3.3 Biological Resources

3.3.1 Existing Conditions

3.3.1.1 Regulatory Setting

The relevant federal, state, and local regulations that apply to biological resources consist of those listed below. A summary of each regulation is provided in Appendix G, *Biological Resources Information*.

Federal

- Endangered Species Act (ESA)
- Migratory Bird Treaty Act (MBTA) and Executive Order 13186
- Federal Clean Water Act (CWA) (Sections 401 and 404)
- Wetlands and other waters of the United States subject to U.S. Army Corps of Engineers (USACE) jurisdiction
- Executive Order 13112 (Invasive Species)

State

- California Endangered Species Act (CESA)
- California Fish and Game Code (Sections 1600, 3503, 3503.3, 3511, 4700, 5050, and 5515)
- California Native Plant Protection Act
- Porter-Cologne Water Quality Control Act

Local

- City and County of San Francisco *Urban Forest Plan*
- City and County of San Francisco Public Works Code
- County of San Mateo Heritage Trees ordinance
- County of San Mateo Significant Trees ordinance
- City of Brisbane Protected Trees ordinance
- City of San Bruno Street Trees ordinance
- City of San Bruno Heritage Trees ordinance
- City of Millbrae Tree Protection and Urban Forestry Program
- City of Burlingame Street Trees ordinance
- City of Burlingame Urban Reforestation and Tree Protection ordinance
- City of San Mateo Street Trees ordinance

- City of San Mateo Heritage Trees ordinance
- City of Belmont Trees ordinance
- City of San Carlos Tree Removal and Maintenance ordinance
- City of Redwood City Street Trees ordinance
- City of Redwood City Tree Preservation ordinance
- Town of Atherton Heritage Trees ordinance
- City of Menlo Park City (Street) Trees ordinance
- City of Menlo Park Heritage Trees ordinance
- County of Santa Clara Tree Preservation and Removal ordinance
- City of Palo Alto Tree Preservation Management Regulations
- City of Mountain View Heritage Trees ordinance
- City of Sunnyvale City Trees ordinance
- City of Sunnyvale Tree Preservation ordinance
- City of Santa Clara Trees and Shrubs ordinance
- City of San Jose Tree Removal ordinance
- *Santa Clara Valley Habitat Plan*

3.3.1.2 Environmental Setting

A variety of natural resources is present along the project corridor. These include tidal basins filled with rubble from the 1906 San Francisco earthquake and more than 40 wetlands and creeks, some influenced by tidal action. Storm drains (both open and closed systems) consisting of highly altered creeks in urban settings are also present. The project corridor also transects several well-known streams with riparian corridors, including San Francisquito Creek, Stevens Creek, Los Gatos Creek, and the Guadalupe River.

Although ruderal disturbed areas dominate the vast majority of the project corridor, some special-status species may still have the potential to occur within the greater Project vicinity, and several of the resource areas are in close proximity to the Caltrain right-of-way (ROW). For example, the southernmost portion of the project corridor cuts through Communications Hill in San Jose, which is composed of serpentine outcrops of rock and soil and may be inhabited by special-status wildlife and plants. Several trees and shrubs that provide suitable nesting substrate for a number of bird species also occur within in the project corridor. Despite these infrequent areas with greater potential for special-status species, the vast majority of the project corridor is in a disturbed state with a low potential to harbor special-status species. Appendix G provides a comprehensive discussion of the project corridor's environmental setting.

Previous Studies Conducted within the Project Corridor for the Prior EIR

A Natural Environmental Study (NES) (Parsons 2002a) was prepared in 2002, consisting of a comprehensive literature review and background search, multiple reconnaissance-level field surveys for biological resources, and coordination with state and federal resource agency personnel.

A subsequent biology letter report assessment was prepared in 2008 to determine if project modifications would affect the "no significant impact" conclusion of the NES (Garcia and Associates 2008a). In addition, Garcia and Associates (2008b) conducted a follow-up visit to the proposed paralleling station (PS) 7 site in April 2008 and prepared a biology letter report to confirm that this site has little to no value to protected biological resources, including the California tiger salamander and Western burrowing owl. Another biology letter review was prepared in 2008 to determine potential project effects at the sites for traction power substation (TPS) 1, Options 2 and 3 (Garcia and Associates 2008c). Vegetation communities and incidental wildlife sightings were recorded during the surveys. Wetlands and waters of the United States that may be subject to the jurisdiction of USACE under Section 404 of the CWA were also surveyed and delineated.

