3.5 Biological Resources

3.5.1 Introduction

This section describes the regulatory and environmental setting for biological resources, and it identifies potential temporary, permanent, and cumulative effects of the proposed Project during construction and operation. This section describes biological resources that are known to occur or have the potential to occur in the proposed biological resource study area (RSA).

3.5.2 Regulatory Setting

This section identifies federal, state, regional, and local laws, regulations, and orders relevant to the analysis of biological resources. This section also addresses the proposed Project's consistency with the regulations described herein.

3.5.2.1 Federal

Federal Endangered Species Act of 1973

The Federal Endangered Species Act (FESA) provides protective measures for federally listed threatened and endangered species, including their habitats, from unlawful take (16 U.S. Code [USC] Sections 1531–1544). The FESA defines take to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Title 50, Part 222.102, of the Code of Federal Regulations (CFR) Section 222 further defines "harm" to include an act that actually kills or injures fish or wildlife, including through habitat modification and/or degradation or by significantly impairing essential behavioral patterns (i.e., feeding, spawning, rearing, migrating, feeding, or sheltering).

The FESA Section 7(a)(1) requires federal agencies to use their authority to further the conservation of listed species. Section 7(a)(2) requires consultation with the United States Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) if a federal agency undertakes, funds, permits, or authorizes (termed the federal nexus) any action that may affect endangered or threatened species or designated critical habitat. For projects that may result in the incidental take of threatened or endangered species, or critical habitat, and that lack a federal nexus, a Section 10(a)(1)(b) incidental take permit (ITP) can be obtained from USFWS and/or NMFS.

Magnuson-Stevens Fishery Conservation and Management Act of 1976

The Magnuson-Stevens Act of 1976 (revised in 1996 and reauthorized in 2007) is the primary law governing marine fisheries management in U.S. federal waters. The primary objectives of the Act are to prevent overfishing, to rebuild overfished stocks, increase long-term economic and social benefits, and ensure a safe and sustainable supply of seafood.

Among other items, the Sustainable Fisheries Act revision in 1996 specifically outlined the responsibility of the U.S. to conserve and facilitate long-term protection of essential fish habitat (EFH), defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (16 USC 1801)."

Under the Sustainable Fisheries Act, federal agencies that fund, permit, or carry out activities that may adversely impact EFH are required to consult with NMFS regarding the potential adverse effects of project activities, as well as respond in writing to NMFS project-specific recommendations. EFH is described by Fishery Management Councils in amendments to Fishery Management Plans and is approved by the Secretary of Commerce acting through the NMFS (50 CFR 600.10) (NMFS 2004).

Migratory Bird Treaty Act of 1918

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Sections 703–711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Section 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR Section 21). In California, the species that are typically not covered by the MBTA include house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), and rock pigeon (*Columba livia*). Other introduced species are also not protected by the MBTA.

All raptors and their nests are protected from take or disturbance under the MBTA (16 U.S. Code, Section 703 et seq.).

Bald and Golden Eagle Protection Act

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 USC Section 668). The act prohibits anyone without a permit issued by the Department of the Interior from "taking" bald eagles, including their parts, nests, or eggs.

Executive Order 11990 Wetlands

Executive Order 11990 (May 24, 1977) directs all federal agencies to provide leadership and action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities for (1) acquiring, managing, and disposing of federal lands and facilities; and (2) providing federally undertaken, financed, or assisted construction and improvements; and (3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Executive Order 13112 Invasive Species

Executive Order 13112 (February 3, 1999) directs all federal agencies to prevent and control the introduction and spread of invasive non-native species in a cost-effective and environmentally sound manner and minimize their effects on economic, ecological, and human health.

Executive Order 13186 Migratory Birds

Executive Order 13186 (January 10, 2001) directs all federal agencies to take certain actions to further implement the MBTA. It requires that each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement, within two years, a Memorandum of Understanding with the USFWS that shall promote the conservation of migratory bird populations.

River and Harbors Act of 1899

Section 10 (33 USC 403) of the River and Harbors Act prohibits the unauthorized obstruction or alteration of any navigable water of the U.S. Under Section 10, a permit is required for work on structures in, over, or under navigable Waters of the United States (WOUS).

General Bridge Act of 1946

Any individual, partnership, corporation, or local, state, or federal legislative body, agency, or authority planning to construct or modify a bridge or causeway across a navigable waterway of the United States must apply for a United States Coast Guard (USCG) bridge permit. This includes all temporary bridges used for construction access or a traffic detour.

Clean Water Act of 1972

The Federal Clean Water Act (CWA) was enacted as an amendment to the federal Water Pollution Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to WOUS. The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations and includes programs addressing both point-source and non-point-source pollution. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool. The following sections provide additional details on specific sections of the CWA.

WOUS are protected under Section 404 of the CWA and may include both wetlands and non-wetland waters. Any activity that involves a discharge of dredged or fill material into WOUS, including wetlands, is subject to regulation by the U.S. Army Corps of Engineers (USACE). WOUS are defined to include navigable waters of the U.S.; interstate waters; all other waters that, through their use, degradation, or destruction, could affect interstate or foreign commerce; tributaries to any of these waters; and wetlands that meet any of the criteria or are adjacent to any of these waters or their tributaries. Wetlands are defined under Section 404 as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration that may support, and, under normal circumstances, do support, a prevalence of vegetation that is typically adapted for life in saturated soil conditions. Jurisdictional wetlands must meet three wetland delineation criteria:

- They support hydrophytic vegetation (i.e., plants that grow in saturated soil);
- They have hydric soil types (i.e., soils that are wet or moist enough to develop anaerobic conditions); and,
- They have wetland hydrology (i.e., flooding, inundation, or saturation conditions that support wetland communities).

The extent of the USACE jurisdiction in inland situations extends to the ordinary high-water mark (OHWM)[1].

Activities requiring a Section 404 permit must also obtain certification from the state where the discharge would originate or, if appropriate, the interstate water pollution control agency with jurisdiction over the affected waters at the point where the discharge would originate, pursuant to CWA Section 401. Either the State Water Resources Control Board (SWRCB) or the San Francisco Bay Regional Water Quality Control Board (RWQCB) would have to issue such certification prior to alteration of or discharge to WOUS and waters of the state (WOS, e.g., work involving bridge crossings of jurisdictional waters). WOS are defined under Porter-Cologne Water Quality Control Act in the state regulations section below.

Section 408 of the CWA provides that the USACE may grant permission for another party to alter a Civil Works project[2] upon a determination that the alteration proposed will not be injurious to the public interest and will not impair the usefulness of the Civil Works project.

CWA Section 402 regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, as administered by the U.S. EPA.

3.5.2.2 State

California Endangered Species Act of 1970

The California Endangered Species Act (CESA) (Fish and Game Code [FGC] Sections 2000 through 2089.25) outlines the protection provided to California's rare, endangered, and threatened species. Section 2080 of the FGC prohibits the taking of plants and animals listed under CESA. Section 2081 established an incidental take permit program for state listed species. In addition, the Native Plant Protection Act of 1977 (Fish and Game Code Section 1900 et seq.) gives CDFW authority to designate state endangered, threatened, and rare plants and provides specific protection measures for designated populations.

California Fish and Game Code 4150

California FGC 4150 protects all mammals in California that occur naturally, are game mammals, are fully protected mammals, or are fur-bearing mammals, are nongame mammals. This measure also states that nongame mammals, or parts of nongame mammals, can be taken or possessed, unless it's in accordance with this code or with regulations adopted by the commission. FGC 4150 also provides protection to listed and non-listed bat roosts.

California Code of Regulations 251.1

California Code of Regulations 251.1 offers extra protection for wildlife species within California by preventing anyone from harassing, herding, or driving game or nongame birds, and providing

[1] OHWM is the line on the shore established by fluctuations in water levels, as indicated by a clear, natural line impressed on the bank; shelving; changes in soil character; the destruction of terrestrial vegetation; and/or the presence of litter and debris. In coastal situations, the USACE jurisdiction extends to the mean high-water line, which is based on elevation.

[2] USACE Civil Works projects include flood risk management, navigation, recreation, infrastructure, and environmental stewardship.

mammals and furbearing mammals the same coverage. This regulation also provides protection to listed and non-listed bat roosts.

California Native Plant Protection Act of 1977

The California Native Plant Protection Act (FGC Sections 1900 through 1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered (as defined by the California Department of Fish and Wildlife [CDFW]). An exception in the Act allows landowners, under specified circumstances, to take listed plant species, if the owners first notify CDFW and give the agency at least 10 days to retrieve the plants before they are plowed under or otherwise destroyed (FGC Section 1913). Project impacts on these species are not considered significant unless the species are known to occur (or have a high potential to occur) within the area of disturbance associated with construction of the proposed Project.

California Fish and Game Code Section – Lake and Streambed Alteration Agreement

CDFW regulates water resources under Sections 1600 et seq. of the California FGC. The CDFW has the authority to grant Streambed Alteration Agreements under Section 1602, which states:

> An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated or to the limit of the adjacent riparian habitat located contiguous to the watercourse if the stream or lake is vegetated. Projects that require a Streambed Alteration Agreement may also require a permit from the USACE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

California Fish and Game Code Section 2081 – Incidental Take Permit

Under Section 2081, an ITP from CDFW is required for projects that could result in take of a species that is state listed as threatened or endangered or identified as a candidate for threatened or endangered listing under the CESA. The state definition of "take" is defined as an activity that would directly or indirectly kill an individual of a species, which differs from the FESA definition by not covering activities that harm or harass state protected species. CDFW administers the CESA and authorizes take through Section 2081 ITPs, except for species that have been designated as fully protected. Section 2081 also requires measures to avoid or minimize take of CESA-regulated species and fully mitigate the impact of take.

California Fish and Game Code Sections 3503 and 3503.3 – Bird Nesting Protections

Sections 3503 and 3503.5 of the FGC provide regulatory protection to resident and migratory birds and all birds of prey within the state of California, including the prohibition of the taking of nests and eggs, unless otherwise provided for by the FGC. Specifically, these sections of the FGC make it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code.

California Fish and Game Code Sections 3511, 4700, 5050, and 5515 – Fully Protected Species

Sections 3511, 5050, and 5515 of the FGC list 37 fully protected species and prohibits the take or possession of the listed species at any time, except when collecting these species for scientific research or relocating bird species for the protection of livestock.

Assembly Bill 147 – Fully Protected Species: California Endangered Species Act Authorized Take

Assembly Bill 147 specifies projects or categories of projects eligible for a take authorization permit are limited to all of the following: Transportation projects, including any associated habitat connectivity and wildlife crossing projects, undertaken by a state, regional, or local agency, which do not increase highway or street capacity for automobile or truck travel. Eleven fully protected birds, nine mammals, five reptiles and amphibians, and nine fish species could have authorized take under CESA for a qualifying project.

Porter-Cologne Water Quality Control Act of 1966

The Porter-Cologne Water Quality Control Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. RWQCB's jurisdiction includes federally protected waters and areas that meet the definition of WOS. WOS are defined as any surface water or groundwater, including saline waters, within the boundaries of the state. Under Porter-Cologne, the RWQCB has the discretion to take jurisdiction over areas not federally protected under Section 401, provided they meet the definition of WOS, which would require issuance of waste discharge requirements. Mitigation requiring no net loss of wetland functions and values of WOS is typically required by RWQCB.

State Water Resources Control Board's 2019 State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State

SWRCB adopted a statewide definition of rules to protect wetlands and other environmentally sensitive waterways throughout the state on April 2, 2019. These rules define what SWRCB considers a wetland and include a framework for determining if a feature that meets the SWRCB wetland definition is a WOS, subject to regulation. Second, the rules clarify requirements for permit applications to discharge dredged or fill material to any water of the state. The SWRCB defines an area as wetland as follows:

> An area is 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 (SWRCB 2019).

SWRCB considers the following wetlands (as determined using methodology in the *USACE Wetland Delineation Manual* [USACE Environmental Laboratory 1987]) as WOS:

1. Natural wetlands.
2. Wetlands created by modification of a surface water of the state.

3. Artificial wetlands that meet any of the following criteria:

    a. Approved by an agency as compensatory mitigation for impacts to other WOS, except where the approving agency explicitly identifies the mitigation as being of limited duration.

    b. Specifically identified in a water quality control plan as a wetland or other WOS.

    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape.

    d. Greater than or equal to 1 acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not WOS unless they also satisfy the criteria set forth in 2, 3a, or 3b):

        i. Industrial or municipal wastewater treatment or disposal.

        ii. Settling of sediment.

        iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program.

        iv. Treatment of surface waters.

        v. Agricultural crop irrigation or stock watering.

        vi. Fire suppression.

        vii. Industrial processing or cooling.

        viii. Active surface mining, even if the site is managed for interim wetlands functions and values.

        ix. Log storage.

        x. Treatment, storage, or distribution of recycled water.

        xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits).

        xii. Fields flooded for rice growing.

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in numbers 2, 3.a, 3.b, or 3.c are not WOS. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a WOS.

Other Relevant California Wildlife Protections

California Wetlands and Other Policies

The California Natural Resources Agency and its various departments, which includes CDFW and the California Department of Water Resources (DWR), do not authorize or approve projects that fill or

otherwise harm or destroy coastal, estuarine, or inland wetlands. Exceptions may be granted if all the following conditions are met:

- The project is water dependent.
- No other feasible alternative is available.
- The public trust is not adversely affected.
- Adequate compensation is proposed as part of the project.

Species of Special Concern

CDFW has also identified many species of special concern (SSC). Species with this status have limited distribution, or the extent of their habitats has been reduced substantially such that their populations may be threatened. Thus, their populations are monitored, and they may receive special attention during the environmental review process. While they do not have statutory protection, they may be considered rare under CEQA and are thereby warranted specific protection measures.

Fully Protected Species

CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code Sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited, and CDFW cannot authorize their take in association with a general project except under the provisions of a Natural Communities Conservation Plan, California Fish and Game Code Section 2081.7, or if certain requirements are met pursuant to FGC 2081.15. [3]

3.5.2.3 Regional

McAteer-Petris Act of 1965

The McAteer-Petris Act established the Bay Conservation and Development Commission (BCDC) to prepare an enforceable plan to guide protection of the San Francisco Bay and its shoreline. BCDC requires that any person or governmental agency wishing to place fill in, or to extract materials exceeding $20 in value from, or make any substantial change in use of any land, water, or structure within BCDC's area of jurisdiction secure a permit from the BCDC (as well as any permit required from any city or county within which any part of the work is to be performed). BCDC regulates nearly all work, including grading, on land within 100 feet of San Francisco Bay shoreline ("shoreline band"), all areas subject to tidal action, such as sloughs and marshes, and certain designated waterways. BCDC carries out its "federal consistency" responsibilities by reviewing federal projects much as it reviews permit applications. The BCDC issues four types of permits: major permits, administrative permits, emergency permits, and region-wide permits.

The agency's decision to grant or deny a permit for the project is guided by the McAteer-Petris Act's provisions and the standards set out in the San Francisco Bay Plan (Bay Plan) (BCDC 2021). BCDC is authorized to regulate fill or dredge in the San Francisco Bay and development of the shoreline band. The McAteer-Petris Act created broad circumstances under which a permit is required by providing that any person wishing to place fill, extract materials, or make any substantial change in

[3] 1B – Plant is rare, threatened, or endangered in, and outside of, California.
2B – Plant is rare, threatened, or endangered in California but more common outside of California.

the use of water, land, or structures within areas subject to BCDC's jurisdiction must obtain a permit. The term fill is defined broadly to include not only earth and other materials, but pilings, structures placed on pilings, and floating structures. BCDC is authorized to issue a permit for fill in the Bay if it determines that the issuance of the permit would be consistent with the provisions of the Act and with the policies established for the Bay Plan or if BCDC determines that the activity to be permitted is necessary for the health, safety, or welfare of the public in the entire Bay Area. Pursuant to Section 66605 of the McAteer-Petris Act, BCDC must determine if the proposed fill in the Bay: (1) is for a water-oriented use and provides public benefits that outweigh the adverse impacts from the loss of open water areas; (2) there is no alternative upland location available for the proposed action; (3) the fill would be the minimum amount necessary to achieve the purpose of the proposed action; (4) the nature, location, and extent of fill minimizes harmful effects on the Bay; (5) the fill is constructed in accordance with sound safety standards.

The McAteer-Petris Act also provides that a permit must be obtained from BCDC prior to undertaking construction activities within the shoreline band jurisdiction. In addition, for permitting purposes, the McAteer-Petris Act allows for areas associated with the shoreline band to be designated by BCDC for priority uses. Within such areas, the proposed use must be consistent with the priority uses specified for the designated area.

3.5.2.4 Local

City of Oakland General Plan

The *City of Oakland General Plan – Open Space, Conservation, and Recreation Element* (City of Oakland 1998) includes the following policies related to biological resources:

Policy CO-7.1: Protection of Native Plant Communities – Protect native plant communities, especially oak woodlands, redwood forests, native perennial grasslands, and riparian woodlands, from potential adverse impacts of development. Manage development in a way which prevents or mitigates adverse impacts on these communities. This policy includes the following applicable actions:

- **Action CO-7.1.1: Native Plant Mapping** – Map the remaining native oak woodlands, redwood forests, perennial grasslands, and other native plant communities within Oakland.
- **Action CO-7.1.2: Development of Standardized Mitigation Measures** – Develop standardized mitigation measures for development on lands containing coast live oak woodland, redwood forests, native perennial grassland, and riparian woodland communities.
- **Action CO-7.1.4: Riparian Setbacks** – Where legally permissible, consider establishing a 150-foot setback along riparian corridors which are wholly contained on public lands.

Policy CO-7.2: Native Plant Restoration. Encourage efforts to restore native plant communities in areas where they have been compromised by development or invasive species, provided that such efforts do not increase an area's susceptibility to wildfire. This policy includes the following applicable action:

- **Action CO-7.2.2: Control of Invasive Species** – On an on-going basis, work with the East Bay Regional Park District, the East Bay Municipal Utility District, and the University of California to control the spread of invasive species and protect native plant and animal habitat.

Policy CO-7.3: Forested Character – Make every effort to maintain the wooded or forested character of tree-covered lots when development occurs on such lots.

Policy CO-7.4: Tree Removal – Discourage the removal of large trees on already developed sites unless removal is required for biological, public safety, or public works reasons. The city's tree preservation ordinance requires a permit (and satisfaction of a number of conditions) prior to the removal of most species, with more restrictive requirements for coast live oaks and redwoods.

Policy CO-7.5: Non-Native Plant Removal – Do not remove non-native plants within park and open space areas solely because they are non-natives. Plant removal should be related to other valid management policies, including fire prevention.

Policy CO-7.6: Rehabilitation of Damaged or Dead Vegetation – Encourage programs which rehabilitate, enhance, or replace damaged or dead vegetation as appropriate.

Policy CO-8.1: Mitigation of Development Impacts – Work with federal, state, and regional agencies on an on-going basis to determine mitigation measures for development which could potentially impact wetlands. Strongly discourage development with unmitigable adverse impacts. This policy includes the following applicable actions:

- **Action CO-8.1.1: Mitigation Planning and Monitoring** – Support development of mitigation plans and monitoring programs for projects which may impact wetlands.
- **Action CO-8.1.2: Maintenance of Wetland Buffers** – Work with the Port to establish "buffers" or mandatory setbacks on the perimeter of wetlands.

Policy CO-9.1: Habitat Protection – Protect rare, endangered, and threatened species by conserving and enhancing their habitat and requiring mitigation of potential adverse impacts when development occurs within habitat areas. This policy includes the following applicable actions:

- **Action CO-9.1.1: Development of Standardized Mitigation Measures** – Develop performance criteria, development standards, and standardized mitigation measures for development within the habitat of special-status plant and animal species in Oakland identified in Tables 5 and 6 of the General Plan.
- **Action CO-9.1.2: Preparation of Pre-Development Surveys** – Require large-scale development within the habitat of species listed in Tables 5 and 6 of the General Plan to conduct pre-development surveys to determine whether these species are present. Require site-specific analyses of the effects of proposed development on the species where appropriate, along with a plan for minimizing those effects.

Policy CO-11.2: Migratory Corridors – Protect and enhance migratory corridors for wildlife. Where such corridors are privately owned, require new development to retain native habitat or take other measures which help sustain local wildlife population and migratory patterns. This policy includes the following applicable action:

Action CO-11.2.2: Guidelines for Habitat Protection – Develop guidelines for habitat protection which reduce the potential impacts of new development on wildlife movement and migratory patterns.

City of Oakland Tree Preservation Ordinance

The City of Oakland *Tree Preservation Ordinance* includes the following policies related to biological resources:

Ordinance No. 9366 in Chapter 7, Article 6 of the Oakland Municipal Code establishes regulations and procedures to ensure the protection and preservation of trees. A protected tree is defined as:

- A coast live oak tree (*Quercus agrifolia*) measuring at least 4 inches diameter at breast height (DBH), or 4.5 feet above the ground.
- Any other tree measuring at least 9 inches DBH except eucalyptus (*Eucalyptus* spp.) and Monterey pine (*Pinus radiata*).

A tree removal permit application is required for the removal of or possible damage to protected trees on public or private property. A site plan indicating the location, species, and DBH of all protected trees proposed for removal must be included with the permit application.

City of San Leandro 2035 General Plan

The City of San Leandro *2035 General Plan – Open Space, Conservation, and Parks Element* (City of San Leandro 2016) includes the following policies related to biological resources:

Policy OSC-6.1: Ecosystem Management – Promote the long-term conservation of San Leandro's remaining natural ecosystems, including wetlands, grasslands, and riparian areas. Future development should minimize the potential for adverse impacts on these ecosystems and should promote their restoration and enhancement.

