance and minimization measures applicable to the project, with project environmental plans included as appendices.
- **BIO-IAMF#8, Demarcate:** Staging and access areas will be sited within designated areas to avoid sensitive biological resources and unintentional impacts on vegetation communities.

The IAMFs listed above would not entirely avoid temporary effects on riparian habitat and special-status natural communities. The following mitigation measures, as described in Section 3.7.7, Mitigation Measures, would be implemented to further minimize, reduce, avoid, or offset temporary effects on riparian and special-status natural communities during construction.

- **BIO-MM#6, Prepare and Implement a Restoration and Revegetation Plan (RRP)**, offsets effects through restoration in areas where these resources have been temporarily disturbed.
- **BIO-MM#33, Conduct Preconstruction Surveys and Delineate Active Nest Buffers Exclusion Areas for Breeding Birds (Aquatic Restoration – Temp)**, offsets effects through restoration of temporarily disturbed aquatic resources considered potential waters of the U.S., waters of the state, or areas subject to California Fish and Game Code Section 1600 et seq.
- **BIO-MM#34, Monitor Construction Activities in Aquatic Resources (Biological Monitor in Aquatic Resources)**, further avoids and minimizes impacts through the biologist monitoring construction, ensuring that BMPs are employed, including the use of sandbags, silt fencing, and other BMPs, along with measures required by the CWA and other regulatory requirements to prevent lowered water quality.
- **BIO-MM#47, Prepare and Implement a Compensatory Mitigation Plan (CMP) for Impacts on Aquatic Resources (Aquatic CMP)**, offsets impacts through restoration, establishment, enhancement, or preservation of aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction, including functions and values, and will meet state and federal policies on no net loss of wetlands.
- **BIO-MM#55, Prepare and Implement a Weed Control Plan (WCP)**, further avoids and minimizes impacts from invasive weeds via the preparation of a WCP. The WCP requires the use of environmentally sensitive areas (ESA), weed surveys, fire prevention, and other methods to avoid the spread of noxious weeds that could outcompete this resource. This plan will minimize and avoid the spread of invasive weeds during construction.

- **BIO-MM#56, Conduct Monitoring of Construction Activities (Biomonitor – Ground Disturbance)**, further avoids and minimizes unintended disturbances through the establishment of ESAs and the installation of exclusion fencing.
- **BIO-MM#58, Establish ESAs and Nondisturbance Zones (ESAs, wildlife exclusion fencing [WEF])**, further avoids and minimizes impacts outside of the construction footprint through establishing ESAs.
- **BIO-MM#60, Limit Vehicle Traffic and Construction Site Speeds (Traffic),** delineates and avoids, through the establishment of ESAs, this resource in and adjacent to construction areas.
- Water diversions will be subject to the dewatering plan (**BIO-MM#62, Prepare Plan for Dewatering and Water Diversions [Dewatering/Water Diversions]**) to minimize turbidity and siltation during dewatering.
- **BIO-MM#79, Conduct Presence/Absence Preconstruction Surveys for Special-Status Plant Species and Special-Status Natural Communities (Special-Status Plant Species Surveys)**, requires survey within the within the Botanical RSA in suitable habitat for Goodding's willow – red willow herbaceous alliance.

Shared Passenger Track Alternative B

There are no riparian habitats or special-status natural communities at the LMF sites at either 15th Street or 26th Street, and there is no difference in the impact acreages for either alternative for riparian habitats or special-status natural communities. Therefore, temporary construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for riparian habitat and special-status natural communities.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

There are no riparian habitats or special-status natural communities at the site, and therefore the Norwalk/Santa Fe Springs HSR Station Option does not include any impacts on these resources. If selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts on riparian habitat or special-status natural communities would be the same as those of the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

There are no riparian habitats or special-status natural communities at the site. Therefore, the Fullerton HSR Station Option does not include any impacts on these resources. If selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives. With inclusion of the Fullerton HSR Station Option, impacts on riparian habitat and special-status natural communities would be the same as under the Shared Passenger Track Alternatives.

Permanent

Shared Passenger Track Alternative A

Permanent direct effects on riparian habitat and special-status natural communities would consist of vegetation, topsoil, and seedbank removal for the placement of permanent infrastructure associated with the project footprint. Permanent direct effects would occur where the project footprint overlaps with vegetation communities and would be associated with the following construction activities: grading; construction and upgrading of track; construction of grade separations, an LMF, stormwater drainage facilities, and access roads; and installation of utility improvements. In addition to removal of vegetation, the permanent degradation of vegetation communities would occur because of shading from overcrossings and aerial structures. Excess dust and piled dirt would bury viable seed banks of native species, which would lower germination

rates and thereby lower recruitment and survival of native species. Permanent direct effects on riparian habitat and special-status natural communities are quantified in Table 3.7-11.

The impacts could involve permanent impacts on hardstem and California bulrush marsh herbaceous alliance, which is both a riparian community and a CDFW special-status natural community (S3). Both shading impacts (0.05 acre) and permanent impacts (0.18 acre) are expected on this community. 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.

There would be permanent indirect construction effects on riparian habitat and special-status natural communities, including on native plant communities, which would prevent re-establishment following construction. These effects could include the following:

- Erosion, siltation, sedimentation, and runoff into native plant communities could 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.

The Authority has incorporated the following IAMFs as part of the project to reduce permanent effects on riparian habitat and special-status natural communities.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP so that construction crews are aware of and abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- The project biologist will develop a BRMP that will include a compilation of the biological resources avoidance and minimization measures applicable to the project, with project environmental plans included as appendices (**BIO-IAMF#5, BRMP**).
- Staging and access areas will be sited within designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on vegetation communities (**BIO-IAMF#8, Demarcate**).
- The effects of invasive weeds will be minimized by cleaning construction equipment to remove mud and plant materials that would introduce invasive weeds (**BIO-IAMF#10, Equipment Cleaning**).
- The effects from erosion and sedimentation will be minimized through **BIO-IAMF#11, BMPs**, which will implement construction BMPs to reduce erosion and control sediment.
- The effects of fugitive dust on seed banks will be minimized through incorporation of **AQ-IAMF#1, Dust**.
- The project's SWPPP will reduce effects associated with the accidental spills of hazardous materials or erosion and sedimentation resulting from construction (**HYD-IAMF#3, SWPPP**).

The IAMFs listed above would not entirely avoid permanent effects on riparian habitat and special-status natural communities. The following mitigation measures, as described in

Section 3.7.7, would be implemented to further reduce or offset permanent effects on riparian habitat and special-status natural communities.

- **BIO-MM#34, Biological Monitor in Aquatic Resources**, requires the biologist to monitor construction near aquatic resources, including monitoring near riparian habitat and special-status natural communities, ensuring that BMPs are employed, including the use of sandbags, silt fencing, and other BMPs, along with measures required by the CWA and other regulatory requirements.
- **BIO-MM#47, Aquatic CMP**, involves restoration, establishment, enhancement, or preservation of aquatic resources to offset impacts on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction, including functions and values, and will meet state and federal policies on no net loss of wetlands. Under the CMP, compensatory mitigation will be achieved.
- **BIO-MM#50, Implement Measures to Minimize Impacts During Off-Site Habitat Restoration, or Enhancement, or Creation on Mitigation Sites (Mitigation Site)**, includes site assessments of biological and aquatic resources, and obtaining any necessary regulatory authorizations prior to conducting compensatory mitigation activities, as well as implementation of avoidance and minimization measures prior to and during these activities.
- **BIO-MM#55, WCP**, avoids the permanent impacts of out-competition with invasive weed species through the minimization and avoidance of the spread of invasive weeds during construction through ESAs, weed surveys, weed control, and fire prevention.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, requires the biologist to establish ESAs and install exclusion fencing to prevent inadvertent disturbance and destruction of suitable habitat outside the construction footprint.
- **BIO-MM#58, ESAs, WEFs**, minimizes impacts outside of the construction footprint through establishing ESAs.
- **BIO-MM#60, Traffic**, delineates and avoids, through the establishment of ESAs, riparian and special-status natural communities in and adjacent to temporary construction areas.
- Water diversions will be subject to the dewatering plan (**BIO-MM#62, Dewatering/Water Diversions**) to minimize turbidity and siltation during dewatering, preventing permanent changes in the riparian communities affected by the dewatering.
- **BIO-MM#79, Special-Status Plant Species Surveys**, requires survey in the Botanical RSA in suitable habitat for Goodding's willow – red willow herbaceous alliance.

Shared Passenger Track Alternative B

Permanent construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for riparian habitat, vegetation communities, and special-status natural communities (Table 3.7-11). There is no riparian habitat or special-status natural communities in either the LMF at 15th Street or 26th Street and there is no difference in the impact acreages for either alternative for riparian habitats or special-status natural communities.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is no riparian habitat or special-status natural communities at the site.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, permanent impacts on riparian habitat and special-status natural communities would be the same as under the Shared Passenger Track Alternatives. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is no riparian habitat or special-status natural communities at the site.

CEQA Conclusion

The temporary and permanent construction impacts on any riparian habitat or special-status natural community as identified in local or regional plans, policies, regulations or by CDFW or USFWS would be potentially significant under CEQA because of the potential to have a substantial adverse effect on a riparian or sensitive natural community.

Mitigation measures are required under CEQA to address impacts on riparian habitat and special-status natural communities, including **BIO-MM#6, RRP**; **BIO-MM#33, Aquatic Restoration – Temp**; **BIO-MM#34, Biological Monitor in Aquatic Resources**; **BIO-MM#47, Aquatic CMP**; **BIO-MM#50, Mitigation Site**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; and **BIO-MM#79, Special-Status Plant Surveys**. With implementation of these mitigation measures, impacts would be less than significant under CEQA.

Impact BIO-2: Construction Impacts on Special-Status Plant Species

Temporary

General biological surveys were not conducted and focused (protocol) surveys for special-status species were not conducted. A habitat assessment was conducted in 2017, because of lack of physical access to the majority of areas where special-status species could occur. In the absence of the ability to conduct surveys, the presence of the special-status species where suitable habitat exists has been assumed.

Shared Passenger Track Alternative A

If special-status plant species are present, temporary direct effects would 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 would result in the temporary disturbance of individual plants, resulting in lower population productivity. Temporary direct effects would also include temporary soil compaction associated with travel routes, temporarily reducing suitable habitat for special-status plant species.

It is anticipated that 1.37 acres (in a construction easement on the northern side of Coyote Creek) of temporary direct effects on suitable habitat would occur for southern tarplant and lucky morning-glory. The presence of these species is assumed; however, additional surveys are required, during which it may be determined that these species are not present. There could be an impact on special-status plant species habitat during construction.

Temporary indirect effects could include temporary indirect impacts on adjacent special-status plant populations (if present). During construction, indirect effects could include temporary increases in construction dust temporarily affecting plants' photosynthetic abilities, accidental spills of hazardous materials, and increases in erosion and sedimentation resulting from construction temporarily affecting special-status plants. Once construction ceases, these effects would cease.

To reduce temporary direct and indirect effects on special-status plant species, the Authority has incorporated the following IAMFs as part of the project.

- **BIO-IAMF#1, Biomonitors**, and **BIO-IAMF#3, WEAP – Construction**, will ensure the implementation of BMPs, which will require proper cleanup and disposal of hazardous spills and implementation of measures to reduce erosion and sedimentation.

- The project biologist will develop a BRMP that will include a compilation of the biological resources avoidance and minimization measures applicable to the project, with project environmental plans included as appendices (**BIO-IAMF#5, BRMP**).
- Staging and access areas will be sited within designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on vegetation communities (**BIO-IAMF#8, Demarcate**).
- Construction waste materials will be stored at or near the construction site to decrease construction truck trips and to reduce generated dust (**BIO-IAMF#9, Waste Storage**).
- There will be a reduction of effects from erosion and sedimentation through **BIO-IAMF#11, BMPs**, and implementation of the project's SWPPP (**HYD-IAMF#3, SWPPP**). The SWPPP will also reduce effects associated with the accidental spills of hazardous materials.
- The effects of fugitive dust on plants will be minimized through incorporation of **AQ-IAMF#1, Dust**, requiring a dust control plan to reduce fugitive dust caused by construction.

The IAMFs listed above would not entirely minimize, reduce, or avoid temporary direct and indirect effects on special-status plants. The following mitigation measures, as described in Section 3.7.7, would be implemented to further reduce or minimize temporary effects on vegetation communities during construction.

- **BIO-MM#6, RRP**, requires the preparation and implementation of revegetation plans for temporary impacts on special-status plant species.
- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into existing vegetation communities.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species, avoiding inadvertent temporary impacts on these communities.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent temporary impacts on vegetation communities and reducing speeds and therefore dust.
- **BIO-MM#62**, **Dewatering/Water Diversions**, minimizes turbidity and siltation for construction work in open and flowing water and requires surveys for special-status species in the affected waterbody (i.e., basins). This measure includes the requirement to conduct surveys for special-status species prior to water diversion and relocation of special-status plants if necessary.
- Within the mapped 1.37 acres of potential suitable habitat for southern tarplant and lucky morning-glory, **BIO-MM#79, Special-Status Plant Surveys**, will occur.
- If southern tarplants or lucky morning-glory are observed, **BIO-MM#80, Prepare and Implement Plan for Salvage and Relocation of Special-Status Plant Species**, would be implemented, which requires special-status plants to be avoided; if avoidance is not possible, salvage and relocation are required.

Shared Passenger Track Alternative B

Temporary impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for special-status plants. There is no habitat for special-status plants at the 15th Street LMF and there is therefore no difference in the impact acreages for special-status plants.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, temporary impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. The Norwalk/Santa Fe Springs HSR Station Option does not include any impacts on special-status plants; if selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives. There is no habitat for special-status plants at the site.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than what would be modified under the Shared Passenger Track Alternatives, but there is no habitat for special-status plants at the site. If this HSR station option were selected, it would not add to the impacts on special-status plants associated with the Shared Passenger Track Alternatives.

Permanent

There would be no permanent construction impacts on special-status plant species because the only location with potential suitable habitat for special-status plant species is in a temporary disturbance area.

CEQA Conclusion

Temporary construction impacts on special-status plants would be potentially significant under CEQA because of the potential to have a substantial adverse effect on the special-status plant species southern tarplant and lucky morning-glory. No permanent impacts are anticipated to occur in this area because it is only a temporary disturbance area, so no permanent impacts are expected on special-status plants.

Mitigation measures are required under CEQA to reduce potential temporary impacts on special-status plant species, and include **BIO-MM#6, RRP**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#79, Special-Status Plant Surveys**; and **BIO-MM#80, Prepare and Implement Plan for Salvage and Relocation of Special-Status Plant Species**. With implementation of these mitigation measures, impacts would be reduced to less-than-significant levels under CEQA.

Impact BIO-3: Construction Impacts on Special-Status Birds, Raptors, and Migratory Birds

Temporary

Shared Passenger Track Alternative A

Temporary direct construction effects on special-status birds, raptors, and migratory birds would include the temporary loss of suitable nesting, foraging, and roosting (burrowing) habitat. Construction activities would temporarily directly affect species of special concern birds, species of special concern raptors, fully protected birds, and other migratory birds protected under the MBTA (including raptors) and similar state statutes if potential nesting habitat would be disturbed during construction, generally by construction occurring during the nesting season in the vicinity of active nests. Such disturbance includes noise associated with construction activities and equipment, which could cause the displacement, mortality, nest failure, or injury of species of special concern bird species, species of special concern raptors, fully protected birds, and migratory birds. If construction cannot be avoided during the breeding season (February 1 through September 1), active nests would be disturbed, potentially causing the loss of eggs or developing young (i.e., nest abandonment during the incubation, nestling, or fledgling stages of these species).

Indirect effects on special-status birds, raptors, and migratory birds as a result of temporary habitat conversion could include temporary shifts in foraging patterns or territories, which could reduce ecological fitness. Effects could include the displacement of or injury to special-status bird species. The inadvertent introduction of invasive (noxious) weeds could reduce habitat suitability for these species and could reduce foraging success, survivability, and reproduction.

Indirect effects may include avoidance behavior by some species in response to increased noise, lighting, and startle and motion disturbances. Increases in noise can make avian calls inaudible and this effect is referred to as *masking*. This effect occurs at approximately 60 to 65 A-weighted decibels depending on the ambient noise to which the birds have become habituated. Noise pollution is associated with changes in behavior associated with migration, communication, detection of prey, and predator avoidance in wildlife (Collins et al. 2022). How wildlife responds to noise pollution varies, with some species indicating habituation over time, and some presenting fear responses. Direct effects on special-status bird species, raptors, and migratory birds are quantified based on suitable habitat in Table 3.7-12. There would be a temporary loss of 3.87 acres of Bald Eagle foraging habitat, no suitable Least Bell's Vireo nesting habitat, no direct loss of California Least Tern nesting habitat, 0.86 acre of Long-Eared Owl nesting and foraging habitat, 15.28 acres of Burrowing Owl nesting and foraging habitat, 0.74 acre of Mountain Plover habitat, 17.19 acres of White-Tailed Kite nesting habitat, 13.52 acres of Loggerhead Shrike nesting habitat, 13.53 acres of Yellow Warbler habitat, and 29.29 acres of nesting bird habitat.

Habitat types that would be disturbed with Shared Passenger Track Alternative A include mainly developed, barren, disturbed/ruderal, and ornamental urban land cover types. Small areas of wild oats and annual brome grassland seminatural alliance would be disturbed, as would some aquatic habitats. The loss of aquatic habitats would be offset through compensatory mitigation.

There would be a temporary impact on special-status birds, raptors, and migratory birds during construction. The Authority has incorporated the following IAMFs as a part of the project to reduce temporary direct effects on special-status birds, raptors, and migratory birds.

- To reduce these temporary direct effects, biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- Monofilament will be eliminated in erosion-control materials to prevent injury to or death of wildlife through entanglement or ingestion (**BIO-IAMF#6, Monofilament**).
- The potential for wildlife to become entrapped in construction trenches, pipes, or culverts will be avoided (**BIO-IAMF#7, Entrapment**).
- Staging and access areas will be sited within designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on wildlife (**BIO-IAMF#8, Demarcate**).
- Construction waste materials will be stored at or near the construction site to decrease construction truck trips, which will reduce disturbance of avian nests by vehicles (**BIO-IAMF#9, Waste Storage**).
- The temporary indirect effects caused by introduction of invasive plant species will be partially addressed through incorporation of **BIO-IAMF#10**, **Equipment Cleaning**, by requiring the cleaning of construction equipment to remove mud and plant materials that would introduce invasive weeds.
- **BIO-IAMF#11, BMPs**, will help reduce invasive species by applying construction site BMPs as prepared in the BMP field manual to employ waste management to prevent the attraction and feeding of predators.

Table 3.7-12 Estimated Potential Effects on Suitable Habitat for Special-Status Wildlife Species

Special-Status Wildlife Species	Federal Status[1]	State Status[2]	Direct Effects: Shared Passenger Track Alternative A			Direct Effects: Shared Passenger Track Alternative B			Difference Between Shared Passenger Track Alternative B and Shared Passenger Track Alternative A			Direct Effects: Norwalk/Santa Fe Springs HSR Station Option			Direct Effects: Fullerton HSR Station Option		
			Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)
Bald Eagle *Haliaeetus leucocephalus*	Delisted, BGEPA, BCC	SE, FP	5.10	3.87	0.08	5.10	3.87	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
California Least Tern *Sternula antillarum browni*	FE	SE, FP	None	None	None	None	None	None	N/A	N/A	N/A	None	None	None	None	None	None
Least Bell's Vireo *Vireo bellii pusillus*	FE	SE	None	None	None	None	None	None	N/A	N/A	N/A	None	None	None	None	None	None
Mountain Lion *Puma concolor*	—	SC	32.36	28.74	0.15	33.27	28.74	0.15	0.91	0	0	0.00	0.00	0.00	1.35	0.00	0.00
Long-Eared Owl *Asio otus*	BCC	SSC	0.88	0.86	0.10	0.88	0.86	0.10	0	0	0	None	None	None	None	None	None
Burrowing Owl *Athene cunicularia hypugaea*	BCC	SC	16.34	15.28	0.10	16.35	15.28	0.10	0.01	0	0	None	None	None	0.03	0.00	0.00
Mountain Plover *Charadrius montanus*	BCC	SSC	0.98	0.74	0.03	0.98	0.74	0.03	0	0	0	None	None	None	None	None	None
White-Tailed Kite *Elanus leucurus*	—	FP	19.71	17.19	0.08	20.61	17.19	0.08	0.90	0	0	None	None	None	1.32	0.00	0.00
Loggerhead Shrike *Lanius ludovicianus*	—	SSC	15.03	13.52	0.03	15.93	13.52	0.03	0.90	0	0	None	None	None	1.32	None	None
Yellow Warbler *Setophaga petechia*	—	SSC	15.64	13.53	0.08	16.54	13.53	0.08	0.90	0	0	None	None	None	1.32	0.00	0.00
Pallid bat *Antrozous pallidus*	—	SSC	6.93	4.79	0.08	6.93	4.79	0.08	0	0	0	None	None	None	0.00	0.00	0.00
Mexican long-tongued bat *Choeronycteris mexicana*	—	SSC	14.61	13.32	0.00	15.51	13.32	0.00	0.90	0	0	None	None	None	1.32	0.00	0.00
Townsend's big-eared bat *Corynorhinus townsendii*	—	SSC	10.65	1.36	0.04	10.65	1.36	0.04	0	0	0	None	None	None	0.07	0.00	0.00
Western mastiff bat *Eumops perotis californicus*	—	SSC	3.24	1.06	0.05	3.24	1.06	0.04	0	0	-0.01	None	None	None	0.07	None	None
Western red bat *Lasiurus frantzii*	—	SSC	16.22	14.14	0.05	17.12	14.14	0.04	0.90	0	-0.01	None	None	None	1.32	0.00	None
Western yellow bat *Lasiurus xanthinus*	—	SSC	16.22	14.14	0.05	17.12	14.14	0.04	0.90	0	-0.01	None	None	None	1.32	0.00	0.00
Pocketed free-tailed bat *Nyctinomops femorosaccus*	—	SSC	11.86	0.82	0.09	11.86	0.82	0.09	0	0	0	None	None	None	0.07	0.00	0.00

Special-Status Wildlife Species	Federal Status[1]	State Status[2]	Direct Effects: Shared Passenger Track Alternative A			Direct Effects: Shared Passenger Track Alternative B			Difference Between Shared Passenger Track Alternative B and Shared Passenger Track Alternative A			Direct Effects: Norwalk/Santa Fe Springs HSR Station Option			Direct Effects: Fullerton HSR Station Option		
			Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)	Permanent (acres)	Temporary (acres)	Shading (acres)
Big free-tailed bat *Nyctinomops macrotis*	—	SSC	11.86	0.82	0.09	11.86	0.82	0.09	0	0	0	None	None	None	0.07	0.00	0.00
Nesting birds	—	—	42.01	29.29	0.19	42.92	29.29	0.19	0.91	0	0	None	None	None	1.42	0.00	0.00

Sources: Calculations generated using ESRI ArcGIS versions 10.1, 10.2, and 10.3 from data generated by field surveys and aerial photo interpretation; USFWS 2023; CDFW 2024a
Vegetation and habitat datasets used to calculate acreage were derived from different sources, which in some cases may slightly inflate the impact acreage because of overlaps.
[1] Federal Status
BCC = Birds of Conservation Concern designated by the U.S. Fish and Wildlife Service
BGEPA = Protected under the Bald and Golden Eagle Protection Act
FE = Endangered
[2] State Status
FP = Fully protected species designated by the California Department of Fish and Wildlife
SC = Candidate
SE = Endangered
SSC = California Species of Special Concern designated by the California Department of Fish and Wildlife
A minimum of two significant digits are used for acreage calculations, with the last number rounded up or down depending on value.
-- = no data; HSR = high-speed rail

The IAMFs listed above would not completely avoid temporary effects on special-status birds, raptors, and migratory birds. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid temporary effects on special-status birds, raptors, and migratory birds during construction.