A routine on-site determination of jurisdictional waters, including wetlands, was conducted along the project corridor in November and December 2000 and 2001, and in January 2002. Findings of the wetlands determination are presented in the Preliminary Wetlands Delineation Report (Parsons 2002b), which will be submitted to USACE for review and verification as part of the permit application. Several locations within the project corridor were identified as meeting the criteria for waters of the United States under CWA Section 404 (see Table 3.3-1 and Figure 3.3-1).

Table 3.3-1. Summary of Jurisdictional Features in the Peninsula Corridor Electrification Project's Vicinity

Location	Name and Type of Resource
Paul Avenue Station (closed 2005)	Unnamed ditches
Millbrae Transit Center	South Lomita Canal
Broadway Station	Easton Creek, Sanchez Creek, and Cherry Creek Canyon ditches
Hillsdale Station	Seal Slough Tributary B
Lawrence Station	Calabazas Creek
Los Gatos Creek Crossing	Los Gatos Creek
TPS-1 Option 3[a]	Depressional seasonal wetland

Source: Parsons 2002b.
[a] Source data for this site was collected during ICF's wetland assessment in June 2013.

Field surveys and site assessments for special-status wildlife and plant species and their habitat were conducted on the following dates: April 25, 2000; June 10 and November 30, 2001; December 6, 2007; January 3, 22, 29, and 30, 2008; and April 28, 2008. For the 2000–01 surveys, detailed species-specific studies were not conducted, owing to the 51-mile length of the corridor and because most construction would occur within the Caltrain ROW, where ground-disturbing activities would be limited to installation of Overhead Contact System (OCS) poles. All areas with at least a moderate potential to provide suitable habitat for a particular special-status species were evaluated in the inventory; however, particular attention was paid to drainages paralleling the railroad corridor and to the proposed locations for the Traction Power Facilities (TPFs).

New Studies Conducted for this EIR

Vegetation/Wildlife

After reviewing the previously prepared biological resources documents, ICF biologists conducted a reconnaissance-level survey of the project corridor on June 26, 2013 at the updated proposed

station sites (TPS1 Options 1, 2, and 3 and access roads, PS3 Option 1, PS4 Options 1 and 2, switching station 1 [SWS1] Option 1, PS5 Options 1 and 2, PS6 Options 1 and 2, TPS2 Options 1, 2, and 3, and PS7) and on September 9, 2011 at the proposed sites for PS3 Option 2 and SWS1 Option 2. The PS1 and PS2 sites were previously surveyed and, based on aerial photographs, it was determined that conditions were unchanged. The site for PS1 is a small ruderal area surrounded by commercial development and I-280, and the PS2 site is also a small ruderal area that includes an existing utility facility expected to be associated with train operation. The site for PS2 was also evaluated from aerial photographs and a ground-level photograph taken on May 30, 2011 (Google Earth 2011). PS4 Option 3, PS5 Option 1B, and TPS1 Option 4 were evaluated using aerial photography (Google Earth 2012). The purpose of this survey was to determine the potential for any special-status wildlife and plant species to occur within the project corridor, as well as to characterize biotic communities that could be affected by Proposed Project construction and operation, and to determine locations of jurisdictional waters within the project corridor. The Project Variant 1 locations for PS7 were evaluated using aerial photography due to the disturbed ruderal nature of the sites.

During the reconnaissance-level surveys, biotic communities were characterized based on plant composition and distribution. Seven biological communities have been identified as occurring within or immediately adjacent to the project corridor: non-native annual grassland, willow scrub riparian, ruderal/disturbed, windrow, freshwater marsh, Northern Coastal salt marsh, and coastal brackish marsh. These biological communities were evaluated for their potential to support special-status plant and animal species. Brief descriptions of each biological community and associated species are provided in Appendix G.