Policy OSC-6.2: Mitigation of Development Impacts – Require measures to mitigate the impacts of development or public improvements on fish and wildlife habitat, plant resources, and other valuable natural resources in the City.

Policy OSC-6.3: Habitat Restoration – Encourage the restoration of native vegetation in the City's open spaces as a means of enhancing habitat and reducing wildfire hazards.

Policy OSC-6.4: Species of Special Concern – Ensure that local planning and development decisions do not damage the habitat of rare, endangered, and threatened species, and other species of special concern in the City and nearby areas.

City of San Leandro Tree Ordinance

Ordinance 2019-015 serves as the City of San Leandro's tree ordinance and amends portions of Title 5, Chapter 5-2 of the San Leandro Municipal Code relating to street trees (City of San Leandro 2019). The ordinance covers the removal of street trees and requirements for obtaining an encroachment permit prior to removal, which may require a fee to replace the tree to be planted in a location of the City's choosing.

City of Hayward 2040 General Plan

The *City of Hayward 2040 General Plan* (City of Hayward 2014) includes the following policies related to biological resources:

Policy NR-1.1: Native Wildlife Habitat Protection – The City shall limit or avoid new development that encroaches into important native wildlife habitats; limits the range of listed or protected species; or creates barriers that cut off access to food, water, or shelter of listed or protected species.

Policy NR-1.2: Sensitive Habitat Protection – The City shall protect sensitive biological resources, including state and federally designated sensitive, rare, threatened, and endangered plant, fish, and wildlife species and their habitats from urban development and incompatible land uses.

Policy NR-1.7: Native Tree Protection – The City shall encourage protection of mature, native tree species to the maximum extent practicable, to support the local ecosystem, provide shade, create windbreaks, and enhance the aesthetics of new and existing development.

Policy NR-1.9: Native Plant Species Protection and Promotion – The City shall protect and promote native plant species in natural areas as well as in public landscaping.

City of Hayward Tree Ordinance (Hayward West Focus Area,[4] Industrial Parkway Focus Area)

The City of Hayward *Tree Ordinance* (City of Hayward 2002) includes the following policies related to biological resources:

SEC. 10-15.11 Application of Ordinance – The Tree Preservation Ordinance is applicable to all types of existing Industrial, Commercial, and Multi-family development, and to new development, under-developed properties, or undeveloped properties. Maintenance and removal of street trees is governed by the City's Street Tree Ordinance.

SEC. 10-15.13 Protected Trees – The following trees, when located on properties to which this Ordinance applies as set forth in Section 10-15.11 above, shall be Protected Trees:

- Trees having a minimum trunk diameter of eight inches measured 54 inches above the ground. When measuring a multi-trunk tree, the diameters of the largest three trunks shall be added together.
- Street trees or other required trees such as those required as a condition of approval, Use Permit, or other Zoning requirement, regardless of size.
- All memorial trees dedicated by an entity recognized by the City, and all specimen trees that define a neighborhood or community.
- Trees of the following species that have reached a minimum of four inches diameter trunk size:
    - big leaf maple (*Acer macrophyllum*).
    - California buckeye (*Aesculus californica*).
    - madrone (*Arbutus menziesii*).
    - western dogwood (*Cornus nuttallii*).
    - California sycamore (*Platanus racemosa*).

[4] The City of Hayward General Plan designates certain significant Focus Areas for the implementation of Smart Growth principles.

- coast live oak (*Quercus agrifolia*).
- canyon live oak (*Quercus chrysolepis*).
- blue oak (*Quercus douglassii*).
- Oregon white oak (*Quercus garryana*).
- California black oak (*Quercus kelloggi*).
- valley oak (*Quercus lobata*).
- interior live oak (*Quercus wislizenii*).
- California bay (*Umbellularia californica*).

- A tree or trees of any size planted as a replacement for a Protected Tree. Trees located on a developed single-family residential lot that cannot be further subdivided are exempt unless they have been required or protected as a condition of approval.

City of Union City 2040 General Plan

The *City of Union City 2040 General Plan – Resource Conservation Element* (City of Union City 2019) includes the following policies related to biological resources:

Policy RC-2.1: Preserve Significant Natural Resources – The City shall commit to preservation of significant natural resources including wetlands; bay shores; hillside areas; and significant plant, animal, and fish habitats.

Policy RC-2.2: Require Biological Surveys – The City shall require a site survey by a qualified biologist for sites that have the potential to contain critical or sensitive habitat or special-status species or for sites within 100 feet of such areas. Appropriate mitigation measures shall be incorporated into the project as necessary to protect the resources.

Policy RC-2.3: Require Wetland Delineation – A wetland delineation shall be prepared using the protocol defined by the U. S. Army Corps of Engineers for sites with the potential to contain wetland resources. Appropriate mitigation measures shall be incorporated into the project as necessary to protect the resources.

Policy RC-2.10: Nesting Bird Protection – The City shall require project applicants to retain the services of a qualified biologist(s) to conduct a pre-construction nesting bird survey during the nesting season (February 1 through August 31) prior to all new development that may remove any trees or vegetation that may provide suitable nesting habitat for migratory birds or other special-status bird species. If nests are found the qualified biologist(s) shall identify appropriate avoidance measures, and these measures shall be incorporated into the project and implemented accordingly.

City of Union City Tree Conservation Ordinance

Title 12; Chapter 12.16.170 of the *Union City Municipal Code* (City of Union City 1989) serves as a tree conservation ordinance. Protected trees include:

- All trees which have a 35-inch or greater circumference of a trunk measured 3 feet above the ground, or in the case of multi-trunk trees, a total of 70 inches or more of the circumference of all trunks, where such trees are located on residential property.

- All trees which have a twelve-inch or greater circumference of any trunk, when removal relates to any transaction for which zoning approval or subdivision approval is required.
- All trees with a minimum 12-inch trunk circumference on a vacant lot or undeveloped property, commercial, office, or industrial developed property.

A tree removal permit is required for the removal of any protected tree. The application must include the number and location of the trees to be removed, the type of tree, and reason for removal.

City of Fremont General Plan

The *City of Fremont General Plan – Conservation Element* (City of Fremont 2011) includes the following policies related to biological resources:

Policy 7-1.1: Preservation of Natural Habitat. Preserve and protect fish, wildlife, and plant species and their habitats including wetlands, creeks, lakes, ponds, saltwater bodies, and other riparian areas. Maintain these areas for their critical biological values and to help improve water quality. This policy includes the following applicable implementation measures:

- **Implementation 7-1.1.A** – Protect Riparian and Wetland Areas – Preserve and minimize impacts on natural and semi-natural wetland areas, including riparian corridors, vernal pools and their wildlife habitat through the development and environmental review process. Riparian areas and wetlands should be protected and/or restored as project amenities. Require mitigation for potential significant environmental impacts on riparian areas from development.
- **Implementation 7-1.1.B** – Evaluate Development near Bodies of Water – Evaluate development within 100 feet of the top of bank of riparian areas and water bodies, including creeks, lakes, ponds, marshes, and vernal pools. This distance shall be increased to 200 feet in areas above the toe of the hill. Carefully assess the extent and characteristics of riparian corridors and creeks to a minimum distance of 100 feet from the top of bank below the toe of the hill and 200 feet from the top of bank above the toe of the hill. Consider the full spectrum of habitat needs for vegetation and wildlife in environmental assessments of these areas.
- **Implementation 7-1.1.C** – Control Measures to Limit Soil Erosion – Implement control measures in riparian areas to prevent soil erosion and minimize runoff of excess nutrients, sediments, and pesticides. Provide for maximum retention of natural vegetation and topographic features adjacent to the buffer described in Implementation 7-1.1.B.
- **Implementation 7-1.1.D** – Conservation of Habitat and Natural Areas – Require conservation, protection and/or revegetation of habitat and natural areas for nesting, foraging and retreat for projects that impact such areas.

Policy 7-1.2: Protection of Species. Preserve and protect rare, threatened, endangered and candidate species and their habitats consistent with State and Federal law. This policy includes the following applicable implementation measures:

- **Implementation 7-1.2.C** – Limit Development in Habitat Protection Areas – Evaluate and limit development near designated habitat protection areas unless sufficient mitigation can be provided to reduce impacts to insignificant levels.
- **Implementation 7-1.2.D –** Mitigation of Special-status Species – When offsite mitigation is required for special-status species, require that mitigation be provided within the City of

Fremont to the maximum extent practical. If not practical in the City of Fremont require mitigation in Alameda County, followed by the nine-county Bay Area.

Policy 7.1.8: Urban Forests. Promote and protect the City's urban forest and maintain healthy tree resources within the City. This policy includes the following applicable implementation measure:

- **Implementation 7-1.8.D –** Tree Preservation Ordinance – Enforce the City's Tree Preservation ordinance and continue to make information regarding the ordinance easily available to the public and development community.

City of Fremont Tree Preservation Ordinance

Chapter 18.215 of the City of Fremont's Municipal Code (City of Fremont 1979) includes the following policies related to biological resources:

No person shall remove, damage, or relocate a private tree or any landmark tree, whether publicly or privately owned, except as follows:

- When authorized by a permit issued by the landscape architect, which permit shall, while any person is removing or damaging the subject tree, be posted on the lot by the applicant so as to be prominently visible from the street;
- When removal, damage or relocation is allowed without permit under Section 18.215.050;
- When expressly authorized as part of a city-issued entitlement or permit for a development project; or
- In the case of a landmark tree, when authorized by the city council in accordance with this chapter. (Ord. 2481 Section 1, 7-23-02. 1990 Code Section 4-5103.)

Permit or Other Authorization Required for Private Trees Other Than Landmark Trees.

A permit or other authorization conferred in accordance with this chapter is required to remove, damage, or relocate a private tree if it is:

- A tree having a diameter at breast height (DBH) of six inches or more and located on a vacant or underdeveloped lot.

A tree having a DBH of 6 inches or more and located on a developed lot which is the subject of a contemplated or pending application for a development project.

City of Newark General Plan

The *City of Newark General Plan Conservation and Sustainability Element* (City of Newark 2013) includes the following policies related to biological resources:

Policy CS-4.1 – Tree Preservation: Maintain and improve City programs for protecting and preserving trees.

Under this policy, a tree removal permit must be filed with the City's maintenance division.

3.5.2.5 Consistency with Plans, Policies, and Regulations

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines requires an environmental impact report (EIR) to discuss "any inconsistencies between the proposed Project and applicable general plans, specific plans, and regional plans." Applicable plans, policies, and regulations were considered during the preparation of this analysis and were reviewed to assess whether the proposed Project would be consistent with the plans of relevant jurisdictions. The proposed Project would comply with all relevant federal, state, and local policies and regulations as they relate to biological resources. The proposed Project would make sure that all biological resource regulations are followed, which includes compliance with the FESA and CESA, CWA, and CDFW's 1602 program and all applicable goals and policies set forth by Alameda County and the cities of Hayward, Fremont, Newark, Oakland, San Leandro, and Union City.

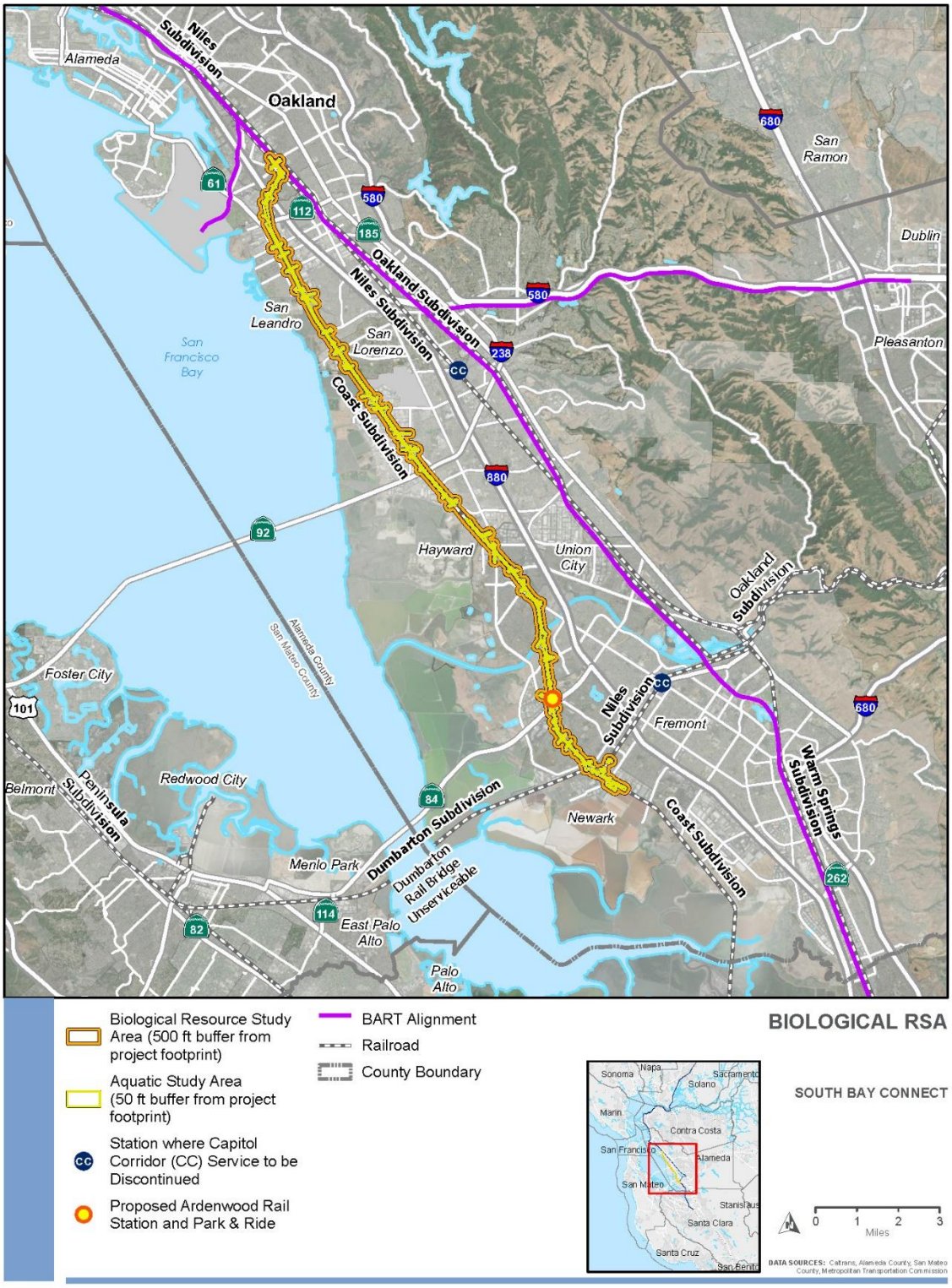
3.5.3 Methods for Evaluating Environmental Impacts

This section defines the RSA for biological resources and describes the methods used to analyze the impacts on biological resources within the RSA.

3.5.3.1 Resource Study Area

As defined in Section 3.1, *Introduction*, RSAs are the geographic boundaries within which the environmental analyses specific to each resource topic were conducted. As shown in Figure 3.5-1, the RSA for biological resources encompasses the area directly and indirectly affected by the construction and operation of the proposed Project, which is defined as the proposed Project footprint plus a 500-foot buffer to account for potential indirect impacts on sensitive communities and special-status botanical and wildlife species. In addition, a separate RSA for aquatic biological resources was developed as part of this analysis and is defined as the proposed Project footprint plus a 50-foot buffer to account for potential impacts on jurisdictional features. Given the linear nature of the proposed Project, its restrictions to the ROW, and the urban setting, a 50-foot buffer was deemed sufficient to capture all direct and indirect impacts on waters from the proposed Project. For the purposes of this document, unless specifically referring to the aquatic RSA, biological RSA will refer to all areas within both the aquatic and biological RSAs. Ingress and egress routes were not included as publicly available roads will be used to access proposed Project locations.

Figure 3.5-1. Biological RSA



3.5.3.2 Data Sources

The following sources were drawn upon to characterize the existing conditions in the biological and aquatic RSAs.

Desktop Review

Preliminary database searches were performed to identify general vegetation communities and sensitive communities, including federal and state-regulated aquatic resources and special-status species with the potential to occur in the biological and aquatic RSAs. A preliminary review of recent aerial imagery was also conducted to collect site-specific data regarding habitat suitability for special-status species. Preliminary database searches were performed of the following:

- Biological RSA
    - USFWS Information Planning and Conservation System (USFWS 2024a);
    - USFWS Critical Habitat Mapper (USFWS 2024b);
    - NMFS, West Coast Region, California Species List Tools (NMFS 2024);
    - CDFW California Natural Diversity Database (CNDDB) Rarefind 5 in BIOS (CDFW 2024a), including essential connectivity areas, natural landscape blocks, and missing linkage in California;
    - CDFW's California Wildlife Habitat Relationships (CWHR) (CDFW 2024b);
    - California Native Plant Society (CNPS) Inventory of Rare, Threatened, and Endangered Plants of California (CNPS 2024);
    - Google Earth aerial imagery (Google Earth Pro 2024);
    - U.S. Geological Survey topographical maps; and
    - Cal-IPC Inventory (Cal-IPC 2024).
- Aquatic RSA
    - USFWS National Wetland Inventory (USFWS 2024c);
    - Google Earth aerial imagery (Google Earth Pro 2024);
    - U.S. Geological Survey topographical maps.

The USFWS and NMFS databases were queried to identify special-status species, critical habitat, and EFH under their jurisdiction that have the potential to occur in the biological RSA. A query of CDFW's Rarefind provided a list of known occurrences for special-status species in the *Calaveras Reservoir, Diablo, Dublin, Hayward, Hunters Point, La Costa Valley, Las Trampas Ridge, Livermore, Milpitas, Mountain View, Newark, Niles, Oakland East, Oakland West, Palo Alto, Redwood Point, San Leandro, San Mateo, Tassajara*, and *Woodside* U.S. Geological Survey 7.5-minute quadrangles. A query of the CHWR database provided coarse-scale data on the location and extent of vegetation communities in the biological RSA. Lastly, a query of the CNPS database identified special-status plant species with the potential to occur in the aforementioned quadrangles. Raw data from the

database queries are provided in, Attachment 1 of Appendix C, which summarizes each species' potential to occur and the rationale for each determination.

Reconnaissance Surveys

A reconnaissance survey of the biological RSA was conducted on August 2, 2019, to verify the desktop assessment results. Project biologists drove on publicly accessible roads and walked publicly accessible portions of the biological RSA to ground-truth information on existing vegetation communities, sensitive communities, and the suitability of habitats for special-status species. Wildlife observed during the August 2, 2019, reconnaissance survey included house finch (*Haemorhous mexicanus*), snowy egret (*Egretta thula*), California scrub jay (*Aphelocoma californica*), mallard (*Anas platyrhynchos*) and other waterfowl, and red-tailed hawk (*Buteo jamaicensis*). Only one special-status species, bald eagle (*Haliaeetus leucocephalus*), was observed during the survey in the vicinity of the Shinn Connection area. Although there were no other special-status species directly observed during the reconnaissance survey, suitable habitat for special-status species exists within the biological RSA.

Aquatic Resources Delineation

Project biologists conducted a delineation of aquatic resources on September 7, 8, and 10, 2021. In locations where property access was permitted, soil analyses were conducted. The delineation was conducted using the routine onsite determination method described in the 1987 USACE *Wetlands Delineation Manual* (Environmental Laboratory 1987) and the supplemental procedures and wetland indicators provided in the *Arid West Supplement* (Environmental Laboratory 2008). The OHWM was delineated using methods and indicators described in *A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States* (Lichvar and McColley 2008). During a pre-field desktop analysis, the aquatic resources were delineated using color aerial images and then verified in the field, based on hydrologic, vegetation, and soil indicators. Aquatic resources within parts of the proposed Project footprint that did not overlap with the previously delineated areas were added to the delineation in May 2023. The mapping of these additional aquatic resources was based on a desktop analysis and the previously mapped aquatic resources that were verified in the field. This material is presented in Attachment 2 of Appendix C.

3.5.3.3 CEQA Thresholds

To satisfy CEQA requirements, biological resource impacts were analyzed in accordance with Appendix G of the CEQA Guidelines. According to the CEQA Guidelines, CCR, Title 14, Section 15002(g), "a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed Project." As stated in CEQA Guidelines Section 15064(b)(1), the significance of an activity may vary with the setting. The impact analysis identifies and analyzes construction (short-term) and operation (long-term) impacts, as well as direct and indirect impacts (see PRC Section 21065). The proposed Project would have significant biological resource impacts under CEQA if it would:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries; or

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service; or

c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means; or

d. Interfere substantially with the movement of any 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; or

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.5.4 Affected Environment

3.5.4.1 Environmental Setting

Regional Setting

The biological RSA is in the Central California Coast ecological section of the California Coastal Chaparral Forest and Shrub ecological province (McNab et al. 2007). The landscape of the California Central Coast ecological section is characterized by parallel valleys and ranges with low to moderate elevations. Cover types in this section consist of western hardwoods, coastal scrub, chaparral, and annual grasslands. Surface water is characterized by gently flowing streams flowing west into the San Francisco Bay. Local reservoirs store seasonal rainfall for municipal water supply and flood control, and streams are often channelized, especially in urban areas. In addition, the province is described as having a Mediterranean-like climate with mild, wet winters and dry, and hot summers (McNab et. Al. 2007).