- **BIO-MM#6, RRP**, implements restoration activities in areas that could support special-status birds and where a temporary loss of suitable habitat for these species occurred.
- **BIO-MM#14, Conduct Preconstruction Surveys and Delineate Active Nest Buffers Exclusion Areas for Breeding Birds (Bird Surveys)**, requires preconstruction nest surveys for nonraptor species during the nesting season and ESA buffers for active nests.
- **BIO-MM#15, Conduct Preconstruction Surveys and Monitoring for Raptors (Raptor Surveys)**, requires preconstruction nest surveys for raptor species during the nesting season and ESA buffers for active nests.
- **BIO-MM#20, Conduct Protocol Surveys for Burrowing Owls (Burrowing Owl Surveys)**, requires Burrowing Owl preconstruction surveys prior to ground disturbance.
- **BIO-MM#21, Implement Avoidance and Minimization Measures for Burrowing Owl (Burrowing Owl Measures)**, requires avoidance of occupied Burrowing Owl burrows during the nesting season and relocation of these burrows outside of the nesting season.
- **BIO-MM#37, Minimize Effects on Wildlife Movement Corridors During Construction (Wildlife Movement Corridor Avoidance)**, avoids or reduces nighttime lighting disturbances during construction on special-status birds, nesting birds, raptors, or migrating birds in or near wildlife crossings. This will be accomplished through avoidance of work during the night or the use of shielding for night lighting.
- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into existing suitable habitat for special-status birds, raptors, and migratory birds.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species and WEF for wildlife, including special-status bird, raptor, and migratory bird nests, avoiding inadvertent temporary impacts on nests.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent temporary impacts on nests; and will reduce speeds and therefore nest disturbance.
- **BIO-MM#62, Dewatering/Water Diversions**, includes surveys for nests and special-status species (such as Burrowing Owl) prior to dewatering to avoid drowning nests and special-status species.
- **BIO-MM#63, Work Stoppage**, gives the Project Biologist the authority to halt work to prevent death of or injury to the species or disturbance of the nest in the event that a special-status wildlife species or nest is found in the work area.
- **BIO-MM#68, Avoid and Minimize Impacts on White-Tailed Kite (White-Tailed Kite)**, avoids temporary effects from construction on nesting White-Tailed Kites.
- **BIO-MM#76, Implement Wildlife Rescue Measures (Wildlife Rescue)**, prevents direct effects on special-status birds, raptors, and migratory birds by allowing the Project Biologist to release the animal or take it to the nearest rehabilitation center in the event that trapped or injured special-status birds, raptors, and migratory birds are observed.

- **BIO-MM#82: Implement Lighting Minimization Measures During Construction (Bio Construction Lighting),** reduces impacts from construction lighting on avian species, preventing impacts such as disorientation and potential collisions.
- **N&V-MM#1, Construction Noise**, includes a noise-monitoring program to comply with noise limits, which would reduce direct noise effects on avian species.
- **AVQ-MM#1, Minimize Visual Disruption from Construction Activities (Visual)**, requires the replacement of shrubs, small trees, and mature trees removed during construction to replace temporarily lost nesting habitat for nesting birds.
- **AVQ-MM#2, Minimize Light Disturbance During Construction (Construction Lighting)**, includes a technical memorandum outlining how the Authority will shield nighttime construction lighting and direct it downward to minimize the light falling outside the construction site, to avoid disturbance of avian behavioral patterns with nighttime lighting.

Shared Passenger Track Alternative B

Temporary construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for special-status birds, raptors, or migratory birds.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is nesting habitat for raptors and migratory birds at the site; however, no temporary impacts on this habitat at this HSR station option are anticipated.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than what would be modified under the Shared Passenger Track Alternatives; although there is additional suitable nesting habitat for raptors and migratory birds in the area of additional disturbance for the HSR station elements, the Fullerton HSR Station Option does not include any impacts on special-status birds, raptors, or migratory birds. If this option is selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives.

Permanent

Shared Passenger Track Alternative A

Construction activities (e.g., grubbing, grading, excavation, driving off-road) would remove or destroy potential nesting habitat for special-status birds, raptors, and migratory birds. Direct effects would include bird mortality or injury and the permanent conversion and loss of occupied nesting and foraging habitat to Shared Passenger Track Alternatives infrastructure. Fragmentation of habitats and landscapes resulting from widening tracks, adding an LMF, and adding fencing could interfere with seasonal movement and dispersal of raptors, migratory birds, and special-status birds. Habitat fragmentation reduces the probability of a population's survivability but is dependent on factors such as the remaining patch size, the dispersal traits of species, and the time scale of the effects. Because of the existing constrained nature of the corridor and low habitat quality, these effects are expected to be minimal.

Expected permanent direct effects include the following:

- If construction occurs during the breeding season (February 1 to September 1), active passerine and raptor nests would be disturbed, potentially causing the loss of eggs or developing young (i.e., nest abandonment during the incubation, nestling, or fledgling stages)

if potential nesting habitat was disturbed during construction, generally by construction occurring during the nesting season in the vicinity of active nests.

- Burrowing Owls extensively use open landscapes with suitable natural or artificial burrows. Suitable habitat exists in some areas within the project footprint.

Because of the noise levels within the existing urbanized environment, it is not expected that construction noise levels would appreciably affect special-status birds, raptors, and migratory birds.

Indirect effects on special-status birds, raptors, and migratory birds as a result of permanent habitat conversion could include shifts in foraging patterns or territories, increased predation caused by construction trash, and decreased reproductive success caused by the loss of foraging habitat. The inadvertent introduction of invasive (noxious) weeds would reduce habitat suitability for these species and could reduce foraging success and therefore survivability and reproduction. Night lighting could disrupt migrations or local movement patterns of avian species. Birds may become disoriented by construction vehicle lighting, resulting in collisions. However, artificial construction lighting at night is not expected to cause indirect effects in this urban setting because the lighting is not expected to appreciably increase baseline light levels, except in situations where temporary construction lighting enters previously unlit areas and is considerably brighter than ambient surrounding conditions. Construction trash provides food for opportunistic predators such as coyotes, raccoons, or crows that prey on or outcompete nesting birds.

Direct effects on avian species would include increases in mortality caused by nest disturbance from construction activities causing nest abandonment, vehicle collisions, and construction trash providing food for opportunistic predators such as raccoons that forage on avian eggs.

Direct effects on special-status bird species, raptors, and migratory birds are quantified based on suitable habitat listed in Table 3.7-12. There would be a permanent loss of 5.10 acres of Bald Eagle foraging habitat, no direct loss of Least Bell's Vireo habitat (no suitable nesting habitat is present), no direct loss of California Least Tern nesting habitat, 0.88 acre of Long-Eared Owl nesting and foraging habitat, 16.34 acres of Burrowing Owl nesting and foraging habitat, 0.98 acre of Mountain Plover habitat, 19.71 acres of White-Tailed Kite nesting habitat, 15.03 acres of Loggerhead Shrike nesting habitat, 15.64 acres of Yellow Warbler nesting habitat, and 42.01 acres of nesting bird habitat.

There would be habitat losses from shading of 0.08 acre of Bald Eagle foraging habitat, 0.10 acre of Burrowing Owl nesting and foraging habitat, 0.03 acre of Mountain Plover habitat, 0.08 acre of White-Tailed Kite nesting habitat, 0.03 acre of Loggerhead Shrike nesting habitat, 0.08 acre of Yellow Warbler nesting habitat, and 0.19 acre of nesting bird habitat.

Habitat types that would be disturbed under Shared Passenger Track Alternative A include mainly developed, barren, disturbed/ruderal, and ornamental urban land cover types. Small areas of wild oats and annual brome grassland seminatural alliance would be disturbed, as would some aquatic habitats. The loss of aquatic habitats would be offset through compensatory mitigation.

Construction could result in impacts on special-status birds, raptors, and nesting migratory birds during construction. To reduce permanent effects on special-status birds, raptors, and migratory birds, the Authority has incorporated the following IAMFs as a part of the project.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- Monofilament will be eliminated in erosion-control materials to prevent injury to or death of wildlife through entanglement or ingestion (**BIO-IAMF#6, Monofilament**).

- The potential for wildlife to become entrapped in construction trenches, pipes, or culverts will be avoided (**BIO-IAMF#7, Entrapment**).
- Staging and access areas will be sited in designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on wildlife (**BIO-IAMF#8, Demarcate**).
- Construction waste materials will be stored at or near the construction site to decrease construction truck trips, which will reduce disturbance of avian nests by vehicles (**BIO-IAMF#9**, **Waste Storage**).
- **BIO-IAMF#10**, **Equipment Cleaning**, will require the cleaning of construction equipment to remove mud and plant materials that would introduce invasive weeds.
- **BIO-IAMF#11, BMPs**, requires applying construction site BMPs as prepared in the BMP field manual to employ waste management to prevent the attraction and feeding of predators.
- The catenary systems, masts, and other structures will be designed to be bird and raptor safe in accordance with applicable standards (**BIO-IAMF#12, Bird Safe**).

The IAMFs listed above would not entirely avoid permanent effects on special-status birds, raptors, and migratory birds. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid, minimize, and offset permanent effects on special-status birds, raptors, and migratory birds during construction.

- **BIO-MM#14, Bird Surveys**, requires preconstruction nest surveys for nonraptor species during the nesting season and ESA buffers for active nests.
- **BIO-MM#15, Raptor Surveys**, requires preconstruction nest surveys for raptor species during the nesting season and ESA buffers for active nests.
- **BIO-MM#20, Burrowing Owl Surveys**, requires Burrowing Owl preconstruction surveys prior to ground disturbance.
- **BIO-MM#21, Burrowing Owl Measures**, requires avoidance of occupied Burrowing Owl burrows during the nesting season and relocation of these burrows outside of the nesting season.
- **BIO-MM#44, Provide Compensatory Mitigation for Loss of Active Burrowing Owl Burrows and Habitat (Burrowing Owl Compensatory Mitigation)**, includes compensatory mitigation for permanent impacts on nesting, occupied, and satellite Burrowing Owls or their habitat.
- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into existing suitable habitat for special-status birds, raptors, and migratory birds.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species and WEF for wildlife, including special-status bird, raptor, and migratory bird nests, avoiding inadvertent temporary impacts on nests.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent temporary impacts on nests; and will reduce speeds and therefore nest disturbance.
- **BIO-MM#62, Dewatering/Water Diversions**, includes surveys for nests and special-status species (such as Burrowing Owl) prior to dewatering to avoid drowning nests and special-status avian species.

- **BIO-MM#63, Work Stoppage**, gives the Project Biologist the authority to halt work to prevent the death of or injury to the species or disturbance of the nest in the event that a special-status wildlife species or nest is found in the work area.
- **BIO-MM#68, White-Tailed Kite**, avoids permanent effects from construction on nesting White-Tailed Kites.
- **BIO-MM#76, Wildlife Rescue**, prevents direct effects on special-status birds, raptors, and migratory birds by allowing the Project Biologist to release the animal or take it to the nearest rehabilitation center in the event that trapped or injured special-status birds, raptors, and migratory birds are observed.
- **N&V-MM#1, Construction Noise**, includes a noise-monitoring program to comply with noise limits, which would reduce direct noise effects on avian species.
- **AVQ-MM#2, Construction Lighting**, includes a technical memorandum outlining how the Authority will shield nighttime construction lighting and direct it downward to minimize the light falling outside the construction site, to avoid disturbance of avian behavioral patterns with nighttime lighting.

Shared Passenger Track Alternative B

Permanent construction impacts for Shared Passenger Track Alternative B would be similar to those of Shared Passenger Track Alternative A for special-status birds, raptors, or migratory birds. Permanent impacts on nesting birds would be 42.92 acres for Shared Passenger Track Alternative B (0.91 acre greater than for Shared Passenger Track Alternative A). In addition, permanent impacts on Yellow Warbler would be 16.54 acres and White-Tailed Kite would be 20.61 acres (both 0.90 acre greater than for Shared Passenger Track Alternative A), and on Loggerhead Shrike would be 15.93 acres (0.90 acre greater than for Shared Passenger Track Alternative A).

The losses caused by shading would be the same for Shared Passenger Track Alternative B as those of Shared Passenger Track Alternative A for special-status birds, raptors, or migratory birds, with the exception that shading impacts on nesting bird habitat would be 0.19 acre (0.10 acre less than for Shared Passenger Alternative A).

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, there would be no permanent impacts on special-status birds, raptors, or migratory birds within the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is nesting habitat for raptors and migratory birds at the site; however, no permanent impacts are expected on this habitat. The Norwalk/Santa Fe Springs HSR Station Option does not include any permanent impacts on special-status birds, raptors, or migratory birds; if selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. Suitable habitat for raptors and migratory birds exists within the area of additional disturbance for the HSR station elements. Additional permanent impacts are anticipated on habitat for Burrowing Owl (0.03 acre), White-Tailed Kite (1.32 acres), Loggerhead Shrike (1.32 acres), Yellow Warbler (1.32 acres), and nesting birds (1.42 acres).

CEQA Conclusion

The temporary and permanent impacts on special-status birds, raptors, and migratory birds would be potentially significant under CEQA because of the potential to have a substantial adverse effect on special-status avian species, raptors, and nesting migratory birds.

Mitigation measures, as described in Section 3.7.7, are required under CEQA to address potential temporary and permanent impacts on special-status birds, raptors, and migratory birds including **BIO-MM#6, RRP**; **BIO-MM#14, Bird Surveys**; **BIO-MM#15, Raptor Surveys**; **BIO-MM#20, Burrowing Owl Surveys**; **BIO-MM#21, Burrowing Owl Measures**; **BIO-MM#37, Wildlife Movement Corridor Avoidance**; **BIO-MM#44, Burrowing Owl Compensatory Mitigation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#68, White-Tailed Kite**; **BIO-MM#76, Wildlife Rescue**; **BIO-MM#82, Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; **AVQ-MM#1, Visual**; and **AVQ-MM#2, Construction Lighting**. With implementation of these mitigation measures, impacts would be reduced to less-than-significant levels under CEQA.

Impact BIO-4: Construction Impacts on Special-Status Mammals

Temporary

Shared Passenger Track Alternative A

The special-status mammal species expected to occur in the Wildlife RSA include mountain lion, a candidate species under the CESA (CDFW 2020), and eight bat species that are CDFW species of special concern. Temporary construction effects on mountain lion include light or noise disturbances within wildlife movement corridors for this species, preventing or altering movement through wildlife movement corridors. Construction activities may attract prey species (such as coyotes, raccoons, feral cats, and dogs) if trash or other attractants are present, attracting mountain lions to urban areas, which increases the chances of changing the movement patterns of the mountain lions.

The placement of temporary structures and staging areas, as well as equipment operation, would result in noise or dust disturbance, which could affect bats temporarily.

Temporary alterations in traffic patterns and pedestrian infrastructure would temporarily modify activity, lighting, and noise along adjacent roadways, which could result in the temporary displacement and disruption of foraging and roosting of bats. Indirect effects on bat species from temporary habitat conversion could include shifts in foraging patterns or territories, potential increases in foraging costs, and decreased reproductive success. There would be an impact on special-status bats during construction. Indirect effects could also include construction noise and, despite existing levels of artificial light, effects on foraging and migration patterns from nighttime construction lighting. These impacts would be greatest in areas where ambient light is lowest and in situations where construction lighting is required to be bright during nighttime hours. Shielding the light from entering wildlands (where ambient light would be lower, such as the watercourses) would prevent inadvertent impacts on special-status mammals.

Indirect effects on mountain lions as a result of temporary construction could include shifts in movement patterns or territories because of construction noise or light. Changes in the habitat suitability for prey species common in urban environments could occur through the introduction of invasive plant species during construction.

Direct effects on special-status mammals (identified by species) are quantified based on suitable habitat in Table 3.7-12. There would be a temporary loss of 28.74 acres of suitable mountain lion habitat, 4.79 acres of suitable pallid bat habitat, 13.32 acres of suitable Mexican long-tongued bat habitat, 1.36 acres of suitable Townsend's big-eared bat habitat, 1.06 acres of suitable western mastiff bat habitat, 14.14 acres of suitable western red bat habitat, 14.14 acres of suitable western yellow bat habitat, 0.82 acre of suitable pocketed free-tailed bat habitat, and 0.82 acre of suitable big-free-tailed bat habitat. The loss of this habitat is not additive in the sense that the

habitat identified for one species is not the same as habitat identified for a second species, or a portion of habitat being suitable for multiple species.

The Authority has incorporated the following IAMFs as a part of the project.

- To reduce temporary direct effects on mountain lions and special-status bats, biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- The potential for wildlife to become entrapped in construction trenches, pipes, or culverts will be minimized through the use of covers and ramps (**BIO-IAMF#7, Entrapment**).
- Staging and access areas will be sited within designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on wildlife (**BIO-IAMF#8, Demarcate**).
- Construction waste materials will be stored at or near the construction site to decrease construction truck trips, which will reduce mortality risk for mountain lions and special-status bats from vehicles (**BIO-IAMF#9, Waste Storage**).
- **BIO-IAMF#11**, **BMPs**, requires the application of construction site BMPs as prepared in the BMP field manual to employ waste management to prevent the attraction and feeding of predators.

The IAMFs listed above would not entirely avoid temporary direct effects on mountain lions and special-status bats. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid or minimize temporary direct effects on mountain lions and special-status bats during construction.

- **BIO-MM#6, RRP**, implements an RRP in areas that could support mountain lions and special-status bats and where a temporary loss of suitable habitat for these species occurred.
- **BIO-MM#25, Conduct Preconstruction Surveys for Special-Status Bat Species (Bat Surveys)**, requires conducting visual and acoustic surveys for roosting bats.
- **BIO-MM#26, Implement Bat Avoidance and Relocation Measures (Bat Avoidance)**, requires avoidance or relocation of active bat hibernacula, bat maternity roosts, or bat nurseries (per a relocation plan).
- **BIO-MM#27, Implement Bat Avoidance and Relocation Measures (Bat Exclusion/ Deterrence)**, allows the Project Biologist to evict nonbreeding or nonhibernating bats roosting in the work area.
- **BIO-MM#37, Wildlife Movement Corridor Avoidance**, avoids impacts on wildlife using wildlife crossings through avoiding working at night in the wildlife crossings. If avoidance is not possible, night lighting will be shielded to prevent light from entering the crossing. The wildlife crossings will not be impeded through the use of fencing, either permanent or temporary construction fencing. Wildlife crossings include the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River.
- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into existing suitable habitat for special-status mammals.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.

- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species and WEF for wildlife, including mountain lions and special-status bats, avoiding inadvertent temporary impacts.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent temporary impacts on mountain lions and bats; and will reduce speeds and therefore roost disturbance.
- **BIO-MM#62, Dewatering/Water Diversions**, includes surveys for special-status species prior to dewatering to avoid drowning special-status species.
- **BIO-MM#63, Work Stoppage**, gives the Project Biologist the authority to halt work to prevent the death of or injury to mountain lions or special-status bat species in the event that a special-status wildlife species is found in the work area.
- **BIO-MM#76, Wildlife Rescue**, prevents direct effects on special-status mammals by allowing the Project Biologist to release the animal or take it to the nearest rehabilitation center in the event that a trapped or injured special-status mammal is observed.
- **BIO-MM#82: Bio Construction Lighting**, reduces impacts from construction lighting on wildlife movement, preventing impacts such as disorientation, attraction to construction equipment, and potential collisions.
- **N&V-MM#1, Construction Noise**, includes a noise-monitoring program to comply with noise limits. This measure would reduce direct noise effects on mountain lions and special-status bats.
- **AVQ-MM#1, Visual**, requires the replacement of shrubs, small trees, and mature trees removed during construction to replace temporarily lost roosting habitat for special-status bats.
- **AVQ-MM#2, Construction Lighting**, includes a technical memorandum outlining how the Authority will shield nighttime construction lighting and direct it downward to minimize the light falling outside the construction site, to avoid disturbance of mountain lion and bat behavioral patterns with nighttime lighting.

Construction of the early action projects—specifically the Pioneer Boulevard grade separation and the Buena Park Metrolink Station relocation—as described in Chapter 2, Alternatives, would have temporary effects on special-status mammals through the disturbance of bat roosts, hibernacula, and maternity sites in or adjacent to the temporary construction areas. IAMFs would be incorporated into the design of these early action projects and mitigation measures would be implemented to minimize effects on special-status mammals.

Shared Passenger Track Alternative B

Temporary construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for special-status mammals.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, temporary construction impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is habitat for special-status mammals, including western red bat, western yellow bat, and mountain lion at the site. However, the Norwalk/Santa Fe Springs HSR Station Option does not include any impacts on special-status mammals because the temporary and permanent impact areas do not overlap with the suitable habitat for these species. The HSR station option would not add to the impact caused by the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, temporary construction impacts on special-status mammals would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. Suitable habitat exists for special-status mammals, including western red bat, western yellow bat, and mountain lion at this site. However, no temporary impacts are anticipated at the Fullerton HSR Station Option within these suitable habitat areas because the temporary and permanent impact areas do not overlap with the suitable habitat for these species. The Fullerton HSR Station Option would not add to the impact caused by the Shared Passenger Track Alternatives.

Permanent

Shared Passenger Track Alternative A

Special-status mammals expected in the Wildlife RSA include mountain lion, a candidate species under the CESA (CDFW 2020), and eight bat species that are CDFW species of special concern. Permanent direct effects on mountain lions could include mortality of individuals during construction through collisions (e.g., with construction vehicles), entrapment in construction areas, inadvertent poisoning through the use of anticoagulant rodenticides, and death through human and mountain lion conflict.

Construction activities may attract prey species if trash is present, attracting mountain lions to urban areas, which increases the chances of human and mountain lion conflicts, which can lead to death of mountain lions. The use of anticoagulant rodenticides for pest control can lead to death of mountain lions through mountain lions ingesting prey species that have been poisoned by rodenticides. Increased construction traffic can lead to vehicle strikes of mountain lions, especially in areas adjacent to wildlife movement corridors for this species. Increased construction activity increases the likelihood of human and mountain lion interactions, especially at the interfaces of urban areas and wildlands.

Other permanent direct effects include the permanent conversion of foraging habitat to the Shared Passenger Track Alternatives infrastructure and the fragmentation of habitats and landscapes resulting from construction.

Construction activities could attract raptors or other opportunistic predators (such as coyotes, raccoons, and feral cats) if trash or other attractants are present. This increase in opportunistic predators could increase predation pressure on bats. Construction traffic creates noise and lighting and increases collision risk for bat species. Permanent direct effects on bats could include the mortality of individuals during construction through collisions (e.g., with vehicles or wires) or entrapment in construction areas or equipment such as water tanks. Increased lighting after sunset could disrupt foraging activities by special-status bat species, causing some species to leave an area that has prolonged disturbance and attraction of other species. Nocturnal insects are drawn by lighting, which in turn attracts foraging bats. Special-status bats that are attracted to lighted construction areas could have higher potential mortality through disorientation and interaction with construction equipment.

Permanent direct effects also include (1) the permanent conversion of occupied roosting and foraging habitat to Shared Passenger Track Alternatives infrastructure and (2) the fragmentation of habitats and landscapes resulting from construction, which could interfere with seasonal movement and dispersal of special-status bats. Removal or disturbance of roost sites would cause the direct mortality of bats during construction or would cause the bats to be displaced. Bats require roost sites to maintain stable temperatures and to avoid predators. If suitable alternate roost sites are not available, the bats may be predated or die from exposure. Bats are particularly sensitive to noise pollution, because they use echolocation to hunt insect prey and for orientation, and it has been found that bats avoid foraging in proximity to loud noise and that foraging efficiency declines in proximity to traffic noise (Schaub et al. 2008; Siemers and Schaub 2011).

Permanent indirect construction effects would include increases in construction-related pedestrian and vehicle traffic. Changes in the patterns of human activity because of construction would increase the amount of human disturbance, noise, and lighting in adjacent habitat areas, which could result in the permanent disruption of bat foraging and roosting areas. Although construction noise and lighting effects would be temporary and occur only as long as construction is occurring, these effects could cause increases in bat mortality because of disruptions in travel and foraging caused by night lighting.

Direct effects on special-status mammals are quantified based on suitable habitat and are included in Table 3.7-12. There would be a permanent loss of 32.36 acres of suitable mountain lion habitat, 6.93 acres of suitable pallid bat habitat, 14.61 acres of suitable Mexican long-tongued bat habitat, 10.65 acres of suitable Townsend's big-eared bat habitat, 3.24 acres of suitable western mastiff bat habitat, 16.22 acres of suitable western red bat habitat, 16.22 acres of suitable western yellow bat habitat, 11.86 acres of suitable pocketed free-tailed bat habitat, and 11.86 acres of suitable big-free-tailed bat habitat. The loss of this habitat is not additive in the sense that the habitat identified for one species is not the same as the habitat identified for a second species, or a portion of habitat being suitable for multiple species.

Shading losses for special-status mammals are quantified in Table 3.7-12. There would be shading impacts of 0.15 acre for suitable mountain lion habitat, 0.08 acre of pallid bat habitat, 0.04 acre of Townsend's big-eared bat habitat, 0.05 acre of western mastiff bat habitat, 0.05 acre of western red bat habitat, 0.05 acre of western yellow bat habitat, 0.09 acre of pocketed free-tailed bat habitat, and 0.09 acre of big free-tailed bat habitat.