Jurisdictional Waters

A wetlands assessment was conducted on June 26, 2013 to survey the locations of new permanent facilities for potential wetlands that were not included in the previous wetland delineation report (Parsons 2002b). The wetland assessment focused on proposed permanent facility locations where project design might not be able to avoid these resources. At all other locations within the ROW where the OCS poles would clearly span creeks or rivers, wetland resources were not assessed in the field. One depressional seasonal wetland feature was observed during the assessment. This 0.035-acre feature was located in the vicinity of the TPS1 Option 3 site in South San Francisco east of U.S. Highway 101 (US 101) and adjacent to Gateway Boulevard.

For potential staging areas within the Caltrain ROW, a desktop study was conducted to identify potential wetlands and waters using aerial photography. Potential wetlands and waters were identified at nine potential staging areas in Brisbane, San Bruno, Millbrae, Burlingame, San Mateo, and Palo Alto (see Appendix G).

Special-Status Species

Special-status species are defined as species that meet one or more of the following criteria.

- Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 [listed plants], 50 CFR 17.11 [listed animals], and various notices in the Federal Register [FR] [proposed species]).
- Species that are candidates for possible future listing as threatened or endangered under ESA (77 FR 69994, November 21, 2012).

Path: K:\Projects_3\Caltrain\00606_12_Caltrain_Modernization\mandoc\CNDDB_Figures\Fig_XX_CNDDB_Animals_MapBook_20131108.mxd; User: 29391; Date: 2/19/2014

Legend

- 5-Mile Facilities Buffer
- Caltrain Tracks
- Alameda song sparrow
- American badger
- American peregrine falcon
- Bay checkerspot butterfly
- California black rail
- California clapper rail
- California least tern
- California red-legged frog
- Mission blue butterfly
- Myrtle's silverspot
- San Bruno elfin butterfly
- San Francisco Bay Area leaf-cutter bee
- San Francisco dusky-footed woodrat
- San Francisco garter snake
- big free-tailed bat
- burrowing owl
- callippe silverspot butterfly
- fringed myotis
- hoary bat
- monarch butterfly
- pallid bat
- saltmarsh common yellowthroat
- steelhead - central California coast DPS
- western pond turtle
- western red bat

0 2 4 Miles

N

Source: CNDDB, CDFW May 2013; Caltrain Tracks, Caltrain JPB 2013; Base Imagery, ESRI, Digital Globe, 2013

Figure 3.3-1a
Special Status Wildlife Occurrences within 5 miles of Caltrain Peninsula Corridor Electrification Project Area