Local Setting

The biological RSA is located on the eastern edge of the San Francisco Bay, in the flatlands between Oakland, Hayward, and Fremont, including Niles and Newark. The biological and aquatic RSAs lie along the western edge of the Diablo Range at the base of the San Leandro Hills. Topography across the biological and aquatic RSAs is flat to gently rolling. Elevation ranges from sea level to approximately 100 feet above mean sea level. Land use within the biological and aquatic RSAs consists largely of industrial uses, with smaller amounts of commercial and residential usage. The majority of the proposed Project footprint consists of existing railroad corridors that are largely maintained (e.g., regularly mowed, trimmed, weed controlled) and devoid of vegetation.

Vegetation Communities and Other Land Cover Types

Thirteen vegetation communities and other land cover types were identified during site surveys conducted within the biological RSA. Table 3.5-1 summarizes vegetation communities or land cover types within the biological RSA. As indicated in Table 3.5-1, the dominant vegetation communities or

land cover types in the biological RSA are urban (3,745.96 acres), lacustrine (122.77 acres), and California annual grassland (91.09 acres), which equals approximately 96.5 percent of the total area. Mapping of these vegetation communities is provided in Appendix C. Descriptions of common species associated with each vegetation community documented in the biological RSA are presented below. Vegetation classifications, mapping, and the following descriptions are based on data obtained from the CWHR database (CDFW 2021b). Characterization of aquatic resources is discussed in the Aquatic Resources Section and in more detail in Appendix C.

Table 3.5-1. Summary of Vegetation Communities within Biological RSA

Vegetation Community	Portion of Biological RSA (acres)
California Annual Grassland (AGS)	91.09 acres
Coastal Oak Woodland (COW)	2.44 acres
Coastal Scrub (CSB)	0.78 acre
Cropland (CRP)	22.10 acres
Estuarine (EST)	2.34 acres
Eucalyptus (EUC)	1.66 acres
Freshwater Emergent Wetland (FEW)	8.40 acres
Lacustrine (LAC)	122.77 acres
Mixed Riparian Forest (MRF)	4.85 acres
Riverine (RIV)	32.36 acres
Ruderal (RUD)	61.84 acres
Saline Emergent Wetland (SEW)	6.42 acres
Urban (URB)	3,745.96 acres

California Annual Grassland (AGS)

The dominant species in this community are non-native annual grasses, such as wild oats (*Avena* spp.) and bromes (*Bromus* spp.). Invasive species, such as yellow star thistle (*Centaurea solstitialis*) and mullein (*Verbascum* spp.), were also observed. A few ornamental trees, such as Peruvian pepper

(*Schinus molle*) and eucalyptus (*Eucalyptus* spp.), and shrubs, such as native manzanita (*Arctostaphylos* spp.), are sparsely scattered in various portions of the biological RSA.

Estuarine (EST)

Estuarine habitats occur on periodically and permanently flooded substrates and open water portions of bays and other coastal waters, where salt and freshwater mix, creating areas of moderate and often changing salinity levels. Estuarine habitats differ greatly in size, shape, and volume of water flow, based on local topography. In the biological RSA, estuarine habitat consists largely of channelized waterways, and include tidal canals, tidal wetland canals, and tidal perennial streams.

Eucalyptus (EUC)

Eucalyptus communities are typically characterized by dense stands, with a closed canopy, and can have a range of understory compositions. Understory consists of annual grasses and weedy forbs. Eucalyptus habitat has the potential to support nesting and foraging raptors, small vertebrate species such as the gopher snake (*Pituophis catenifer*), and the monarch butterfly (*Danaus plexippus*). A small amount of Eucalyptus habitat, in the form of two rows of trees, occurs within the biological resource RSA at Ardenwood Historic Farm.

Freshwater Emergent Wetland (FEW)

Freshwater emergent wetland habitat is flooded frequently and is characterized by rooted hydrophytic (i.e., water-loving), vegetation. This community can be found in shallow to deep depressions on flat to rolling topography. Typical plant species include those that thrive in saturated soil conditions, including cattails (*Typha* spp.), bulrushes (*Schoenoplectus* and *Bolboschoenus* spp.), sedges (*Carex* spp.), and rushes (*Juncus* spp.). This community is very productive and supports an array of plant and wildlife species. Raptors and other birds utilize this habitat for foraging and roosting, while other species rely on these areas for the duration of their life including countless freshwater invertebrates.

Lacustrine (LAC)

Typical lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes, and shallow ponds. Depth can vary from a few inches to hundreds of feet. Lacustrine habitats have the potential to support numerous aquatic and terrestrial native and non-native plant and wildlife species.

Mixed Riparian Forest (MRF)

Riparian habitat consists of the corridor of woody species along the bank of intermittent and perennial riverine and detention basins. Trees and shrubs typical of riparian include willows (*Salix* spp.), maples (*Acer spp.*), alders (*Alnus* sp.), Fremont's cottonwood (*Populus fremontii*), valley oak (*Quercus lobata*), and coast live oak (*Quercus agrifolia*). Gaps in the riparian canopy can be dominated by cattails, tule, non-native annual grasses, or be unvegetated. Wildlife species associated with riverine habitats would also be associated with riparian habitat. However, riparian habitats also contain wildlife species that would occur above the OHWM, including small mammals and birds.

Riverine (RIV)

Typical riverine habitats include intermittent or continually flowing water of streams and creeks. Freshwater perennial stream habitats that occur in the biological RSA include Alameda Creek and several channelized streams and canals. Alameda Creek is one of the largest tributaries feeding into the San Francisco Bay, covering roughly 680 square miles, and provides habitat for both fish and wildlife species including central California coast steelhead (*Oncorhynchus mykiss*) and western pond turtle (*Emys marmorata*). In addition, San Leandro Creek flows from Lake Chabot to the San Francisco Bay, between the cities of Oakland and San Leandro. Steelhead are known to occur within San Leandro reservoir and other species, such as western pond turtle, may use San Leandro Creek as a movement corridor. Within the biological RSA, Alameda Creek, San Leandro Creek, and Ward Creek are channelized and lined with riprap. Two drop structures within the Alameda Creek confine and slow the channel, resulting in long, deep pool habitat with some backwater habitat.[5] The USACE has identified the creek as a navigable water, protected by Section 10.

Ruderal (RUD)

Ruderal communities are characterized by heavy disturbance and a sparse cover of non-native or weedy species. It is often classified as part of urban habitat, described below. Ruderal habitat in the biological RSA consists of a variety of non-native annual grasses and other plant species common in disturbed habitats. This vegetation community has the potential to support Congdon's tarplant and burrowing owl.

Saline Emergent Wetland (SEW)

Saline emergent wetlands typically include salt/brackish marshes with thick vegetation coverage except in those locations with standing or flowing water. These communities tend to occur above intertidal sand and mud flats, and below upland communities. Plant species commonly observed in these habitats include California cordgrass (*Spartina foliosa*), pickleweed (*Salicornia* spp.), saltmarsh bulrush (*Bolboschoenus robustus*), and tules (*Schoenoplectus* spp.). This habitat type has the potential to support a variety of reptiles, amphibians, birds, and mammals. Species such as the California black rail (*Laterallus jamaicensis coturniculus),* a few sub-species of song sparrow (*Melospiza melodia*), and the salt marsh yellowthroat (*Geothlypis trichas*) are endemic to this community in the San Francisco Bay.

Urban (URB)

Urban habitat in the biological RSA includes the existing rail ROW, industrial and residential properties, existing roads and road shoulders, recreational areas, and various other areas with a history of disturbance. These areas are a mix of man-made structures, hardscape, and semi-barren areas with sparse ruderal vegetation consisting primarily of non-native annual grasses and invasive weeds. Because of the high degree of disturbance, urban areas generally have a low habitat value for wildlife, although several species adapted to disturbed conditions can utilize these areas. Impacts on urban habitat are not discussed further in this document as these impacts would not affect special-status species or other biological resources.

[5] Backwaters are essentially ponds connected to main water bodies and are important in providing areas of still water as a refuge for fish, in particular fish fry which thrive in their warm, shallow waters.

Sensitive Natural Communities

Natural communities are considered to be of special concern based on (1) federal, state, or local laws regulating their development; (2) limited distributions; and/or (3) the habitat requirements of special-status plants or animals occurring in those habitats. Additionally, jurisdictional aquatic resources are considered sensitive natural communities. CDFW maintains a list of natural communities that are provided sensitivity rankings of S1 through S5 and considers those with ranks of S1 through S3 sensitive. Sensitive natural communities in the biological RSA consist of California Sensitive Natural Communities, Critical Habitat, EFH, and jurisdictional aquatic resources such as riverine, freshwater emergent wetland, lacustrine, estuarine, and saline emergent wetland. Consultation with regulatory agencies regarding proposed Project impacts to sensitive natural communities occurring within or adjacent to the proposed Project footprint is required.

California Sensitive Natural Communities

A California sensitive natural community is one that has a state rarity rank of S1, S2, S3, S4, or S5 as determined by the NatureServe Heritage Program Status Ranking system (Faber-Langendoen et al. 2012) or is identified as subject to local, state, or federal regulations (e.g., oak woodland alliance and vegetation communities meeting USACE's three -parameter wetland criteria). CDFW considers communities with a sensitivity ranking of S1- S3 as sensitive. Definitions of the state ranks are as follows:

- **S1:** Critically imperiled and at a very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors.
- **S2:** Imperiled and at high risk of extinction or elimination due to a very restricted range, very few populations or occurrences, steep declines, or other factors.
- **S3:** Vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.

Within the biological RSA, mixed riparian forest is the only California sensitive natural community, with ranking S3. Consultation with regulatory agencies regarding proposed Project impacts to mixed riparian forest occurring within or adjacent to the proposed Project footprint would be required.

Invasive Species

The Cal-IPC Invasive Plant Inventory highlights non-native plants that are serious problems in wildlands (i.e., natural areas that support native ecosystems, including national, State, and local parks; ecological reserves; wildlife areas; national forests; and Bureau of Land Management lands). The inventory categorizes plants as High, Moderate, or Limited based on each species' negative ecological impact in California. Plants categorized as High have severe ecological impacts. Plants categorized as Moderate have substantial and apparent, but not severe, ecological impacts. Plants categorized as Limited are invasive, but their ecological impacts are minor on a statewide level.

As shown in **Table 3.5-2**, 23 invasive plant species with a Limited, Moderate, or High Cal-IPC rating were identified in the RSA.

Table 3.5-2. Cal-IPC Rating for Invasive Plant Species Identified in the RSA

Scientific Name	Common Name	Cal-IPC Rating
Avena barbata	slender oat	Moderate
Avena fatua	wild oat	Moderate
Brassica nigra	black mustard	Moderate
Bromus diandrus	ripgut brome	Moderate
Carduus pycnocephalus	Italian thistle	Moderate
Cirsium vulgare	bull thistle	Moderate
Conium maculatum	poison hemlock	Moderate
Cortaderia jubata	Pampas grass	High
Cynodon dactylon	Bermuda grass	Moderate
Dittrichia graveolens	stinkwort	Moderate
Eucalyptus globulus	blue gum	Limited
Festuca myuros	rattail sixweeks grass	Moderate
Festuca perennis	Italian rye grass	Moderate
Foeniculum vulgare	sweet fennel	Moderate
Geranium dissectum	cutleaf geranium	Limited
Helminthotheca echioides	bristly ox-tongue	Limited
Hirschfeldia incana	short-podded mustard	Moderate
Hordeum marinum ssp. Gussoneanum	Mediterranean barley	Moderate

Table 3.5-2. Cal-IPC Rating for Invasive Plant Species Identified in the RSA

Scientific Name	Common Name	Cal-IPC Rating
Hordeum murinum ssp. Leporinum	foxtail barley	Moderate
Lepidium latifolium	perennial pepperweed	High
Ludwigia hexapetala	six petal water primrose	High
Marrubium vulgare	white horehound	Limited
Medicago polymorpha	California burclover	Limited
Mentha pulegium	pennyroyal	Moderate
Nicotiana glauca	tree tobacco	Moderate
Phytolacca americana	pokeweed	Limited
Plantago lanceolata	English plantain	Limited
Polypogon monspeliensis	rabbitsfoot grass	Limited
Raphanus sativus	wild radish	Limited
Rumex crispus	curly dock	Limited
Salsola tragus	Russian thistle	Limited
Schinus molle	Peruvian pepper tree	Limited
Sesbania punicea	rattlebox	High
Torilis arvensis	field hedge parsley	Moderate
Washingtonia robusta	Mexican fan palm	Moderate

Critical Habitat

A small portion of the biological RSA contains designated critical habitat for southern distinct population segment green sturgeon. However, this critical habitat is located outside of the proposed Project footprint (Figure 3.5-2). Consultation with the USFWS regarding effects to green sturgeon is required for potential effects in the biological RSA and downstream.

Essential Fish Habitat (EFH)

EFH includes those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity. Salmonid EFH overlaps the entire aquatic RSA, Figure 3.5-3 depicts the location and extent of EFH units in the vicinity of the biological RSA. Although salmonid EFH is mapped throughout the entire area, there is only a small amount of potentially suitable habitat for salmonid species within the proposed Project footprint. Consultation with the NMFS regarding effects to EFH is required for potential impacts in the biological RSA and downstream.

Jurisdictional Aquatic Resources

Jurisdictional aquatic resources within the biological RSA are mapped as estuarine, freshwater emergent wetland, lacustrine, riverine, and saline emergent wetland. As depicted in Attachment 2 of Appendix C there are multiple jurisdictional aquatic resources mapped within the proposed Project footprint. Mitigation measures to ensure that the proposed Project does not result in significant impacts on jurisdictional aquatic resources would be required as part of the regulatory permits for impacts on jurisdictional features.

Special-Status Species

Special-status species are plants and animals that are legally protected under FESA, CESA, or other regulations; and species that are considered sufficiently rare by the scientific community to qualify for such listing.

Of the 135 special-status species identified by the USFWS, NMFS, CDFW, and CNPS database queries for the biological RSA, 21 have the potential to occur based on suitable habitat being present. Table 3.5-3 provides those species determined to have potential to occur within the biological RSA, along with their status, habitat characteristics, and rationale. In cases where a determination was made that no suitable habitat for a given species was present, that species is not discussed further in this document. Attachment 1 of Appendix C, summarizes the special-status species identified in the database results, describes the habitat requirements for each species, and provides conclusions regarding the potential for each species to be affected by proposed Project-related activities in the biological RSA). Consultation with regulatory agencies regarding effects to special-status species is required for species that may be present in the biological RSA.

Figure 3.5-2. Critical Habitat

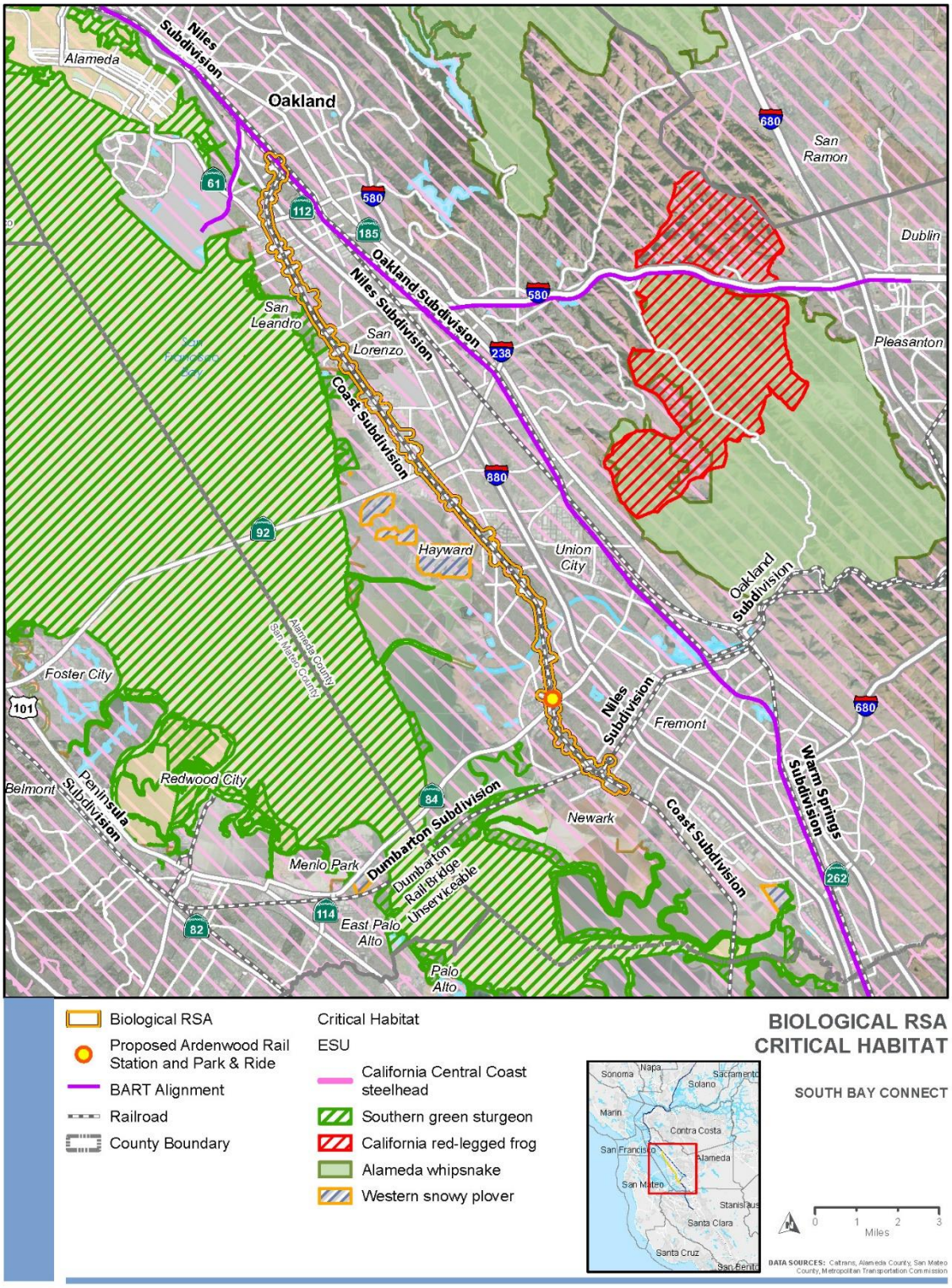


Figure 3.5-3. Essential Fish Habitat

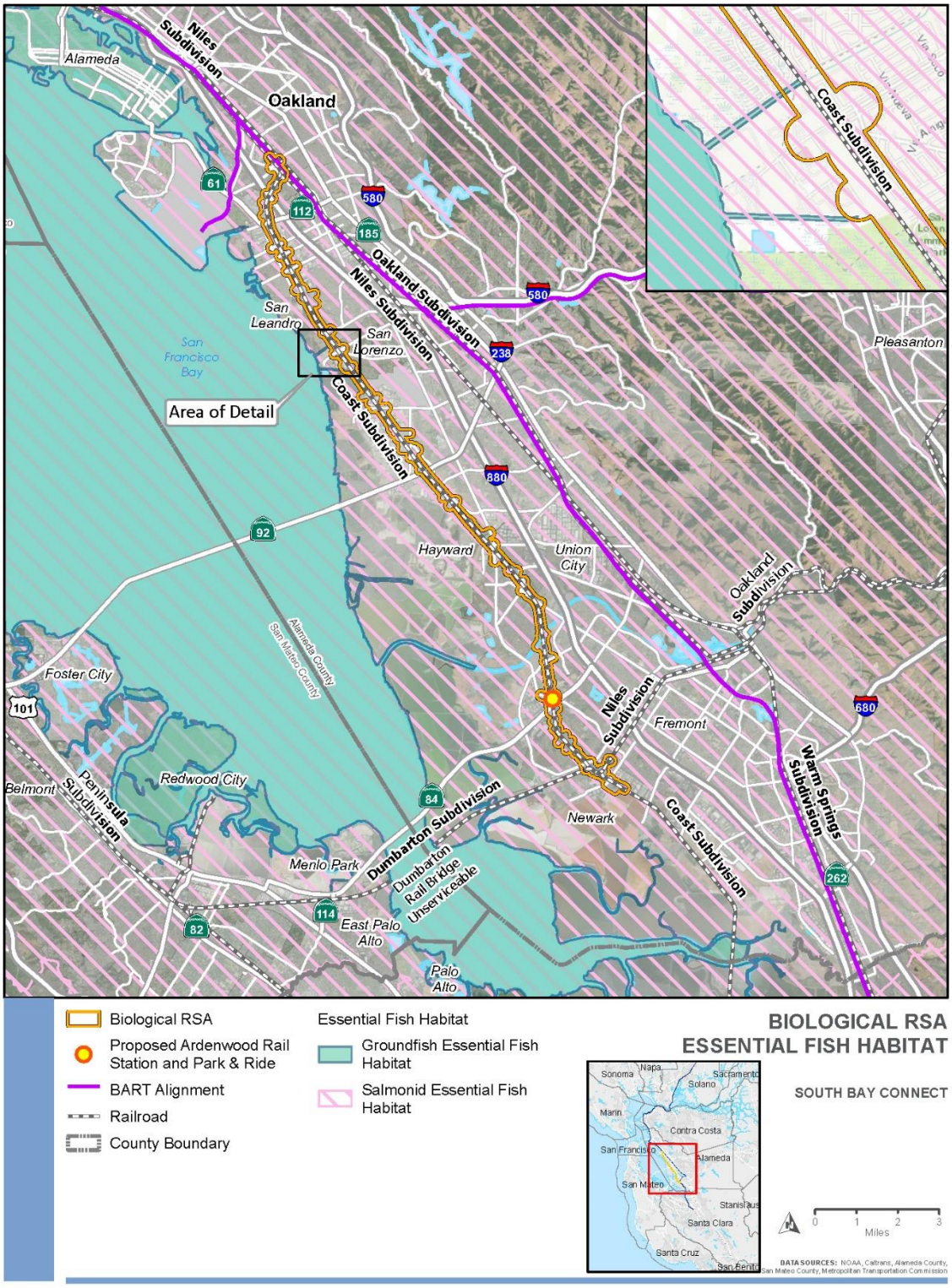


Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
Plants			
Congdon's tarplant (*Centromadia parryi* ssp. *Congdonii*)	Federal: None State: None CNPS: 1B.1	Congdon's tarplant is typically found in alkaline soils in grassland and ruderal habitat at elevations ranging from 0 to 755 feet. The plant's blooming period is between May and November.	Suitable habitat for this species is present within the RSA.
California seablite (*Suaeda californica*)	Federal: FE State: None CNPS: 1B.1	California seablite is found in coastal salt marshes and swamps at elevations ranging from 0 to 50 feet. California seablite's blooming period is between July and October.	Suitable habitat for this species is present within the RSA.
Invertebrates			
Crotch's bumble bee (*Bombus crotchii*)	Federal: None State: CE	Crotch's bumble bee inhabits open grassland and scrub habitats with nesting typically occurring underground. This species is classified as a short-tongued species, whose food plants include those in the following genera: Asclepias, Chaenactis, Lupinus, Medicago, Phacelia, and Salvia (Williams et al. 2014).	Suitable habitat for this species is present throughout the RSA.
Western bumble bee (*Bombus occidentalis*)	Federal: None State: CE	The western bumble bee inhabits open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. The bee typically nests underground in abandoned rodent burrows, such as old squirrel or other animal nests, and in open west-southwest slopes bordered by trees, although a few nests have been reported from above-ground locations such as in logs among	Suitable habitat for this species is present throughout the RSA.

Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
		railroad ties. Availability of nest sites may depend on rodent abundance (Xerces 2014).	
Monarch butterfly (California overwintering population) [*Danaus plexippus* (pop. 1)]	Federal: FC State: None	The Monarch butterfly overwinters along the coast from Mendocino County, south into Baja California. The butterfly occupies wind-protected groves of gum (*Eucalyptus* spp.), Monterey pine (*Pinus radiata*), or Monterey cypress (*Hesperocyparis macrocarpa*) with nectar and water sources nearby (IELP 2012).	Suitable habitat for this species is present in the RSA. Additionally, the butterfly has known overwintering occurrences at Ardenwood Historic Farm, which is adjacent to the proposed Ardenwood Rail Station.
Fish			
Green sturgeon (southern DPS) (*Acipenser medirostris*)	Federal: FT State: SSC	Spawning occurs primarily in the Sacramento River, but those that spawn in the Feather and Yuba Rivers are also part of the southern DPS. Oceanic waters, bays, and estuaries during non-spawning season. Enters San Francisco Bay late winter through early spring, and spawn occurs from April through early July. Spawn in cool sections of river mainstems in deep pools containing small to medium-sized gravel, cobble, or boulder substrate (NMFS 2015).	Designated critical habitat for this species occurs within and adjacent to the biological RSA.
Steelhead (central California coast Distinct Population Segment [DPS]) [*Oncorhynchus mykiss irideus* (pop. 8)]	Federal: FT State: None	This DPS includes naturally spawned and artificially propagated steelhead. The naturally spawned anadromous steelhead originate below natural and manmade impassable barriers from the Russian River to Aptos Creek, and all drainages of San Francisco and San Pablo	Steelhead may utilize the portion of Alameda Creek (or other waterways) in the biological RSA for migration.

Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
		Bays eastward to Chipps Island at the confluence of the Sacramento and San Joaquin Rivers. The artificially propagated steelhead originate from two artificial propagation programs: Don Clausen Fish Hatchery Program and Kingfisher Flat Hatchery Program (Monterey Bay Salmon and Trout Project). Spawning habitat includes gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning habitat includes estuarine and marine waters (NMFS 2021).	
Reptiles			
Western pond turtle (*Emys marmorata*)	Federal: None State: SSC	The western pond turtle is found throughout California except for Inyo and Mono counties. Generally, the turtle occurs in various water bodies including natural and artificial permanent and ephemeral systems. Upland habitat that is at least moderately undisturbed is required for nesting and overwintering, in soils that are loose enough for excavation (Thomson et al. 2016).	Suitable habitat for this species is present in Alameda Creek and is present in the RSA for Biological Resources.
Birds			
Burrowing owl (*Athene cunicularia*)	Federal: MBTA State: SSC	The burrowing owl is found throughout California in open, dry grasslands and various desert habitats. The owl requires open areas with mammal burrows; especially those of California ground squirrel (*Otospermophilus beecheyi*). Inhabits rolling hills, grasslands,	Suitable habitat for this species is present along existing railroad tracks, grasslands, and other ruderal habitat throughout the RSA.

Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
		fallow fields, sparsely vegetated desert scrub, vacant lots, and other open human disturbed lands such as airports and golf courses. The owl is absent at elevations above 5,500 feet (CWHR Program Staff 1999a).	
Western snowy plover (*Charadrius nivosus nivosus*)	Federal: FT, MBTA State: SSC	Coastal populations of western snowy plover nest on sandy or gravelly dune-backed beaches, sand spits, and on estuarine salt pans and lagoons (USFWS 2005). Inland populations nest along barren to sparsely vegetated flats and along shores of alkaline and saline lakes, reservoirs, ponds, braided river channels, agricultural wastewater ponds, and salt evaporation ponds (Shuford and Gardali 2008). Inland nesting occurs at Salton Sea, Mono Lake, and isolated sites on the shores of alkali lakes in northeastern California, the Central Valley, and southeastern deserts (CWHR Program Staff 2008a).	Suitable habitat for this species is present within the RSA. Additionally, Eden Landing Ecological Reserve contains critical habitat for the species. Nearest critical habitat is 0.25 miles from the Union Pacific Railroad (UPRR) ROW on the Coast Subdivision.
Northern harrier (*Circus hudsonius*)	Federal: MBTA State: SSC	Northern harriers nest on the ground in patches of dense, tall vegetation in undisturbed areas. The birds breed and forage in a variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats, and desert sinks (Shuford and Gardali 2008).	Suitable habitat for this species is present within marshlands and grassland habitat within the RSA.
White-tailed kite (*Elanus leucurus*)	Federal: MBTA State: FP	The white-tailed kite is a fairly common resident of the Central Valley, coast, and Coast Range Mountains. The bird nests in oak	Suitable habitat for this species is present throughout the RSA.

Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
		savanna, oak and willow riparian, and other open areas with scattered trees near foraging habitat, and forages in open grasslands, meadows, farmlands, and emergent wetlands. The birds are often seen hover foraging over roadsides or grassy highway medians (CWHR Program Staff 2005a).	
Bald eagle (*Haliaeetus leucocephalus*)	Federal: MBTA, BGEPA State: SE, FP	Permanent resident in the highest Coast Range mountains, across the Cascade Range, and down the Sierra Nevada to the eastern Transverse Ranges of San Bernardino and Riverside counties. Uncommon migrant and winter visitor to lowland rivers, lakes, and reservoirs. Nests in large, old-growth, or dominant live trees with open branches, especially ponderosa pine (*Pinus ponderosa*). Requires large bodies of water or rivers with abundant fish, and adjacent snags (CWHR Program Staff 1999b).	Juvenile observed during reconnaissance survey near Alameda Creek but outside of the RSA; suitable foraging habitat located within the biological RSA. However, no suitable nesting habitat present in the biological RSA.
Alameda song sparrow (*Melospiza melodia pusillula*)	Federal: MBTA State: SSC	The Alameda song sparrow is found near to tidal salt marshes, mainly on the fringes of south San Francisco Bay with strongholds near Milpitas and in the Palo Alto Baylands, though a few persist within San Francisco city limits and as far north as El Cerrito in Contra Costa County (Shuford and Gardali 2008).	Suitable habitat for this species is present within a portion of the RSA.
San Francisco common yellowthroat	Federal: MBTA State: SSC	The San Francisco common yellowthroat dwells only in the San Francisco Bay Area. The bird is primarily found in brackish and fresh marshes, but also	Suitable habitat for this species is present in the RSA.

Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
(*Geothlypis trichas sinuosa*)		occupies salt marsh and riparian woodland habitat. (Shuford and Gardali 2008).	
California black rail (*Laterallus jamaicensis coturniculus*)	Federal: MBTA State: ST, FP	The California black rail is found in saline, brackish, and fresh emergent wetlands. While the bird is considered scarce, their true abundance is difficult to determine due to small size and extremely secretive nature. The bird is known to nest at scattered locations in the San Francisco Bay Area and Delta region, Point Reyes National Seashore, San Luis Obispo, and Orange counties, as well as the Imperial and Lower Colorado River Valleys, and appears intermittently and sparingly at a few locations in the Sacramento Valley (CWHR Program Staff 1999c).	Suitable habitat for this species is present in the RSA.
California Ridgway's rail (*Rallus obsoletus obsoletus*)	Federal: FE State: SE, FP	The California Ridgway's rail is found near tidal marshes on the fringes of San Pablo Bay, San Francisco Bay, Monterey Bay, and Morro Bay. The bird requires intricate network of sloughs with small natural berms along tidal channels, preferably with cordgrass (*Spartina* spp.) and pickleweed (*Salicornia* spp.) (USFWS 2017).	Suitable habitat for this species is present in the RSA.
Mammals			
Salt marsh harvest mouse (*Reithrodontomys raviventris*)	Federal: FE State: SE, FP	The salt marsh harvest mouse is found in salt and brackish marshes with dense stands of pickleweed adjacent to upland, salt-tolerant vegetation in the San Francisco, San Pablo, and Suisun Bay areas (USFWS 2010).	Suitable habitat for this species is present within a portion of the RSA.

Table 3.5-3. Special-status Species with the Potential to Occur in the Biological RSA

Species	Sensitivity Status[1]	Habitat Characteristics	Rationale
Pallid bat (*Antrozous pallidus*)	Federal: None State: SSC	The pallid bat can be found across nearly all of California except for high elevation portions of the Sierra Nevada Mountains and Del Norte, western Siskiyou, Humboldt, and northern Mendocino counties. The bat is generally found in a wide variety of habitats but with some preference for drier areas. Day roosts occur in caves, crevices, mines, and occasionally in hollow trees and buildings (Harris et al. 1990).	Suitable habitat for this species is present throughout the RSA.
Townsend's big-eared bat (*Corynorhinus townsendii*)	Federal: None State: SSC	Townsend's big-eared bat ranges throughout California except for high elevation portions of the Sierra Nevada Mountains. Generally, the bats prefer mesic habitats but is known to occur in all non-alpine habitats of California. Roosting occurs in caves, tunnels, mines, buildings, or other structures and this species may use different roosting sites for day and night (CWHR Program Staff 2000).	Suitable habitat for this species is present throughout the RSA.
Western mastiff bat (*Eumops perotis californicus*)	Federal: None State: SSC	The western mastiff bat ranges throughout all of Southern California, the central coast, and the Sierra Nevada Mountains. Generally, the bat occurs in open, arid, or semi-arid habitats, and roosts in rock crevices and buildings. (Ahlborn and White 1990).	Suitable habitat for this species is present throughout the RSA.

1 FE=Federally Endangered, FT=Federally Threatened, FC=Federal Candidate, MBTA=Migratory Bird Treaty Act, SE=State Endangered, ST=State Threatened, CE = California Candidate Endangered, FP=Fully Protected, SSC=State Species of Species Concern, 1B.1= Rare, Threatened, or Endangered in California and Elsewhere

Wildlife Movement Corridors

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Corridors are present in a variety of habitats and link otherwise fragmented acres of high-quality habitat. Maintaining the continuity of established wildlife corridors is important to a) sustain species with specific foraging requirements, b) preserve a species' distribution potential, and c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

A review of CDFW BIOS 5 Viewer (CDFW 2021c) and its wildlife movement corridor layers, including the Essential Connectivity Areas [ds620] layer, the Natural Landscape Blocks [ds621] layer, and the Missing Linkages in California [ds420] layer identified several natural landscape blocks occurring within or adjacent to the biological RSA. No Missing Linkages were identified that intersected the RSA; however, Natural Landscape Block #125, which includes the Coyote Hills Regional Park and Eden Landing Ecological Reserve, partially overlaps the RSA. Alameda Creek and its associated riparian corridor provide a wildlife corridor through the RSA. Additionally, multiple open culverts and channelized ditches and streams provide some connectivity through the biological RSA between the marsh and estuarine habitat in San Francisco Bay and upland habitats to the east.

In addition to the wildlife movement corridors, creeks within the RSA provide fish passage, such as Alameda Creek. The Caltrans Fish Passage Assessment Database (CalFish 2024) layer was also reviewed in relation to the biological RSA, all total barriers to fish passage are upstream of the proposed Project. Consultation with regulatory agencies regarding effects to wildlife movement corridors is required when there may be potential effects to corridors in the biological RSA.

Aquatic Resources

Per Section 404 of the CWA, the Aquatic Resources Delineation Report (ICF 2021) documented 30.7 acres of potentially jurisdictional features in the aquatic RSA, which consists of the proposed Project footprint plus a 50-foot buffer. As shown in Attachment 2 of Appendix C, potentially jurisdictional features in the aquatic RSA that could be subject to Sections 404 and 401 of the CWA included 0.2 acres of freshwater wetlands, 6.6 acres of tidal wetlands, 12.7 acres of freshwater non-wetland waters, and 11.3 acres of tidal non-wetland waters. Tidal features were mapped below the mean high tide line using vegetative and hydrologic field indicators. Per Section 10 of the Rivers and Harbors Act, 1.2 acres of navigable waters were delineated in the aquatic RSA along San Lorenzo Creek and Alameda Creek. Navigable waters were delineated below the mean high-water line. For more details, see Attachment 2 of Appendix C. Consultation with RWQCB/CDFW/USACE regarding effects to aquatic resources is required for potential effects to aquatic resources that may be present in the biological RSA.

3.5.5 Best Management Practices

As noted in Chapter 2, Project Alternatives, CCJPA would incorporate a range of BMPs to avoid and minimize adverse effects on the environment that could result from implementation of the proposed Project. BMPs are included in the proposed Project description, and the impact analyses were conducted assuming application of these practices.

The following BMPs would be implemented as part of the proposed Project:

BMP HYD-1 Stormwater Management and Treatment Plan.

BMP BIO-1 Weed Abatement Program.

3.5.6 Environmental Impacts

This section describes the potential environmental impacts on biological resources as a result of implementation of the proposed Project. Lettering shown within title for each environmental factor below correlates with CEQA Statute and Guidelines, Appendix G table lettering and numbering.

Impacts as a result of implementing the proposed Project can be broadly classified into construction and operational effects. Long-term or permanent impacts and short-term or temporary impacts related to biological resources would be anticipated as a result of constructing the proposed Project. Most impacts related to biological resources would occur during construction when sensitive plant communities or habitat is disturbed from clearing for construction, placement of permanent structures (e.g., track, stations, bridges, and other rail infrastructure), staging of equipment, and stockpiling of soil, ballast, or other construction materials. Other short-term construction-related impacts on adjacent habitats and corresponding wildlife could be caused by noise, vibration, and air pollution from construction equipment and activities. Operational impacts on biological resources could result in an increased strike risk to local wildlife from permanent changes to sensitive habitat within the biological RSA.

3.5.6.1 (a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?

No Project Alternative

No Impact. Under the No Project Alternative, the Capitol Corridor passenger rail service between Oakland and San Jose would not be relocated from the Niles Subdivision to the Coast Subdivision associated with the proposed Project. Improvements proposed for the Coast and Niles Subdivisions associated with the proposed Project would not occur. Capitol Corridor passenger trains would continue to operate based on current routes with no changes. There would be no changes to connectivity or operational efficiency. Therefore, the No Project Alternative would not result in impacts or changes to special-status species within the RSA, resulting in no impact.

Proposed Project

Construction

Less Than Significant Impact with Mitigation Incorporated. As summarized in Table 3.5-3, 21 special-status plant and wildlife species have the potential to occur within the RSA and be impacted with implementation of the proposed Project.

Special-Status Plants

Federally Listed Plant Species

California seablite (FE- Federally Endangered, 1B.1 – Rare, Threatened, or Endangered in California and Elsewhere).

California seablite has the potential to occur in saline emergent wetlands and estuarine habitats, both of which occur in the biological RSA along the Coast Subdivision, adjacent to Heron Bay (Attachment 3 of Appendix C). Potential impacts on California seablite may occur as a result of track and adjacent land improvements at Thornton Road and the Newark Junction, the replacement of portions of existing rail and ties, the addition of several inches of new ballast, and the upgrade and slight shift of tracks. If the species is present, implementation of the proposed Project may impact California seablite due to disturbance or destruction of individual plants and suitable habitat. Direct impacts could include grading or filling areas supporting this species, trampling or crushing of plants, and soil compaction. Indirect impacts could include increased mobilization of dust onto plants, which can affect their photosynthesis and respiration, or changes to hydrology supporting these plants due to grading or construction in nearby habitats.

The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, and BMP BIO-1 Weed Abatement Program which would avoid and minimize potential impacts on California seablite during construction. Mitigation Measures (MM) BIO-1 through MM BIO-4 would be required to mitigate impacts. BMP HYD-1 requires compliance with construction BMPs related to soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. MM BIO-1 Implement Biological Resource Protection Measures during Construction requires a mandatory environmental awareness training program for all on-site construction personnel. Prior to ground disturbance, MM BIO-2 Rare Plant Pre-construction Surveys would require rare plant surveys in work areas where suitable habitat for California seablite have the potential to occur. In the event that California seablite is identified during pre-construction surveys, MM BIO-3 Rare Plant Avoidance Buffers, and MM BIO-4 Rare Plant Mitigation/Habitat Mitigation Management Plan would be required. Implementation of the measures would reduce construction related impacts on California seablite to a less than significant level.

Other Special-status Plant Species

Congdon's Tarplant (1B.1- – Rare, Threatened, or Endangered in California and Elsewhere).

Congdon's tarplant is a special-status plant with a California rare plant rank of 1B.1. Congdon's tarplant has the potential to occur within ruderal habitat in the biological RSA along a portion of the Coast Subdivision adjacent to Heron Bay and along other portions of the corridor (Attachment 3 of Appendix C). Potential impacts on Congdon's tarplant may occur during construction activities such as track and adjacent land improvements, replacement of portions of existing rail and ties, addition of new ballast, and the upgrade and shifting of tracks. Implementation of the proposed Project may impact Congdon's tarplant due to disturbance, destruction of individual plants and degradation or destruction of suitable habitat. Direct impacts to Congdon's tarplant may result in grading or filling of areas supporting this species, soil compaction and individual plants being walked or driven on. Potential indirect impacts include increased mobilization of dust onto plants or changes to the hydrology supporting these plants from proposed Project construction activities in adjacent areas next to the rail ROW.

The proposed Project includes implementation of BMP HYD-1 (Stormwater Management and Treatment Plan) and BMP BIO-1 (Weed Abatement Program), which would minimize potential impacts on Congdon's tarplant during proposed Project construction activities. Mitigation Measures MM BIO-1 (Implement Biological Resource Protection Measures during Construction), MM BIO-2 (Rare Plant Pre-construction Surveys), would be implemented to mitigate proposed Project impacts. In the event that Congdon's tarplant is identified during pre-construction surveys, MM BIO-3 (Rare Plant Avoidance Buffers) and MM BIO-4 (Rare Plant Mitigation/Habitat Mitigation Management Plan) would be required. Implementation of the measures would reduce construction-related impacts on Congdon's tarplant to a less than significant level.

Special-Status Invertebrates

Crotch's Bumble Bee and Western Bumble Bee (CE – California Candidate Endangered).

In September 2022, the California Supreme Court ruled that the California Fish and Game Commission can protect bumble bees under CESA. Two species of bumble bee—Crotch's bumble bee (*Bombus crotchii*) and western bumble bee (*Bombus occidentalis occidentalis*) that historically occurred in the Alameda County area are now special-status species for the purposes of CEQA review.

Like most bumble bees, the Crotch's bumble bee and western bumble bee primarily nests underground. The size of Crotch's bumble bee and western bumble bee colonies has not been well documented. Generally, for all bumble bee species, high-quality habitat has three major components: a diverse supply of flowers for nectar and pollen, nesting locations, and subterranean spaces for overwintering queens (Hatfield et al. 2012). In California, Crotch's bumble bee is found in grassland and scrub habitats (Attachment 3 of Appendix C). Proposed Project construction could impact Crotch's bumble bees and/or western bumble bees if they are present within the construction area at the time of construction, by causing the injury or mortality of adults, eggs, and larvae, burrow collapse, nest abandonment, and reduced nest success.