There would be an impact on special-status mammals during construction. The Authority has incorporated the following IAMFs as a part of the project to reduce permanent direct effects on special-status mammals.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- The potential for wildlife to become entrapped in construction trenches, pipes, or culverts will be minimized through the use of covers and ramps (**BIO-IAMF#7, Entrapment**).
- Staging and access areas will be sited within designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on wildlife (**BIO-IAMF#8, Demarcate**).
- Construction waste materials will be stored at or near the construction site to decrease construction truck trips, which will reduce mortality risk for special-status mammals from vehicles (**BIO-IAMF#9, Waste Storage**).

The IAMFs listed above would not entirely avoid permanent effects on special-status mammals. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid permanent effects on special-status mammals during construction.

- **BIO-MM#25, Bat Surveys**, requires the Project Biologist to conduct visual and acoustic surveys for roosting bats.
- **BIO-MM#26, Bat Avoidance**, requires the Project Biologist to avoid or relocate active hibernacula, maternity roosts, or nurseries (per a relocation plan).
- **BIO-MM#27, Bat Exclusion/Deterrence**, allows the Project Biologist to evict nonbreeding or nonhibernating bats roosting within the work area.
- **BIO-MM#37, Wildlife Movement Corridor Avoidance**, avoids impacts on wildlife using wildlife crossings through avoiding working at night in the wildlife crossings. If avoidance is

not possible, night lighting will be shielded to prevent light from entering the crossing. The wildlife crossings will not be impeded through the use of fencing, either permanent or temporary construction fencing. Wildlife crossings include the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River.

- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into existing suitable habitat for special-status mammals.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species and WEF for wildlife, including special-status mammals, avoiding inadvertent temporary impacts.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent impacts on special-status mammals; and will reduce speeds and therefore collision potential and bat roost disturbance.
- **BIO-MM#62, Dewatering/Water Diversions**, includes surveys for special-status species prior to dewatering to avoid drowning special-status species.
- **BIO-MM#63, Work Stoppage**, gives the Project Biologist the authority to halt work to prevent the death of or injury to the special-status species in the event that a special-status wildlife species is found in the work area.
- **BIO-MM#76, Wildlife Rescue**, prevents direct effects on special-status mammals by allowing the Project Biologist to release the animal or take it to the nearest rehabilitation center in the event that a trapped or injured special-status mammal is observed.
- **N&V-MM#1, Construction Noise**, includes a noise-monitoring program to comply with noise limits, which would reduce direct noise effects on special-status mammals.
- **AVQ-MM#2, Construction Lighting**, includes a technical memorandum outlining how the Authority will shield nighttime construction lighting and direct it downward to minimize the light falling outside the construction site, to avoid disturbance of mountain lion and special-status bat behavioral patterns with nighttime lighting.

Construction of the early action projects—specifically the Pioneer Boulevard grade separation and the Buena Park Metrolink Station relocation—as described in Chapter 2 would have permanent effects on special-status mammals through the disturbance of roosts, hibernacula, and maternity sites in permanent construction areas. IAMFs would be incorporated into the design of these early action projects and mitigation measures would be implemented to minimize effects on special-status mammals.

Shared Passenger Track Alternative B

Permanent construction impacts for Shared Passenger Track Alternative B would be similar to those of Shared Passenger Track Alternative A for special-status mammals. Shared Passenger Track Alternative B would result in 33.27 acres of impacts on mountain lion habitat (0.91 acre greater than for Shared Passenger Track Alternative A), 15.51 acres of impacts on Mexican long-tongued bat habitat (0.90 acre greater than for Shared Passenger Track Alternative A), and 17.12 acres of impacts on western red bat and western yellow bat habitat (0.90 acre greater than for Shared Passenger Track Alternative A). Shading impacts would be 0.04 acre for western mastiff bat, western red bat, and western yellow bat (0.01 acre fewer than for Shared Passenger Track Alternative A).

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, permanent impacts on special-status mammals would be the same as those of the Shared Passenger Track Alternatives

in the station area because the Norwalk/Santa Fe Springs HSR Station Option does not include any additional impacts on special-status mammals and would not add to the impact caused by the Shared Passenger Track Alternatives. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is habitat for special-status mammals, including western red bat, western yellow bat, and mountain lion at the site; however, no additional impacts would result.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, permanent impacts on special-status mammals would be greater than those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for special-status mammals within the area of additional disturbance, including habitat for mountain lion (1.35 acres of impacts), Mexican long-tongued bat (1.32 acres of impacts), Townsend's big-eared bat (0.07 acre of impacts), western mastiff bat (0.07 acre of impacts), western red bat (1.32 acres of impacts), western yellow bat (1.32 acres of impacts), pocketed free-tailed bat (0.07 acre of impacts), and big free-tailed bat (0.07 acre of impacts). No permanent shading impacts are anticipated to occur within this HSR station option; therefore, no impacts would occur on bats from shading.

CEQA Conclusion

The temporary and permanent construction impacts on mammal species identified as candidate, sensitive, or special status would be potentially significant under CEQA because of the potential to have a substantial adverse effect on these species either directly or indirectly through habitat modification.

Mitigation measures are required under CEQA to address potential temporary and permanent construction impacts on special-status mammals, including **BIO-MM#6, RRP**; **BIO-MM#25, Bat Surveys**; **BIO-MM#26, Bat Avoidance**; **BIO-MM#27, Bat Exclusion/Deterrence**; **BIO-MM#37, Wildlife Movement Corridor Avoidance**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#76, Wildlife Rescue**; **BIO-MM#82, Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; **AVQ-MM#1, Visual**; and **AVQ-MM#2, Construction Lighting**. With implementation of these mitigation measures, impacts would be reduced to less-than-significant levels under CEQA.

Impact BIO-5: Construction Impacts on Aquatic Resources

Temporary

Shared Passenger Track Alternative A

As described in Section 3.7.5, the Aquatic RSA is heavily disturbed and consists predominantly of concrete-lined, unvegetated channels. In addition, earthen-bottom channels and basins are regularly maintained (disced, mowed, or treated) for capacity, thus altering natural functions on a routine basis.

Aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction identified in the Aquatic RSA consist of freshwater emergent wetland, freshwater forested/shrub wetland, basin, riverine, and built watercourse features.

Under Shared Passenger Track Alternative A, construction activities that would result in temporary direct effects on aquatic resources 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.

The resultant effects of these activities on aquatic functions and services could include temporary direct effects on substrate and vegetation; currents, circulation, and drainage patterns; and water quality, as described below. Temporary direct effects on these resources for the project section are quantified in Table 3.7-13. For additional detail, including impacts for each aquatic resource,

refer to the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).

Table 3.7-13 Temporary Direct Effects on Aquatic Resources Considered Waters of the U.S. and Waters of the State, and Subject to California Fish and Game Code Section 1600 et seq.[5,6]

Aquatic Resource Category[1]	USACE or SWRCB Wetland Effects	USACE or SWRCB Nonwetland Waters of the U.S. Effects	CDFW Streambed Effects	CDFW Lakes Effects	CDFW Associated Riparian Vegetation Effects[2]
Wetlands					
Freshwater emergent wetland[3]	0.29	--	--	--	0.29
Freshwater forested/shrub wetland	--	--	--	--	--
Wetlands subtotal	0.29	--	--	--	0.29
Nonwetland Waters					
Basin	N/A	--	--	--	--
Built watercourse	N/A	0.02	0.03	--	--
Riverine[4]	N/A	1.21	1.99	--	--
Nonwetland waters subtotal	N/A	1.23	2.02	--	--
Grand Total	**0.29**	**1.23**	**2.02**	**--**	**0.29**

[1] As defined by *Corps of Engineers Wetland Delineation Manual* (USACE 1987), U.S. Fish and Wildlife Service's National Wetlands Inventory (USFWS 2024b, 2016), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).
[2] In the Aquatic RSA, California Fish and Game Code Section 1600 "associated riparian vegetation" occurs in wetlands (freshwater emergent wetland, freshwater forested/shrub wetland) as well as nonwetland (basin, riverine) conditions, depending on the hydrologic, geomorphic, soils, and vegetative conditions.
[3] The bulrush marsh identified in the San Gabriel River portion of the RSA is classified as "freshwater emergent wetland" for USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction and "associated riparian vegetation" for CDFW Section 1600 jurisdiction. The cattail marsh identified in the La Mirada Creek (Feature 19) portion of the RSA is classified as "freshwater emergent wetland" associated riparian vegetation for purposes of CDFW Section 1600 jurisdiction and "riverine" for purposes of USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction, because this feature does not meet the USACE or SWRCB wetland definitions.
[4] The mulefat thickets habitat identified in the San Gabriel River portion of the RSA is classified as "riverine" for purposes of USACE or SWRCB (CWA Section 404/401) jurisdiction and as "associated riparian vegetation" for purposes of CDFW Section 1600 jurisdiction.
[5] Aquatic resource impact acreages include both Shared Passenger Track Alternatives A and B. Specifically, the Aquatic RSA includes both LMF sites (26th Street LMF and 15th Street LMF) and both station options (Norwalk/Santa Fe Springs HSR Station Option and Fullerton HSR Station Option). In summary, there is no difference in the location or extent of aquatic resource acreages or aquatic resource impacts between Shared Passenger Track Alternatives A and B.
[6] Aquatic resources potentially subject to California Fish and Game Code Section 1600 et seq. identified in the Aquatic RSA are generally inclusive of aquatic resources considered subject to USACE or SWRCB jurisdiction (i.e., overlapping).
-- = no effect; CDFW = California Department of Fish and Wildlife; CWA = Clean Water Act; HSR = high-speed rail; LMF = light maintenance facility; N/A = not applicable; RSA = resource study area; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers

These temporary activities could lead to disturbance of substrate and vegetation in and adjacent to aquatic resources in the construction zones. The excavation and stockpiling of bed or basin substrate, use of surface water diversions and cofferdams, and installation of access roads and forms (e.g., for concrete pours) could directly alter currents, circulation, and drainage patterns of surface waters, particularly during the wet season (October through April) when precipitation and high flows are more prevalent. Temporary fill materials and structures can modify flow patterns through the obstruction of flow; changes in the direction or velocity of water circulation; increasing erosion, siltation, or runoff; and reduction of the capacity of a watercourse or waterbody (i.e., basin).

The presence of construction equipment and materials in aquatic resources and the excavation and stockpiling of bed or basin substrate has the potential to also degrade water quality through accidental leaks, spills, and the erosion of stockpiles (e.g., sidecast substrate). Specifically, the introduction of pollutants and sediment into surface waters could further degrade water quality in riverine and built watercourse features. These effects are of particular concern during the wet season (October through April). Construction of Shared Passenger Track Alternative A also has the potential to result in temporary indirect effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction. Construction equipment, vehicles, and personnel could spread invasive and noxious weeds through activities such as spreading soils during grading and using unclean equipment and vehicles from other project sites. The introduction and establishment of these species has the potential to outcompete regulated riparian and wetland habitats. However, as described in Section 3.7.5, 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. The presence of watercourses supporting state and federally regulated riparian and wetland habitats within the temporary disturbance footprint of Shared Passenger Track Alternative A is limited to the San Gabriel River and La Mirada Creek. Accordingly, the potential adverse effects of invasive and noxious weeds on these regulated resources during construction would be limited to these watercourses within the project footprint and immediate vicinity.

In addition, the excavation and stockpiling of bed or basin substrate, use of surface water diversions and cofferdams, and installation of access roads and forms (e.g., for concrete pours) in aquatic areas may indirectly alter currents, circulation, and drainage patterns of surface waters near construction zones, including in downstream reaches of built watercourses and riverine features. These activities also have the potential to temporarily degrade water quality near construction zones through leaks, spills, and the erosion of stockpiles, including in downstream reaches of built watercourses and riverine features. The introduction of pollutants and sediment into surface waters could further degrade water quality downstream in receiving waters such as the Los Angeles River, Rio Hondo, San Gabriel River, and Santa Ana River. These major watercourses are listed by Los Angeles and Santa Ana Regional Water Quality Control Boards as “impaired” for one or more pollutants (Los Angeles RWQCB 2018; Santa Ana RWQCB 2016). These potential indirect effects are of particular concern during the wet season (October through April). However, based on the limited number and restricted size of proposed temporary in-channel fill or structures, indirect changes to flow patterns, velocities, erosion, siltation, runoff, channel capacity, and water quality would be minimal.

To reduce potential temporary direct and indirect effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction, the Authority has incorporated the following IAMFs as a part of the project.

- Biological monitors will oversee construction activities (**BIO-IAMF#1, Biomonitors**), stop work if necessary, and implement WEAP training (**BIO-IAMF#3, WEAP – Construction**).
- Temporary staging and access areas will be sited within designated areas and avoid aquatic resources and sensitive habitats to the extent feasible (**BIO-IAMF#5, BRMP**, and **BIO-IAMF#8, Demarcate**).
- Excavated material will be returned as backfill or, if unsuitable for treatment and reuse, will be disposed of at an off-site location (**BIO-IAMF#9, Waste Storage**).
- The introduction of invasive plant species will be minimized through incorporation of **BIO-IAMF#10, Equipment Cleaning**.
- A construction site BMP manual will be prepared and implemented (**BIO-IAMF#11, BMPs**).
- Stormwater and nuisance runoff resulting from changes in impervious surfaces or accidental releases of hazardous materials will be controlled and treated through construction of

stormwater management facilities and low-impact development techniques (**HYD-IAMF#1, Stormwater**; **HYD-IAMF#3, SWPPP**; and **HYD-IAMF#4, SWPPP – Industrial**).

- Standard construction BMPs will be implemented to prevent and clean up accidental releases of hazardous materials (**HMW-IAMF#6, Spills**).

The IAMFs listed above would not entirely avoid temporary effects on state and federally protected wetlands, riparian habitat, and nonwetland waters. Mitigation measures, as described in Section 3.7.7, would offset temporary effects on these resources during construction.

- Grade landform contours to approximate predisturbance conditions, revegetate disturbed areas with native plant species, and use certified weed-free straw and mulch (**BIO-MM#6, RRP**).
- Restore temporarily disturbed aquatic resources considered potential waters of the U.S., waters of the state, or areas subject to California Fish and Game Code Section 1600 et seq (**BIO-MM#33, Aquatic Restoration – Temp**).
- Document compliance with applicable avoidance and minimization measures including measures set forth in regulatory authorizations issued under the CWA or Porter-Cologne (**BIO-MM#34, Aquatic Monitoring**).
- Minimize the spread of invasive weeds during construction (**BIO-MM#55, WCP**).
- Establish ESAs to minimize impacts outside of the construction footprint (**BIO-MM#58, ESAs, WEFs**).
- Prepare and implement a dewatering and diversion plan to minimize turbidity and siltation (**BIO-MM#62, Dewatering/Water Diversions**).

Construction of the early action projects—specifically the Buena Park Metrolink Station relocation—as described in Chapter 2 would have temporary effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction (Coyote Creek) through the extension of a box culvert adjacent to the existing rail corridor. IAMFs would be incorporated into the design of these early action projects and mitigation measures would be implemented to minimize effects on aquatic resources.

Shared Passenger Track Alternative B

Temporary construction impacts on aquatic resources for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A, because there is no difference in the location or extent of existing aquatic resources or aquatic resource impacts between the alternatives. Specifically, no aquatic resources were identified within the project footprint of either LMF site (26th Street LMF and 15th Street LMF).

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. No aquatic resources or areas subject to California Fish and Game Code Section 1600 et seq. were identified at the HSR station option site.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives, but no aquatic resources or areas subject to California Fish and Game Code Section 1600 et seq. were identified at the HSR station option site.

Permanent

Shared Passenger Track Alternative A

Under Shared Passenger Track Alternative A, construction activities and features that would result in permanent direct effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction include modification of watercourse and waterbody crossings, and construction and modification of stormwater drainage facilities and access roads. The resultant effects of these activities on aquatic functions and services within the project section include permanent direct effects on substrate and vegetation; currents, circulation, and drainage patterns; wetlands; and nonwetland riparian areas, as described below.

Permanent direct effects of Shared Passenger Track Alternative A on aquatic resources are quantified in Table 3.7-14. For additional detail, including impacts for each aquatic resource, reference the *Los Angeles to Anaheim Project Section Draft Biological and Aquatic Resources Technical Report* (Authority 2025a).

Table 3.7-14 Permanent Direct Effects on Aquatic Resources Considered Waters of the U.S. and Waters of the State, and Subject to California Fish and Game Code Section 1600 et seq.[5,6]

Aquatic Resource Category[1]	USACE or SWRCB Wetland Effects	USACE or SWRCB Nonwetland Waters of the U.S. Effects	CDFW Streambed Effects	CDFW Lakes Effects	CDFW Associated Riparian Vegetation Effects[2]
Wetlands					
Freshwater emergent wetland[3]	0.01	--	--	--	0.01
Freshwater forested/shrub wetland	--	--	--	--	--
Wetlands subtotal	0.01	--	--	--	0.01
Nonwetland Waters					
Basin	N/A	--	--	--	--
Built watercourse	N/A	--	--	--	--
Riverine[4]	N/A	0.09	0.20	--	--
Nonwetland waters subtotal	N/A	0.09	0.20	--	--
Grand Total	**0.01**	**0.09**	**0.20**	**--**	**0.01**

[1] As defined by *Corps of Engineers Wetland Delineation Manual* (USACE 1987), U.S. Fish and Wildlife Service's National Wetlands Inventory (USFWS 2024b, 2016), and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979).
[2] Within the Aquatic RSA, California Fish and Game Code Section 1600 "associated riparian vegetation" occurs in wetlands (freshwater emergent wetland, freshwater forested/shrub wetland) as well as nonwetland (basin, riverine) conditions, depending on the hydrologic, geomorphic, soils, and vegetative conditions.
[3] The bulrush marsh identified in the San Gabriel River portion of the RSA is classified as "freshwater emergent wetland" for USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction and "associated riparian vegetation" for CDFW Section 1600 jurisdiction. The cattail marsh identified in the La Mirada Creek (Feature 19) portion of the RSA is classified as "freshwater emergent wetland" associated riparian vegetation for purposes of CDFW Section 1600 jurisdiction and "riverine" for purposes of USACE or SWRCB (CWA Section 404/401 and Porter-Cologne Water Quality Control Act) jurisdiction, because this feature does not meet the USACE or SWRCB wetlands definitions.
[4] The mulefat thickets habitat identified in the San Gabriel River portion of the RSA is classified as "riverine" for purposes of USACE or SWRCB (CWA Section 404/401) jurisdiction and as "associated riparian vegetation" for purposes of CDFW Section 1600 jurisdiction.
[5] Aquatic resource impact acreages include both Shared Passenger Track Alternatives A and B. Specifically, the Aquatic RSA includes both LMF sites (26th Street LMF and 15th Street LMF) and both station options (Norwalk/Santa Fe Springs HSR Station Option and Fullerton HSR Station Option). In summary, there is no difference in the location or extent of aquatic resource acreages or aquatic resource impacts between Shared Passenger Track Alternatives A and B.
[6] Aquatic resources potentially subject to California Fish and Game Code Section 1600 et seq. identified in the Aquatic RSA are generally inclusive of aquatic resources considered subject to USACE or SWRCB jurisdiction (i.e., overlapping).
-- = no effect; CDFW = California Department of Fish and Wildlife; CWA = Clean Water Act; HSR = high-speed rail; LMF = light maintenance facility; N/A = not applicable; RSA = resource study area; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers

Under Shared Passenger Track Alternative A, the following types of permanent structures (fill material) would be installed within aquatic resources: bridge supports (piers, footings), retaining walls, and open channel or culvert modifications. In addition, the following structures would be either replaced or modified within aquatic resources: concrete channel bed, banks, or sidewalls; county maintenance roads; county access roads; and public bike paths.

Specifically, existing in-channel piers would be extended and new pier walls would be built in the Rio Hondo and San Gabriel River; permanent access roads would be built, modified, or relocated in the Rio Hondo and the San Gabriel River; a storm drain outlet would be built in the San Gabriel River; existing piers would be modified, reconstructed, or extended in North Fork Coyote Creek, La Mirada Creek, and Brea Creek; a headwall and culvert would be removed and reconstructed in La Mirada Creek; a culvert would be extended in Coyote Creek; and portions of open concrete-lined channels would be replaced with box culverts or extension of existing box culverts in the Balcom Avenue Storm Drain (described as Feature 29 in the supporting technical reports). The installation of new bridge supports, retaining walls, and access roads and the modification of open channels or culverts would permanently alter currents, circulation, and drainage patterns. Fill materials can modify flow patterns through the obstruction of flow; changes in the direction or velocity of water circulation; increasing erosion, siltation, or runoff; and reduction of the capacity of a watercourse or waterbody.

The placement of concrete structures within earthen-bottom aquatic features considered subject to USACE, SWRCB, or CDFW jurisdiction in the San Gabriel River would permanently alter the existing natural substrate and vegetation and potentially reduce natural biogeochemical and habitat functions performed by wetlands and riparian vegetation within the project footprint of these structures. In the Aquatic RSA, freshwater emergent wetlands and freshwater forested/ shrub wetlands are found in the San Gabriel River, and nonwetland riparian vegetation (mulefat thicket scrubland) is found in the San Gabriel River, La Mirada Creek, and the Rio Hondo spreading grounds. Based on the limited extent and early establishment stage of wetlands and riparian vegetation (i.e., pioneer wetland and riparian species) within the proposed limits of disturbance, these activities and structures are not expected to result in permanent effects on biogeochemical functions or water quality.

Construction of Shared Passenger Track Alternative A also has the potential to result in permanent indirect effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction. Construction equipment, vehicles, and personnel could spread invasive and noxious weeds, which have the potential to outcompete regulated riparian and wetland habitats. However, based on the heavily modified condition of aquatic resources within the project section, as well as routine maintenance practices, the presence of watercourses supporting state and federally regulated riparian and wetland habitats in the permanent disturbance footprint of Shared Passenger Track Alternative A is limited to the San Gabriel River and La Mirada Creek. Accordingly, the potential for permanent habitat conversion would be limited to these watercourses within the project footprint and immediate vicinity.

In addition, the placement of bridge supports, box culverts, and retaining walls and the replacement or modification of concrete channel bed, banks, or sidewalls; county maintenance roads; county access roads; and public bike paths could result in permanent indirect effects on currents, circulation, and drainage patterns in the vicinity of the limits of disturbance (e.g., downstream for riverine and built watercourse features). Fill materials can modify flow patterns through the obstruction of flow; changes in the direction or velocity of water circulation; increasing erosion, siltation, or runoff; and reduction of the capacity of a watercourse or waterbody. However, based on the limited number and restricted size of proposed permanent in-channel fill or structures, indirect changes to flow patterns, velocities, erosion, siltation, runoff, channel capacity, and water quality would be minimal.

Lastly, the potential effects from shading associated with construction of a 30-foot-wide bridge widening over the San Gabriel River could result in permanent indirect effects on approximately 0.1 acre of area under the widened bridge deck subject to California Fish and Game Code Section 1600 et seq. and potentially waters of the state regulated under Porter-Cologne. Shading

from overhead structures reduces the amount of direct and indirect sunlight available for plants, and therefore has the potential to inhibit photosynthesis and result in plant mortality. Habitat affected would include hardstem and California bulrush marsh, wild oats, and annual brome grasslands.

To reduce permanent direct and indirect effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction, the Authority has incorporated the following IAMFs as a part of the project: **BIO-IAMF#1**, **Biomonitors**; **BIO-IAMF#3**, **WEAP – Construction**; **BIO-IAMF#5, BRMP**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10**, **Equipment Cleaning**; **BIO-IAMF#11**, **BMPs**; **HYD-IAMF#1, Stormwater**; **HYD-IAMF#3, SWPPP**; **HYD-IAMF#4, SWPPP – Industrial**; and **HMW-IAMF#6, Spills**.

The IAMFs listed above would not entirely avoid permanent effects on state and federally protected wetlands, riparian habitat, and nonwetland waters. Mitigation measures, as described in Section 3.7.7, would be implemented to offset permanent effects on these resources during construction: **BIO-MM#34, Aquatic Monitoring**; **BIO-MM#47, Aquatic CMP**; **BIO-MM#50, Mitigation Site**; **BIO-MM#55, WCP**; and **BIO-MM#58, ESAs, WEFs**.