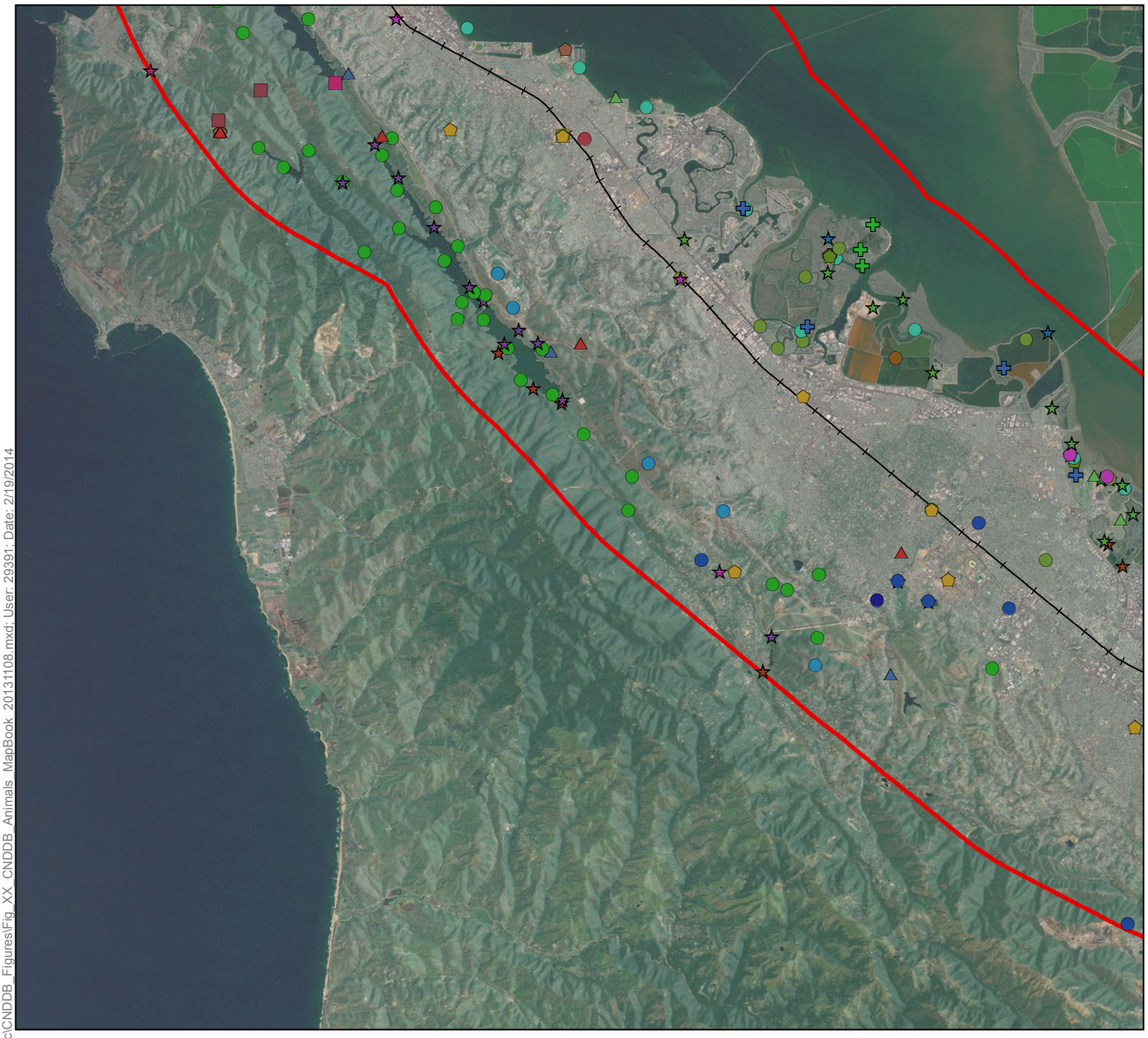

Figure 3.3-1b
Special Status Wildlife Occurrences within 5 miles of Caltrain Peninsula Corridor Electrification Project Area