The proposed Project includes BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize impacts on Crotch's bumble bee and western bumble bee during construction activities. The proposed Project will also implement Mitigation Measures MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-6 Bumble Bee Pre-Construction Surveys, and MM BIO-7 Bumble Bee CESA Section 2080 Coordination would be required to mitigate proposed Project impacts. MM BIO-6 would require focused pre-construction surveys in work areas where suitable habitat for Crotch's bumble bee and western bumble bee have the potential to occur. In the event that Crotch's bumble bee and western bumble bee are identified during pre-construction surveys and cannot be avoided, MM BIO-7 requires consultation with CDFW to determine if a CESA Section 2080 Incidental Take Permit is required if "take" or adverse impacts to Crotch's bumble bees and/or western bumble bees cannot be avoided. Implementation of the measures would reduce construction related impacts on Crotch's bumble bee and western bumble bee to a less than significant level.

Monarch Butterfly (FC – Federal Candidate).

The monarch butterfly is known to overwinter in and near Ardenwood Historic Farm in eucalyptus trees (Attachment 3 of Appendix C). Ardenwood Historic Farm is one of over 500 sites along the west coast of California where monarchs gather for the winter to wait out cold winter temperatures further north. While monarchs mostly roost in trees, the species are known to rest on the ground

when they are too cold to fly. When the monarchs are warm enough to fly, they forage for nectar from plants nearby. Suitable breeding and foraging habitat for the monarch is higher-quality grassland habitat that is more likely to support milkweed and other nectar plant species (James et al. 2021). The monarch butterfly depends solely on milkweed plants for completing their life cycle, and milkweed plants are not expected to be present in all suitable habitat. Milkweed plants are expected to be restricted to small patches or isolated individual plants in most locations.

Direct impacts during construction activities could include mortality and injury of individual adults, eggs, and larvae, however prohibitions on take do not apply to federal candidates. While California annual grassland is present within the portions of the biological RSA within the Coast Subdivision, rail improvements are not anticipated to impact grassland vegetation communities. In addition, no tree removal is anticipated as part of work in or near Ardenwood Historic Farm, in the Coast Subdivision, where monarchs are known to overwinter.

However, if individual milkweed plants and other nectar plant species are present within or adjacent to the proposed Project footprint, construction activities conducted during the breeding or migratory season could crush host plants supporting egg masses and larvae or kill adult monarch butterflies feeding on nectar plants. In addition, fugitive dust generated from construction activities could temporarily affect host or nectar plants by covering leaves and reducing the vigor of plants. Similarly, fugitive dust during construction could also reduce the health and vigor of any monarch butterfly larvae present on host plants affected by fugitive dust and could also affect the ability of adult monarch butterflies to lay eggs or feed on host and nectar plants covered in fugitive dust.

The proposed Project would not cause indirect impacts on habitat from increased cover of non-native invasive plants because the habitat in the rail corridor is heavily disturbed and non-native invasive species are already widespread. As part of the proposed Project, BMP HYD-1 Stormwater Management and Treatment Plan would minimize indirect impacts to monarch butterfly during construction. MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-2 Rare Plant Pre-construction surveys, and MM BIO-5 Monarch Butterfly Avoidance would mitigate direct and indirect impacts to monarchs during construction, reducing impacts to a less than significant level.

Special-Status Fish

Central California Coast Steelhead (FT – Federally Threatened) and Green Sturgeon – southern DPS (FT – Federally Threatened/SSC – Species of Special Concern).

Potentially suitable habitat for central California coast steelhead and green sturgeon occurs within the biological RSA, and critical habitat for green sturgeon occurs within the proposed Project footprint (Attachment 3 of Appendix C).

Habitat requirements for the central California coast steelhead include cool, clean flowing water with sufficient dissolved oxygen and minimal turbidity for successful incubation and rearing. Implementation of the proposed Project may require construction of a new railroad bridge over Alameda Creek. Due to the width of the creek, the new bridge structure may require up to two in-channel piers to support the structure. While no steelhead spawning or rearing habitat occurs within this reach of Alameda Creek, steelhead are known to utilize it as a migration corridor for adults moving upstream to spawn and for juveniles moving downstream to enter the ocean. Mature steelhead primarily migrate from the ocean to freshwater in the fall, then stays in suitable habitat until spawning during the winter and early spring (McEwan and Jackson 1996). Peak immigration

seems to have occurred historically in the fall from late September to late October (Hallock 1989), with peak spawning typically occurring January through March (Hallock et al. 1961; McEwan and Jackson 1996).

Green sturgeon (southern DPS) are typically found in the Sacramento River during spawning season, although populations do occur in the Feather and Yuba rivers. During the spawning season, the sturgeon requires cool water in the mainstems of rivers, with deep pools containing small to medium sized gravel, cobble or boulders. When not spawning, green sturgeon can be found in oceanic waters, bays, and estuaries.

In-water piers associated with the new railroad bridge are anticipated to be constructed using cast-in-drilled-hole piles which may require dewatering of a portion of Alameda Creek during construction and the need for pile-driving activities. NMFS (2023) identifies a behavioral disturbance threshold for fish from all source types as 150 dB. Anything higher than 150 dB could result in injury and/or mortality. It is anticipated that aquatic noise levels from pile-driving activities are not expected to have any significant impacts on fish within Alameda Creek, since the area where the pile-driving would occur would be dewatered. Therefore, there is no aquatic sound to travel through water. If bridge construction methods change and pile-driving activities would occur within the water, MM BIO-8 (Steelhead and Green Sturgeon Work Window) and MM BIO-9 (Dewatering and Aquatic Species Relocation Plan) would ensure that hydroacoustic impacts to special-status fish species would be mitigated to a less than significant level.

Direct impacts on steelhead and green sturgeon associated with the construction of the rail bridge structure would include temporary loss of migratory and/or critical habitat and potential injury or death of steelhead and/or green sturgeon. Construction of in-water piers associated with the railroad bridge over Alameda Creek would also permanently impact riverine habitat. Shoreline aquatic habitat and associated riparian habitat performs valuable functions for special-status fish, such as providing shade/cover, reduction in water temperature, and provide habitat for food sources such as invertebrates. The proposed Project includes implementation of BMP HYD-1, which would minimize potential impacts on steelhead and green sturgeon. The proposed Project would also implement MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-8 Steelhead and Green Sturgeon Work Window, MM BIO-9 Dewatering and Aquatic Species Relocation Plan, MM BIO-10 Steelhead and Green Sturgeon Habitat Replacement, and MM BIO-17 Compensate for the Loss of Riparian Habitat to mitigate for direct take of individuals and degradation of habitat. MM BIO-1 requires a mandatory environmental awareness training program for all on-site construction personnel. MM BIO-8 requires that work within and over Alameda Creek occur when steelhead and green sturgeon are not anticipated to occur within this portion of Alameda Creek. MM BIO-9 requires a dewatering and aquatic species relocation plan if work in Alameda Creek would occur when flowing water is present. MM BIO-10 requires the replacement of steelhead and green sturgeon habitat that results from construction activities while MM BIO-17 compensates for the loss of riparian habitat. Implementation of these measures would reduce the construction impacts on Central California DPS steelhead and green sturgeon to less than significant.

Indirect impacts on water quality could potentially occur as a result of sediment mobilization or spills of fluids/materials from construction activities occurring in Alameda Creek. These indirect impacts on water quality could affect the steelhead and steelhead habitat. Compliance with permit conditions to protect water quality, as described in BMP HYD-1, would minimize the potential for impacts to water quality and to sensitive species that inhabit Alameda Creek waters due to increases in erosion, sedimentation, and turbidity as well as releases of pollutants.

Special-Status Amphibians and Reptiles

Western Pond Turtle (SSC – Species of Special Concern).

The western pond turtle is designated as a California Species of Special Concern by the CDFW. This species is a fully aquatic turtle found in slow moving rivers, streams, lakes, ponds, wetlands, reservoirs, brackish estuarine waters, and irrigation ditches. The western pond turtle prefers areas that provide logs, algae, or vegetation for cover, and boulders for basking and requires well vegetated upland refuge sites to escape predators or high-water levels. Suitable habitat for this species is present in Alameda Creek, which flows through the Coast Subdivision (Attachment 3 of Appendix C).

Implementation of the proposed Project may result in the construction of a new railroad bridge over Alameda Creek which would require up to two in-channel piers to support the structure. Western pond turtle is known to occur within Alameda Creek and may occur in the adjacent percolation ponds. Construction of the bridge may require dewatering of a portion of Alameda Creek and the need for pile-driving activities. Construction activities, such as vegetation removal, grading, and bank stabilization, could directly impact the western pond turtle should they be in the construction area and be trampled or crushed by vehicles or equipment. In addition, earthwork, vegetation removal, installation of water diversions, and demolition activities within riparian habitat present within Alameda Creek could result in temporary impacts on breeding, upland, and dispersal habitat suitable for the western pond turtle. Direct impacts on western pond turtle associated with the construction of the bridge structure would include a permanent loss of habitat, and potentially injury or death. Increased noise and dust during construction also has potential to temporarily displace western pond turtle individuals utilizing this portion of Alameda Creek.

As part of the proposed Project, BMP HYD-1 Stormwater Management and Treatment Plan, would minimize potential indirect impacts on western pond turtle. To mitigate for potential impacts on western pond turtle including direct take of individuals and degradation of habitat, implementation of MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-11 Western Pond Turtle Pre-construction Surveys (requires preconstruction surveys for western pond turtles within Alameda Creek and adjacent aquatic habitats), and MM BIO-17 Compensate for the Loss of Riparian Habitat would be required. Implementation of these mitigation measures would reduce the construction impacts on western pond turtle to less than significant.

Special-Status Birds, including Migratory Birds

Habitat within the biological RSA provides suitable foraging opportunities for many avian species, including special-status bird species. Raptors (e.g., burrowing owl, northern harrier, white-tailed kite, bald eagle) and raptor nests are considered to be a special resource by federal and state agencies and are protected under the MBTA and California Code of Regulations. Nesting birds are protected under the MBTA (16 USC § 703 et seq.) and the California FGC (§ 3503 et. seq.). Federal regulations prohibit any person to "pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, [or] purchase" any migratory bird, including parts of birds, as well as eggs and nests. The California FGC Sections 3503, 3503.5 and 3512 also prohibit the take of birds and active nests.

Although only one special-status bird species was directly observed during the reconnaissance survey (bald eagle), suitable habitat for other special-status bird species also exists within the biological RSA. As long as habitat that supports special-status bird species exists, there is the

potential for bird species to enter areas where construction activities could occur for foraging, nesting, or movement between territories. Therefore, construction activities associated with the proposed Project may directly impact special-status bird species or indirectly impact special-status bird species habitat, which would be considered a potentially significant impact. In addition, construction activities that require disturbance of trees or other vegetation containing active nests could cause direct impact to nesting raptors and migratory birds. Construction could also result in noise, dust, increased human activity, and other indirect impacts to nesting raptors or migratory bird species in the proposed Project vicinity. Potential nest abandonment and mortality to eggs and chicks, as well as stress from loss of foraging areas, would also be considered a significant impact. Disturbance of active nests within the proposed Project footprint would be considered a significant impact, but implementation of MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys would reduce this to a less than significant impact. However, there would be no take of nests for birds protected by the MBTA and FGC with implementation of MM BIO-12.

Indirect impacts on water quality could potentially occur as a result of sediment mobilization or spills of fluids/materials from construction activities. These indirect impacts on water quality could affect habitat for special-status bird species. The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan and compliance with permit conditions to protect water quality, which would minimize the potential for impacts to water quality and to sensitive species that inhabit estuarine and saline emergent wetland habitats due to increases in erosion, sedimentation, as well as releases or bioaccumulation of pollutants.

Federally Listed Bird Species

Western Snowy Plover (FT – Federally Threatened/SSC – Species of Special Concern). Suitable foraging and nesting habitat (e.g., estuarine and saline emergent wetland) for western snowy plover (WSNPL) occurs within portions of the Coast Subdivision, outside of the proposed Project footprint (Attachment 3 of Appendix C). Construction activities associated with the proposed Project include the replacement of portions of existing rail and ties, the addition of several inches of new ballast, and the upgrade of tracks along a portion of the Coast Subdivision. While all construction activities would occur within the existing rail ROW, the work would be conducted directly adjacent to potential foraging and nesting habitat for western snowy plover. Therefore, there is potential for WSNPL to be indirectly impacted by construction activities, including impacts to estuarine and saline waters. Implementation of BMP HYD-1 Stormwater Management and Treatment Plan as part of the proposed Project would minimize indirect impacts to potentially suitable aquatic habitat for western snowy plover resulting in less than significant impacts.

Construction of the proposed Project would provide potential perching sites for raptors in trees, on light posts, or on buildings adjacent to the construction area. The addition of potential perching sites could increase foraging opportunities for predators of WSNPL, such as raptors. However, numerous existing trees, light poles, and existing buildings and structures provide perches for raptors in the area. Therefore, relative to baseline conditions, the construction of the proposed Project is not expected to result in a substantial increase in the predation of WSNPL adults and nestlings inhabiting adjacent habitats by raptors, or to affect regional populations of these species. Impacts are considered less than significant.

Construction activities could also generate sources of food waste from workers accessing the construction work area. The presence of food waste on site could attract native and non-native nuisance wildlife, such as raccoons, ravens, and coyotes, which could prey on WSNPL adults and

nestlings. However, implementation of MM BIO-1 (Implement Biological Resource Protection Measures during Construction) and MM BIO-12 (Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys) would reduce impacts to a less than significant level.

Bald Eagle (SE – State Endangered/FP – Fully Protected).

The bald eagle is a permanent resident in the highest Coast Range mountains, across the Cascade Range, and down the Sierra Nevada to the eastern Transverse Ranges of San Bernardino and Riverside counties. An uncommon migrant and winter visitor to lowland rivers, lakes, and reservoirs, bald eagles nest in large, old-growth, or dominant live trees with open branches, especially ponderosa pine (*Pinus ponderosa*). This species requires large bodies of water or rivers with abundant fish, and adjacent snags.

While suitable nesting habitat is absent from the proposed Project footprint and biological RSA, potentially suitable foraging habitat occurs within and adjacent to the biological RSA (Attachment 3 of Appendix C). Due to the presence of foraging habitat within and adjacent to the biological RSA, construction activities have potential to indirectly impact bald eagle. The proposed Project includes BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize indirect impacts to potential habitat. To reduce direct and indirect impacts on bald eagle to a less than significant level, MM BIO-1 Implement Biological Resource Protection Measures during Construction, and MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys would be implemented.

California Ridgway's Rail (FE – Federally Endangered/FP – Fully Protected/SE – State Endangered).

California Ridgway's rail is listed as endangered at both the federal and state levels. Throughout their distribution, they occur within salt and brackish marshes. In south and central San Francisco Bay and along the perimeter of San Pablo Bay, this species typically inhabits salt marshes dominated by pickleweed and Pacific cordgrass. Pacific cordgrass dominates the middle marsh zone throughout the south and central San Francisco Bay.

However, in recent decades, populations of non-native cordgrass species, which were introduced in the late 20th century, have spread rapidly and begun to dominate much of the San Francisco Bay estuary system. These more aggressive cordgrass species eventually render the marsh habitat less suitable for California Ridgway's rails (California State Coastal Conservancy 2003).

Use of brackish marshes by California Ridgway's rail is largely restricted to major sloughs and rivers of San Pablo Bay and Suisun Marsh, and along Coyote Creek in south San Francisco Bay. California Ridgway's rails have rarely been recorded in non-tidal marsh areas.

Breeding California Ridgway's rails require tidal marshes with the following elements: a well-developed tidal channel system with full tidal influence, cordgrass, and a vegetated upper marsh/ upland ecotone. Suitable foraging and nesting habitat for California Ridgway's rail occurs within the biological RSA, but outside of the proposed Project footprint (Attachment 3 of Appendix C). Construction activities associated with the proposed Project would include replacing segments of existing rail and ties, adding new ballast, as well as track upgrades for sections of the Coast Subdivision. All construction activities would occur within the existing railroad ROW, however, potentially suitable foraging and nesting habitat for California Ridgway's rail occurs adjacent to the ROW. Therefore, there is potential for indirect impacts from construction activities to California Ridgway's rail. The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize indirect impacts California Ridgway's rail

habitat during construction activities. The proposed Project would apply MM BIO-1 Implement Biological Resource Protection Measures during Construction, and MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys to mitigate potentially significant impacts to this special-status bird species to a less than significant level.

State Listed Bird Species

White-tailed Kite (FP – Fully Protected). White-tailed kite is a state fully protected raptor species in California that nests in oak savanna, oak and willow riparian, and other open areas with scattered trees near their foraging habitat of open grasslands, meadows, and farmland. They are often seen hover foraging over roadsides or grassy highway medians in pursuit of their prey, mainly small mammals such as voles, mice, and pocket gophers, although birds, reptiles, and insects are sometimes taken. White-tailed kite has the potential to occur in non-native annual grassland, ruderal/disturbed, and oak woodland in and adjacent to the biological RSA, but outside of the proposed Project footprint (Attachment 3 of Appendix C). Tall, landscaped trees (e.g., gum, oak, pine) within and adjacent to the biological RSA provide suitable nesting habitat for white-tailed kites.

Construction activities associated with the proposed Project would include replacing existing rail and ties, the addition of new ballast, and track upgrades for sections of the Coast Subdivision. Potentially suitable foraging and nesting habitat for white-tailed kite occurs adjacent to the ROW, there is potential for indirect impacts from construction activities to white-tailed kite. The proposed Project includes BMP BIO-1 (Protect Water Quality and Minimize Sedimentation Runoff during Construction), which would minimize indirect impacts to white-tailed kite habitat. In order to reduce direct and indirect impacts to a less than significant level, MM BIO-1 Implement Biological Resource Protection Measures during Construction, and MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys would be implemented.

California Black Rail (ST – State Threatened/FP – Fully Protected). The California black rail is found in saline, brackish, and fresh emergent wetlands. While the bird is considered scarce, their true abundance is difficult to determine due to small size and extremely secretive nature. The bird is known to nest at scattered locations in the San Francisco Bay Area and Delta region, Point Reyes National Seashore, San Luis Obispo, and Orange counties, as well as the Imperial and Lower Colorado River Valleys, and appears intermittently and sparingly at a few locations in the Sacramento Valley.

Construction activities associated with the proposed Project would include replacing existing rail and ties, adding new ballast, and upgrading portions of the tracks along the Coast Subdivision. Construction activities would occur within the existing ROW. However, since potentially suitable foraging habitat for California black rail occurs adjacent to the ROW in the Coast Subdivision (Attachment 3 of Appendix C), there is potential for indirect impacts from construction activities. The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize indirect impacts to California black rail habitat. In order to reduce direct and indirect impacts to a less than significant level, MM BIO-1 Implement Biological Resource Protection Measures during Construction, and MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys would be implemented.

Other Special-Status Bird Species

Raptors-Burrowing Owl and Northern Harrier (SSC – Species of Special Concern). Burrowing owl and northern harrier are California SSCs and are protected under the MBTA. Burrowing owls are a year-round resident of open, dry grassland and desert habitats, and in grass, forb, and open shrub stages of pinyon-juniper and ponderosa pine habitats. In general, burrowing owls prefer open grasslands and desert shrub habitats where grass height is relative short, including areas that are actively grazed by livestock, particularly when perches (artificial or natural) are present. However, burrowing owls may also occur within urban areas in vacant lots, weedy fields, and utility, railroad, and road/highway rights-of-ways. In California, nest and roost burrows of the burrowing owl are most commonly dug by ground squirrels, but they may use badger, coyote, and fox dens or holes, as well as structures such as culverts, pipes, concrete rubble and nest boxes.

Burrowing owls have the potential to occur within portions of the biological RSA, especially in ruderal habitats (Attachment 3 of Appendix C). Because of the disturbed nature of the ROW and the ongoing maintenance activities of the active rail corridors, suitable foraging and nesting habitat is absent for burrowing owls within the proposed Project footprint, therefore direct impacts to burrowing owls are not anticipated. However, there could be available nesting habitat for burrowing owls adjacent to the existing railroad ROW in areas with suitable ruderal habitat, outside of the proposed Project footprint.

Northern harrier frequent meadows, grasslands, open rangelands, desert sinks, and fresh- and saltwater emergent wetlands. Open areas of tall, dense grasses, moist or dry shrubs, and edges are used for nesting, cover, and feeding. Suitable foraging habitat for this species is present within marshlands and grassland habitat within and adjacent to the proposed Project footprint (Attachment 3 of Appendix C).

The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize indirect impacts to burrowing owl and northern harrier habitat. Since there is a potential to directly and indirectly impact burrowing owl and northern harrier during construction activities, MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys, and MM BIO-13 Burrowing Owl Habitat Assessment are required to reduce potentially significant impacts to these species to a less than significant level.

Construction of the proposed Project would provide potential perching sites for raptors within trees, on light posts, or on buildings adjacent to the construction area. The addition of potential perching sites could increase foraging opportunities for predators of these bird species, such as raptors. However, numerous existing trees, light poles, and existing buildings and structures provide perches for raptors in the area. Therefore, relative to baseline conditions, the construction of the proposed Project is not expected to result in a substantial increase in the predation of special-status bird species adults and nestlings inhabiting adjacent habitats by raptors, or to affect regional populations of these species. Impacts are considered less than significant.

Passerines-Alameda Song Sparrow and San Francisco Common Yellowthroat (SSC – Species of Special Concern).

Suitable foraging and nesting habitat (e.g., estuarine and saline emergent wetland) for Alameda song sparrow and San Francisco common yellowthroat occurs within portions of the RSA but outside of the proposed Project footprint (Attachment 3 of Appendix C). Construction activities associated with

the proposed Project include the replacement of portions of existing rail and ties, the addition of several inches of new ballast, and the upgrade of tracks along a portion of the Coast Subdivision. While all construction activities would occur within the existing rail ROW, the work would be conducted directly adjacent to potential foraging and nesting habitat for these special-status bird species. Therefore, there is potential that these special-status bird species be indirectly impacted by construction activities.