Compensatory mitigation implemented under **BIO-MM#47, Aquatic CMP**, will be achieved through one or more of the following methods, in consultation with USACE, SWRCB, and CDFW:

- Purchase of credits from an agency-approved conservation or mitigation bank
- Purchase of credits from an agency-approved in-lieu fee program
- Establishment, restoration, or enhancement of aquatic resources through permittee-responsible mitigation
- Preservation of aquatic resources through acquisition of property

To avoid and minimize potential impacts on these resources associated with off-site compensatory mitigation, the Authority would also implement **BIO-MM#50, Mitigation Site**, which includes site assessments of biological and aquatic resources, and obtaining any necessary regulatory authorizations prior to conducting compensatory mitigation activities, as well as implementation of avoidance and minimization measures prior to and during these activities.

Construction of the early action projects—specifically the Buena Park Metrolink Station relocation—as described in Chapter 2 would have permanent effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction (Coyote Creek) through the extension of a box culvert adjacent to the existing rail corridor. IAMFs would be incorporated into the design of these early action projects and mitigation measures would be implemented to minimize effects on aquatic resources.

Shared Passenger Track Alternative B

Permanent construction impacts on aquatic resources for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A, because there is no difference in the location or extent of aquatic resource acreages or aquatic resource impacts between the alternatives. Specifically, no aquatic resources were identified within the project footprint of either LMF site (26th Street LMF and 15th Street LMF).

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. No aquatic resources or areas subject to California Fish and Game Code Section 1600 et seq. were identified at the HSR station option site.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives, but no aquatic resources or areas subject to California Fish and Game Code Section 1600 et seq. were identified at the HSR station option site.

CEQA Conclusion

The temporary and permanent impacts on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction through direct removal, filling, hydrological interruption, or other means would be potentially significant under CEQA. Temporary and permanent direct and indirect impacts on these resources would include localized modification to currents, circulation, and drainage patterns, and potential adverse effects on water quality throughout the project section. Temporary and permanent impacts would also include the disturbance of natural substrate in the San Gabriel River and La Mirada Creek. Therefore, CEQA requires mitigation.

Implementation of mitigation measures **BIO-MM#6**, **RRP**; **BIO-MM#33**, **Aquatic Restoration – Temp**; **BIO-MM#34, Aquatic Monitoring**; **BIO-MM#47, Aquatic CMP**; **BIO-MM#50, Mitigation Site**; **BIO-MM#55, WCP**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#62, Dewatering/Water Diversions**, would reduce and offset temporary and permanent impacts to less-than-significant levels under CEQA.

Impact BIO-6: Construction Impacts on Wildlife Movement Corridors

The wildlife movement corridors in this document refer to habitat in watercourses, including the Los Angeles River, the Rio Hondo and spreading grounds, the San Gabriel River, and the Santa Ana River and, to a lesser extent, North Fork Coyote Creek, La Mirada Creek, Coyote Creek, Brea Creek, Fullerton Creek, and Carbon Creek. Modifications in these watercourses during construction would require work in and adjacent to the watercourse.

No work is planned to occur in the Los Angeles River, but the bridge over the Los Angeles River would be upgraded to add overhead contact system (a series of wires strung above the tracks to provide electrical power to HSR trainsets).

Within the Rio Hondo, retained fill would be needed in both the East and West Basins. At the West Basin, the existing railroad bridge would be widened on the northern side and extended. Within the East Basin, the existing Pico Rivera yard track would be realigned north of the new mainline track, which would widen the railroad right-of-way. Within the channel, on the western side, new piers and abutments would be added to the channel and would widen the track cross section.

At the San Gabriel River, new piers and abutments would be added to the river, with the existing railroad bridge being widened on the southern side to accommodate the new mainline track. At the existing Slauson Avenue bridge, adjacent to the river, an existing pier would be removed and replaced.

At North Fork Coyote Creek, new piers and abutments would be added within the creek because the existing railroad bridge would be widened at the northern side to accommodate the new mainline track.

At La Mirada Creek, new piers and abutments would be added within the creek because the existing railroad bridge would be widened at the northern side to accommodate the new mainline track.

At Coyote Creek, the existing double box culvert would be extended on both sides, which would include extending the middle wall within the creek to accommodate the new mainline track and realigned existing tracks.

Brea Creek would have new piers and abutments added within the creek because the existing railroad bridge would be widened on the southern side to accommodate the new mainline track.

Fullerton Creek and Carbon Creek would have no modifications in the watercourse, but the tracks on the existing railroad bridge would be electrified.

Temporary

Shared Passenger Track Alternative A

Based on the activities described above within the watercourses, temporary construction impacts on wildlife movement corridors would include temporary access into and adjacent to the watercourses for construction purposes, such as adding or changing piers and abutments, adding fill material, building overhead catenary systems, and widening railroad bridges.

The placement of temporary barriers required for construction (such as equipment and crews within the watercourse required to install new piers and abutments) could impede wildlife movement through areas with restricted crossing opportunities. These barriers may not cross the entirety of the watercourse but may exist in small segments, and the presence of human activity can act as a deterrent to wildlife movement through a wildlife corridor. Based on the design of the Shared Passenger Track Alternatives, the crossings at the identified wildlife movement corridors would be elevated (refer to description above) and would not impede movement.

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 wildlife movement corridors in the Supplemental RSA have the potential to support “rare” movements of listed wildlife species, including both mountain lion and Burrowing Owl, in the region. As the last remaining habitat corridors in the Los Angeles basin, the value of these areas increases rather than decreases, and the potential for project impacts on these wildlife movement corridors to reduce or restrict the range of special-status species exists.

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, dependent on the corridor for dispersal events.

Temporary construction activities occurring at or near wildlife movement corridors could result in indirect disruption of wildlife movement through nighttime lighting effects that could disrupt normal behavioral patterns, including foraging behavior and migration. Construction noise could create avoidance behaviors, and temporary physical barriers may exist along with temporary disturbance associated with construction from lighting, construction noise, and human presence, which 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 mountain lions away from wildlife movement corridors and into construction areas, thereby increasing human and mountain lion interaction risks. This is a temporary construction impact on mountain lions in the wildlife corridor because of the risk of human and mountain lion interactions resulting in mountain lions avoiding the wildlife corridor, leading to movement of mountain lions in riskier areas. Construction traffic creates noise and lighting, which could confuse wildlife, including mountain lions. Trenches, pipes, and other similar structures associated with construction can create traps for wildlife.

Indirect effects on wildlife movement corridors because of the temporary habitat conversion 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 could reduce foraging success. To reduce temporary effects on wildlife movement corridors during construction, the Authority has incorporated the following IAMFs as part of the project.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).

- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- The potential for wildlife to become entrapped in construction trenches, pipes, or culverts will be minimized through the use of covers and ramps (**BIO-IAMF#7, Entrapment**).
- Staging and access areas will be sited within designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on wildlife (**BIO-IAMF#8, Demarcate**).
- **BIO-IAMF#10**, **Equipment Cleaning**, requires the cleaning of construction equipment to remove mud and plant materials that would introduce invasive weeds.
- **BIO-IAMF#11, BMPs**, will apply construction site BMPs as prepared in the BMP field manual to employ waste management to prevent the attraction and feeding of predators.

The IAMFs listed would not entirely avoid temporary effects on wildlife movement corridors. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid temporary effects on wildlife movement corridors during construction.

- **BIO-MM#6, RRP**, implements restoration in areas that could support special-status species within the wildlife movement corridor and where a temporary loss of suitable habitat for these species occurred.
- **BIO-MM#34, Biological Monitor in Aquatic Resources**, requires the biologist to monitor construction near aquatic resources, including monitoring near the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River, ensuring that BMPs are employed, including the use of sandbags, silt fencing, and other BMPs, along with measures required by the CWA and other regulatory requirements.
- **BIO-MM#37, Wildlife Movement Corridor Avoidance**, specifies that, to avoid impacts on wildlife in the wildlife movement corridors, the placement of temporary or permanent fencing in wildlife movement corridors where the tracks are elevated will be avoided. Ground disturbance during the night will be avoided to the extent feasible and night lighting will be shielded to avoid the wildlife crossings where the use of night lighting cannot be avoided. The identified wildlife crossings include the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River.
- **BIO-MM#55, WCP**, minimizes and avoid the spread of invasive weeds into wildlife movement corridors.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species and WEF for wildlife, avoiding inadvertent temporary impacts in the wildlife movement corridor.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent temporary impacts; and will reduce speeds and therefore disturbance.
- **BIO-MM#62, Dewatering/Water Diversions**, includes surveys for special-status species prior to dewatering to avoid drowning special-status species in wildlife movement corridors associated with watercourses.
- **BIO-MM#63, Work Stoppage**, gives the Project Biologist the authority to halt work to prevent the death of or injury to the species in the event that a special-status wildlife species is found in the work area.

- **BIO-MM#82: Bio Construction Lighting**, reduces impacts from construction lighting on wildlife movement, preventing impacts such as disorientation, attraction to construction equipment, and potential collisions.
- **AVQ-MM#1, Visual**, requires the replacement of shrubs, small trees, and mature trees removed during construction to replace temporarily lost wildlife movement corridor habitat.
- **AVQ-MM#2, Construction Lighting**, requires a technical memorandum outlining how the Authority will shield nighttime construction lighting and direct it downward to minimize the light falling outside the construction site to avoid disturbance of wildlife movement corridors with nighttime lighting.
- **N&V-MM#1, Construction Noise**, requires a noise-monitoring program and compliance with noise limits. This measure would reduce indirect noise effects on wildlife movement corridors.

Shared Passenger Track Alternative B

Temporary construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for wildlife movement corridors. There are no wildlife movement corridors in the vicinity of either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. Wildlife movement corridors are not present at this site. The Norwalk/Santa Fe Springs HSR Station Option does not include any temporary impacts on wildlife movement corridors; if selected, it would not add to the related impact associated with either Shared Passenger Track Alternative.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives, but wildlife movement corridors are not present at this site. The Fullerton HSR Station Option does not include any temporary impacts on wildlife movement corridors; if selected, it would not add to the related impact associated with either Shared Passenger Track Alternative.

Permanent

Shared Passenger Track Alternative A

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. Species expected to use these wildlife movement corridors include species common to urban areas such as coyote, skunk, and raccoon, and these corridors could provide refuges of habitat for the native species. For example, the Los Angeles River, while concrete lined, is known to support many nonnative fish species that provide food for native avian species such as ducks, geese, herons, and kingfishers.

Permanent fencing may be used adjacent to the wildlife corridor during construction. Fence poles, if not capped, can trap both birds and bats, leading to mortality of these species. Pipes, culverts, and trenches used during construction can entrap wildlife when wildlife enter these areas to seek refuge. These areas need to be covered or provide an escape to prevent the mortality of wildlife species.

Introduced invasive plant species can be carried with soil on construction equipment and can change the habitat quality of the existing wildlife corridor substantially, making the corridor no longer suitable for many species, creating a permanent impact.

Lighting in the wildlife corridor could change the behavior of the species using the corridor. It may attract some species, such as bats, because of an increase in availability of prey species, because invertebrates are attracted to lights, but the lights associated with construction are disorienting and the bats could be killed by construction activities. Lighting may be avoided by some species, including individual bat and avian species, causing the species to avoid using the undercrossings associated with the watercourses in favor of crossings at roadways, increasing the risk of mortality. Despite existing baseline levels of artificial light and although construction lighting effects would be temporary and occur only for the duration of construction, these effects could cause permanent disruptions to bat and avian travel routes and subsequently migration routes because of their prolonged duration, and would therefore be considered permanent.

Permanent direct effects include the placement of permanent linear barriers to wildlife movement with restricted crossing opportunities. This barrier placement would substantially degrade linkages, which would no longer provide food, cover, or ease of travel for many species. Corridor shifts could also result in increased competition for resources and the potential for isolation of populations. The severity of each effect would depend on the permeability of the Shared Passenger Track Alternatives (i.e., the presence of elevated structures, or road crossings), the amount of usable land, and the presence of identified linkages. There is little usable land, and the linkages include only the portion of the Los Angeles River, the San Gabriel River, the Rio Hondo, and the Santa Ana River in the Wildlife RSA; therefore, this effect would be minimal. Most of the wildlife movement corridors are below elevated track, so fencing would not be required across the corridors and linear barriers are only expected on the elevated track. It is not expected that any permanent direct effects on wildlife movement would result from the placement of permanent linear barriers.

Construction activities occurring at or near wildlife movement corridors (linkages) could result in permanent indirect disruption of wildlife movement through lighting, noise, motion, and startle effects. Although these effects are temporary, they can cause permanent indirect effects such as through reductions in survival during migration because of the disruption to flight paths (through reducing energy stores and delaying arrival at breeding and wintering grounds) (Adams et al. 2019). There would be an impact on wildlife movement corridors during construction.

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 could include changes in movement and migration routes 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 permanent effects on wildlife movement corridors, the Authority has incorporated the following IAMFs as a part of the project.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- The potential for wildlife to become entrapped in construction trenches, pipes, or culverts will be minimized through the use of covers and ramps (**BIO-IAMF#7, Entrapment**).
- Staging and access areas will be sited in designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on wildlife (**BIO-IAMF#8, Demarcate**).

- Construction waste materials will be stored at or near the construction site to decrease construction truck trips, which will reduce mortality risk for special-status wildlife in wildlife movement corridors from vehicles (**BIO-IAMF#9, Waste Storage**).
- **BIO-IAMF#10**, **Equipment Cleaning**, includes the requirement of cleaning of construction equipment to remove mud and plant materials that would introduce invasive weeds.
- **BIO-IAMF#11, BMPs**, requires the application of construction site BMPs as prepared in the BMP field manual, including waste management to prevent the attraction and feeding of predators.

The IAMFs listed above would not entirely avoid permanent effects on wildlife movement corridors. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid permanent direct effects on wildlife movement corridors during construction.

- **BIO-MM#34, Biological Monitor in Aquatic Resources**, requires the biologist to monitor construction near aquatic resources, including monitoring near the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River, ensuring that BMPs are employed, including the use of sandbags, silt fencing, and other BMPs, and measures required by the CWA and other regulatory requirements.
- **BIO-MM#37, Wildlife Movement Corridor Avoidance**, specifies that, to avoid impacts on wildlife in the wildlife movement corridors, the placement of temporary or permanent fencing in wildlife movement corridors where the tracks are elevated will be avoided. Ground disturbance will be avoided during the night to the extent feasible. Where night lighting cannot be avoided, it will be shielded to avoid the wildlife crossings. The identified wildlife crossings include the Los Angeles River, the San Gabriel River, the Rio Hondo and spreading grounds, and the Santa Ana River.
- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into wildlife movement corridors.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support special-status species and WEF for wildlife, avoiding inadvertent temporary impacts in the wildlife movement corridor.
- **BIO-MM#60, Traffic**, restricts vehicle traffic to roads, construction areas, and other work areas, avoiding inadvertent temporary impacts; and will reduce speeds and therefore disturbance.
- **BIO-MM#62, Dewatering/Water Diversions**, includes surveys for special-status species prior to dewatering to avoid drowning special-status species in wildlife movement corridors associated with watercourses.
- **BIO-MM#63, Work Stoppage**, gives the Project Biologist the authority to halt work to prevent the death of or injury to the species in the event that a special-status wildlife species is found in the work area.
- **BIO-MM#82: Bio Construction Lighting**, reduces impacts from construction lighting on wildlife movement, preventing impacts such as disorientation, attraction to construction equipment, and potential collisions.
- **N&V-MM#1, Construction Noise**, requires a noise-monitoring program and compliance with noise limits. This measure would reduce indirect noise effects on wildlife movement corridors.
- **AVQ-MM#2, Construction Lighting**, requires a technical memorandum outlining how the Authority will shield nighttime construction lighting and direct it downward to minimize the light

falling outside the construction site to avoid disturbance of wildlife movement corridors with nighttime lighting.

Where specific habitat for specific special-status species exists, the appropriate IAMFs and mitigation measures would be implemented for those species and those requirements would become a part of the protection measures for the wildlife movement corridors. For instance, if Burrowing Owl were to be observed, **BIO-MM#44, Burrowing Owl Compensatory Mitigation**, would reduce and offset impacts on Burrowing Owl.

Shared Passenger Track Alternative B

Permanent construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for wildlife movement corridors. There are no wildlife movement corridors in the vicinity of either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. Wildlife movement corridors are not present at this HSR station option site. The Norwalk/Santa Fe Springs HSR Station Option does not include any permanent impacts on wildlife movement corridors; if selected, it would not add to the related impact associated with either Shared Passenger Track Alternative.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives, but wildlife movement corridors are not present at this HSR station option site. The Fullerton HSR Station Option does not include any permanent impacts on wildlife movement corridors; if selected, it would not add to the related impact associated with either Shared Passenger Track Alternative.

CEQA Conclusion

Temporary and permanent construction impacts could adversely affect the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites, which would be potentially significant under CEQA.

Mitigation measures are required under CEQA to address potential temporary and permanent impacts on wildlife movement corridors, including **BIO-MM#6, RRP**; **BIO-MM#34, Biological Monitor in Aquatic Resources**; **BIO-MM#37, Wildlife Movement Corridor Avoidance**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#82, Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; **AVQ-MM#1, Visual**; and **AVQ-MM#2, Construction Lighting**. With implementation of these mitigation measures, temporary and permanent impacts would be reduced to less-than-significant levels under CEQA.

Impact BIO-7: Construction Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)

Temporary

Shared Passenger Track Alternative A

Temporary direct effects on locally protected biological resources, such as protected trees and shrubs, from construction activities would occur from trimming or pruning trees and shrubs associated with the temporary project footprint. There would be an impact on protected trees and shrubs.

Locally protected biological resources, such as protected trees and shrubs, must not be trimmed, cut, or damaged during construction activities. These temporary effects would be contrary to local policies regarding protected trees. A summary of locally protected biological resources, such as protected trees and shrubs, and the requirements for protection are included in Table 3.7-10 in Section 3.7.5.2, Protected Trees. Without compliance with the local jurisdiction requirements regarding locally protected biological resources, such as protected trees, the project could conflict with local tree policies or ordinances.

Temporary indirect effects from construction would include dust, debris, and other airborne pollutants resulting from construction activities temporarily affecting locally protected biological resources such as protected trees and shrubs by covering leaves with substances that would inhibit photosynthesis. 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. Temporary indirect effects from construction activities could result from unintentional contamination, such as chemical leaks and spills, which would affect water or soils that locally protected biological resources, such as protected trees and shrubs, depend on. These effects would become permanent if the source of the unintentional contamination is not safely removed.

To reduce temporary effects on protected trees and shrubs within the project section, the Authority has incorporated the following IAMFs as a part of the project.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- Staging and access areas will be sited in designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on protected trees and shrubs (**BIO-IAMF#8, Demarcate**).

The IAMFs listed above would not entirely avoid temporary effects on protected trees. The following mitigation measures, as described in Section 3.7.7, would be implemented to reduce temporary effects on protected trees and shrubs during construction.

- **BIO-MM#35, Implement Transplantation and Compensatory Mitigation Measures for Protected Trees or Shrubs (Tree Compensation)**, establishes ESAs surrounding protected trees and shrubs and provide compensatory mitigation for the loss of protected trees and shrubs.
- **BIO-MM#55, WCP**, minimizes and avoids the spread of invasive weeds into areas occupied by protected trees and shrubs.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and will not encroach on protected trees. Biomonitors will also ensure that site BMPs are implemented so that there is not increased erosion from construction associated with protected trees and shrubs.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support protected trees and shrubs, preventing inadvertent soil removal adjacent (and possibly within the dripline) to the protected trees and shrubs, preventing soil compaction, and other activities such as tree and shrub trimming.

Shared Passenger Track Alternative B

Temporary construction impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for protected trees and shrubs. There are no protected trees or shrubs present in either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for protected trees and shrubs in the station area. The Norwalk/Santa Fe Springs HSR Station Option includes no additional temporary impacts on protected trees and shrubs; if selected, impacts would be the same as those of the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than what would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for protected trees and shrubs in the area of additional disturbance for the HSR station elements. The Fullerton HSR Station Option includes additional temporary impacts on protected trees and shrubs; if selected, it would add to the related impact associated with either Shared Passenger Track Alternative.

Permanent

Shared Passenger Track Alternative A

Permanent direct effects on locally protected biological resources, including protected trees and shrubs, are anticipated in areas where permanent infrastructure requires the removal of protected trees and shrubs. Indirect effects from construction activities could result from unintentional contamination, such as chemical leaks and spills, which would affect water or soils used by protected trees and shrubs, potentially resulting in their death.

Protected trees and shrubs must not be cut, destroyed, removed, relocated, damaged, or encroached into the protected zone. These alterations are considered to be permanent when the tree does not sufficiently recover in a short period of time, such as after trimming. In some cases, these activities are only regulated within the local jurisdiction-owned lands, but in other cases, this applies to the entirety of the local jurisdiction. A permit may be required for these activities to occur, or they may be prohibited altogether. In some jurisdictions, there are requirements such as the planting of trees for shade without the removal of protected trees, in an effort to reduce urban heat islands. A summary of the protected tree requirements is included in Table 3.7-10 in Section 3.7.5.2. Without compliance with the local jurisdiction's requirements regarding locally protected biological resources, including protected trees and shrubs, the effect would be substantial.

Permanent indirect effects on locally protected biological resources, including trees and shrubs, could occur as a result of changes in erosion and sedimentation. Displaced sediment and alterations to microtopography could change the soil and substrate conditions required by protected trees and shrubs. Permanent changes in hydrology and topography would damage the soil environment surrounding tree or shrub roots by affecting the level of necessary symbionts in the soil (i.e., mycorrhizae for oaks) or lead to fungal infections, root rot, lack of proper drainage, and difficulty in obtaining oxygen or other necessary elements. These factors would affect the growth of roots and vegetation and could lead to the death of protected trees or shrubs. The Wildlife RSA is mostly developed and, therefore, the permanent effects on locally protected biological resources, including protected trees and shrubs, are anticipated to be limited.

Compliance with local jurisdiction requirements regarding protected trees and shrubs would further reduce these impacts.

To reduce permanent effects on locally protected biological resources, including protected trees and shrubs, the Authority has incorporated the following IAMFs as a part of the project.

- Biological monitors will oversee construction activities to ensure that ground-disturbing activities are confined to the work areas and that site BMPs are implemented (**BIO-IAMF#1, Biomonitors**).
- The Authority will implement a WEAP training so that construction crews are aware of and can abide by the environmental requirements of the project (**BIO-IAMF#3, WEAP – Construction**).
- Staging and access areas will be sited in designated areas to the extent feasible to avoid sensitive biological resources and unintentional impacts on locally protected biological resources, including trees and shrubs (**BIO-IAMF#8, Demarcate**).

The IAMFs listed above would not entirely avoid permanent effects on locally protected biological resources, including protected trees and shrubs. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid permanent effects on locally protected biological resources, including protected trees and shrubs, during construction.

- **BIO-MM#35, Tree Compensation**, establishes ESAs surrounding locally protected biological resources, including protected trees and shrubs, and provide compensatory mitigation for the loss of locally protected biological resources, including protected trees and shrubs.
- **BIO-MM#55, WCP**, minimizes and avoid the spread of invasive weeds into areas occupied by locally protected biological resources, including protected trees and shrubs.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and that site BMPs are implemented.
- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support locally protected biological resources, including protected trees and shrubs.
- **BIO-MM#60, Traffic**, delineates and avoids, through the establishment of ESAs, this resource in and adjacent to construction areas.

Shared Passenger Track Alternative B

Impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A on locally protected biological resources, such as protected trees and shrubs. There are no protected trees present in either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for protected trees and shrubs in the station area. The Norwalk/Santa Fe Springs HSR Station Option includes no additional permanent impacts on protected trees and shrubs; if selected, impacts would be the same as those of either Shared Passenger Track Alternative.

High-Speed Rail Station Option: Fullerton High-Speed Rail Station Option

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Construction of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for protected trees and shrubs within the area of additional disturbance for the HSR station elements. The Fullerton HSR Station

Option includes additional permanent impacts on protected trees and shrubs; if selected, it would add to the related impact associated with either Shared Passenger Track Alternative.

CEQA Conclusion

The temporary and permanent construction impacts would be potentially significant under CEQA because of the potential to conflict with local policies or ordinances protecting trees.

Mitigation measures are required under CEQA to address potential temporary and permanent impacts on protected trees and shrubs: **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**. With implementation of these mitigation measures, impacts would be reduced to less-than-significant levels under CEQA.