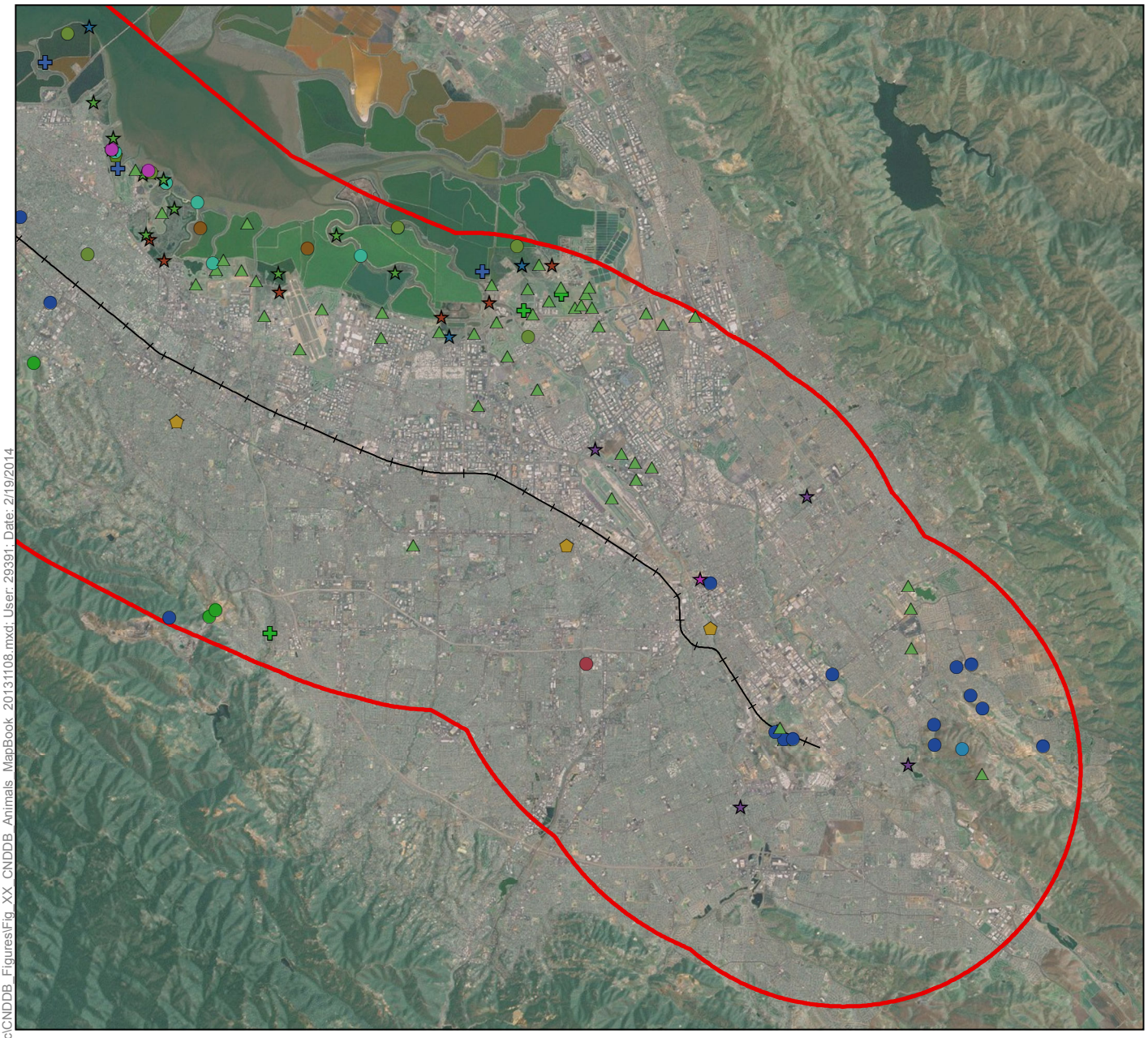

Figure 3.3-1c
Special Status Wildlife Occurrences within 5 miles of Caltrain Peninsula Corridor Electrification Project Area

- Species listed or proposed for listing by the State of California as threatened or endangered under CESA (14 California Code of Regulations [CCR] 670.5).
- Species that meet the definitions of rare or endangered under the California Environmental Quality Act (CEQA) (State CEQA Guidelines Section 15380).
- Plants listed as rare under the California Native Plant Protection Act (California Fish and Game Code Section 1900 et seq.).
- Plants considered by California Department of Fish and Wildlife (CDFW) to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1B and 2) (California Department of Fish and Wildlife 2013; California Native Plant Society 2013).
- Plants listed by CDFW as plants about which more information is needed to determine their status, and plants of limited distribution (CRPR 3 and 4) (California Department of Fish and Wildlife 2013; California Native Plant Society 2013). These plants may be included as special-status species on the basis of local significance or recent biological information.
- Animal species of special concern to CDFW (Shuford and Gardali 2008 [birds]; Williams 1986 [mammals]; Jennings and Hayes 1994 [amphibians and reptiles]).
- Animals fully protected in California (California Fish and Game Code Sections 3511 [birds], 4700 [mammals], and 5050 [amphibians and reptiles]).
- Bat species designated as high or medium priority by the Western Bat Working Group (WBWG). The WBWG is a partner in the Coalition of North American Bat Working Groups. High-priority bat species are those species that, based on available information on distribution, status, ecology, and known threats, should be considered the highest priority for funding, planning, and conservation actions. These species are imperiled or are at high risk of imperilment. Medium-priority species are those species that are considered to warrant closer evaluation, both of the species and of possible threats, as well as more research and conservation actions (Western Bat Working Group 2007).