While there is likely no suitable habitat for special-status bird species within the active railroad ROW, trees and vegetation located in areas adjacent to the railroad ROW could provide nesting habitat for these special-status bird species. Implementation of MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys and MM BIO-1 Implement Biological Resource Protection Measures during Construction would reduce potential impacts to nesting birds to a less than significant level.

The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan which includes good housekeeping measures as part of the SWPPP. Construction activities could also generate sources of food waste from workers accessing the construction work area. The presence of food waste on site could attract native and non-native nuisance wildlife, such as raccoons, ravens, and coyotes, which could prey on special-status bird species adults and nestlings. With inclusion of BMP HYD-1, the proposed Project would have less than significant impacts.

Special-Status Mammals

Federally Listed Mammal Species

Salt Marsh Harvest Mouse (FE – Federally Endangered/SE – State Endangered/FP – Fully Protected).

Salt marsh harvest mouse has the potential to occur in saline emergent wetland habitat within the RSA along the Coast Subdivision (Attachment 3 of Appendix C). No permanent acquisition or conversion of salt marsh harvest mouse habitat is proposed. Construction activities associated with the proposed Project include the replacement of portions of existing rail and ties, the addition of several inches of new ballast, and the upgrade of tracks along a portion of the Coast Subdivision adjacent to Heron Bay. While all construction activities would occur within the existing rail ROW, the work would be conducted directly adjacent to existing salt marsh harvest mouse habitat. Therefore, there is potential that salt marsh harvest mice could access the construction area during periods of high tide.

In the absence of protective measures, construction activities may cause the injury or mortality of salt marsh harvest mice as a result of crushing by equipment, vehicle traffic, and worker foot traffic. Individuals that access the construction area could also be exposed to increased levels of predation because of unfamiliarity with the new area or lack of sufficient cover. As described under Regulatory Section, Senate Bill 147 authorizes the CDFW to issue an incidental take permit that would authorize the take of a fully protected species. MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-14 Salt Marsh Harvest Mouse Avoidance and MM BIO-15 Salt Marsh Harvest Mouse Immediate Work Stoppage would be required.

In addition, implementation of the proposed Project has the potential to degrade habitat adjacent to the proposed Project site through the introduction of invasive weeds during and following proposed Project construction when seeds are attached to vehicles, equipment, and clothing. The spread of

invasive plants can displace native vegetation and reduces habitat quality for salt marsh harvest mice by reducing the availability of plants they use for refugia and nesting. BMP HYD-1 Stormwater Management and Treatment Plan and BMP BIO-1 Weed Abatement Program would minimize indirect habitat impacts. However, implementation of MM BIO-20 Salt Marsh Harvest Mouse Habitat Replacement would be required to reduce impacts to a less than significant level.

Small mammals that inhabit natural areas adjacent to the rail ROW would be subjected to increased noise and vibrations during construction. However, no studies have been conducted to determine what noise levels result in disturbance of salt marsh harvest mice. In addition, rail improvements associated with the proposed Project would occur within an active rail corridor. Should salt marsh harvest mice in nearby habitat be disturbed by proposed Project activities, including noise or vibration, and move away from the source, they would move away from the construction area. Therefore, construction noise levels are not expected to cause salt marsh harvest mice to flush out into the open, or to increase mortality of individuals due to predation. In addition, suitable habitat adjacent to the construction area site would only be subjected to increased noise and vibrations during construction; following completion of construction, individual mice would re-occupy any habitat that was vacated during construction. Therefore, noise from construction activities would not result in take of individual salt marsh harvest mice and impacts are less than significant.

Construction of the proposed Project would be unlikely to provide new potential perching sites for raptors (which prey on salt marsh harvest mice) within trees, on light posts, or on buildings adjacent to the construction area. However, numerous existing trees, light poles, and existing buildings and structures provide perches for raptors in the area. Therefore, relative to baseline conditions, the construction of the proposed Project is not expected to result in a substantial increase in the predation of small mammal species by raptors, or to affect regional populations of these small mammal species. Impacts due to increased raptor predation are considered less than significant.

Construction activities could also generate sources of food waste from workers accessing the construction work area. The presence of food waste on site could attract native and non-native nuisance wildlife such as American crows, common ravens (*Corvus corax*), gulls (*Larus spp.*), raccoons, and others, which prey on salt marsh harvest mice. However, implementation of MM BIO-1 Implement Biological Resource Protection Measures during Construction would reduce impacts to a less than significant level.

Construction lighting associated with the proposed Project could result in impacts on salt marsh harvest mice by increasing the likelihood of predation and/or deterring these species from using well-lit habitat, thus resulting in potential loss of individuals and effective habitat loss in well-lit areas immediately adjacent to the proposed Project site. Lighting that increases nighttime illumination in adjacent areas could potentially result in temporary habitat loss, as salt marsh harvest mice would avoid illuminated areas at night. Additionally, increases in illumination of adjacent habitat could increase predation on the species by making them more visible to predators. Implementation of MM BIO-1 Implement Biological Resource Protection Measures during Construction and MM BIO-20 Salt Marsh Harvest Mouse Habitat Replacement would reduce impacts to the salt marsh harvest mouse to a less than significant level.

Other Special-status Mammal Species

Bats-Pallid Bat, Townsend's Big-Eared Bat, and Western Mastiff Bat, (SSC – Species of Special Concern). Three special-status bat species (Pallid bat, Townsend's big-eared bat, and Western Mastiff bat)

have potential to occur in the RSA through occupation of existing bridges, culverts, building structures, and trees adjacent to the proposed Project corridor. Bats commonly roost between narrow spaces above bridge beams, above or behind intact expansion or insulation boards, within concrete spalls, pipe collars and similar crevices whose openings are not oriented towards the ground. For special-status and common bat species, construction activities could result in the removal or disturbance of potential nesting habitat, mortality or injury; the permanent conversion of occupied nesting and foraging habitat to rail or station infrastructure; and fragmentation of habitats and landscapes resulting from construction of the proposed Project. Specifically, the proposed Project has potential to temporarily affect bat species due to work adjacent to existing bridges over waterways, creeks, and other portions of the proposed Project corridor adjacent to culverts, trees, and other potential bat roosting habitat.

If construction occurs during the bat maternity season (generally April 1 to August 31), bat roosts could also be disturbed, which could disrupt bat breeding or roosting activity. In addition, increased lighting after sunset could disrupt foraging activities by special-status bat species, causing them to leave an area that has prolonged disturbance. 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 collisions with construction equipment. Some maintenance activities (e.g., surface treatments including chip sealing, crack filling, crack sealing, patching) can kill/entomb bats or cause the abandonment of non-volant young. Additionally, these activities can create excessive noise, vibrations, and modify thermal conditions of roosts; and consequently, may promote roost abandonment. Nighttime maintenance activities can also affect special-status bat species. Light, odors and noise can delay or discourage bats from emergence, or potentially, cause site abandonment. The proposed Project may result in the construction of various rail infrastructure including new bridges over Ward and Alameda creeks, which could provide additional roosting opportunities for special-status bat species.

The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan which would minimize indirect impacts. To mitigate potentially significant impacts on special-status bats during construction activities, including direct take of individuals and loss of roosts, , Mitigation Measure MM BIO-1 Implement Biological Resource Protection Measures during Construction and MM BIO-16 Bat Habitat Suitability Assessment and Surveys would be required. MM BIO-1 requires a mandatory environmental awareness training program for all on-site construction personnel. MM BIO-16 would require a bat habitat suitability assessment at all locations where suitable habitat and proposed Project-related impacts would occur. MM BIO-1 requires that work in areas where night roosting is known or suspected to be limited to daylight hours where feasible. Implementation of these measures would reduce construction related impacts on special-status bat species to less than significant.

Operations

Special-Status Plants

During operation of the proposed Project, maintenance activities could include, but are not limited to, cleaning, preventative maintenance to preserve and lengthen service life and technical or specialized repairs. These activities may involve the operation of support vehicles and equipment, pavement repair, welding and grinding operations and already occur within the existing rail corridor as part of existing rail operations. Implementation of the proposed Project would result in

the continuation of current maintenance activities within the rail corridor. Therefore, operational impacts on special-status plants are anticipated to be less than significant.

Special-Status Invertebrates

Crotch's Bumble Bee and Western Bumble Bee (CE – California Candidate Endangered)

During operation of the proposed Project, maintenance activities could include, but are not limited to, cleaning, preventative maintenance to preserve and lengthen service life and technical or specialized repairs. These activities may involve the operation of support vehicles and equipment, pavement repair, welding and grinding operations and already occur within the existing rail corridor as part of existing rail operations. Implementation of the proposed Project would result in the continuation of current maintenance activities within the rail corridor. Therefore, operational impacts on Crotch's bumble bee and western bumble bee are anticipated to be less than significant.

Monarch Butterfly (FC – Federal Candidate)

Proposed Project operations would include passing trains and inspection and maintenance activities along the railroad ROW. The monarch butterfly may be able to access the railroad ROW and be present during operational activities. Because inspection and maintenance activities would be a continuation of existing inspection and maintenance activities within the rail corridor, operation of the proposed Project would not cause any new impacts on the monarch butterfly.

Special-Status Fish

Central California Coast Steelhead (FT – Federally Threatened) and Green Sturgeon – southern DPS (FT – Federally Threatened/SSC – Species of Special Concern)

Operational noise and vibration impacts from trains crossing the new railroad bridge over Alameda Creek could result in substrate vibrations and sounds that could potentially startle juvenile and adult steelhead, thus increasing the risk of predation for juveniles and adults. To reduce impacts from noise to a less than significant level for green sturgeon and steelhead, MM BIO-19 Fish Passage and Noise Analysis would be required. This measure requires a noise study be conducted to determine current dB levels of Alameda Creek and the anticipated noise levels of operation activities, as well as proposed methods of reducing noise levels should they be found to exceed 150 dB. The additional noise study analysis would be done in coordination with NMFS and CDFW during final design and will establish the approved construction work window for steelhead and green sturgeon, which is required to be observed per MM BIO-8 Steelhead and Green Sturgeon Work Window.

In addition, additional permanent piers in the Alameda Creek could create upstream and downstream migration impediments (e.g., narrowing the passage corridor, debris accumulation, scour, and creating predatory fish and bird habitat) potentially inhibiting feeding and rearing of steelhead and green sturgeon. Construction of an additional bridge may affect steelhead and green sturgeon through increased shading of Alameda Creek. However, implementation of MM BIO-10 Steelhead and Green Sturgeon Habitat Replacement, MM BIO-17 Compensate for the Loss of Riparian Habitat, and MM BIO-19 Fish Passage and Noise Analysis would mitigate impacts on the abundance, productivity, spatial structure, or diversity of Central California DPS steelhead and green sturgeon to a less than significant level.

Special-Status Amphibians and Reptiles

Western Pond Turtle (SSC – Species of Special Concern). Implementation of the proposed Project may also result in an increase in the shading of Alameda Creek. Since the western pond turtle may utilize portions of Alameda Creek to bask and thermoregulate, additional shading of Alameda Creek may result in an impact on the species. To reduce impacts associated with additional shading of Alameda Creek to a less than significant level, MM BIO-17 (Compensate for the Loss of Riparian Habitat) would be required.

Special-Status Birds, including Migratory Birds

Operational impacts on special-status bird species, including those covered by the MBTA, are not anticipated to be significant when compared to existing conditions. There may be changes in the frequency and timing of rail traffic throughout the proposed Project area, however, rail traffic throughout the rail corridor is anticipated to be similar to noise levels generated from existing railroad traffic. During operation of the proposed Project, maintenance activities could include, but are not limited to, cleaning, preventative maintenance to preserve and lengthen service life and technical or specialized repairs. These activities may involve the operation of support vehicles and equipment, pavement repair, welding and grinding operations which already occur within the existing rail corridor as part of existing rail operations. In addition, within the existing rail corridor, regular maintenance occurs that greatly limits the growth of any vegetation including non-native grasslands, which could be considered foraging habitat for special-status bird species. As this limitation to foraging habitat is already present within the existing corridor this would result in no new impact due to the proposed Project. Therefore, operational impacts on the special-status bird species addressed under construction above are anticipated to be less than significant with no mitigation measures required.

Special-Status Mammals

Federally Listed Mammal Species

Salt Marsh Harvest Mouse (FE – Federally Endangered/SE – State Endangered/FP – Fully Protected). During operation of the Project, maintenance activities could include, but are not limited to, cleaning, preventative maintenance to preserve and lengthen service life and technical or specialized repairs. These activities may involve the operation of support vehicles and equipment, ballast repair, welding and grinding operations and already occur within the existing rail corridor as part of existing rail operations. Implementation of the proposed Project would result in the continuation of maintenance activities within the rail corridor. Therefore, operational impacts on the salt marsh harvest mouse are anticipated to be less than significant.

Other Special-status Mammal Species

During operation of the proposed Project, maintenance activities could include, but are not limited to, cleaning, preventative maintenance to preserve and lengthen service life and technical or specialized repairs. Minor maintenance activities typically have minor or no impact on bats. Operational activities are anticipated to be the same as existing activities; therefore, operational impacts on special-status bats are anticipated to be less than significant.

3.5.6.2 (b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Project Alternative

No Impact. Under the No Project Alternative, the Capitol Corridor passenger rail service between Oakland and San Jose would not be relocated from the Niles Subdivision to the Coast Subdivision associated with the proposed Project. Improvements proposed for the Coast and Niles Subdivisions associated with the proposed Project would not occur. Capitol Corridor passenger trains would continue to operate based on current routes with no changes. Therefore, the No Project Alternative would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

Proposed Project

Critical Habitat

Less Than Significant Impact with Mitigation Incorporated. The biological RSA contains designated critical habitat for southern distinct population segment green sturgeon and snowy plover, as shown on Figure 3.5-1; however, the critical habitat for sturgeon occurs outside of the proposed Project footprint. The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize water quality impacts. To avoid potential direct or indirect effects on critical habitat for green sturgeon (southern DPS), MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-7 Steelhead and Green Sturgeon Work Window, and MM BIO-8 Dewatering and Aquatic Species Relocation Plan would be implemented. Implementation of the mitigation measures would reduce construction related impacts on green sturgeon (Southern DPS) critical habitat to a less than significant level. No impact to snowy plover critical habitat is anticipated.

Essential Fish Habitat

Less Than Significant Impact with Mitigation Incorporated. EFH for Pacific salmonids and groundfish occurs throughout the entire biological resource area, however, only a small amount of salmonid and groundfish EFH occurs within the proposed Project footprint. The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize impacts to water quality. In order to avoid potential direct or indirect effects on EFH occurring within and adjacent to the proposed Project footprint, MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-7 Steelhead and Green Sturgeon Work Window, and MM BIO-8 Dewatering and Aquatic Species Relocation Plan would be implemented. Implementation of the mitigation measures would reduce construction related impacts on EFH to a less than significant level.

California Sensitive Natural Communities

Less Than Significant Impact with Mitigation Incorporated. Construction and demolition of existing and new tracks would require ground disturbance, grading, possible removal of vegetation,

relocation of existing utilities, and staging of equipment and materials. This could directly affect sensitive natural communities present in the biological RSA. Additionally, impacts in the form of dust and contaminant runoff (i.e., oil, grease, concrete) may occur as a result of construction activities within the biological RSA and decrease the quality of sensitive communities. However, the only California sensitive natural communities that are mapped as occurring within the biological RSA is mixed riparian forest and aquatic resources (Attachment 3 of Appendix C). The mixed riparian forest has a state rarity rank of S3, meaning it is vulnerable and at moderate risk of extinction or elimination. Impacts on aquatic resources, their significance, and mitigation are described in detail under Impact Discussion (c) below. With the implementation of MM BIO-1 Implement Biological Resource Protection Measures and MM BIO-17 Compensate for the Loss of Riparian Habitat during Construction, the proposed Project would avoid impacts on sensitive natural communities during construction. All temporary impacts on sensitive natural communities would be avoided, minimized and/or mitigated. With the implementation of MM BIO-1 and MM BIO-17, construction and operational impacts would be reduced to a less than significant level. As noted above, additional discussion regarding aquatic species is below.

Jurisdictional Aquatic Resources

Less Than Significant Impact with Mitigation Incorporated. Five jurisdictional aquatic resources were mapped within the biological RSA: estuarine, freshwater emergent wetland, lacustrine, riverine, and saline emergent wetland. However, none of these resources occur within the proposed Project footprint (Attachment 3 of Appendix C). The proposed Project would implement BMP HYD-1 Stormwater Management and Treatment Plan which would minimize water quality impacts. To avoid potential direct or indirect effects on jurisdictional aquatic resources, MM BIO-1 Implement Biological Resource Protection Measures during Construction would be implemented to reduce impacts to less than significant.

Invasive Plant Species

Less Than Significant Impact with Mitigation Incorporated. Potential impacts from invasive species associated with the construction and operation of transportation projects are considered permanent impacts. Implementation of the proposed Project has the potential to spread invasive species to adjacent native habitats in the RSA through the entering and exiting of contaminated construction equipment, the inclusion of invasive species in seed mixtures and mulch, and the improper removal and disposal of invasive species causing seed to be spread along the rail corridor. To avoid potential direct or indirect effects attributable to the spread of invasive plant species within the RSA, MM BIO-21 (Weed Abatement Program) will be implemented to reduce impacts to less than significant.

3.5.6.3 (c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Project Alternative

No Impact. Under the No Project Alternative, the Capitol Corridor passenger rail service between Oakland and San Jose would not be relocated from the Niles Subdivision to the Coast Subdivision associated with the proposed Project. Improvements proposed for the Coast and Niles Subdivisions

associated with the proposed Project would not occur. Capitol Corridor passenger trains would continue to operate based on current routes with no changes. Therefore, the No Project Alternative would not 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, or other means.

Proposed Project

Less Than Significant Impact with Mitigation Incorporated. Construction and demolition of existing and new tracks would require ground disturbance, grading, possible removal of vegetation, relocation of existing utilities, and staging of equipment and materials that could directly affect aquatic resources through direct removal, filling, hydrological interruption, compaction, or sedimentation. Additionally, impacts in the form of dust and contaminant runoff (e.g., oil, grease, concrete) may occur as a result of construction activities and decrease the quality of aquatic resources within the biological RSA.

Although the aquatic RSA is highly urbanized and disturbed in nature, direct impacts on state and federally protected wetlands and waters could occur during proposed Project construction under the proposed Project. This would occur at several locations, including Alameda Creek, and other stream crossings located within the biological RSA.

Therefore, the proposed Project could result in permanent and temporary impacts on aquatic resources and WOUS. The proposed Project includes BMP HYD-1 (Protect Water Quality and Minimize Sedimentation Runoff During Construction), which protects water quality during construction. However, with the implementation of MM HYD-1 Stormwater Management and Treatment Plan, which avoids impacts on aquatic resources and MM BIO-17 Compensate for the Loss of Riparian Habitat, which mitigates for the loss of aquatic resources, impacts on aquatic resources would be reduced to a less than significant level. Anticipated required permits are discussed below.

3.5.6.4 (d) Would the project interfere substantially with the movement of any 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?

No Project Alternative

No Impact. Under the No Project Alternative, the Capitol Corridor passenger rail service between Oakland and San Jose would not be relocated from the Niles Subdivision to the Coast Subdivision associated with the proposed Project. Improvements proposed for the Coast and Niles Subdivisions associated with the proposed Project would not occur. Capitol Corridor passenger trains would continue to operate based on current routes with no changes. Therefore, the No Project Alternative would not interfere substantially with the movement of any 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.

Proposed Project

Less Than Significant Impact with Mitigation Incorporated. Several natural landscape blocks and essential habitat connectivity areas occur adjacent to the biological RSA. In addition, a corridor for fish passage is associated with Alameda Creek and other creeks occurring within the Coast Subdivision where new railroad bridges would be constructed or culverts installed.

The proposed Project has the potential to impact natural landscape blocks or essential habitat connectivity areas identified by CDFW BIOS. As described under Section 3.5.4.1, permanent impacts on Alameda Creek associated with a new railroad bridge structure (i.e., in-water piers) are anticipated under the proposed Project. Construction of in-channel bridge piers has potential to affect fish and wildlife passage during construction. If dewatering is needed as part of the pier construction in Alameda Creek, western pond turtle and other native fish and wildlife species may be deterred from passing upstream or downstream. However, the deterrence would be a temporary impact. The installation of these new piers would not have a permanent impact on the movement of native fish and wildlife species through Alameda Creek. The proposed Project includes implementation of BMP HYD-1 Stormwater Management and Treatment Plan, which would minimize water quality impacts during construction. During construction, dewatering of the work area would be required. This would require the temporary installation of a cofferdam and may involve temporary work pads in the stream channel. With implementation of MM BIO-1 Implement Biological Resource Protection Measures during Construction, MM BIO-8 Steelhead and Green Sturgeon Work Window, MM BIO-9 Dewatering and Aquatic Species Relocation Plan, MM BIO-10 Steelhead and Green Sturgeon Habitat Replacement, and MM BIO-17 Compensate for the Loss of Riparian Habitat, construction related impacts to wildlife movement would be considered less than significant.

During maintenance and operations, the installation of these new structures would not have a permanent impact on the movement of native fish and wildlife species through Alameda Creek. The proposed Project would have no impact on natural landscape blocks or essential habitat connectivity (including fish passage) areas during operational activities. With implementation of MM BIO-19, final design of the proposed Project would ensure that any new bridges or culverts would not impede fish passage. Therefore, proposed Project-related construction would be considered less than significant with implementation of MM BIO-19.