Operational Impacts

Operational Impacts on Special-Status Plant Species

Operational impacts on special-status plants are not anticipated because no permanent impacts on special-status plants are expected for Shared Passenger Track Alternative A, Shared Passenger Track Alternative B, or the HSR station options. No impacts are therefore anticipated on special-status plants during operations, and they are therefore not addressed further.

Impact BIO-8: Operational Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities

Shared Passenger Track Alternative A

Ongoing O&M activities (e.g., routine inspection and maintenance of the HSR right-of-way, such as mowing, weed control, driving off-road) may have direct effects on riparian areas, vegetation communities, land cover, and special-status natural communities because of unexpected impacts 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 of contaminants or pollutants, including chemical spills from fuel, transmission fluid, lubricating oil, and motor oil leaks, would contaminate the water column, and could degrade riparian habitat and special-status natural communities. Both special-status natural communities and riparian habitats exist in 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 operational maintenance 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 of vegetation caused by application drift or broadcasting application. These activities could 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 would be an impact on vegetation communities and land cover during operations.

Impacts on riparian areas would also include the spread of invasive weeds into riparian areas because of maintenance activities. There are two special-status natural communities present in 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 has incorporated the following IAMF as a part of the project.

- WEAP training will be provided on a regular basis for maintenance crews (**BIO-IAMF#4, WEAP – O&M**) to reduce the potential for unplanned 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 operational effects on riparian habitat, vegetation communities, land cover, and special-status natural communities. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid these effects during operations.

- **BIO-MM#54, Prepare and Implement an Annual Vegetation Control Plan (VCP):** To control invasive weeds, comply with chemical vegetation-control methods and other pest-control methods.
- **BIO-MM#55, WCP:** A WCP will be prepared that will use ESAs, 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 throughout O&M.

Shared Passenger Track Alternative B

Operational impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for riparian habitat, vegetation communities, land cover, and special-status natural communities. There is no riparian habitat or special-status natural communities in either the LMF at 15th Street or 26th Street and there is no difference in the impact acreages for either alternative for riparian habitats or special-status natural communities.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Riparian or special-status natural communities are not present at this site and therefore the Norwalk/Santa Fe Springs HSR Station Option does not include any operational impacts on riparian or special-status natural communities; if selected, it would not add to the related impact associated with either Shared Passenger Track Alternative.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those for the Shared Passenger Track Alternatives in the station area for riparian or special-status natural communities, because there are no riparian or special-status natural communities present at this site. The Fullerton HSR Station Option does not include any operational impacts on riparian or special-status natural communities; if selected, it would not add to the related impact associated with either Shared Passenger Track Alternative.

CEQA Conclusion

The operational impact on any riparian habitat or other special-status natural community as identified in local or regional plans, policies, regulations or by CDFW or USFWS would be potentially significant under CEQA because of the potential to have a substantial adverse effect through habitat modifications on riparian habitat or other special-status natural community.

BIO-MM#54, VCP, and **BIO-MM#55, WCP**, are required under CEQA to address potential impacts of invasive weeds on riparian areas or other special-status natural communities during the O&M stage. With implementation of these mitigation measures, impacts would be less than significant under CEQA.

Impact BIO-9: Operational Impacts on Special-Status Birds, Raptors, and Migratory Bird Species

Shared Passenger Track Alternative A

Maintenance activities (e.g., mowing, weed control, driving off-road) could result in impacts on special-status birds, raptors, and migratory birds because of the removal or disturbance of areas that provide potential nesting habitat for these species. O&M activities conducted in areas of nesting habitat during the breeding season (generally between February 1 and September 1)

would disturb nesting birds, if present, which would cause nest abandonment and subsequent loss of eggs or developing young at active nests in or near the area of activity, if present. Operational effects (e.g., operation of the project at grade or on an elevated structure) could include injury or mortality from bird strikes or bird interactions with fencing and the electrical systems, or direct strikes with the train, as well as by disturbance caused by noise, wind, or visual stimuli.

Indirect effects would occur from operational activities that disrupt nesting birds, which could lead to nest failure or abandonment. Indirect effects could include avoidance behavior by some species in response to increased noise, lighting, and startle and motion disturbances during O&M activities. Noise impacts during operations include the noise from operation of the train and noise from rail resurfacing (i.e., rail grinding) conducted several times per year, and tamping of ballasted tract (conducted approximately every 4 to 5 years). Tamping of the ballasted track consists of raising the track, straightening the track, tamping it, and using vibrating “arms” to move and position the ballast under the ties. This work is usually conducted at night. Other operational effects including disturbances caused by drain clearing, litter removal, vegetation control, vegetation trampling, vehicle access, and off-road vehicle use, and noise impacts are anticipated to be minor.

Recent research (Wiacek et al. 2020) studied the response of avian species to railway noise and found that, during the autumn migration period, the railway line did not adversely affect avian species, indicating species richness actually highest near the railway line, with species preferring foraging on invertebrates near the railway line.

Long-term, indirect effects on special-status birds, raptors, and migratory birds could still occur if species that nest in the same location each year (e.g., raptors) are unable to adapt to the presence of the Shared Passenger Track Alternatives and must find new nest sites elsewhere. Night lighting affects migration of avian species and it is often recommended that the use of white, yellow, or red lighting be avoided to minimize effects on nocturnal migrant avian species (Wiltschko and Wiltschko 2014), with the suggestion to use green and blue night lighting. Operational lighting consists of lighting used as a part of the project design including sources such as HSR facilities with security lighting and train headlights. It is not anticipated that operational lighting would be appreciably greater than ambient conditions because of existing baseline levels of artificial light. Rodent-control programs could inadvertently poison avian predators through consumption of poisoned rodents. There would be an impact on special-status birds, raptors, and migratory birds during operations.

To reduce direct and indirect effects on special-status birds, raptors, and migratory birds during the operational phase, the Authority has incorporated the following IAMFs as part of the project.

- The Authority will implement WEAP training on a regular basis for maintenance crews (**BIO-IAMF#4, WEAP – O&M**) to reduce the potential of unplanned effects.
- The project will be designed to be bird and raptor safe in compliance with applicable standards (**BIO-IAMF#12, Bird Safe**).

The IAMFs listed above would not entirely avoid direct and indirect effects on special-status birds, raptors, and migratory birds. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid direct and indirect effects on special-status birds, raptors, and migratory birds during operations.

- **BIO-MM#54, VCP**, requires preparation of an annual VCP to control invasive weeds during the operational phase and will prohibit the use of rodenticides.
- **BIO-MM#55, WCP**, requires preparation of a WCP that will use ESAs, weed surveys, and fire prevention and other methods to avoid the spread of noxious weeds that could reduce the quality of habitat for special-status birds. This plan will minimize and avoid the spread of invasive weeds throughout O&M.

- **BIO-MM#76, Wildlife Rescue**, minimizes direct effects on special-status birds, raptors, and migratory birds by allowing the Project Biologist to release the animal or take it to the nearest rehabilitation center in the event that trapped or injured special-status birds, raptors, and migratory birds are observed.
- **BIO-MM#83, Implement Lighting Minimization Measures During Operations (Operations Lighting)**, reduces lighting impacts on special-status avian species, if necessary. Night lighting interferes with migration, nesting, and movement.
- **BIO-MM#84, Nesting Bird Surveys During Operations (Operations Nesting)**, avoids impacts on nesting birds during operations through the requirement of nesting bird surveys in suitable habitat.

Shared Passenger Track Alternative B

Operational impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for special-status birds, raptors, or migratory birds. There is no habitat for special-status birds, raptors, or migratory birds in either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Operation of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is nesting habitat for raptors and migratory birds at the site; however, the impact areas do not overlap with the suitable nesting habitat and therefore the Norwalk/Santa Fe Springs HSR Station Option does not include any operational impacts on nesting habitat for raptors and migratory birds. If selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Operation of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. There is suitable nesting habitat for raptors and migratory birds in the area of additional disturbance for the HSR station elements. The Fullerton HSR Station Option includes additional operational impacts on nesting habitat for raptors and migratory birds; if selected, it would add to the related impact associated with the Shared Passenger Track Alternatives.

CEQA Conclusion

The operational impact would be potentially significant under CEQA because of the potential to have a substantial adverse effect on special-status birds, raptors, and migratory birds.

Mitigation measures are required under CEQA to address potential effects on special-status birds during the O&M stage, including **BIO-MM#54, VCP**; **BIO-MM#55, WCP**; **BIO-MM#76, Wildlife Rescue**; **BIO-MM#83, Operations Lighting**; **BIO-MM#84, Operations Nesting**. With implementation of these mitigation measures, impacts would be less than significant under CEQA.

Impact BIO-10: Operational Impacts on Special-Status Mammals

Shared Passenger Track Alternative A

Direct operational effects on mammals could include increased noise from human presence, which may cause local shifts in populations. Foraging, denning, and roosting habitat could be directly affected. Some free-ranging mammals, such as mountain lion, may avoid the area and be funneled along the upgraded tracks until a wildlife crossing is available. Operations at grade or on elevated structures could result in injury or mortality through train strikes with mountain lions or bats or bat interactions with electrical systems. Night lighting could attract insects and therefore could attract some bat species to the project footprint, which could increase the mortality risk for

bats associated with collisions with trains or electrical systems. The color and type of night lighting used during operations could attract bats to the trains or electrical systems or alter migratory behavior of bat species.

Trash receptacles could attract urban prey species that mountain lions forage on opportunistically such as coyotes, foxes, raccoons, squirrels, skunks, and domestic animals. These species occur at relatively high densities in developed areas and have higher food quality for mountain lions. Mountain lions are at risk when drawn into developed landscapes, especially if the mountain lions are foraging on domestic pets, because there is an increased chance of mortality from conflicts between humans and mountain lions. Mountain lion mortalities in urban areas can be caused by close proximity to humans because mountain lions can be killed from conflicts with humans (Moss et al. 2015).

Mountain lions are also at risk of mortality because of the use of anticoagulant rodenticides used to control rodent populations (National Park Service 2021) that could be used during the O&M phase of the project.

Operations of HSR project trains could result in the displacement of mammal species from noise, wind, and visual stimuli, and from the actual fragmentation of the landscape as a result of the placement of infrastructure. Noise impacts during operations also include noise from rail resurfacing and tamping of the ballasted track. These effects could result in shifts in foraging patterns or territories or dispersal movements, increased predation, decreased reproductive success, and reduced population viability.

Of all the potential disturbances that could occur (such as noise or lighting), mountain lions are most sensitive to human presence. The presence of humans during operational maintenance activities at a crossing could prevent a mountain lion from using the crossing temporarily, which could shift movement into areas with roads where mountain lions are at risk for vehicle collisions (Moss et al. 2015).

Vehicles, including trains, have a direct risk of collision for bat species and mountain lions. Many bat species are long lived, but have low fecundity (one to two offspring per year) (Kunz and Fenton 2003) so even a moderate increase in mortality can have large effects on populations (Schorcht et al. 2009). Mountain lion species are also long lived (the lifespan of a mountain lion is approximately 12 years in the wild) with low fecundity (kittens stay with their mother for 1.5 to 2 years prior to dispersal) (Currier 1983). In addition to the direct effects associated with collision mortalities, roads and rail systems can act as barriers to movements of bats and mountain lions between habitats with associated increases in mortality, avoidance of light and noise, reduced foraging, and interrupted flyways and migration routes associated with roads (Ramalho and Aguiar 2022). However, none of the identified wildlife crossings with the best quality habitat for mountain lions are at grade and there is therefore no risk of train collisions with mountain lions at the wildlife crossings.

Night lighting often increases human presence in wildlands. Increases in human use of potential wildlife crossings would deter mountain lions from using these areas and would affect movement of mountain lions in an already constrained urban environment. However, in an urban environment, operational lighting is not expected to increase appreciably from existing conditions.

Direct effects could include the disturbance of bat roosts below bridges and in undercrossings during O&M activities or during the removal or reinstallation of these components during O&M activities.

Whether specific bat species are attracted to or deterred from the at-grade and elevated track components and the roadway crossings would depend on species-specific habitat requirements. For example, bat species that prefer to forage in closed environments would be less likely to cross the wide-open area of the at-grade and elevated tracks, but species more adapted to open environments would be attracted to the openness of the surface and elevated tracks and roadway crossings. Pallid bats, western mastiff bats, western yellow bats, pocketed free-tailed bats, hoary bats, and big free-tailed bats would be attracted to the open environment of the surface and elevated track components.

Increased night lighting has substantial effects on bat behavior because bats are either attracted to different colors of light or avoid lit areas. In addition, night lighting causes changes in behavior in insects, prey for many bat species. This can affect how bats use the project area, including the permanent project components such as the HSR station sites, the LMF, surface and elevated tracks, and roadway crossings. Some bat species—generally fast-flying species that hunt insects—are attracted to artificial light, while other bat species—generally slow-flying species—avoid artificial light even in the presence of high food abundance (Voigt et al. 2017). This is further complicated by the color of the lights present and the effects of night lighting on migratory bat species. In a recent study, it was found that migratory bats are attracted to green lighting even in the absence of prey (Voigt et al. 2017), thereby disrupting their migration patterns. In another study, it was found that red light does not affect bats (Spoelstra et al. 2017). Where night lighting is prolonged, bats would be attracted to the area because of the increase in nocturnal insects. However, artificial lighting could lead to potential increases in bat mortality as a result of disorientation.

Low-flying bat species are more prone to collisions than high-flying species, and juveniles are more vulnerable than adults, with a sizeable bias toward male casualties (Fensome and Mathews 2016). Pallid bats, Townsend's big-eared bats, and western yellow bats are low-flying species. Low-flying species often prefer to use bridges and underpasses to cross rather than fly directly over the road or crossing (Bennett and Zurcher 2013).

Roads and rail systems can also act as barriers to movements of bats (Ramalho and Aguiar 2022). Because of the presence of suitable bat habitat adjacent to the rail system near the major rivers, bats are more likely to be present at these locations; therefore, there is an increased likelihood of collisions at these crossings. In addition, casualties of bats increase near other linear habitat features that bats use, such as tree lines, hedges, rivers, forest edges, and woodland paths (Lesinski 2008; Ikovic et al. 2014). Bat mortalities are generally related to the quality of habitat bordering the road or, in this case, rail system, and bats are more likely to be killed where roads or other linear transportation features bisect high-quality habitat or pass near foraging locations such as waterbodies (i.e., basins) and riparian habitats (Medinas et al. 2012). The presence of trees and shrub layers adjacent to the road or crossing increases the likelihood of road-crossing behavior (Bennett and Zurcher 2013).

Although bat habitat quality within the project section is low, when the project alignment crosses rivers, the potential risks of collisions for low-flying bat species and species attracted to lighting, which are composed of fast-flying bat species, increases. The general absence of trees and shrubs adjacent to the project reduces the probability that bats would cross. Townsend's big-eared bats prefer to be at or near edges of habitat, and the lack of trees or shrubs might preclude this species. The presence of undercrossings and bridges provides alternate crossing strategies for low-flying species. Undercrossings and bridges provide potential roosting and hibernation areas, and these areas are likely to be disturbed during operations.

Local noise and motion disturbance effects resulting from operations would cause avoidance behavior or alter foraging ability and efficiency for both bat species and mountain lion. Rodent-control programs could increase the risk of mortality through the consumption of poisoned rodents or reduction in the amount of available prey for mountain lions. There would be an impact on special-status mammals during operations.

To reduce direct and indirect effects on special-status mammals during the operational phase, the Authority has incorporated the following IAMF as a part of the project.

- The Authority will implement WEAP training on a regular basis for maintenance crews (**BIO-IAMF#4, WEAP – O&M**) to reduce the potential of unplanned effects.

The IAMF listed above would not entirely avoid direct and indirect effects on special-status mammals. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid direct and indirect effects on special-status mammals during operations.

- **BIO-MM#54, VCP**, requires the preparation of an annual VCP to control invasive weeds during the operational phase and adherence to the California Department of Pesticide

Regulation, which bans second-generation anticoagulant rodenticides in California, protecting mountain lions from inadvertent poisoning.

- **BIO-MM#76, Wildlife Rescue**, prevents direct effects on special-status mammals by allowing the Project Biologist to release the animal or take it to the nearest rehabilitation center in the event that trapped or injured special-status mammals are observed.
- **BIO-MM#83: Operations Lighting**, reduces lighting impacts caused by attracting bats to operational activities and leading to disorientation of the bats or leading to mountain lion avoidance of wildlife movement corridors.

Shared Passenger Track Alternative B

Operational effects for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for special-status mammals. There is no habitat for special-status mammals in either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Operation of the HSR station platform, facilities, and parking would occur in the same area that would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for special-status mammals, including mountain lion, western red bat, and western yellow bat, at the site. The Norwalk/Santa Fe Springs HSR Station Option includes operational impacts on special-status mammals; if selected, there would be impacts on special-status mammals associated with this HSR station option. However, because this HSR station option is within the same area that would be modified under the Shared Passenger Track Alternatives, no additional impacts are anticipated.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Operation of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for special-status mammals, including mountain lion, western red bat, and western yellow bat, within the area of additional disturbance for the HSR station elements. The Fullerton HSR Station Option includes additional operational impacts on special-status mammals; if selected, it would add to the related impact associated with the Shared Passenger Track Alternatives.

CEQA Conclusion

Operational impacts on mammal species identified as candidate, sensitive, or special-status would be potentially significant under CEQA because of the potential to have a substantial adverse effect on these species either directly or through habitat modification.

Mitigation measures are required under CEQA to address potential effects on special-status mammals during the O&M stage, including **BIO-MM#54, VCP**; **BIO-MM#76, Wildlife Rescue**; **BIO-MM#83, and Operations Lighting**. With implementation of these mitigation measures, impacts would be less than significant under CEQA.

Impact BIO-11: Operational Impacts on Wildlife Movement Corridors

Shared Passenger Track Alternative A

Operation of the Shared Passenger Track Alternatives could 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; disturbances caused by noise, wind, and visual stimuli (such as lighting) that would affect movement, foraging, migration, and breeding; poisoning of avian predators or special-status mammals through the consumption of poisoned rodents; and night lighting that alters migration patterns.

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. Avian species have been found not to be deterred from foraging near a railway by train noise (Wiacek et al. 2020). Noise impacts during operations also include the noise from rail resurfacing and tamping of the ballasted track.

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

To reduce direct and indirect effects on wildlife movement corridors during the O&M phase, the Authority has incorporated the following IAMFs as a part of the project.

- The Authority will conduct WEAP training on a regular basis for maintenance crews (**BIO-IAMF#4, WEAP – O&M**) to reduce the potential of unplanned effects.
- The Authority will design the project to be bird and raptor safe in compliance with applicable standards (**BIO-IAMF#12, Bird Safe**).

The IAMFs listed above would not entirely avoid direct and indirect effects on wildlife movement corridors. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid direct and indirect effects on wildlife movement corridors during operations.

- **BIO-MM#54, VCP**, requires the preparation of an annual VCP to control invasive weeds during the operational phase and will adhere to the California Department of Pesticide Regulation, which bans second-generation anticoagulant rodenticides in California, protecting mountain lions from poisoning.
- **BIO-MM#55, WCP**, requires preparation of a WCP that will use ESAs, weed surveys, and fire prevention and other methods to avoid the spread of noxious weeds that could reduce the quality of habitat in wildlife movement corridors. This plan will minimize and avoid the spread of invasive weeds through O&M.
- **BIO-MM#83, Operations Lighting**, reduces night lighting impacts on all wildlife using the wildlife movement corridor. Impacts from night lighting can include attraction, resulting in collisions and disorientation or avoidance, leading to animals being deterred from using safe wildlife crossings.

Shared Passenger Track Alternative B

Operational impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for wildlife movement corridors. There are no wildlife movement corridors in the vicinity of either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Ongoing maintenance activities at the HSR station option site would occur in a larger area than what would be required under the Shared Passenger Track Alternatives, but wildlife movement corridors are not present at this site. The Norwalk/Santa Fe Springs HSR Station Option does not include any operational impacts on wildlife movement corridors; if selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be the same as those of the Shared Passenger Track Alternatives in the station area. Ongoing maintenance activities at the HSR station option site would occur in a larger area than would be required under the Shared

Passenger Track Alternatives, but wildlife movement corridors are not present at this site. The Fullerton HSR Station Option does not include any operational impacts on wildlife movement corridors; if selected, it would not add to the related impact associated with the Shared Passenger Track Alternatives.

CEQA Conclusion

The operational impacts would be potentially significant under CEQA because of the potential to interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife movement corridors, or impede the use of native wildlife nursery sites.

Mitigation measures are required under CEQA to address potential effects on wildlife movement corridors during the O&M stage, including **BIO-MM#54, VCP**; **BIO-MM#55, WCP**; and **BIO-MM#83, Operations Lighting**. With implementation of these mitigation measures, impacts would be less than significant under CEQA.

Impact BIO-12: Operational Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)

Shared Passenger Track Alternative A

Operations would affect locally protected biological resources (trees and shrubs). Direct effects on these resources 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 on locally protected biological resources, such as protected trees and shrubs, could result from increases in vehicle and foot traffic, leading to increases in soil compaction, which inhibits the ability for tree and shrub roots to function. Indirect effects could also result from inadvertent damage to protected trees and shrubs, including damaging limbs and bark during operational activities.

To reduce direct and indirect effects during the O&M phase, the Authority has incorporated the following IAMF as a part of the project.

- The Authority will conduct WEAP training on a regular basis for maintenance crews (**BIO-IAMF#4, WEAP – O&M**) to reduce the potential of unplanned effects on locally protected biological resources, such as protected trees and shrubs.

The IAMF listed above would not entirely avoid direct and indirect effects on locally protected biological resources, such as protected trees and shrubs. The following mitigation measures, as described in Section 3.7.7, would be implemented to avoid effects on locally protected biological resources, such as protected trees and shrubs, during operations.

- **BIO-MM#35, Tree Compensation,** establishes ESAs surrounding protected trees and provide compensatory mitigation for the loss of protected trees.
- **BIO-MM#54, VCP**, requires the preparation of an annual VCP to control invasive weeds during the operational phase.
- **BIO-MM#55, WCP**, minimizes and avoid the spread of invasive weeds into areas occupied by protected trees.
- **BIO-MM#56, Biomonitor – Ground Disturbance**, reduces effects through biological monitors ensuring that ground-disturbing activities are confined to the delineated work area and will not encroach on protected trees. Biomonitors will also ensure that site BMPs are implemented so that there is no increased erosion from construction associated with protected trees.

- **BIO-MM#58, ESAs, WEFs**, establishes ESAs that support protected trees, preventing inadvertent soil removal adjacent (and possibly within the dripline) to the protected trees, preventing soil compaction, and other activities such as tree trimming.
- **BIO-MM#60, Traffic**, delineates and avoids, through the establishment of ESAs, this resource in and adjacent to construction areas.

Shared Passenger Track Alternative B

Operational impacts for Shared Passenger Track Alternative B would be the same as those of Shared Passenger Track Alternative A for locally protected biological resources, including protected trees and shrubs. There are no protected trees or shrubs present in either the LMF at 15th Street or 26th Street.

High-Speed Rail Station Options

High-Speed Rail Station Option: Norwalk/Santa Fe Springs

With inclusion of the Norwalk/Santa Fe Springs HSR station option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Operation of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for protected trees and shrubs in the area of additional disturbance of the HSR station elements. The Norwalk/Santa Fe Springs HSR Station Option includes additional operational impacts on protected trees and shrubs; if selected, it would add to the related impact associated with the Shared Passenger Track Alternatives.

High-Speed Rail Station Option: Fullerton

With inclusion of the Fullerton HSR Station Option, impacts would be greater than those of the Shared Passenger Track Alternatives in the station area. Operation of the HSR station platform, facilities, and parking would occur in a larger area than would be modified under the Shared Passenger Track Alternatives. There is suitable habitat for protected trees and shrubs in the area of additional disturbance for the HSR station elements. The Fullerton HSR Station Option includes operational impacts on protected trees and shrubs; if selected, it would add to the related impact associated with the Shared Passenger Track Alternatives.

CEQA Conclusion

Operational impacts on locally protected biological resources, including protected trees and shrubs, would be potentially significant under CEQA because of the potential to conflict with local policies or ordinances protecting trees and shrubs.

Mitigation measures **BIO-MM#35, Tree Compensation**; **BIO-MM#54, VCP**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**, are required under CEQA to address operational effects on locally protected biological resources, including protected trees and shrubs. With implementation of these mitigation measures, impacts would be less than significant under CEQA.