Information on the biology, distribution, taxonomy, status, and other aspects of the special-status species that could occur in the project vicinity was obtained from standard references for biological resources. Searches of the U.S. Fish and Wildlife Service's (USFWS) Quadrangle query (U.S. Fish and Wildlife Service 2013), California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife 2013), and California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular plants of California (California Native Plant Society 2013) were conducted to determine if there are any recorded occurrences of special-status species in the project area (results are included in Appendix G). Suitable habitat for special-status species is defined as areas where special-status species are known to exist or have potential to exist based on a range, habitat, and presence of important habitat elements. The primary objective of the 2013 survey was to assess the 10 proposed paralleling station facility sites, locations of the six traction power substation options, and one switching station facility site for potential suitable habitat and the presence of special-status species. The area surveyed included a 100-foot buffer around each site when not obstructed by private property or other access issues.

Special-status wildlife species with a potential to occur within or immediately adjacent to the project corridor are Central California steelhead (*Oncorhynchus mykiss*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), western pond turtle (*Emys marmorata*), California tiger salamander (*Ambystoma californiense*), California red-legged frog (*Rana draytonii*), Townsend's big-

eared bat (*Corynorhinus townsendii*), pallid bat (*Antrozous pallidus*), hoary bat (*Lasiurus cinereus*), fringed myotis (*Myotis thysanodes*), western burrowing owl (*Athene cunicularia hypugaea*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrines anatum*) (foraging), purple martin (*Progne subis*), and saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*).

Special-status plant species with a potential to occur within the project corridor are Franciscan onion (*Allium peninsulare* var. *franciscanum*), bent-flowered fiddleneck (*Amsinckia lunaris*), round-leaved filaree (*California macrophylla*), bristly sedge (*Carex comosa*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchellii*), marsh microseris (*Microseris paludosa*), white seaside tarplant (*Hemizonia congesta* ssp. *congesta*), San Francisco campion (*Silene verecunda* ssp. *verecunda*), and showy rancheria clover (*Trifolium amoenum*).

The primary areas where special-status plant and wildlife species may occur along the ROW are where remnant intact natural habitat is present along or adjacent to the Caltrain ROW and in areas with suitable tree nesting for special-status birds and suitable roosting/foraging habitat for bats. A few special-status species also use man-made structures such as bridge structures. The key areas where special-status species are most likely to occur are listed here.

- Open land adjacent to and north of the Brisbane lagoon.
- Open land between San Francisco International Airport/US 101 and the BART/Caltrain ROW[1];
- Non-native annual grassland and ruderal grassland near San Jose International Airport.
- Communications Hill in San Jose.
- Stream crossings with riparian vegetation and/or aquatic habitat (including Mills Creek, San Mateo Creek, San Francisquito Creek, Stevens Creek, Los Gatos Creek, and the Guadalupe River).
- Mature trees (nesting for special-status birds and roosting for special-status bats).

Most of the TPFs would be located in disturbed, developed areas that do not contain habitat for special-status species. The site for TPS-1, Option 3 contains a freshwater emergent wetland. PS7 would be located in an area of serpentine bunchgrass grassland within and around the proposed facility site, based on *Santa Clara Valley Habitat Plan* (ICF International 2012) mapping data.

Special-status wildlife and plant species descriptions and areas of suitable habitat are provided in Appendix G. Table 3.3-2 provides information regarding special-status wildlife species status, geographic distribution, habitat requirements, and potential to occur in the project corridor. Table 3.3-3 provides information regarding special-status plant species status, geographic distribution, habitats, blooming period, and potential to occur in the project corridor. Special-status wildlife and plant species occurrences within 5 miles of the project corridor are respectively shown in Figures 3.3-1 and 3.3-2.

[1] Habitat near San Francisco International Airport is mostly blocked by BART facilities (tracks and tunnels) from the entire Caltrain corridor, except for the northernmost approximately300 feet. In this 300-foot segment, the nearby creek is bound by a concrete control structure and upland habitat is separated from the Caltrain corridor by small (approximately 2- to 3-foot-tall) concrete walls that line the access road (based on Google streetview) immediately east of the Caltrain and BART corridors.