3.5.6.5 (e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Project Alternative

No Impact. Under the No Project Alternative, the Capitol Corridor passenger rail service between Oakland and San Jose would not be relocated from the Niles Subdivision to the Coast Subdivision associated with the proposed Project. Improvements proposed for the Coast and Niles Subdivisions associated with the proposed Project would not occur. Capitol Corridor passenger trains and UPRR freight trains would continue to operate based on current routes with no changes. Therefore, the No Project Alternative would not conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Proposed Project

Less Than Significant Impact with Mitigation Incorporated. The Cities of Hayward, Fremont, Newark, Oakland, San Leandro, and Union City all have policies and ordinances to protect and preserve certain trees and other sensitive native biological resources, such as wildlife habitat and native plant species. As described under *CEQA Threshold* a), the proposed Project could result in permanent and temporary impacts on vegetation and aquatic communities. These habitats are protected by applicable City policies and ordinances as well as applicable resource agency rules and regulations. Protected trees covered under local jurisdiction ordinances, as described in Section 3.5.1, could be impacted through removal and would require relocation or replacement. In the absence of mitigation, these impacts are considered potentially significant. However, with implementation of MM BIO-1 (Implement Biological Resource Protection Measures during Construction), MM BIO-2 (Rare Plant Pre-construction Surveys) and MM-BIO-18 (Protected Trees Pre-construction Surveys), proposed Project-related construction impacts would be considered less than significant. During operation, the proposed Project would not include any activities that would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

BCDC has authorization to issue a permit to place fill in the Bay if it is determined that a proposed project would be consistent with the provisions of the McAteer-Petris Act, with the policies established in the Bay Plan and if BCDC determines that the activity to be permitted is necessary for the health, safety, or welfare of the public in the Bay Area. The proposed Project would not conflict with the BCDC regulations. Sea-level rise considerations that would involve BCDC area described in Chapter 4, Sea-Level Rise.

3.5.6.6 (f) Would the project conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Project Alternative

No Impact. Under the No Project Alternative, the Capitol Corridor passenger rail service between Oakland and San Jose would not be relocated from the Niles Subdivision to the Coast Subdivision associated with the proposed Project. Improvements proposed for the Coast and Niles Subdivisions associated with the proposed Project would not occur. Capitol Corridor passenger trains would continue to operate based on current routes with no changes. Therefore, the No Project Alternative would not conflict with an adopted habitat conservation plan.

Proposed Project

No Impact. There are no local, regional, or state habitat conservation plans within the biological RSA. Therefore, the proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

3.5.7 Mitigation Measures

The following Mitigation Measures would be applied to the proposed Project:

MM BIO-1 Implement Biological Resource Protection Measures during Construction.

CCJPA will implement the following measures during construction to minimize direct and indirect impacts on special-status species.

a. Prior to the commencement of construction, CCJPA will designate a CDFW-approved Project Biologist who has familiarity with special-status plant and wildlife species with the potential to be impacted by the proposed Project. The Project Biologist will be responsible for overseeing compliance with protective measures for biological resources during vegetation clearing and work activities within and adjacent to areas of special-status species habitat. The Project Biologist will be familiar with the local habitats, plants, and wildlife, and will maintain communications with the contractor to ensure that issues relating to biological resources are appropriately and lawfully managed. The Project Biologist may designate qualified biologists or biological monitors to help oversee proposed Project compliance or conduct pre-construction surveys for special-status species. These biologists will have familiarity with the species for which they will be conducting pre-construction surveys or monitoring during construction activities.

b. The Project Biologist or qualified biologist shall review final plans, designate areas that need temporary fencing measures to identify ESAs (e.g., fencing or flagging), and monitor construction activities within and adjacent to areas with native vegetation communities or special-status plant and wildlife species and their habitats. The qualified biologist shall monitor activities within designated areas during critical times such as vegetation removal, initial ground-disturbing activities, and the installation of BMPs and fencing to protect native species. The qualified biologist will also track proposed Project wildlife and regulatory agency permit requirements, conservation measures, and general avoidance and minimization measures are properly implemented and followed. The qualified biologist shall check construction barriers or exclusion fencing and shall provide corrective measures to the contractor to ensure that the barriers or fencing are maintained throughout construction.

c. The qualified biologist will have the authority to stop work if a special-status wildlife species is encountered within or adjacent to the proposed Project footprint during construction. The Project Biologist or qualified biologist will request that the resident engineer halt work within 100 feet of the encounter (or within an appropriate distance, as determined by the Project Biologist or qualified biologist) and confer with CCJPA to confirm proper implementation of species and habitat protection measures. Construction activities shall cease until the Project Biologist or qualified biologist determines that the animal will not be harmed or that it has left the construction area on its own. The Project Biologist will report any encounters or other non-compliance issue(s) to CCJPA. CCJPA will notify the appropriate regulatory agency(is) within 24 hours of the occurrence.

d. Prior to the start of construction, all proposed Project personnel and contractors who will be on site during construction will complete mandatory training

conducted by the Project Biologist or a designated qualified biologist. Any new proposed Project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program training before they commence with work. The training will advise workers of potential impacts on special-status vegetation communities and special-status species, and the potential penalties for impacts on such vegetation communities and species. At a minimum, the training will include the following topics:

i. Occurrences of special-status species and special-status vegetation communities in the proposed Project area (including vegetation communities subject to USACE, CDFW, and RWQCB jurisdiction).

ii. The purpose for resource protection.

iii. Sensitivity of special-status species to human activities.

iv. Protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced to avoid special-status resource areas in the field (i.e., avoided areas delineated on maps or on the proposed Project site by fencing).

v. Environmentally responsible construction practices.

vi. The protocol to resolve conflicts that may arise at any time during the construction process.

vii. Reporting requirements and procedures to follow should a special-status species be encountered during construction.

viii. Avoidance and minimization measures designed to reduce the impacts on special-status species.

ix. The training program will include color photos of special-status species and special-status vegetation communities. Following the education program, the photos will be posted in the contractor and resident engineer's office, where the photos shall remain throughout the duration of proposed Project construction. Photos of the habitat in which special-status species are found will be posted onsite.

x. The contractor will be required to provide CCJPA with evidence of the employee training (e.g., a sign-in sheet) on request. Proposed Project personnel and contractors will be instructed to immediately notify the Project Biologist or designated biologist of any incidents that could affect special-status vegetation communities or special-status species, and incidents that could include fuel leaks or injury to any wildlife. The Project Biologist will notify CCJPA of any incident and CCJPA will notify the appropriate regulatory agency within 24 hours of notification.

e. The Project Biologist will monitor the proposed Project site immediately prior to and during construction to identify the presence of invasive weeds and will

recommend measures to avoid their inadvertent spread in association with the proposed Project. Such measures will include inspection and cleaning of construction equipment and use of eradication strategies. All heavy equipment will be washed and cleaned of debris prior to entering special-status species habitats to minimize the spread of invasive weeds.

f. At least ten days prior to initiating construction, the Contractor will submit to CCJPA proposed plans for ESA fencing/flagging and initial clearing and grubbing of the proposed Project footprint at that segment. Following implementation of CCJPA-approved delineation plan for ESA's and construction area perimeters in the field, and at least five days prior to initiating construction at that segment, CCJPA will submit final plans for initial clearing and grubbing of the proposed Project footprint to the appropriate regulatory agencies for approval; these plans will also identify locations of established ESA protections and will include photographs that show the fenced and flagged ESA limits and all areas to be impacted or avoided, including perimeter fencing and flagging.

g. All native or special-status plant or wildlife habitat within and adjacent to the designated proposed Project footprint will be designated as ESAs on proposed Project maps. Following CCJPA approval of final plans for ESA fencing and flagging, and initial clearing and grubbing, and prior to construction, the Contractor will delineate the proposed Project footprint, including construction, staging, lay-down, and equipment storage areas, and establish construction boundaries, with fencing, along the perimeter of the identified construction area to protect adjacent special-status wildlife habitats and special-status plant populations. . In areas where fencing cannot be installed, other means of identifying the ESA can be used, such as flagging or paint. ESAs within and adjacent to the proposed Project footprint will be clearly delineated with fencing or flagging prior to construction to inform construction personnel where the ESAs are located. ESA fencing may include orange plastic snow fence, orange silt fencing, or stakes and flagging in areas of flowing water. No personnel, equipment, or debris will be allowed within the ESAs. The Contractor will install fences and flagging in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot or operating equipment. Delineations will be approved by the Project Biologist or qualified biologist prior to any ground disturbance. If work inadvertently occurs beyond the flagged or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of CCJPA and the appropriate regulatory agencies. Temporary construction fences, flagging, and markers will be maintained in good repair by the contractor throughout the duration of work at that segment, and will be removed upon completion of proposed Project construction at that segment.

h. No work activities, materials or equipment storage or access will be permitted outside the proposed Project footprint. All parking and equipment storage by the contractor related to the proposed Project will be confined to the proposed Project footprint. Areas outside and adjacent to the proposed Project footprint will not be used for parking or equipment storage. Proposed Project-related

vehicle traffic will also be restricted to the proposed Project footprint and established roads and construction access points.

i. When nighttime activities are required, then workers will direct all lights for nighttime lighting into the work area and will minimize the lighting of natural habitat areas adjacent to the work area. The contractor will use light glare shields to reduce the extent of illumination. If the work area is located near surface waters, the lighting will be shielded such that it does not shine directly into the water.

j. Vegetation clearing will be confined to the minimal area necessary to facilitate construction activities. Cleared vegetation and spoils will be disposed of daily at a permanent offsite disposal facility or at a temporary onsite location that will not create habitat for special-status wildlife species. Spoils and dredged material will be disposed of at an approved site or facility in accordance with all applicable federal, state, and local regulations.

k. All garbage will be disposed of in wildlife-proof containers and will be removed from the proposed Project area daily during the construction period. Vehicles carrying trash will be required to have loads covered and secured to prevent trash and debris from falling onto roads and adjacent properties.

l. Construction equipment used for the proposed Project will be maintained in accordance with manufacturer's recommendations and requirements and will be maintained to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures).

m. The Contractor will store all construction-related vehicles and equipment in the designated staging areas. These areas will not contain native or sensitive natural communities and will not provide habitat for special-status plant or wildlife species.

n. The Contractor will avoid wildlife entrapment by completely covering or providing escape ramps for all excavated steep-walled holes or trenches that are more than 1 foot deep at the end of each construction workday. The qualified biologist will inspect open trenches and holes and will remove or release any trapped wildlife found in the trenches or holes prior to being refilled by the construction contractor.

o. Wildlife species can be attracted to den-like structures and may enter stored materials or equipment and become trapped or injured. All construction pipes, culverts, or similar features; construction equipment; or construction debris left overnight in areas that may be occupied by wildlife species that could occupy such structures will be inspected by a qualified biologist prior to being used for construction. Such inspections will occur at the beginning of each day's activities for those materials to be used or moved that day. If necessary, and under the direct supervision of the qualified biologist, the structure may be moved up to one time to isolate it from construction activities, until the wildlife species has moved from the structure of their own volition, has been captured and relocated, or has otherwise been removed from the structure.

p. Capture and relocation of trapped or injured special-status wildlife species will only be performed by personnel with appropriate state and/or federal permits. CCJPA and resource agencies will be notified by biologists within 24 hours of discovery of injury to or mortality of a special-status species that results from proposed Project-related construction activities or is observed at the construction site. Notification will include the date, time, and location of the incident or of the discovery of an individual special-status species that is dead or injured. For a special-status species that is injured, general information on the type or extent of injury will be included. The location of the incident will be clearly indicated on a USGS 7.5-minute quadrangle and/or similar map at a scale that will allow others to find the location in the field, or as requested by resource agencies. A follow-up report will be prepared for governing regulatory agencies, including dates, locations, habitat description, and any corrective measures taken to protect special-status species encountered. Any general sightings (no injury or mortality) will be recorded per monitoring requirements. For each special-status species encountered, the biologist will submit a completed CNDDB field survey form (or equivalent) to CDFW no more than 90 days after completing the last field visit to the proposed Project site.

q. The spread of dust from work sites to sensitive natural communities or habitats for special-status plant or wildlife species on adjacent lands will be minimized by use of a water truck. During dry conditions, dirt access roads, haul roads, and spoils areas will be watered at least twice each day when being used during construction.

r. The Contractor will strictly limit their activities, vehicles, equipment, and construction materials to established roads and the proposed Project footprint limits. Posted speed limit signs on local roads and a 15 mile-per-hour speed limit along access and haul routes will be observed. Extra caution will be used when special-status reptile species may be basking on roads.

s. To avoid injury or death to wildlife, no firearms will be allowed on the proposed Project site except for those carried by authorized security personnel or local, state, or federal law enforcement officials.

t. To prevent harassment, injury, or mortality of special-status wildlife species by dogs or cats, no canine or feline pets of workers will be permitted in the construction area.

u. Plastic monofilament netting or similar material will not be used for erosion control because smaller wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackifier hydroseeding compounds. This limitation will be communicated to the contractor through specifications or special provisions included in the construction bid solicitation package.

v. Rodenticides and herbicides will be used in accordance with the manufacturer recommended uses and applications, and in such a manner as to prevent primary or secondary poisoning of special-status fish and wildlife species and depletion of prey populations or vegetation upon which they depend. All uses of

such compounds will observe label and other restrictions mandated by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, and other appropriate state and federal regulations.

w. Hazardous materials and equipment stored overnight, including small amounts of fuel to refuel handheld equipment, will be stored within secondary containment at least 50 feet from open water to the fullest extent practicable.

x. The Contractor will be required to conduct vehicle refueling in upland areas where fuel cannot enter Waters of the U.S. or Waters of the State, and in areas that do not have suitable habitat to support special-status species. Any fuel containers, repair materials including creosote treated wood, and/or stockpiled material that is left on site overnight will be secured in secondary containment within the construction work area or a staging area and covered with plastic at the end of each workday.

y. In the event that no activity is to occur in the work area for the weekend and/or a period of time greater than 48 hours, the Contractor will remove all portable fuel containers from the proposed Project site or place them within a secured container.

z. Equipment and containers will be inspected daily for leaks. Should a leak occur, contaminated soils and surfaces will be cleaned up and disposed of following the guidelines identified in the Stormwater Pollution Prevention Plan (SWPPP), Materials Safety Data Sheets, and any specifications required by other permits issued for the proposed Project.

aa. If maintenance of equipment must occur onsite, fuel/oil pans, absorbent pads, or appropriate containment will be used to capture spills/leaks. Where feasible, maintenance of equipment will occur in upland areas where fuel cannot enter WOUS or WOS and in areas that do not have suitable habitat to support special-status species.

MM BIO-2 Rare Plant Pre-construction Surveys.

At least one year prior to initial ground disturbance and during the appropriate blooming period (June through November), a focused survey for rare plants, including Congdon's tarplant and California seablite, will be conducted by a qualified plant ecologist within suitable habitat in the proposed Project footprint (e.g., areas of ruderal grassland, estuarine, and saline emergent wetland habitat) and a 50-foot buffer around the identified suitable habitat. This buffer may be increased by the qualified plant ecologist depending on site-specific conditions and activities planned in the area but must be at least 50 feet wide for permanent impacts. Situations for which a greater buffer may be required include proximity to proposed activities expected to generate large volumes of dust that cannot be effectively mitigated, such as grading; potential for proposed Project activities to alter hydrology supporting the habitat for the species; or proximity to proposed structures that may shade areas farther than 50 feet away. The purpose of the survey will be to assess the presence or absence of Congdon's tarplant and California seablite. If the target species are not found in the impact area or the identified buffer, then no further

mitigation will be warranted. If Congdon's tarplant and/or California seablite are observed on or in proximity to the proposed Project site, or during proposed Project surveys, CCJPA will submit California Natural Diversity Data Base (CNDDB) forms and maps to the CNDDB within five working days of the sightings. In addition, if California seablite is found, consultation with USFWS would be required.

MM BIO-3 Rare Plant Avoidance Buffers.

To the extent feasible, and in consultation with a qualified plant ecologist and USFWS, CCJPA and/or its contractors will design and construct the proposed Project to avoid and minimize impacts on all populations of Congdon's tarplant and California seablite within the proposed Project footprint or within the identified buffer of the impact area. Avoided Congdon's tarplant and California seablite populations will be protected by establishing and enforcing ESAs with fencing and appropriate signage between plant populations and the impact area. If a reduced buffer is needed for temporary impacts, the qualified plant ecologist will work with the proposed Project construction team to minimize temporary indirect impacts (e.g., watering of construction areas periodically during construction to minimize dust mobilization). All such populations located in the impact area or the identified buffer, and their associated designated avoidance areas, will be clearly depicted on any construction plans. In addition, prior to initial ground disturbance or vegetation removal, the limits of the identified buffer around Congdon's tarplant and California seablite individuals to be avoided will be marked in the field (e.g., with flagging, fencing, paint, or other means appropriate for the site). This marking will be maintained intact and in good condition throughout proposed Project-related construction activities.

- If more than 10 percent of a population of Congdon's tarplant (by occupied area or individuals) would be impacted as determined by a qualified plant ecologist, then Mitigation Measure MM BIO-4 will be implemented.
- If complete avoidance of California seablite is not feasible, then Mitigation Measure MM BIO-4 will be implemented.

MM BIO-4 Rare Plant Mitigation/Habitat Mitigation Management Plan.

If avoidance of more than 10 percent of the existing Congdon's tarplant is not feasible, and complete avoidance of California seablite individuals and/or populations is not feasible, CCJPA will consult relevant regulatory agency(ies) (e.g. CDFW/USFWS) regarding compensatory mitigation to be provided via the preservation, enhancement, and management of occupied habitat for the species, or the creation and management of a new population, or as directed by CDFW/USFWS.

- To compensate for impacts on Congdon's tarplant, off-site habitat occupied by the species will be preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and at least one occupied acre preserved for each occupied acre affected), for any impact over the 10 percent significance threshold. Alternately, seed from the population to be impacted may be harvested and used either to expand an existing population (by a similar number/occupied area to compensate for

impacts to Congdon's tarplant beyond the 10 percent significance threshold) or establish an entirely new population in suitable habitat.

- Areas proposed to be preserved as compensatory mitigation for impacts on Congdon's tarplant and/or California seablite must contain verified extant populations of the species, or in the event that enhancement of existing populations or establishment of a new population is selected, the area must contain suitable habitat for the species as identified by a qualified plant ecologist. Mitigation will be achieved through a combination of in-kind creation, restoration, and/or enhancement as determined to be appropriate through consultation with the resource agencies. Mitigation will first be considered on site, then with an approved mitigation bank, and thirdly through offsite mitigation. The appropriate permit applications will be submitted to state and federal regulatory agencies. The permits issued by these agencies will finalize the mitigation requirements.

A habitat mitigation and monitoring plan (HMMP) will be developed and implemented for the mitigation lands. That plan will include, at a minimum, the following information:

- A summary of habitat impacts and the proposed mitigation;
- A description of the location and boundaries of the mitigation site and description of existing site conditions;
- A description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for Congdon's tarplant and California seablite;
- A description of measures to transplant individual plants or seeds from the impacted area to the mitigation site, if appropriate (which will be determined by a qualified plant or restoration ecologist);
- Proposed management activities to maintain high-quality habitat conditions for Congdon's tarplant and California seablite;
- A description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, and monitoring schedule. At a minimum, performance criteria will include demonstration that any plant population fluctuations over the monitoring period of a minimum of five years for preserved populations and a minimum of 10 years for enhanced or established populations do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (e.g., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management);
- If a new population is established, the new population must contain at least 200 individuals or the same number of impacted individuals, whichever is greater,

by year five. This is to make sure the created population will be large enough to expect to persist and gain sufficient dedicated pollination services. If year five is a poor weather year for summer and fall-blooming annual plants and reference populations show a decline, these criteria can be measured in the next year occurring with average or better rainfall; and

- Contingency measures for mitigation elements that do not meet performance criteria.

The HMMP will be prepared by a qualified plant or restoration ecologist. CDFW and USFWS approval of the HMMP will be required before proposed Project impacts on Congdon's tarplant or California seablite occur.

MM BIO-5 Monarch Butterfly Avoidance.

Prior to construction, CCJPA will make sure that a qualified biologist conducts a pre-construction survey for overwintering monarchs or milkweed plants within 50 feet of the proposed Project footprint prior to any ground disturbance associated with the proposed Project. If overwintering monarchs are found to be present in any tree within 50 feet of any disturbance area or milkweed is found within 50 feet of any disturbance area during the pre-construction survey, the following guidelines will also be implemented:

- The tree and/or milkweed will be mapped, delineated with ESA fencing, and avoided;
- The modification and/or minimizing of herbicide usage to promote growth of milkweed and flowering plants outside of UPRR ROW; and
- Use local seed mixes that include a variety of flowering plants and milkweed.

MM BIO-6 Bumble Bee Pre-construction Surveys.