3.7.7 Mitigation Measures

The Authority has identified biological and aquatic resources mitigation measures described in Section 3.7.6.3, Project Impacts, to address impacts under NEPA and significant impacts under CEQA that cannot be adequately avoided or minimized by IAMFs. In addition, several mitigation measures described in Section 3.4 and Section 3.16, Aesthetics and Visual Resources, would be implemented that would further avoid or minimize impacts and effects on biological and aquatic resources.

3.7.7.1 BIO-MM#6: Prepare and Implement a Restoration and Revegetation Plan

Prior to ground-disturbing activity, the Project Biologist will prepare an RRP to address temporary impacts resulting from ground-disturbing activities in areas that potentially support special-status species, wetlands, or other aquatic resources. Restoration activities may include, but are not limited to, grading landform contours to approximate predisturbance conditions, revegetating

disturbed areas with native plant species, and using certified weed-free straw and mulch. The Authority will incorporate the RRP in temporarily disturbed areas outside of the permanent right-of-way that potentially support special-status species, wetlands, or other aquatic resources.

Consistent with Section 1415 of the Fixing America's Surface Transportation Act or most recent applicable guidance, restoration activities will provide habitat for native pollinators through plantings of native forbs and grasses. The Project Biologist will obtain a locally sourced native seed mix. The restoration success criteria will include limits on invasive species, as defined by the California Invasive Plant Council, to an increase no greater than 10 percent compared to the predisturbance condition, or to a level determined through a comparison with an appropriate reference site consisting of similar natural communities and management regimes. The RRP will outline at a minimum:

a. Procedures for documenting preconstruction conditions for restoration purposes
b. Sources of plant materials and methods of propagation
c. Specification of parameters for maintenance and monitoring of re-established habitats, including weed-control measures, frequency of field checks, and monitoring reports for temporary disturbance areas
d. Specification of success criteria for re-established plant communities
e. Specification of the remedial measures to be taken if success criteria are not met
f. Methods and requirements for monitoring restoration or replacement efforts, which may involve a combination of qualitative or quantitative data gathering
g. Maintenance, monitoring, and reporting schedules, including an annual report due to the Authority by January 31 of the following year

The RRP will be submitted to the Authority and regulatory agencies, as defined in the conditions of regulatory authorizations, for review and approval.

3.7.7.2 BIO-MM#14: Conduct Preconstruction Surveys and Delineate Active Nest Buffers Exclusion Areas for Breeding Birds

Prior to ground-disturbing activity, including vegetation removal, scheduled to occur during the bird breeding season (February 1 to September 1), the Project Biologist will conduct visual preconstruction surveys in the work area for nesting birds and active nests (nests with eggs or young) of nonraptor species listed under the MBTA or California Fish and Game Code no more than 14 days before the start of the activities in areas where suitable habitat is present. Surveys will occur in the habitat areas within the project footprint and, where access is available, to within 75 feet of the boundary of the project footprint.

In the event that active bird nests are observed during the preconstruction survey, the Project Biologist will delineate no-work buffers. No-work buffers will be set at a distance of 75 feet unless a larger buffer is required pursuant to regulatory authorizations issued under the FESA or CESA. No-work buffers will be maintained until nestlings have fledged and are no longer reliant on the nest or parental care for survival or the Project Biologist determines that the nest has been abandoned. In circumstances where it is not feasible to maintain the standard no-work buffer, the no-work buffer may be reduced, provided that the Project Biologist monitors the active nest during the construction activity to ensure that the nesting birds do not become agitated. Larger buffers may be required if the Project Biologist determines that a larger buffer is required to prevent nest abandonment. Additional measures that may be used when no-work buffers are reduced include visual screens and sound barriers.

3.7.7.3 BIO-MM#15: Conduct Preconstruction Surveys and Monitoring for Raptors

If construction or other vegetation-removal activities are scheduled to occur during the breeding season for raptors (January 1 to September 1), the Project Biologist will conduct preconstruction surveys no more than 14 days before the start of the activities for nesting raptors in areas where suitable habitat is present. Specifically, such surveys will be conducted in habitat areas within the project footprint and, where access is available, within 500 feet of the boundary of the project

footprint. If breeding raptors with active nests are found, the Project Biologist will delineate a 500-foot buffer (or as modified by regulatory authorizations for species listed under the FESA or CESA) around the nest to be maintained until the young have fledged from the nest and are no longer reliant on the nest or parental care for survival or until such time as the Project Biologist determines that the nest has been abandoned. Nest buffers may be adjusted if the Project Biologist determines that smaller buffers would be sufficient to avoid impacts on nesting raptors or if a larger buffer is required to prevent nest abandonment.

3.7.7.4 BIO-MM#20: Conduct Protocol Surveys for Burrowing Owls

Prior to ground-disturbing activity, the Project Biologist will conduct protocol-level surveys for Burrowing Owl within suitable habitat in the work area and extending 500 feet from the boundary of the work area, where access is available. Surveys will be conducted in accordance with guidelines in CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). If no Burrowing Owls are observed and construction occurs within 30 days of the last survey, no further action is required for Burrowing Owls. However, if no Burrowing Owls are observed and construction is delayed more than 30 days after the last surveys, prior to ground-disturbing activities, within 30 days prior to construction, the Project Biologist will conduct preconstruction clearance surveys for Burrowing Owl within suitable habitat in the work area and extending 500 feet from the boundary of the work area, where access is available. If no Burrowing Owls are observed, ground disturbance may occur.

If Burrowing Owls are observed, **BIO-MM#21** and potentially **BIO-MM#44** would be implemented.

3.7.7.5 BIO-MM#21: Implement Avoidance and Minimization Measures for Burrowing Owl

Occupied Burrowing Owl burrows that would be directly affected by ground-disturbing activities (if documented under **BIO-MM#20**) will be relocated in accordance with CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012), which will include the preparation of a Burrowing Owl Exclusion Plan, which will be approved by CDFW. To the extent feasible, the Project Biologist will establish no-work buffers around occupied Burrowing Owl burrows in the work area. From April 1 through October 15, the no-work buffer will be at least 600 feet, and from October 16 through March 31, the no-work buffer will be at least 165 feet. If the no-work buffer is not feasible and occupied burrows will be relocated during the nesting season, relocation will occur either before the birds have begun egg-laying and incubation or after the Project Biologist has determined that the juveniles from the occupied burrows are foraging independently and are capable of independent survival.

3.7.7.6 BIO-MM#25: Conduct Preconstruction Surveys for Special-Status Bat Species

No earlier than 30 days prior to the start of ground-disturbing activities in a work area, the Project Biologist will conduct a visual and acoustic survey (over the course of one day and one evening at a minimum) for roosting bats in the work area and extending 500 feet from the boundary of the work area, where access is available. When necessary, such surveys will be conducted in suitable habitat for special-status bats, including those areas in which bridges, abandoned structures, or trees with large cavities or dense foliage are present within up to a half-mile of the boundary of the work area, dependent on potential project indirect effects on bat hibernacula or maternity colonies. The Project Biologist will determine if surveys extending past 500 feet are necessary.

3.7.7.7 BIO-MM#26: Implement Bat Avoidance and Relocation Measures

Prior to ground-disturbing activity or bridge work, the Project Biologist will survey for active hibernacula or maternity roosts. If active hibernacula or maternity roosts are identified in the work area or within 500 feet extending from the work area during preconstruction surveys, they will be avoided to the extent feasible. If avoidance of a hibernaculum is not feasible, the Project Biologist will prepare a relocation plan to remove the hibernaculum and provide for construction of an alternative bat roost outside of the work area.

The Project Biologist will implement the relocation plan before the commencement of ground-disturbing activities that would occur within 500 feet of the hibernaculum where the qualified biologist deems removal to be more beneficial than avoidance. If avoidance is possible without disturbing the bats, then avoidance will be implemented. Removal of roosts will be guided by accepted exclusion and deterrent techniques.

3.7.7.8 BIO-MM#27: Implement Bat Exclusion and Deterrence Measures

If nonbreeding or nonhibernating individuals or groups of bats are found roosting in the work area, the Project Biologist will facilitate the eviction of the bats by either opening the roosting area to change the lighting and airflow conditions or installing one-way doors or other appropriate methods.

To the extent feasible, the Authority will leave the roost undisturbed by project activities for a minimum of 1 week after implementing exclusion or eviction activities. Steps will not be taken to evict bats from active maternity roosts or hibernacula; instead, such features may be relocated pursuant to a relocation plan.

3.7.7.9 BIO-MM#33: Restore Aquatic Resources Subject to Temporary Impacts

Within 90 days of the completion of construction activities in a work area, the Authority will begin to restore aquatic resources that were temporarily affected by construction. Aquatic resources are those resources considered waters of the U.S. under the CWA or waters of the state under Porter-Cologne. As set out in the RRP, such areas will be, to the extent feasible, restored to their natural topography. In areas where gravel or geotextile fabrics have been installed to protect substrate and to otherwise minimize impacts, the material will be removed and the affected features will be restored. The Authority will revegetate affected aquatic resources using appropriate native plants and seed mixes (from local vendors where available). The Authority will conduct maintenance monitoring consistent with the provisions of the RRP.

3.7.7.10 BIO-MM#34: Monitor Construction Activities in Aquatic Resources

The Project Biologist will monitor construction activities that occur in or adjacent to aquatic resources, including activities associated with the installation of protective barriers (e.g., silt fencing, sandbags, fencing), and installation or removal of creek material to accommodate crossings, construction of access roads, and removal of vegetation. As part of this effort, the Project Biologist will document compliance with applicable avoidance and minimization measures including measures set forth in regulatory authorizations issued under the CWA or Porter-Cologne.

3.7.7.11 BIO-MM#35: Implement Transplantation and Compensatory Mitigation Measures for Protected Trees or Shrubs

Prior to ground-disturbing or maintenance activities, the Project Biologist will conduct surveys in the work area to identify protected trees or shrubs.

The Project Biologist will establish ESAs around protected trees or shrubs with the potential to be affected by construction or maintenance activities, but that do not require removal. The ESAs will extend outward up to 5 feet from the driplines of such protected trees or shrubs and will include the dripline of protected trees. No grading will occur in the ESAs.

Where protected trees or shrubs are present and are to be removed, depending on the requirements of the local government, a certified arborist may need to prepare a report identifying all protected trees and shrubs and any trees or shrubs where activity may occur within the dripline or any trees or shrubs that will be relocated or removed. The report will include the specific proposed mitigation measures for these activities and the anticipated effectiveness of these measures.

The Authority will provide compensatory mitigation for impacts on protected trees and shrubs, including impacts associated with removing or trimming a protected tree or shrub as required by local ordinances. Compensation will be based on requirements set out in applicable local

government ordinances, policies, and regulations. Compensatory mitigation may include, but is not limited to, the following:

- Transplantation of protected trees and shrubs to areas outside of the work area
- Replacement of protected trees or shrubs at an off-site location, based on the number of protected trees or shrubs affected, at a ratio not to exceed 3:1 for native trees or shrubs or 1:1 for ornamental trees or shrubs, unless higher ratios are specified by local government ordinances or regulations
- Contribution to a tree or shrub planting fund

3.7.7.12 BIO-MM#37: Minimize Effects on Wildlife Movement Corridors During Construction

To the extent feasible, the Authority will avoid placing fencing, either temporarily or permanently, in known wildlife movement corridors, including the San Gabriel River, the Rio Hondo River and spreading grounds, the Santa Ana River, or the Los Angeles River, in those portions of the alignment where the tracks are elevated (e.g., viaducts, bridges). The Authority will avoid conducting ground-disturbing activities in these wildlife movement corridors during nighttime hours, to the extent feasible, and will shield nighttime lighting to avoid illuminating these areas in circumstances where night work avoidance is not feasible.

3.7.7.13 BIO-MM#44: Provide Compensatory Mitigation for Loss of Active Burrowing Owl Burrows and Habitat

If active Burrowing Owls burrows or occupied Burrowing Owl habitat is to be lost, a CMP will be prepared to compensate for permanent impacts on nesting, occupied, and satellite burrows for Burrowing Owls and their habitat. The analysis in the CMP will be based on site-specific characteristics of the natal area, home range, foraging area, and other factors that influence the Burrowing Owls and Burrowing Owl population persistence in the area. Mitigation will occur as per CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFG 2012) or in accordance with a regulatory authorization issued under the CESA.

3.7.7.14 BIO-MM#47: Prepare and Implement a Compensatory Mitigation Plan for Impacts on Aquatic Resources

The Authority will prepare and apply a CMP that identifies mitigation to address permanent losses, including functions and values, of aquatic resources defined as waters of the U.S. under the CWA or waters of the state under Porter-Cologne, as well as areas subject to California Fish and Game Code Section 1600 et seq. Compensatory mitigation may involve the restoration, establishment, enhancement, or preservation of aquatic resources through one or more of the following methods:

- Purchase of credits from an agency-approved mitigation bank
- Preservation of aquatic resources through acquisition of property
- Establishment, restoration, or enhancement of aquatic resources
- In-lieu fee contribution determined through consultation with the applicable regulatory agencies

A 1:1 ratio will be used for compensatory mitigation to offset permanent impacts unless a higher ratio is required pursuant to regulatory authorizations issued under Section 404 of the CWA, Porter-Cologne, or California Fish and Game Code Section 1600 et seq.

For mitigation involving the establishment, restoration, enhancement, or preservation of aquatic resources by the Authority, the CMP will contain the following information:

- Objectives: A description of the resource types and amounts that will be provided, the type of compensation (i.e., restoration, establishment, enhancement, or preservation), and the

manner in which the resource functions of the compensatory mitigation project will address the needs of the watershed or ecoregion

- Site selection: A description of the factors considered during the term sustainability of the resource
- Adaptive management plan: A management strategy to address changes in site conditions or other components of the compensatory mitigation project
- Financial assurances: A description of financial assurances that will be provided to ensure that the compensatory mitigation will be successful

In circumstances where the Authority intends to fulfill compensatory mitigation obligations by securing credits from approved mitigation banks or in-lieu fee programs, the CMP need only include the name of the specific mitigation bank or in-lieu fee program to be used and the method for calculating credits.

3.7.7.15 BIO-MM#50: Implement Measures to Minimize Impacts During Off-Site Habitat Restoration, or Enhancement, or Creation on Mitigation Sites

Prior to ground-disturbing activities associated with habitat restoration, enhancement, or creation actions at a mitigation site, the Authority will conduct a site assessment of the work area to identify biological and aquatic resources, including plant communities, land cover types, and the distribution of special-status plants and wildlife.

Based on the results of the site assessment, the Authority will obtain necessary regulatory authorizations prior to conducting habitat restoration, enhancement, or creation activities, including authorization under the FESA or CESA, California Fish and Game Code Section 1600 et seq., CWA, and Porter-Cologne.

The Authority will implement the following to avoid or minimize impacts on species habitat and aquatic biological resources during habitat restoration, enhancement, or creation activities:

- BIO-IAMF#3: Prepare WEAP Training Materials and Conduct Construction-Period WEAP Training
- BIO-IAMF#6: Establish Monofilament Restrictions
- BIO-IAMF#7: Prevent Entrapment in Construction Materials and Excavations
- BIO-IAMF#8: Delineate Equipment Staging Areas and Traffic Routes
- BIO-IAMF#9: Dispose of Construction Spoils and Waste
- BIO-IAMF#10: Clean Construction Equipment
- BIO-IAMF#11: Maintain Construction Sites
- 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#33: Restore Aquatic Resources Subject to Temporary Impacts
- BIO-MM#55: Prepare and Implement a Weed Control Plan
- BIO-MM#58: Delineate Environmentally Sensitive Areas and Install Wildlife Exclusion Fencing
- BIO-MM#60: Limit Vehicle Traffic and Construction Site Speeds
- BIO-MM#63: Work Stoppage

3.7.7.16 BIO-MM#54: Prepare and Implement an Annual Vegetation Control Plan

Prior to O&M of the HSR, the Authority will prepare an annual VCP to address vegetation removal for the purpose of maintaining clear areas around facilities, reducing the risk of fire, and controlling invasive weeds during the operational phase. The Authority will generally follow the procedures established in Chapter C2 of the California Department of Transportation's *Maintenance Manual* to manage vegetation on Authority property (Caltrans 2014). Vegetation will be controlled by chemical, thermal, biological, cultural, mechanical, structural, and manual methods. The VCP will be updated each winter and completed in time to be implemented no later than April 1 of each year. The annual update to the VCP will include a section addressing issues encountered during the prior year and changes to be incorporated into the VCP. The plan will describe site-specific vegetation-control methods, as outlined below:

- Chemical vegetation-control methods
- Mowing program consistent with Section 1415 of the Fixing America's Surface Transportation Act or the most recent applicable guidance
- Other nonchemical vegetation control
- Other chemical pest-control methods (e.g., insect, snail, rodent)

The use of rodenticides will be prohibited to prevent the inadvertent poisoning of Burrowing Owl (CDFG 2012), raptors, and mountain lion.

Only California Department of Transportation–approved herbicides may be used in the vegetation-control program. Pesticide application will be conducted in accordance with requirements of the California Department of Pesticide Regulation and County Agricultural Commissioners by certified pesticide applicators. Noxious or invasive weeds will be treated where requested by County Agricultural Commissioners. The Authority will cooperate in area-wide efforts to control noxious or invasive weeds if such programs have been established by local agencies.

3.7.7.17 BIO-MM#55: Prepare and Implement a Weed Control Plan

Prior to ground-disturbing activity during the construction phase, the Project Biologist will develop a WCP, subject to review and approval by the Authority. The purpose of the WCP is to establish approaches to minimize and avoid the spread of invasive weeds during ground-disturbing activities during construction and O&M.

The WCP will include, at a minimum, the following:

- A requirement to delineate ESAs in the field prior to weed-control activities
- A schedule for weed surveys to be conducted in coordination with the BRMP
- Success criteria for invasive weed control. The success criteria will be linked to the BRMP standards for on-site work during ground-disturbing activities. In particular, the criteria will establish limits on the introduction and spread of invasive species, as defined by the California Invasive Plant Council, to less than or equal to the predisturbance conditions in the area temporarily affected by ground-disturbing activities. If invasive species cover is found to exceed predisturbance conditions by greater than 10 percent or is 10 percent greater than levels at a similar, nearby reference site, a control effort will be implemented. If the target, or other success criteria identified in the WCP, has not been met by the end of the WCP monitoring and implementation period, the Authority will continue the monitoring and control efforts, and remedial actions will be identified and applied until the success criteria are met.
- Provisions to ensure consistency between the WCP and the RRP, including verification that the RRP includes measures to minimize the risk of the spread or establishment of invasive species and reflects the same revegetation performance standards as the WCP.

- Identification of weed-control treatments, including permitted herbicides and manual and mechanical removal methods
- Timeframes for weed-control treatment for each plant species
- Identification of fire-prevention measures

3.7.7.18 BIO-MM#56: Conduct Monitoring of Construction Activities

During initial ground-disturbing activity, the Project Biologist will be present in the work area to verify compliance with avoidance and minimization measures, establish ESAs, and install WEF and construction exclusion fencing.

3.7.7.19 BIO-MM#58: Establish Environmentally Sensitive Areas and Nondisturbance Zones

Prior to ground-disturbing activity in a work area, the Project Biologist will use flagging to mark ESAs that support special-status species or aquatic resources and are subject to seasonal restrictions or other avoidance and minimization measures. The Project Biologist will also direct the installation of WEF to prevent special-status wildlife species from entering work areas. The WEF will have exit doors to allow animals that may be inside an enclosed area to leave the area. The Project Biologist will also direct the installation of construction exclusionary fencing at the boundary of the work area, as appropriate, to avoid and minimize impacts on special-status species or aquatic resources outside of the work area during the construction period. The ESAs, WEF, and construction exclusionary fencing will be delineated by the Project Biologist based on the results of aquatic resource mapping, wildlife corridors, and preconstruction surveys, and in coordination with the Authority. The ESAs, WEF, and construction exclusionary fencing will be regularly inspected and maintained by the Project Biologist.

The ESA, WEF, and construction exclusionary fencing locations will be identified and depicted on an exclusion fencing exhibit. The purpose of the ESAs and WEF will be explained at WEAP training and the locations of the ESA and WEF areas will be noted during worker tailgate sessions.

3.7.7.20 BIO-MM#60: Limit Vehicle Traffic and Construction Site Speeds

Prior to ground-disturbing activities, the Project Biologist will ensure that appropriate measures have been instituted to restrict project vehicle traffic within the project footprint to established roads, construction areas, and other permissible areas. The Project Biologist will establish vehicle speed limits of no more than 15 miles per hour for unimproved access roads and for temporary and permanent construction areas within the project footprint. The Project Biologist will also direct that access routes be flagged and marked and that measures be adopted to prevent off-road vehicle traffic.

3.7.7.21 BIO-MM#62: Prepare Plan for Dewatering and Water Diversions

Prior to initiating construction activity that occurs in open or flowing water, the Authority will prepare a dewatering plan, which will be subject to review and approval by the applicable regulatory agencies. The plan will incorporate measures to minimize turbidity and siltation. The Project Biologist will monitor the dewatering or water diversion sites, including collection of water quality data, as applicable. Prior to the dewatering or diverting of water from a site, the Project Biologist will conduct pre-activity surveys to determine the presence or absence of special-status species in the affected waterbody. In the event that special-status species are detected during pre-activity surveys, the Project Biologist will relocate the species (unless the species is fully protected under state law), consistent with regulatory authorizations applicable to the species.

3.7.7.22 BIO-MM#63: Work Stoppage

In the event that a special-status wildlife species is found in a work area, the Project Biologist will have the authority to halt work to prevent the death of or injury to the species. Any such work stoppage will be limited to the area necessary to protect the species and work may be resumed

once the Project Biologist determines that the individuals of the species have moved out of harm's way, or the Project Biologist has relocated them out of the work area.

Any such work stoppages and the measures taken to facilitate the removal of the species, if any, will be documented in a memorandum prepared by the Project Biologist and submitted to the Authority within 2 business days of the work stoppage.

3.7.7.23 BIO-MM#68: Avoid and Minimize Impacts on White-Tailed Kite

If construction activities are scheduled to occur between February 1 and August 31, the Project Biologist will conduct surveys for White-Tailed Kite in areas with suitable habitat for this species. Nesting surveys for White-Tailed Kite will comply with the general requirements of **BIO-MM#15**, including the requirement for raptor nesting surveys to occur no more than 14 days before the start of the activities in areas where suitable habitat is present. Surveys will cover a minimum of a 0.5-mile radius around the construction area. If nesting White-Tailed Kites are detected, the Project Biologist will establish a 0.25-mile no-disturbance buffer unless the Project Biologist determines that smaller buffers will be sufficient to avoid impacts. Buffers will be maintained until the Project Biologist has determined that the young have fledged and are no longer reliant on the nest or parental care that includes nest use for survival.

3.7.7.24 BIO-MM#76: Implement Wildlife Rescue Measures

During construction and O&M, if an injured or trapped wildlife species, including but not limited to birds and raptors, is observed, the Project Biologist will be notified immediately to determine if it is appropriate to release or take the wildlife species to the nearest CDFW-permitted rehabilitation center. The Project Biologist will follow relevant guidelines for federally and state-listed species. If an injured or trapped bird is incidentally observed during maintenance or construction, personnel will notify the Project Biologist immediately to determine if it is appropriate to release or take the bird to the nearest CDFW-permitted rehabilitation center. Other wildlife species that may be injured or trapped could include bats and mountain lion.

3.7.7.25 BIO-MM#79: Conduct Presence/Absence Preconstruction Surveys for Special-Status Plant Species and Special-Status Natural Communities

Prior to ground-disturbing activity, the Project Biologist will conduct presence or absence botanical surveys for special-status natural communities in potentially suitable habitats in a work area and the Botanical RSA. The Project Biologist will be provided locations of the special-status natural community (Goodding's willow – red willow) as previously mapped within the Botanical RSA. Because this community is found in a natural system that commonly experiences fluctuations from flooding, the location and extent of this community may vary from year to year. The Project Biologist will establish ESAs and record in GIS the locations of observed special-status natural communities in the work area and the Botanical RSA.

Prior to ground-disturbing activity, the Project Biologist will conduct a habitat assessment for southern tarplant and lucky morning-glory and other rare plants within an approximately 1.37-acre temporary construction easement on the northern side of Coyote Creek. If no suitable habitat for southern tarplant or lucky morning-glory is identified at this site, absence is assumed, and no further action is required. No other habitat for rare plants was observed within the project footprint.

If suitable habitat for southern tarplant or lucky morning-glory (and other rare plants) is identified prior to ground-disturbing activity, the Project Biologist will conduct presence or absence botanical surveys for southern tarplant and lucky morning-glory during the appropriate season (May to November) or as determined by the Project Biologist based on survey conditions. The Project Biologist will flag and record in GIS the locations of observed special-status plant species and special-status natural communities.