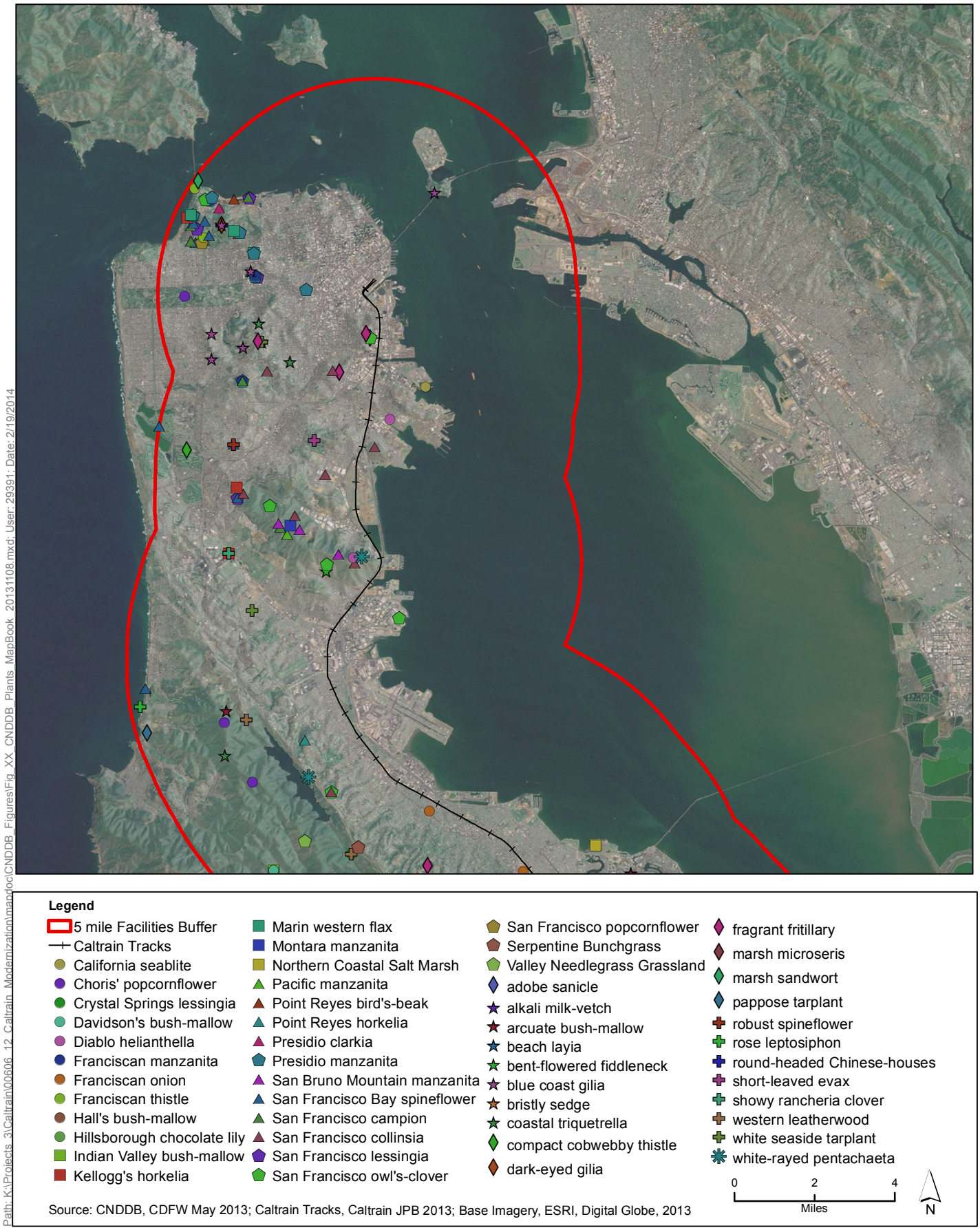

Figure 3.3-2a
Special Status Plant Occurrences within 5 miles of the Caltrain Peninsula Corridor Electrification Project Area