Within one year prior to construction, CCJPA will perform a habitat assessment for Crotch's and western bumble bee be conducted within the proposed Project footprint and an appropriate survey buffer be established by a qualified biologist with experience surveying for and observing Crotch's and western bumble bee. If the qualified biologist determines that suitable habitat is present, surveys will be conducted to determine the presence/absence of Crotch's and western bumble bee. Surveys will be conducted during flying season when the species are most likely to be detected above ground, between March 1 to September 1. Survey results, including negative findings, will be submitted to the CDFW prior to implementing proposed Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's and/or western bumble bee. At minimum, a survey report will provide the following:

a) A description and map of the survey area, focusing on areas that could provide suitable habitat for Crotch's and/or western bumble bee;

b) Field survey conditions including name(s) of qualified entomologist(s) and brief qualifications; date and time of survey; survey duration; general weather conditions; survey goals, and species searched;

c) Map(s) showing the location of nests/colonies; and,

d) A description of physical (e.g., soil, moisture, slope) and biological (e.g., plant composition) conditions where each nest/colony is found, a sufficient description of biological conditions, primarily impacted habitat, will include native plant composition (e.g., density, cover, and abundance) within impacted habitat (e.g., species list separated by vegetation class; density, cover, and abundance of each species).

If the target species is not found in the impact area, then no further mitigation will be warranted. If Crotch's bumble bee or western bumble bee individuals are found within the survey area, then Mitigation Measure MM BIO-7 will be implemented.

MM BIO-7 Bumble Bee CESA Section 2080 Coordination.

If a qualified biologist determines Crotch's and/or western bumble bees are present within the proposed Project footprint, CCJPA will develop a plan to minimize impacts to Crotch's and western bumble bee be developed in consultation with a qualified entomologist during final design. The plan will include effective, specific, enforceable, and feasible measures. An avoidance plan will be submitted to CDFW prior to implementing proposed Project-related ground-disturbing activities and/or vegetation removal where there may be impacts to Crotch's and/or western bumble bee. If Crotch's and/or western bumble bees are determined to be present within the proposed Project footprint and it is determined the species will be impacted by proposed Project implementation, appropriate mitigation will be determined in consultation with CDFW.

If Crotch's and/or western bumble bee is detected during the survey, and if impacts to Crotch's and/or western bumble bee cannot be feasibly avoided during proposed Project construction and activities, CCJPA and a designated qualified entomologist coordinate will coordinate with CDFW to obtain appropriate permit for incidental take of Crotch's and/or western bumble bee prior to commencement of proposed Project activities in habitat occupied by the bumble bees. The incidental take permit will quantify and provide appropriate mitigation for impacts on Crotch's and/or western bumble bee habitat. Mitigation for impacts to Crotch's and/or western bumble bee habitat would be at a ratio comparable to the proposed Project's level of impacts.

MM BIO-8 Steelhead and Green Sturgeon Work Window.

In water work within and over Alameda Creek will be restricted to a seasonal window when surface water flows are lowest, and steelhead and green sturgeon are least likely to be present. The specific work windows (e.g., June 15 to October 15) will be in accordance with the terms identified during NMFS consultation, if warranted.

MM BIO-9 Dewatering and Aquatic Species Relocation Plan.

Prior to any construction activities that could occur in Alameda Creek when flowing water is present, CCJPA will prepare a water diversion/dewatering and aquatic species relocation plan. The plan will be submitted to the RWQCB, CDFW, USFWS,

and NMFS for review and concurrence. If warranted, the plan may need to be shared with the Alameda Flood Control District, or USACE. The plan will include but not be limited to the following:

- Detailed qualifications for an approved fish biologist to monitor in-water construction activities and ensure implementation of Dewatering and Aquatic Species Relocation Plan;
- Detailed methods for cofferdam or other barrier placement and dewatering;
- Methods and best management practices for the relocation of special-status fish and other aquatic species to appropriate suitable habitat; and
- If in-water pile driving activities are required, the *Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish* developed and released by Caltrans in November 2015 will be the basis for avoidance and minimization measures.

MM BIO-10 Steelhead and Green Sturgeon Habitat Replacement.

Prior to construction activities, CCJPA will coordinate with the NMFS to determine mitigation ratios for permanent impacts on Central California Coast Distinct Population Segment steelhead habitat and green sturgeon (Southern DPS) critical habitat. Mitigation may include on-site restoration, in-lieu fee payment, purchase of mitigation credits at a NMFS-approved mitigation bank, or as defined by NMFS as part of consultation, if warranted.

MM BIO-11 Western Pond Turtle Pre-construction Surveys.

A CDFW approved qualified biologist will conduct a pre-construction survey for western pond turtle prior to any proposed ground disturbing activities occurring within 350 feet of Alameda Creek, and other waterways in the proposed Project footprint. The survey area will include all disturbance areas within 350 feet of water line. In areas of suitable habitat, the qualified biologist will conduct a pre-construction survey for the species within 48 hours prior to construction activities before construction equipment mobilizes to the proposed Project footprint. If any pond turtles or their nests are found, the biologist will prepare a relocation plan and submit it to the CDFW for written acceptance prior to starting proposed Project activities, and then implement the plan. Construction activities will avoid all pond turtles and their nests including an appropriate buffer as determined by the CDFW approved qualified biologist.

MM BIO-12 Nesting Migratory Birds, Special-Status Birds, and Raptor Pre-construction Surveys.

CCJPA and its contractors will conduct vegetation removal, where required to construct proposed Project features, during the non-breeding season for migratory birds and raptors (generally between September 16 and January 14) to the extent feasible. If construction activities occur between January 15 and September 15, a qualified biologist will conduct a preconstruction survey (within seven days prior to construction activities) to determine whether any active bird nests are present and, if so, identify their locations. The results of the surveys will be submitted to CCJPA

(and made available to the wildlife agencies [USFWS/CDFW], upon request) prior to initiation of any construction activities. Should nesting birds be found, exclusionary buffers will be determined by a qualified biologist. Proposed Project activity will not commence within the buffer areas until a qualified biologist has determined, that the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. The size of the buffer may be adjusted if a qualified biologist and CCJPA determine that such an adjustment would not be likely to adversely affect the nest. The qualified biologist will monitor active nests during construction to confirm that the buffer is adequate and will document and provide notification when the nest has fledged or failed. Consultation with CDFW may be required if species of state-listed special concern, or fully protected species are observed.

MM BIO-13 Burrowing Owl Habitat Assessment.

Prior to the start of construction activities, CCJPA will retain a qualified biologist to conduct a focused burrowing owl habitat assessment in areas of ruderal and grassland habitat within the proposed Project footprint in accordance with the methodologies outlined in the California Department of Fish and Wildlife's (CDFW's) *2012 Staff Report on Burrowing Owl Mitigation*. If burrowing owls or the presence of suitable burrows are detected during the burrowing owl habitat assessment, the qualified biologist, in coordination with CCJPA and CDFW, will implement avoidance, minimization, and mitigation methodologies outlined in CDFW's *2012 Staff Report on Burrowing Owl Mitigation* prior to initiating proposed Project-related activities that may impact burrowing owls or burrowing owl habitat.

MM BIO-14 Salt Marsh Harvest Mouse Avoidance.

Salt marsh harvest mouse (SMHM) will be assumed present within the proposed Project footprint; therefore, the following measures below would be implemented:

- A barrier will be installed at limits of the construction work area to exclude SMHM from the construction area:
    - This exclusionary barrier, which will be shown on the proposed Project plans and will be constructed and installed under the guidance of a biologist qualified to survey for SMHM (must meet permit requirements and be approved by USFWS), will consist of a 3-foot tall, tight cloth, smooth plastic, or sheet-metal (or similar material approved by the USFWS) fence toed into the soil at least 3 inches deep and supported with stakes placed on the inside of the barrier;
    - A qualified biologist will conduct a preconstruction survey of the area every morning, prior to construction activities commencing for the day;
    - The qualified biologist will monitor the installation of the exclusionary barrier and will remain on site to monitor all work performed adjacent to SMHM ESAs;

- Any excavations or open trenches in or adjacent to SMHM habitat will either be backfilled or closed at the end of the construction day, or escape ramps will be provided;
- Following the installation of the exclusionary barrier, the qualified biologist will check its integrity each morning that construction activities occur and will have construction personnel initiate repairs, under the supervision of a qualified biologist immediately as needed.

MM BIO-15 Salt Marsh Harvest Mouse Immediate Work Stoppage.

If a salt marsh harvest mouse or an animal that could be a harvest mouse (e.g., a similar species of mouse), is observed within the work area during construction activities, all work will stop immediately and the qualified biologist will be immediately notified. The animal will be allowed to leave the area on its own and will not be handled except by a qualified, permitted biologist.

MM BIO-16 Bat Habitat Suitability Assessment and Surveys.

A qualified and CDFW-approved bat biologist will survey potentially suitable structures and vegetation during bat maternity season, prior to construction, to assess the potential for the structures' and vegetation's use for bat roosting and bat maternity roosting, as maternity roosts are generally formed in spring. The qualified bat biologist will also perform preconstruction surveys or temporary exclusion within 2 weeks prior to construction, as bat roosts can change seasonally. These surveys will include a combination of structure inspections, exit counts, and acoustic surveys.

If a roost is detected, a bat management plan will be prepared if it is determined that proposed Project construction would result in direct impacts on roosting bats. The bat management plan will be submitted to California Department Fish and Wildlife (CDFW) prior to implementation and include appropriate avoidance and minimization efforts such as:

- **Temporary Exclusion.** If recommended by the qualified bat biologist, to avoid indirect disturbance of roosting bats adjacent to construction activities, temporary bat eviction and exclusion devices will be installed under the supervision of a qualified and permitted bat biologist prior to the initiation of construction activities. Eviction and subsequent exclusion will be conducted during the fall (September or October) to avoid trapping flightless young bats inside during the summer months or hibernating/overwintering individuals during the winter. Such exclusion efforts are dependent on weather conditions, take a minimum of 2 weeks to implement, and must be continued to keep the structures free of bats and birds until the completion of construction. All eviction and/or exclusion techniques will be coordinated between the qualified bat biologist and the appropriate resource agencies (e.g., CDFW) if the structure is occupied by bats. If deemed appropriate, the biologist may recommend installation of temporary bat panels during construction.

If a roost is detected but would only be subject to indirect impacts:

- **Daytime Work Hours.** All work conducted under the occupied roost will take place during the day. If this is not feasible, lighting and noise will be directed away from night roosting and foraging areas.

MM BIO-17 Compensate for the Loss of Riparian Habitat.

Prior to construction, CCJPA will make sure that permanent direct impacts on riparian habitat will be mitigated through the purchase of credits at a minimum ratio of 2:1 for native riparian habitats and a minimum ratio of 1:1 for non-native riparian habitats. This will be done through in-lieu fee payment to an appropriate mitigation bank for enhancement, restoration and/or creation of riparian habitat within approved watersheds or funding of a minimum 1:1 ratio of riparian habitat enhancement at approved conservation easements/mitigation banks. The final mitigation acreage will be confirmed during review of final engineering drawings and may be modified during the agency consultation process (e.g., CDFW, RWQCB, NMFS). CCJPA will provide written evidence to the resource agencies that compensation has been established through the purchase of mitigation credits. Alternatively, as part of the CDFW Section 1600 Land and Streambed Alteration Agreement (LSAA) process, CCJPA may provide a plan/proposal for CDFW approval to conduct on or off-site riparian habitat creation/enhancement to compensate for the proposed Project's direct riparian impacts. All riparian areas subject to temporary construction disturbance will be restored by CCJPA and its contractors in accordance with a post construction Erosion Control and Habitat Restoration Plan (ECHRP). The ECHRP will address all temporarily disturbed areas, be prepared by a qualified biologist, be developed as part of the CDFW LSAA process and be reviewed and approved by CDFW prior to implementation.

MM BIO-18 Protected Trees Pre-construction Surveys.

Prior to the start of construction activities, CCJPA will retain a qualified arborist to conduct a pre-construction survey for protected trees (e.g., all historic trees, all mature native trees, or any mature trees) that may require removal, pruning or may otherwise be impacted by the proposed Project. The pre-construction survey will identify the types, location, sizes, health of protected trees and summarize survey findings in a tree protection report. The tree protection report will be submitted to the applicable city for review and concurrence. The report will include but not be limited to the following:

- Recommended avoidance and impact minimization measures, replacement value, and feasibility of relocation for protected trees subject to removal.
- Methods and measures for relocation of protected trees to appropriate suitable habitat. Identification of which of the surveyed trees these measures apply to, and if any other tree permit requirements are necessary to comply with municipal policies and ordinances.

MM BIO-19 Fish Passage and Noise Analysis.

To evaluate potential impacts to native fish species and fisheries resources, CCJPA will conduct a fish passage analysis during final proposed Project design. The proposed Project will be designed and constructed so that it does not present a

barrier to fish passage or result in operational noise exceeding 150 dB. CCJPA will coordinate with the necessary regulatory agencies, including NMFS and CDFW prior to initiating the analysis, and will consult with NMFS and CDFW during development of conceptual through the final design plans. NMFS and CDFW will be engaged for coordination during design.

MM BIO-20 Salt Marsh Harvest Mouse Habitat Replacement.

Prior to construction activities, CCJPA will coordinate with the USFWS to determine mitigation ratios for impacts on SMHM. Pending consultation with USFWS, mitigation may include on-site restoration, in-lieu fee payment, purchase of mitigation credits at a USFWS-approved mitigation bank, or as defined by USFWS as part of consultation.

3.5.8 Cumulative Impact Analysis

Cumulative impacts can result from individually minor but collectively considerable impacts from past, present, and reasonably foreseeable future projects. A cumulatively considerable impact to biological resources would occur if the incremental effects of the proposed Project on biological resources (including special-status species, sensitive natural communities including protected aquatic resources, and wildlife migration or nursery sites) were substantial relative to other past, present, and reasonably foreseeable projects.

The geographic context for the analysis of potential contributions to cumulative biological resources impacts includes the proposed Project footprint where proposed Project elements are located, as well as the immediate vicinity. For potential impacts on terrestrial species, the geographic context includes the biological RSA. For aquatic species, the geographic context also includes the streams traversed by the South Bay Connect Project in the aquatic RSA.

Cumulative projects within this geographic context include the projects listed in Section 3.1 that are within or adjacent to proposed Project components and features. As provided in Section 3.1, multiple past, present, and reasonably foreseeable projects were considered for the purpose of this cumulative impact analysis. These cumulative projects include infrastructure projects, transportation and transit projects, recreational and community facility projects, and other private development projects within the proposed Project's RSA.

Some of the projects identified in Section 3.1 have impacts on special-status species and sensitive biological resources described in this Section including potentially significant impacts on sensitive plant species, steelhead, western pond turtle, special-status bird species, salt marsh harvest mouse, and special-status bat species. In addition, potentially significant impacts on riparian habitat, wetlands and other waters, migration corridors, and sensitive natural communities may occur from development of these projects. However, mitigation measures described in the environmental documents associated with the aforementioned projects would reduce the impacts from each project to less than significant. The proposed Project includes implementation of BMP HYD-1 and apply MM BIO-1 through MM BIO-20; therefore, offsetting the proposed Project's contribution to cumulative impacts. Therefore, the proposed Project's contribution to cumulative impacts on biological and aquatic resources would not be cumulatively considerable, and cumulative impacts would be less than significant.

3.5.9 Agency Consultation

As described in Chapter 6, Public Outreach and Agency Consultation, CCJPA has consulted with San Francisco BCDC which focused on sea-level rise. No other agency coordination has been conducted for the proposed Project at this time.

Based on the findings of the focused surveys and technical studies conducted to date, the proposed Project is anticipated to result in a "less than significant impact, with mitigation" determination with respect to seven federally listed species, seven state listed species, and twelve other special-status species. As a result, formal Section 7 consultation with the NMFS and USFWS is expected to be necessary. At this time, it is assumed that FRA would be the federal lead to initiate consultation with federal agencies, such as NMFS and USFWS.

Additionally, coordination with CDFW may be required to pursue a Lake and Streambed Alteration Agreement (impacts to Alameda Creek) or other waterways within the proposed Project footprint. Additionally, consultation with CDFW may be needed for pursuing an Incidental Take Permit of state-listed or fully protected species. Fully protected species, if present, would need to be identified under Senate Bill 147.

Consultation with the NMFS regarding impacts on EFH would also be required because the proposed Project is anticipated to result in a "less than significant impact, with mitigation" determination regarding EFH. Additionally, consultation with San Francisco Bay BCDC would be required because some components of the proposed Project may potentially impact areas under BCDC jurisdiction.

Anticipated Permits Required

Prior to discharge of fill and/or modification of bed and bank to these jurisdictional aquatic resources, the following permits and authorizations will be required:

- USACE – Section 404 Nationwide Permit
    - Nationwide Permit 14 for Linear Transportation Projects would likely be appropriate for implementation of the proposed Project because it is expected to permanently affect less than 0.5 acre of WOUS.
    - Nationwide Permit 14 does not require submittal of a Preconstruction Notification to USACE for fill of less than 1/10 acre.
- CDFW – Section 1600 Lake and Streambed Alteration Agreement
    - A Lake and Streambed Alteration Notification would need to be prepared and submitted to CDFW to acquire a Streambed Alteration Agreement prior to construction.
- RWQCB – Section 401 Water Quality Certification
    - A Section 401 Water Quality Certification from the RWQCB would be required for any proposed impacts on features determined to be subject to USACE jurisdiction.
    - State Water Resources Board Certification Action Order No. WQ 20210048DWQ (General Order) conditionally certifies projects resulting in dredge/fill to WOUS authorized under certain USACE Nationwide Permits, including Nationwide Permit 14. The proposed Project would qualify for Section 401 Certification under this General Order if:

- The proposed Project is exempt from CEQA;
- Permanent Impact Acreage to WOUS is no more than 0.01 acre;
- Total Impact Acreage to WOUS is no more than 0.2 acre;
- Permanent Impact Length to WOUS is no more than 100 linear feet; and
- Total Impact Length to WOUS is no more than 300 linear feet.

- BCDC Regionwide or Major Permit

3.5.10 CEQA Significance Findings Summary Table

Table 3.5-4 summarizes the biological resource impacts of the proposed Project.

Table 3.5-4. Biological Resources Impacts Summary

Impact	Level of Significance Before Mitigation	Incremental Project Contribution to Cumulative Impacts	Mitigation	Level of Significance with Mitigation Incorporated	Incremental Project Cumulative Impact after Mitigation
a) Would the project 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 the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries:	S/M	NCC	MM BIO-1 MM BIO-2 MM BIO-3 MM BIO-4	LTS	NCC
• **Special-Status Plants?**					
• **Crotch's Bumble Bee and Western Bumble Bee?**	S/M	NCC	MM BIO-1 MM BIO-6 MM BIO-7	LTS	NCC
• **Monarch Butterfly?**	S/M	NCC	MM BIO-1 MM BIO-2 MM BIO-5	LTS	NCC
• **Special-Status Fish?**	S/M	NCC	MM BIO-1 MM BIO-8 MM BIO-9 MM BIO-10 MM BIO-17 MM BIO-19	LTS	NCC

Table 3.5-4. Biological Resources Impacts Summary

Impact	Level of Significance Before Mitigation	Incremental Project Contribution to Cumulative Impacts	Mitigation	Level of Significance with Mitigation Incorporated	Incremental Project Cumulative Impact after Mitigation
• **Special-Status Amphibians and Reptiles?**	S/M	NCC	MM BIO-1 MM BIO-11 MM BIO-17	LTS	NCC
• **Western Snowy Plover?**	S/M	NCC	MM BIO-1 MM BIO-12	LTS	NCC
• **Bald Eagle, California Ridgway's rail, White-tailed Kite, California Black Rail?**	S/M	NCC	MM BIO-1 MM BIO-12	LTS	NCC
• **Burrowing Owl?**	S/M	NCC	MM BIO-1 MM BIO-12 MM BIO-13	LTS	NCC
• **Northern Harrier?**	S/M	NCC	MM BIO-1 MM BIO-12	LTS	NCC
• **Alameda Song Sparrow and San Francisco Common Yellowthroat?**	S/M	NCC	MM BIO-1 MM BIO-12	LTS	NCC
• **Salt Marsh Harvest Mouse?**	S/M	NCC	MM BIO-1 MM BIO-14 MM BIO-15	LTS	NCC

Table 3.5-4. Biological Resources Impacts Summary

Impact	Level of Significance Before Mitigation	Incremental Project Contribution to Cumulative Impacts	Mitigation	Level of Significance with Mitigation Incorporated	Incremental Project Cumulative Impact after Mitigation
• **Special-Status Bat Species?**	S/M	NCC	MM BIO-1 MM BIO-16	LTS	NCC
b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	S/M	NCC	MM BIO-1 MM BIO-7 MM BIO-8 MM BIO-17 MM BIO-21	LTS	NCC
c) Would the project have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal etc.) through direct removal, filling, hydrological interruption, or other means?	S/M	NCC	MM BIO-1 MM BIO-17	LTS	NCC
d) Would the project interfere substantially with the movement of any 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?	S/M	NCC	MM BIO-1 MM BIO-8 MM BIO-9 MM BIO-10 MM BIO-17	LTS	NCC

Table 3.5-4. Biological Resources Impacts Summary

Impact	Level of Significance Before Mitigation	Incremental Project Contribution to Cumulative Impacts	Mitigation	Level of Significance with Mitigation Incorporated	Incremental Project Cumulative Impact after Mitigation
e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	S/M	NCC	MM BIO-1 MM BIO-2 MM BIO-18	LTS	NCC
f) Would the project conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NI	NCC	N/A	NI	NCC

Notes: LTS = Less than Significant Impact, NI = No Impact, N/A = Not Applicable, SI = Significant Impact, S/M = Significant Impact but Mitigable to a Less than Significant Level, CC = Cumulatively Considerable, NCC = Not Cumulatively Considerable.

3.5.11 References

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