3.7.7.26 BIO-MM#80: Prepare and Implement Plan for Salvage and Relocation of Special-Status Plant Species

If southern tarplant (CRPR 1B.1) or lucky morning-glory (CRPR 1B.1) are found to occur within the approximately 1.37-acre temporary construction easement on the north side of Coyote Creek during surveys as required in **BIO-MM#79** and cannot be avoided, then, prior to ground-disturbing activity, the Project Biologist will collect seeds and plant materials and stockpile and segregate the top 4 inches of topsoil from locations in the work area where southern tarplants were observed for use on off-site locations.

Suitable sites to receive salvaged material include mitigation sites, refuges, reserves, federal or state lands, and public or private mitigation banks.

The following additional mitigation measures will be implemented if southern tarplant and lucky morning-glory are positively identified:

- If possible, southern tarplant(s) and lucky morning-glory will be avoided through installation of a 25-foot buffer using ESA fencing that will be installed surrounding southern tarplant(s) and lucky morning-glory by a construction crew as directed by the Project Biologist.
- If avoidance is not possible, prior to construction, at the appropriate time of year, translocation of individual southern tarplants and lucky morning-glory or seed collection by the Project Biologist will be required.
- Seeds will be propagated, and suitable sites to receive salvaged materials or translocated individuals include mitigation sites, refuges, reserves, federal or state lands, and public or private mitigation banks.

3.7.7.27 BIO-MM#82: Implement Lighting Minimization Measures During Construction

Ground-disturbing activities in and adjacent to the Los Angeles River, the Rio Hondo and spreading grounds, the San Gabriel River, and the Santa Ana River will be avoided during nighttime hours to the extent feasible. If nighttime work is necessary, a biological monitor will be present and will use methods to reduce lighting in these wildlife corridors. These methods could include ensuring that nighttime lighting is shielded to avoid illuminating wildlife habitat and that night work is only conducted in the boundaries of previously disturbed, cleared, and grubbed areas.

3.7.7.28 BIO-MM#83: Implement Lighting Minimization Measures During Operations

To the extent feasible, measures will be implemented to minimize operational lighting. These will include:

- Shields on nighttime lighting will direct light downward and contain the light to the boundaries of the project site.
- Train headlights will use the minimum standard allowed by the FRA under 49 CFR Part 229.125 (a single headlight of at least 200,000 candelas) in nontunnel portions of the project section.

Outdoor lighting at operational facilities will be consistent with the minimum Occupational Safety and Health Administration requirements established by 29 CFR Part 1926.56 when the facilities are in use. To the extent feasible, the Authority will minimize the duration of lighting at operational facilities by using methods other than lighting (e.g., remote monitoring systems) to ensure security of facilities during nighttime hours they are not in use.

3.7.7.29 BIO-MM#84: Nesting Bird Surveys During Operations

If operational work is to occur in the Los Angeles River, the Rio Hondo and spreading grounds, the San Gabriel River, and the Santa Ana River or other areas deemed to contain suitable

nesting bird habitat during the avian nesting season (February 1 to September 1), the Project Biologist will conduct visual nesting bird surveys in the work area for nesting birds and active nests (nests with eggs or young) of nonraptor species listed under the MBTA or California Fish and Game Code no more than 14 days before the start of the activities in areas where suitable habitat is present. Surveys will occur in the habitat areas within the project footprint and, where access is available, to within 75 feet of the boundary of the project footprint.

In the event that active bird nests are observed during the nesting bird survey, the Project Biologist will delineate no-work buffers. No-work buffers will be set at a distance of 75 feet unless a larger buffer is required pursuant to regulatory authorizations issued under the FESA or CESA. No-work buffers will be maintained until nestlings have fledged and are no longer reliant on the nest or parental care for survival or the Project Biologist determines that the nest has been abandoned. In circumstances where it is not feasible to maintain the standard no-work buffer, the no-work buffer may be reduced provided that the Project Biologist monitors the active nest during operational activities to ensure that the nesting birds do not become agitated. Larger buffers may be required if the Project Biologist determines that a larger buffer is required to prevent nest abandonment. Additional measures that may be used when no-work buffers are reduced include visual screens and sound barriers.

3.7.7.30 Mitigation Measures from Other Resource Topics

In addition to the biological mitigation measures, several mitigation measures described fully in Section 3.4 and Section 3.16 would be implemented that would further avoid or minimize impacts and effects on biological and aquatic resources. A brief summary of the measures related to biological and aquatic resources is included below.

AVQ-MM#1: Minimize Visual Disruption from Construction Activities

Prior to construction, a technical memorandum will be prepared to identify how the project will minimize construction-related visual/aesthetic disruptions, including:

- Minimizing preconstruction clearing to that only necessary for construction
- Preserving existing vegetation along the edge of construction areas that may help screen views
- Regrading areas disturbed by construction, staging, and storage to original contours and revegetating with plant material similar in number and type to plants removed, based on local jurisdictional requirements

AVQ-MM#2: Minimize Light Disturbance During Construction

Prior to construction or ground disturbance requiring nighttime construction, a technical memorandum will be prepared to verify how the contractor will shield nighttime construction lighting and direct it downward to minimize light that falls outside the construction site boundaries.

N&V-MM#1: Construction Noise Mitigation Measures

Prior to construction, a noise-monitoring program will be prepared. The noise-monitoring program will include monitoring construction noise to verify compliance with noise limits. This measure includes methods to meet construction noise limits.

3.7.7.31 Impacts from Implementing Mitigation Measures

Secondary impacts can occur from the implementation of mitigation measures for biological and aquatic resources (Section 3.7.7). Because many of the mitigation measures propose similar activities across multiple affected resource categories, the mitigation measures are grouped in this section by activity (e.g., preconstruction surveys), where appropriate.

The types of impacts identified in this section are common to large infrastructure construction projects and are typically minimal and not substantial. Adhering to applicable regulations and agency guidelines, coordinating with resource agencies, obtaining regulatory permits, and implementing standard BMPs and mitigation measures would further reduce potential indirect

impacts. Discussion of secondary impacts from measures included from other resource topics is found in the sections of the Draft EIR/EIS where these measures are listed in full detail.

Preconstruction Surveys

BIO-MM#14, BIO-MM#15, BIO-MM#20, BIO-MM#25, BIO-MM#26, BIO-MM#35, BIO-MM#50, BIO-MM#62, BIO-MM#68, BIO-MM#79, BIO-MM#80, and BIO-MM#84 will require preconstruction surveys to determine the presence of special-status plants and wildlife within the construction footprint. Survey methods depend on the specific target species but would entail low-impact visual inspections by trained biologists walking in and immediately adjacent to the construction footprint. BIO-MM#20 and BIO-MM#25 would also occur in advance of construction but would involve longer lead times and duration; however, similar to the other mitigation measures, these measures would not involve disturbance of special-status plants or wildlife, substrate, vegetation, or aquatic resources. All of the preconstruction survey mitigation measures listed above would result in minimal to no adverse indirect environmental effects.

Resource Avoidance, Protection, and Restoration

BIO-MM#6, BIO-MM#14, BIO-MM#15, BIO-MM#21, BIO-MM#26, BIO-MM#27, BIO-MM#34, BIO-MM#37, BIO-MM#50, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60, BIO-MM#63, BIO-MM#68, and BIO-MM#79 will require the establishment of special-status species and aquatic resource exclusion zones or barriers, nighttime or seasonal work restrictions, vehicle traffic speed restrictions, construction monitoring measures, work stoppage restrictions, a WCP, and installation of erosion-control measures prior to and during construction. Protective measures (e.g., exclusion zones, barriers, erosion controls) could extend outside of the immediate construction footprint to protect nearby biological and aquatic resources but would be temporary and would not permanently destroy or degrade nearby resources.

BIO-MM#6 and BIO-MM#33 will restore temporary impacts on special-status species and aquatic resources resulting from construction. Revegetation with native species, removal of invasive plants, removal of substrate protection materials (e.g., gravel, geotextiles), restoration of natural topography, and long-term monitoring and maintenance will occur in areas disturbed by construction activities. These mitigation measures will also restore the biological and aquatic resource functions in and immediately adjacent to the construction footprint.

Implementation of BIO-MM#47 will consist of the off-site restoration, establishment, enhancement, or preservation of aquatic resources and areas subject to California Fish and Game Code Section 1600 et seq., sufficient to offset unavoidable temporary and permanent impacts on these resources resulting from project construction. For mitigation involving establishment, restoration, enhancement, or preservation of aquatic resources by the Authority (rather than purchase of credits from agency-approved mitigation banks or in-lieu fee programs), BIO-MM#50 would be implemented. This mitigation measure includes surveying off-site mitigation area(s) for the type and extent of biological and aquatic resources, including plant communities, land cover types, and special-status plants and wildlife, prior to CMP implementation. In addition, BIO-MM#50 includes obtaining necessary regulatory authorizations prior to implementing the CMP, including authorization under the FESA or CESA, California Fish and Game Code Section 1600 et seq., CWA, and Porter-Cologne. This measure also includes a suite of standard IAMFs and mitigation measures to further avoid and minimize potential indirect effects.

Based on this information, the protection and restoration measures would result in minimal to no adverse indirect environmental effects.

Construction Site Management

BIO-MM#34, BIO-MM#37, BIO-MM#55, BIO-MM#60, BIO-MM#62, and BIO-MM#63 would be implemented within the construction footprint to minimize construction-related impacts. BIO-MM#34, BIO-MM#60, and BIO-MM#63 would not result in physical disturbance, whereas implementation of BIO-MM#55 and BIO-MM#62 could temporarily disturb vegetation, substrate, or aquatic resources during weed removal or treatment and installation and removal of dewatering and surface water diversions, respectively. However, these measures will require

implementation of the mitigation measures identified under “Resource Avoidance, Protection, and Restoration” (e.g., exclusion zones, barriers) and “Rescue and Relocation” and will be limited to the construction footprint. Based on this information, the construction site measures would result in minimal to no adverse indirect environmental effects.

Rescue and Relocation

BIO-MM#6, BIO-MM#21, BIO-MM#26, BIO-MM#35, BIO-MM#76, and BIO-MM#80 will include relocation of Burrowing Owls and bats, as well as relocation or replacement of special-status plant species and protected trees. If the measures identified under “Resource Avoidance, Protection, and Restoration” (e.g., exclusion zones, barriers) fail or are not feasible, these special-status or protected species will be relocated into appropriate habitat outside of the construction area, and additional measures would be implemented to maximize likelihood for survival. Such efforts may include improving the biological quality of designated relocation zones, which will be identified in consultation with the appropriate resource agencies. However, relocation could affect resident individuals in the relocation areas through increased predation and competition of resources with relocated individuals. Therefore, relocation activities associated with the mitigation measures listed above could result in adverse indirect environmental effects. These impacts would be effectively minimized with preparation of removal/relocation plans, adherence to applicable regulations and guidelines, coordination with resource agencies, compliance with regulatory permits, and implementation of standard BMPs and mitigation measures. Based on this information, the rescue and relocation measures would result in minimal to no adverse indirect environmental effects.

Operations Site Management

Under BIO-MM#54, standard O&M activities will consist of maintaining clear areas around facilities and structures, reducing the risk of fire, and controlling invasive weeds, consistent with an annual VCP. Vegetation will be controlled by chemical, thermal, biological, cultural, mechanical, structural, and manual methods. These activities have the potential to result in indirect adverse effects on biological and aquatic resources within the construction footprint and nearby (e.g., downstream) areas, including effects on special-status species and water quality. In order to minimize potential impacts, the VCP will be updated each winter and implemented no later than April 1 of each year. The annual update to the VCP will include a section addressing issues encountered during the prior year and changes to be incorporated into the plan. In addition, the VCP will include nonchemical vegetation-control methods, and comply with standard state and federal vegetation-control protocols with respect to the use and application of approved herbicides and pesticides. Based on this information, this measure would result in minimal to no adverse indirect environmental effects.

3.7.7.32 Early Action Projects

Table 3.7-15 lists the mitigation measures required for the early action projects. Potential secondary (indirect) effects of these mitigation measures are described above in Section 3.7.7.31, Impacts from Implementing Mitigation Measures.

Table 3.7-15 Mitigation Measures Required for Early Action Projects

Early Action Project	Impacts	Mitigation Measures
Pioneer Boulevard Grade Separation	Impact BIO-3: Construction Impacts on Special-Status Birds, Raptors, and Migratory Birds ▪ Construction would result in temporary effects on migratory birds and raptors. ▪ Construction would result in permanent effects on migratory birds and raptors. Impact BIO-4: Construction Impacts on Special-Status Mammals ▪ Construction would result in temporary effects on special-status mammals. ▪ Construction would result in permanent effects on special-status mammals.	BIO-MM#14 BIO-MM#15 BIO-MM#25 BIO-MM#26 BIO-MM#27 BIO-MM#56 BIO-MM#58 BIO-MM#60 BIO-MM#63 BIO-MM#68 BIO-MM#76 BIO-MM#82
Norwalk Boulevard and Los Nietos Road Grade Separation	No impacts	N/A
Cerritos Avenue Grade Separation	No impacts	N/A
State College Boulevard Grade Separation	No impacts	N/A
Commerce Metrolink Station Relocation	No impacts	N/A
Buena Park Metrolink Station Relocation	Impact BIO-4: Construction Impacts on Special-Status Mammals ▪ Construction would result in temporary effects on special-status mammals. ▪ Construction would result in permanent effects on special-status mammals. Impact BIO-5: Construction Impacts on Aquatic Resources ▪ Construction would result in temporary effects on potential USACE, SWRCB, and CDFW jurisdictional aquatic resources. ▪ Construction would result in permanent effects on potential USACE, SWRCB, and CDFW jurisdictional aquatic resources.	BIO-MM#14 BIO-MM#15 BIO-MM#25 BIO-MM#26 BIO-MM#27 BIO-MM#47 BIO-MM#50 BIO-MM#56 BIO-MM#58 BIO-MM#60 BIO-MM#62 BIO-MM#63 BIO-MM#68 BIO-MM#76 BIO-MM#82

Early Action Project	Impacts	Mitigation Measures
Fullerton Metrolink/Amtrak Modifications (Fullerton Interlocker)	Impact BIO-3: Construction Impacts on Special-Status Birds, Raptors, and Migratory Birds ▪ Construction would result in temporary effects on migratory birds and raptors. ▪ Construction would result in permanent effects on migratory birds and raptors.	BIO-MM#14 BIO-MM#15 BIO-MM#56 BIO-MM#58 BIO-MM#60 BIO-MM#63 BIO-MM#68 BIO-MM#76 BIO-MM#82
Hobart Yard (BNSF Railway Los Angeles Intermodal Facility)	No impacts	N/A
Commerce Yard (including Commerce Flyover)	No impacts	N/A

CDFW = California Department of Fish and Wildlife; N/A = not applicable; SWRCB = State Water Resources Control Board; USACE = U.S. Army Corps of Engineers

3.7.8 NEPA Impacts Summary

This section evaluates and compares the impacts associated with construction and operation of the Shared Passenger Track Alternatives on biological resources. Direct impacts on biological and aquatic resources would result from activities in temporary and permanent impact areas of the Shared Passenger Track Alternatives. Indirect impacts on such resources would occur in and adjacent to the Shared Passenger Track Alternatives. During project operation, impacts would occur in the project footprint, but because this area would be occupied by project infrastructure, impacts on habitat would be more likely adjacent to the project footprint. Effects are assessed after implementation of mitigation measures. Under NEPA, project effects are evaluated based on the criteria of context, intensity, and duration. Effects are assessed after implementation of the project IAMFs and mitigation measures described in Section 3.7.4.2, Impact Avoidance and Minimization Features, and Section 3.7.7, respectively, and compares them to the anticipated impacts of the No Project Alternative.

3.7.8.1 No Project Alternative

Under the No Project Alternative, recent development trends and infrastructure maintenance in the highly urbanized project section are anticipated to continue, leading to ongoing biological and aquatic resources impacts. Capital improvements to existing highway, airport, conventional rail systems, flood-control facilities, and aquifer recharge facilities, described in adopted regional transportation plans and municipal general plans, would be implemented (pending availability of funding). In addition, industrial, residential, and associated infrastructure development projects (e.g., shopping centers, wastewater conveyance upgrades) are planned. These planned improvements and growth initiatives would result in associated direct and indirect effects on biological and aquatic resources during construction and operation.

Future improvements would have comparable effects on biological and aquatic resources as similar past and ongoing improvement projects, such as habitat loss and degradation, thereby potentially reducing special-status species populations and water quality. However, these development and improvement projects would be subject to environmental impact analysis, regulatory and resource agency permits and approvals, and implementation of mitigation measures sufficient to avoid, minimize, and compensate for impacts on biological and aquatic resources. In addition, it was assumed that existing infrastructure would continue to be subject to routine O&M activities, including inspections, repairs, and removal of vegetation, debris, and sediment from channels and basins.

Based on forecasted population growth in the region, existing and future transportation systems (including both highway and conventional rail) would experience more traffic and congestion under the No Project Alternative. Increased traffic and congestion would have a negative impact on wildlife resulting from increased direct mortality of wildlife through collisions and increased indirect mortality of wildlife through pollution. Similarly, increased traffic and congestion would lead to indirect mortality of botanical resources through pollution, including dust. Both wildlife and plants would experience direct effects because of habitat loss through the conversion of habitat to roads to reduce congestion.

3.7.8.2 Shared Passenger Track Alternatives

With incorporation of IAMFs and implementation of mitigation measures described in Section 3.7.4.2 and Section 3.7.7, respectively, the Shared Passenger Track Alternatives have been designed to avoid and minimize effects on biological and aquatic resources to the maximum extent feasible. Given the context of the urbanized environment associated with the project section, effects on biological and aquatic resources (as described in Section 3.7.6.3) would be minimal in intensity and are summarized below.

Construction Impacts

The Shared Passenger Track Alternatives action area (Wildlife RSA for wildlife and Botanical RSA for plants) does not contain USFWS-designated critical habitat for federally listed species. Although critical habitat was identified in the Supplemental RSA for the federally listed as threatened Coastal California Gnatcatcher (CDFW species of special concern) approximately 1.4 miles from the Wildlife RSA, during the evaluation it was determined that no direct or indirect effects on this critical habitat area are anticipated. As described in Section 3.7.1.1, there would be no effect on any federally listed species or critical habitat. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for federally listed species and critical habitat.

No permanent direct construction effects on special-status plant species are anticipated. There are currently no known areas within the project footprint where habitat for special-status plants occurs; therefore, no permanent direct or indirect effects on special-status plant species are anticipated.

- **Impact BIO-1:**
  - Temporary direct effects on riparian habitat and special-status natural communities would result in the temporary disturbance of the following vegetation communities and land cover types: hardstem and California bulrush marsh herbaceous alliance, duckweed blooms and relatives' provisional herbaceous alliance, and unvegetated channels. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. There are no impacts anticipated on this biological resource associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11**, **BMPs**; **AQ-IAMF#1, Dust**; and **HYD-IAMF#3, SWPPP**; and implementation of **BIO-MM#6, RRP**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; and **BIO-MM#79, Special-Status Plant Surveys**, temporary impacts on vegetation communities would be minimized.
  - Permanent direct losses of riparian habitat and special-status natural communities would result in the permanent disturbance of the following vegetation communities and land cover types: hardstem and California bulrush marsh herbaceous alliance, duckweed blooms and relatives' provisional herbaceous alliance, and unvegetated channels. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. To reduce permanent direct and indirect effects on native plant communities, **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; and **BIO-MM#79, Special-Status**

Plant Surveys, would be implemented, and permanent impacts on vegetation communities would be minimized.

- **Impact BIO-2:**
  - Temporary direct effects on special-status plant species potentially would 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). There would be no difference in impacts between Shared Passenger Track Alternatives A B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11, BMPs**; **HYD-IAMF#3, SWPPP**; and **AQ-IAMF#1, Dust**; and implementation of **BIO-MM#6, RRP**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#79, Special-Status Plant Surveys**; and **BIO-MM#80, Prepare and Implement Plan for Salvage and Relocation of Special-Status Plant Species**, during construction of the project, temporary direct and indirect impacts on special-status plant species would be minimized.
- **Impact BIO-3:**
  - Construction activities would temporarily affect special-status birds, special-status raptors (including Burrowing Owl [candidate for state listing]), and migratory birds (protected under the MBTA) if potential nesting habitat would be disturbed during construction (by construction occurring during the nesting season near active nests). There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11**, **BMPs**; and **BIO-IAMF#12, Bird Safe**; and implementation of **BIO-MM#6, RRP**; **BIO-MM#14, Bird Surveys**; **BIO-MM#15, Raptor Surveys**; **BIO-MM#20, Burrowing Owl Surveys**; **BIO-MM#21, Burrowing Owl Measures**; **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#68, White-Tailed Kite**; **BIO-MM#82, Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; **AVQ-MM#1, Visual**; and **AVQ-MM#2, Construction Lighting**, during construction of the project, temporary direct impacts on avian species would be minimized.
  - Construction activities (e.g., grubbing, grading, excavation, driving off-road) would permanently remove or disturb potential nesting habitat for special-status birds, raptors (including Burrowing Owl [candidate for state listing]), and migratory birds. Effects would include bird mortality or injury and the permanent conversion and loss of occupied nesting and foraging habitat to project infrastructure. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#11**, **BMPs**; and **BIO-IAMF#12, Bird Safe**; and implementation of **BIO-MM#14, Bird Surveys**; **BIO-MM#15, Raptor Surveys**; **BIO-MM#20, Burrowing Owl Surveys**; **BIO-MM#21, Burrowing Owl Measures**; **BIO-MM#35, Tree Compensation**; **BIO-MM#44, Burrowing Owl Compensatory Mitigation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#68, White-Tailed Kite; N&V-MM#1, Construction Noise**; and **AVQ-MM#2, Construction Lighting**, during construction of the project, permanent direct impacts on avian species would be minimized.

- **Impact BIO-4:**
  - Temporary construction impacts on special-status mammals include the increase of opportunistic predators and prey (if trash and other attractants are present); the temporary use of rodenticides, which could lead to the inadvertent poisoning of mountain lions (candidate state-listed); temporary alterations in lighting and noise that could disrupt migration, foraging, and roosting; and increases in dust and noise disturbances. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; and **BIO-IAMF#11**, **BMPs**; and implementation of **BIO-MM#6, RRP**; **BIO-MM#25, Bat Surveys**; **BIO-MM#26, Bat Avoidance**; **BIO-MM#27, Bat Exclusion/Deterrence**; **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#82, Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; **AVQ-MM#1, Visual**; and **AVQ-MM#2, Construction Lighting**, during construction of the project, temporary direct impacts on special-status small mammals would be avoided or minimized.
  - Permanent direct construction effects on special-status mammals, including bats and mountain lion (candidate state-listed), could include the disruption of foraging, roosting, and migration activities of bats and mountain lions as a result of increased lighting; mortality of individuals as a result of collisions with vehicles, wires, and other elements, or entrapment in construction areas or equipment; increased mountain lion and human conflict during construction activities; use of rodenticides and the indirect poisoning of mountain lions because of rodent-control programs; disruption of foraging and flight as a result of noise pollution; and permanent conversion of occupied roosting and foraging habitat. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; and **BIO-IAMF#9, Waste Storage**; and implementation of **BIO-MM#25, Bat Surveys**; **BIO-MM#26, Bat Avoidance**; **BIO-MM#27, Bat Exclusion/Deterrence**; **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **N&V-MM#1, Construction Noise**; and **AVQ-MM#2, Construction Lighting**, during construction of the project, permanent direct impacts on special-status small mammals would be avoided or minimized.
- **Impact BIO-5:**
  - Temporary direct and indirect construction effects on wetland and nonwetland aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction would include the degradation or loss of these resources and associated functions and services, including water quality; currents, circulation, and drainage patterns; and wildlife habitat. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11, BMPs**; **HYD-IAMF#1, Stormwater**; **HYD-IAMF#3, SWPPP**; **HYD-IAMF#4, SWPPP – Industrial**; and **HMW-IAMF#6, Spills**; and implementation of **BIO-MM#6**, **RRP**; **BIO-MM#33**, **Aquatic Restoration – Temp**; **BIO-MM#34, Aquatic Monitoring**; **BIO-MM#50, Mitigation Site**; **BIO-MM#55, WCP**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#62, Dewatering/Water Diversions**, during construction of the project, temporary impacts on these resources would be avoided, minimized, and mitigated.

- Permanent direct and indirect construction effects on aquatic resources considered subject to USACE, SWRCB, or CDFW jurisdiction would include modification of watercourse and waterbody crossings, and construction and modification of stormwater drainage facilities and access roads. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#5, BRMP**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11, BMPs**; **HYD-IAMF#1, Stormwater**; **HYD-IAMF#3, SWPPP**; **HYD-IAMF#4, SWPPP – Industrial**; and **HMW-IAMF#6, Spills**; and implementation of **BIO-MM#34, Aquatic Monitoring**; **BIO-MM#47, Aquatic CMP**; **BIO-MM#50, Mitigation Site**; **BIO-MM#55, WCP**; and **BIO-MM#58, ESAs, WEFs**, during project construction, permanent impacts on these resources would be avoided, minimized, and mitigated.

- **Impact BIO-6:**
  - The placement of temporary barriers during construction could impede wildlife movement through areas with restricted crossing opportunities. Temporary construction activities at or in the vicinity of wildlife movement corridors could result in the indirect disruption of wildlife movement through lighting, noise, motion, and startle effects. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; and **BIO-IAMF#11**, **BMPs**; and implementation of **BIO-MM#6, RRP**; **BIO-MM#35, Tree Compensation**; **BIO-MM#37, Wildlife Movement Corridor Avoidance**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#82, Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; **AVQ-MM#1, Visual**; and **AVQ-MM#2, Construction Lighting**, during project construction, temporary impacts on wildlife movement corridors would be minimized.
  - Permanent impacts on wildlife movement corridors include changes in night lighting and noise in the wildlife movement corridors. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; and **BIO-IAMF#11**, **BMPs**; and implementation of **BIO-MM#37, Wildlife Movement Corridor Avoidance**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#82: Bio Construction Lighting**; **N&V-MM#1, Construction Noise**; and **AVQ-MM#2, Construction Lighting**, during construction of the project, permanent impacts on wildlife movement corridors would be minimized.

- **Impact BIO-7:**
  - Temporary direct construction effects on protected trees from construction activities would occur from trimming or pruning trees, soil compaction, and soil contamination. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; and **BIO-IAMF#9, Waste Storage**; and implementation of **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**, impacts would be avoided or minimized.
  - Permanent direct construction effects on protected trees are anticipated in areas where permanent infrastructure (e.g., rail track, road overpasses) requires the removal of protected trees or temporary activities require clearing (e.g., materials staging, temporary access roads, construction rights-of-way). There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With

incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3**, **WEAP – Construction**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11**, **BMPS**; and **HYD-IAMF#3, SWPPP**; and implementation of **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**, impacts would be avoided or minimized.

Operational Impacts

Operational impacts on special-status plant species are not anticipated, because no areas with impacts on special-status plants are known. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource.

- **Impact BIO-8:**
  - Effects on biological resources associated with operation of the project would be fewer in number and lesser in intensity than those during construction and would primarily occur in areas that would be permanently affected during construction. Under the project, operational impacts on riparian habitat and special-status natural communities could occur because these vegetation communities would persist adjacent to the permanent impact areas within the operational areas. Impacts on these riparian habitat and special-status natural communities would result in the disturbance of the following vegetation communities and land cover types: hardstem and California bulrush marsh herbaceous alliance, Goodding's willow – red willow riparian woodland and forest alliance, duckweed blooms and relatives' provisional herbaceous alliance, and unvegetated channels. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#4, WEAP – O&M**; and implementation of **BIO-MM#54, VCP**; and **BIO-MM#55, WCP**, impacts would be minimized.
- **Impact BIO-9:**
  - Operational impacts on special-status birds, raptors, and migratory birds include injury or mortality from bird strikes or bird interactions with fencing and the electrical systems or direct strikes with the train; disturbances caused by noise, wind, and visual stimuli (such as lighting) that would affect movement, foraging, migration, 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 migration patterns. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#4, WEAP – O&M**; and **BIO-IAMF#12, Bird Safe**; and implementation of **BIO-MM#54, VCP**; and **BIO-MM#55, WCP**, impacts would be minimized.
- **Impact BIO-10:**
  - Operational impacts on special-status mammals include 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; indirect poisoning of mountain lions through rodent-control programs; direct injury or mortality from mountain lion or 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 could affect movement, foraging, migration, and breeding; and the color and type of night lighting that could attract or deter bats and alter migratory behavior. However, lighting levels are not expected to be altered appreciably from baseline conditions. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With the incorporation of **BIO-IAMF#4, WEAP – O&M**; and implementation of **BIO-MM#54, VCP**; and **BIO-MM#55, WCP**, impacts would be minimized.

- **Impact BIO-11:**
  - Operational impacts on wildlife movement corridors would include noise exposure, habitat fragmentation caused by increases in human presence, direct strikes with the train, indirect poisoning of mountain lions through rodent-control programs, and increases in invasive weed species. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#4, WEAP – O&M**; and **BIO-IAMF#12, Bird Safe**; and implementation of **BIO-MM#54, VCP**; and **BIO-MM#55, WCP**, effects would be minimized.
- **Impact BIO-12:**
  - Operational impacts on protected trees could include soil compaction, desiccation from frequent wind, and hydrology changes. There would be no difference in impacts between Shared Passenger Track Alternatives A and B for this resource. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11, BMPs**; **AQ-IAMF#1, Dust**; and **HYD-IAMF#3, SWPPP**; and implementation of **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**, effects would be minimized.

3.7.8.3 High-Speed Rail Station Options

There would be no construction impacts associated with critical habitat associated with the HSR station options.

Construction Impacts

- **Impact BIO-1:** There are no temporary or permanent construction impacts anticipated on riparian habitat and special-status natural communities associated with the including Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impacts BIO-2, BIO-3, and BIO-4:** There are no construction impacts anticipated on federally listed species associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-2:** There are no temporary or permanent construction impacts anticipated on special-status plant species associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-3:** Permanent and temporary construction impacts associated with nesting birds would affect migratory birds at the Norwalk/Santa Fe Springs and Fullerton HSR Station Options. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#6, Monofilament**; **BIO-IAMF#7, Entrapment**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#11**, **BMPs**; and **BIO-IAMF#12, Bird Safe**; and implementation of **BIO-MM#14, Bird Surveys**; **BIO-MM#15, Raptor Surveys**; **BIO-MM#20, Burrowing Owl Surveys**; **BIO-MM#21, Burrowing Owl Measures**; **BIO-MM#35, Tree Compensation**; **BIO-MM#44, Burrowing Owl Compensatory Mitigation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; **BIO-MM#60, Traffic**; **BIO-MM#62, Dewatering/Water Diversions**; **BIO-MM#63, Work Stoppage**; **BIO-MM#68, White-Tailed Kite**; **N&V-MM#1, Construction Noise**; and **AVQ-MM#2, Construction Lighting**, during construction of the project, impacts on avian species would be minimized.
- **Impact BIO-4:** There are no temporary or permanent construction impacts anticipated on special-status mammals associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.

- **Impact BIO-5:** There are no temporary or permanent construction impacts anticipated on aquatic resources associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-6:** There are no temporary or permanent construction impacts anticipated on wildlife movement associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-7:** There are temporary and permanent construction impacts anticipated on locally protected biological resources (trees and shrubs) associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; and **BIO-IAMF#9, Waste Storage**; and implementation of **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**, impacts would be avoided or minimized.

Operational Impacts

There are no operational impacts anticipated on special-status plant species associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.

- **Impact BIO-8:** There are no operational impacts anticipated on riparian habitat and special-status natural communities with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-9:** There would be operational impacts on special-status birds, raptors, and migratory birds associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options. With incorporation of **BIO-IAMF#4, WEAP – O&M**; and **BIO-IAMF#12, Bird Safe**; and implementation of **BIO-MM#54, VCP**; and **BIO-MM#55, WCP**, impacts would be minimized.
- **Impact BIO-10:** There are no operational impacts anticipated on special-status mammals associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-11:** There are no operational impacts anticipated on wildlife movement corridors associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options.
- **Impact BIO-12:** There are operational impacts anticipated on locally protected biological resources (trees and shrubs) associated with the Norwalk/Santa Fe Springs and Fullerton HSR Station Options. With incorporation of **BIO-IAMF#1, Biomonitors**; **BIO-IAMF#3, WEAP – Construction**; **BIO-IAMF#8, Demarcate**; **BIO-IAMF#9, Waste Storage**; **BIO-IAMF#10, Equipment Cleaning**; **BIO-IAMF#11**, **BMPs**; **AQ-IAMF#1, Dust**; and **HYD-IAMF#3, SWPPP**; and implementation of **BIO-MM#35, Tree Compensation**; **BIO-MM#55, WCP**; **BIO-MM#56, Biomonitor – Ground Disturbance**; **BIO-MM#58, ESAs, WEFs**; and **BIO-MM#60, Traffic**, effects would be minimized.

Table 3.7-16 provides a comparison of the potential impacts of the project alternatives followed by a summary of the impacts.

Table 3.7-16 Comparison of Project Alternative Impacts on Biological and Aquatic Resources

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusions Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Options	
									Norwalk/ Santa Fe Springs	Fullerton
Impact BIO-1: Construction Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities	Potential temporary and permanent construction impacts on riparian and special-status natural communities (hardstem and California bulrush marsh and duckweed blooms and relatives).	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Adverse effect (all alternatives and HSR station options)	BIO-MM#6, BIO-MM#33, BIO-MM#34, BIO-MM#47, BIO-MM#50, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60, BIO-MM#62, BIO-MM#79	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-2: Construction Impacts on Special-Status Plant Species	Potential temporary construction impact on two special-status plant species.	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Adverse effect (all alternatives and HSR station options)	BIO-MM#6, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60, BIO-MM#62, BIO-MM#79, BIO-MM#80	No adverse effect	No adverse effect	No adverse effect	No adverse effect

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusions Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Options	
									Norwalk/ Santa Fe Springs	Fullerton
Impact BIO-3: Construction Impacts on Special-Status Birds, Raptors, and Migratory Birds	Potential temporary and permanent construction impacts on up to 10 special-status avian species, migratory birds, and raptors through direct impacts or habitat modification.	Similar to Shared Passenger Track Alternative A. Shared Passenger Track Alternative B would result in the same temporary construction impacts on nesting birds, raptors, and migratory birds and slightly greater permanent construction impacts on nesting birds (0.91 acre), Burrowing Owl (0.01 acre), Yellow Warbler (0.90 acre), Loggerhead Shrike (0.90 acre), and White-Tailed Kite (0.90 acre).	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Similar impacts to the Shared Passenger Track Alternatives within the station area. The additional area of disturbance associated with the Fullerton HSR Station Option contains suitable nesting habitat for raptors and migratory birds within the permanent construction impact area (1.42 acres). Suitable burrowing and nesting habitat for Burrowing Owl (0.03 acre) and nesting habitat for White-Tailed Kite, Loggerhead Shrike, and Yellow Warbler (all with 1.32 acres) exists within the permanent construction area. No habitat is present in the temporary construction area or the areas anticipated to receive shading impacts.	Adverse effect (all alternatives and HSR station options)	BIO-MM#6, BIO-MM#14, BIO-MM#15, BIO-MM#20, BIO-MM#21, 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#68, BIO-MM#76, BIO-MM#82, N&V-MM#1, AVQ-MM#1, AVQ-MM#2	No adverse effect	No adverse effect	No adverse effect	No adverse effect

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusions Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Options	
									Norwalk/ Santa Fe Springs	Fullerton
Impact BIO-4: Construction Impacts on Special-Status Mammals	Potential temporary and permanent construction impacts on up to nine special-status mammal species through direct impacts or habitat modification.	Similar to Shared Passenger Track Alternative A. Shared Passenger Track Alternative B would be the same for temporary construction impacts on special-status mammals. Permanent impacts for Shared Passenger Track Alternative B would be slightly greater for three bat species (0.90 acre greater for Mexican long-tonged bat, western red bat, and western yellow bat) and mountain lion (0.91 acre), with shading impacts being slightly less (0.01 acre for 3 bat species [western mastiff bat, western red bat, and western yellow bat]).	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Similar impacts to the Shared Passenger Track Alternatives within the station area. There is suitable habitat for special-status mammals within the area of additional permanent disturbance, including mountain lion (1.35 acres) and bat species (1.32 acres of permanent impacts on suitable habitat for Mexican long-tongued bat, western red bat, and western yellow bat; and 0.07 acre of permanent impacts on suitable habitat for Townsend's big-eared bat, western mastiff bat, pocketed free-tailed bat, and big free-tailed bat).	Adverse effect (all alternatives and HSR station options)	BIO-MM#6, BIO-MM#25, BIO-MM#26, BIO-MM#27, 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, AVQ-MM#2	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-5: Construction Impacts on Aquatic Resources	Potential temporary and permanent construction impacts on aquatic resources.	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Adverse effect (all alternatives and HSR station options)	BIO-MM#6, BIO-MM#33, BIO-MM#34, BIO-MM#47 BIO-MM#50, BIO-MM#55, BIO-MM#58, BIO-MM#62	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-6: Construction Impacts on Wildlife Movement Corridors	Potential temporary and permanent construction impacts on wildlife movement corridors through substantial interference of the functioning of the corridor.	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Adverse effect (all alternatives and HSR station options)	BIO-MM#6, BIO-MM#34, BIO-MM#37, 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, AVQ-MM#2	No adverse effect	No adverse effect	No adverse effect	No adverse effect

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusions Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Options	
									Norwalk/ Santa Fe Springs	Fullerton
Impact BIO-7: Construction Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)	Potential conflict with local policies or ordinances resulting from temporary and permanent construction impacts on protected biological resources (trees and shrubs).	Same as Shared Passenger Track Alternative A.	Similar impacts to the Shared Passenger Track Alternatives within the station area. There is suitable habitat for protected trees and shrubs within the area of additional disturbance for the HSR station elements.	Similar impacts to the Shared Passenger Track Alternatives within the station area. There is suitable habitat for protected trees and shrubs within the area of additional disturbance for the HSR station elements.	Adverse effect (all alternatives and HSR station options)	BIO-MM#35, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-8: Operational Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities	Potential operational impacts on riparian and special-status natural communities (hardstem and California bulrush marsh herbaceous alliance and duckweed blooms and relatives).	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Adverse effect (all alternatives and HSR station options)	BIO-MM#54, BIO-MM#55	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-9: Operational Impacts on Special-Status Birds, Raptors, and Migratory Bird Species	Potential operational impacts on up to 10 special-status birds, raptors, and migratory birds.	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Similar impacts to the Shared Passenger Track Alternatives within the station area. There is suitable nesting habitat for raptors and migratory birds in the area of additional disturbance for the HSR station elements.	Adverse effect (all alternatives and HSR station options)	BIO-MM#54, BIO-MM#55, BIO-MM#76, BIO-MM#83, BIO-MM#84	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-10: Operational Impacts on Special-Status Mammals	Potential operational impacts on up to nine special-status mammals.	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Similar impacts to the Shared Passenger Track Alternatives within the station area. There is suitable habitat for special-status mammals, including western red bat and western yellow bat, within the area of additional disturbance for the HSR station elements.	Adverse effect (all alternatives and HSR station options)	BIO-MM#54, BIO-MM#76, BIO-MM#83	No adverse effect	No adverse effect	No adverse effect	No adverse effect
Impact BIO-11: Operational Impacts on Wildlife Movement Corridors	Potential operational impacts on wildlife movement corridors.	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Same impacts as the Shared Passenger Track Alternatives. No impacts within the station area.	Adverse effect (all alternatives and HSR station options)	BIO-MM#54, BIO-MM#55, BIO-MM#83	No adverse effect	No adverse effect	No adverse effect	No adverse effect

Impacts	Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Option		NEPA Conclusion Before Mitigation	Mitigation	NEPA Conclusions Post Mitigation			
			Norwalk/Santa Fe Springs	Fullerton			Shared Passenger Track Alternative A	Shared Passenger Track Alternative B	With Inclusion of HSR Station Options	
									Norwalk/ Santa Fe Springs	Fullerton
Impact BIO-12: Operational Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)	Potential conflict with local policies or ordinances from operational impacts on protected biological resources (trees and shrubs).	Same as Shared Passenger Track Alternative A.	Same impacts as the Shared Passenger Track Alternatives within the station area.	Similar impacts to the Shared Passenger Track Alternatives within the station area. There is suitable habitat for protected trees and shrubs in the area of additional disturbance for the HSR station elements.	Adverse effect (all alternatives and HSR station options)	BIO-MM#35, BIO-MM#54, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60	No adverse effect	No adverse effect	No adverse effect	No adverse effect

HSR = high-speed rail; NEPA = National Environmental Policy Act

3.7.9 CEQA Significance Conclusions

Temporary, permanent, direct, and indirect impacts are included in each of these impact statements. Table 3.7-17 contains a summary of the CEQA determinations of significance for the construction and operational impacts of the Shared Passenger Track Alternatives and HSR station options.

Table 3.7-17 CEQA Significance Conclusion for Biological and Aquatic Resources

Impact	Impact Description and CEQA Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation	Source of Impact
Construction				
Impact BIO-1: Construction Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities	Temporary and permanent construction impacts on riparian and special-status natural communities are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#6, BIO-MM#33, BIO-MM#34, BIO-MM#47, BIO-MM#50, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60, BIO-MM#62, BIO-MM#79	Less than significant	All alternatives; no impact for HSR station options
Impact BIO-2: Construction Impacts on Special-Status Plant Species	Temporary construction impacts on two special-status plant species are potentially significant for both Shared Passenger Track Alternatives. No permanent construction impacts are anticipated	BIO-MM#6, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60, BIO-MM#62, BIO-MM#79, BIO-MM#80	Less than significant	All alternatives; no impact for HSR station options
Impact BIO-3: Construction Impacts on Special-Status Birds, Raptors, and Migratory Birds	Temporary and permanent construction impacts on 10 special-status avian species, raptors, and nesting birds are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#6, BIO-MM#14, BIO-MM#15, BIO-MM#20, BIO-MM#21, 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#68, BIO-MM#76, BIO-MM#82, N&V-MM#1, AVQ-MM#1, AVQ-MM#2	Less than significant	All alternatives, and HSR station options
Impact BIO-4: Construction Impacts on Special-Status Mammals	Temporary and permanent construction impacts on nine special-status mammal species are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#6, BIO-MM#25, BIO-MM#26, BIO-MM#27, 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, AVQ-MM#2	Less than significant	All alternatives, and HSR station options

Impact	Impact Description and CEQA Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation	Source of Impact
Impact BIO-5: Construction Impacts on Aquatic Resources	Temporary and permanent construction impacts on aquatic resources are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#6, BIO-MM#33, BIO-MM#34, BIO-MM#47, BIO-MM#50, BIO-MM#55, BIO-MM#58, BIO-MM#62	Less than significant	All alternatives; no impact for HSR station options
Impact BIO-6: Construction Impacts on Wildlife Movement Corridors	Temporary and permanent construction impacts on wildlife movement corridors are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#6, BIO-MM#34, BIO-MM#37, 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, AVQ-MM#2	Less than significant	All alternatives; no impact for HSR station options
Impact BIO-7: Construction Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies and Ordinances)	Temporary and permanent construction impacts on locally protected biological resources (trees and shrubs) are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#35, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60	Less than significant	All alternatives and HSR station options
Operation				
Impact BIO-8: Operational Impacts on Riparian Habitat, Vegetation Communities, Land Cover, and Special-Status Natural Communities	Operational impacts on riparian habitat and special-status natural communities are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#54, BIO-MM#55	Less than significant	All alternatives; no impact for HSR station options
Impact BIO-9: Operational Impacts on Special-Status Birds, Raptors, and Migratory Bird Species	Operational impacts on 10 special-status birds, raptors, and nesting migratory birds are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#54, BIO-MM#55, BIO-MM#76, BIO-MM#83, BIO-MM#84	Less than significant	All alternatives, and HSR station options
Impact BIO-10: Operational Impacts on Special-Status Mammals	Operational impacts on nine special-status mammals are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#54, BIO-MM#76, BIO-MM#83	Less than significant	All alternatives; no impact for HSR station options

Impact	Impact Description and CEQA Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation	Source of Impact
Impact BIO-11: Operational Impacts on Wildlife Movement Corridors	Operational impacts on wildlife movement corridors are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#54, BIO-MM#55, BIO-MM#83	Less than significant	All alternatives; no impact for HSR station options
Impact BIO-12: Operational Impacts on Locally Protected Biological Resources (Tree and Shrub Preservation Policies or Ordinances)	Operational impacts on locally protected biological resources (trees and shrubs) are potentially significant for both Shared Passenger Track Alternatives.	BIO-MM#35, BIO-MM#54, BIO-MM#55, BIO-MM#56, BIO-MM#58, BIO-MM#60	Less than significant	All alternatives and HSR station options

HSR = high-speed rail

3.7.10 Summary of Section 7 Consultation

Section 7 of the FESA, Interagency Cooperation, establishes the process whereby federal action agencies and USFWS, NOAA Fisheries, or both enter into consultation to ensure proposed actions are not likely to jeopardize the continued existence of species listed or proposed for listing as threatened or endangered, or result in the destruction or adverse modification of designated critical habitats for those species.

In accordance with Section 7 (16 U.S.C. 1536) and the implementing regulations of the FESA, effects on federally listed species were evaluated according to legal requirements and the Authority has made a finding of *no effect* for federally listed species. There would be no impact on designated or proposed critical habitat for Coastal California Gnatcatcher or any other federally listed species (no critical habitat for any other species occurs within the Supplemental RSA). No formal consultation with USFWS or NOAA Fisheries is required for the proposed action. Nine federally listed plant species and 11 wildlife species were evaluated for their potential to occur within 3 miles of the action area.[7] An additional three wildlife species are federal candidate species for listing. Determinations for federally listed species are summarized in Table 3.7-18. No federally listed species or designated critical habitat are present in the action area; therefore, no consultation is required.

Table 3.7-18 Determination of Effects for Federally Listed Species and Designated or Proposed Critical Habitat

Scientific Name/Common Name	Federal Status	Determination
Wildlife		
Southwestern pond turtle *Actinemys pallida*	Proposed Threatened	No Effect
Santa Ana sucker *Catostomus santaanae*	Threatened	No Effect

[7] For the purposes of the Los Angeles to Anaheim Project Section, the action area encompasses the footprint and all areas where direct and indirect effects from the proposed action may occur on federally listed species or their critical habitats. The action area includes the footprint and up to a 250-foot buffer for plant species and up to a 1,000-foot buffer for wildlife species.

Scientific Name/Common Name	Federal Status	Determination
Western Snowy Plover *Charadrius nivosus nivosus*	Threatened (pacific coastal)	No Effect
Western Yellow-Billed Cuckoo *Coccyzus americanus occidentalis*	Threatened	No Effect
Monarch butterfly *Danaus plexippus plexippus* pop. 1 California overwintering population	Candidate	No Effect
Southwestern Willow Flycatcher *Empidonax traillii extimus*	Endangered	No Effect
Quino checkerspot butterfly *Euphydryas editha quino*	Endangered	No Effect
Southern California steelhead *Oncorhynchus mykiss irideus pop. 10*	Endangered	No Effect
Pacific pocket mouse *Perognathus longimembris pacificus*	Endangered	No Effect
Coastal California Gnatcatcher *Polioptila californica*	Designated Critical Habitat, Threatened	No Effect
Light-Footed Ridgway's Rail *Rallus obsoletus levipes*	Endangered	No Effect
Foothill yellow-legged frog south coast Distinct Population Segment *Rana boylii pop. 6*	Endangered	No Effect
Western spadefoot *Spea hammondii*	Proposed Threatened	No Effect
California Least Tern *Sternula antillarum browni*	Endangered (nesting colony)	No Effect
Least Bell's Vireo *Vireo bellii pusillus*	Endangered	No Effect
Plants		
Marsh sandwort *Arenaria paludicola*	Endangered	No Effect
Braunton's milk-vetch *Astragalus brauntonii*	Endangered	No Effect
Ventura marsh milk-vetch *Astragalus pycnostachyus* var. *lanosissimus*	Endangered	No Effect
Nevin's barberry *Berberis nevinii*	Endangered	No Effect
Salt marsh bird's-beak *Chloropyron maritimum* ssp. *maritimum* or *Cordylanthus maritimus* spp. *maritimus*	Endangered	No Effect
Slender-horned spineflower *Dodecahema leptoceras*	Endangered	No Effect

Scientific Name/Common Name	Federal Status	Determination
Santa Ana River woollystar *Eriastrum densifolium ssp. sanctorum*	Endangered	No Effect
Gambel's water cress *Nasturtium gambelii*	Endangered	No Effect
California orcutt grass *Orcuttia californica*	Endangered	No Effect