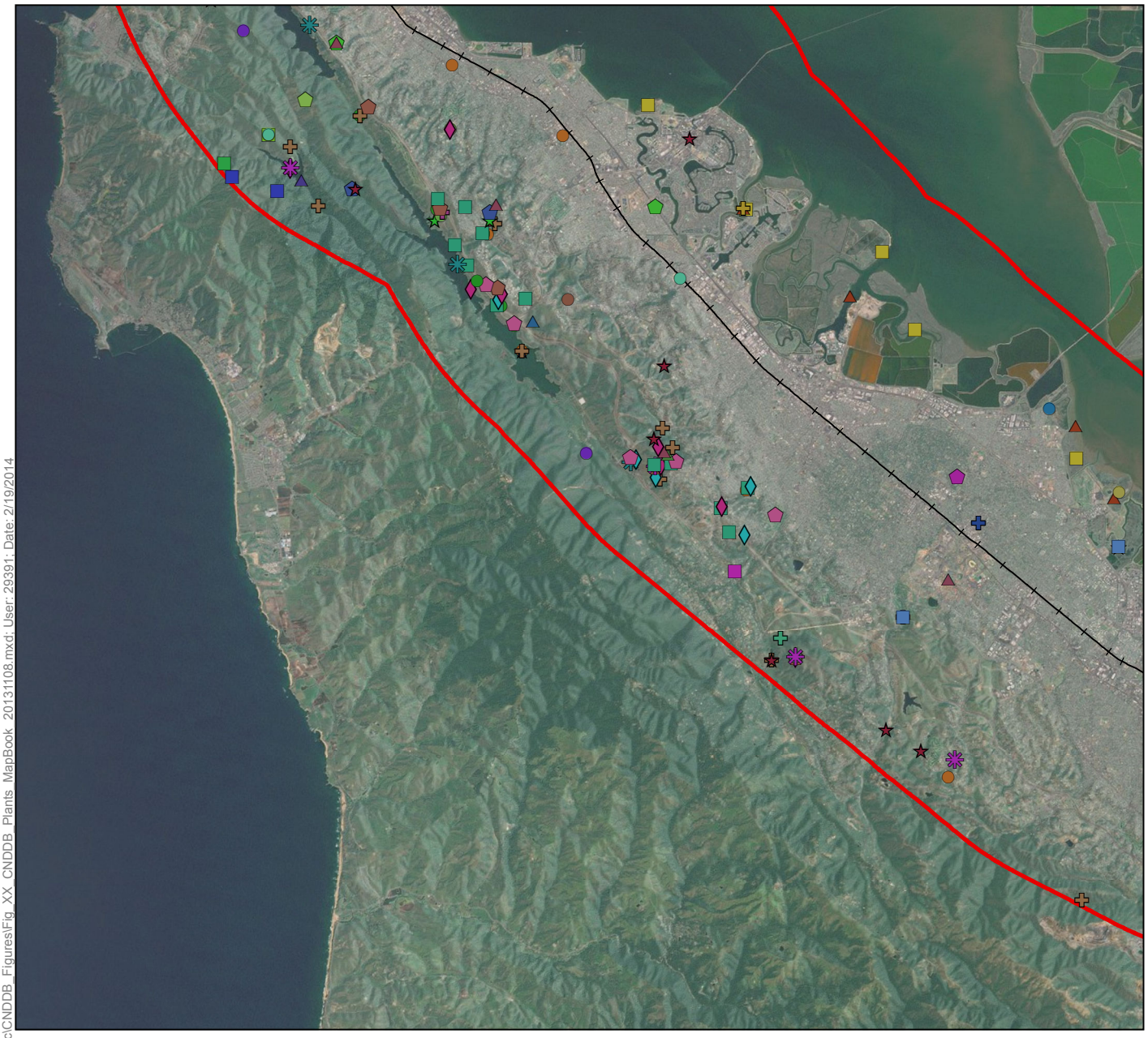

Figure 3.3-2b
Special Status Plant Occurrences within 5 miles of the Caltrain Peninsula Corridor Electrification Project Area

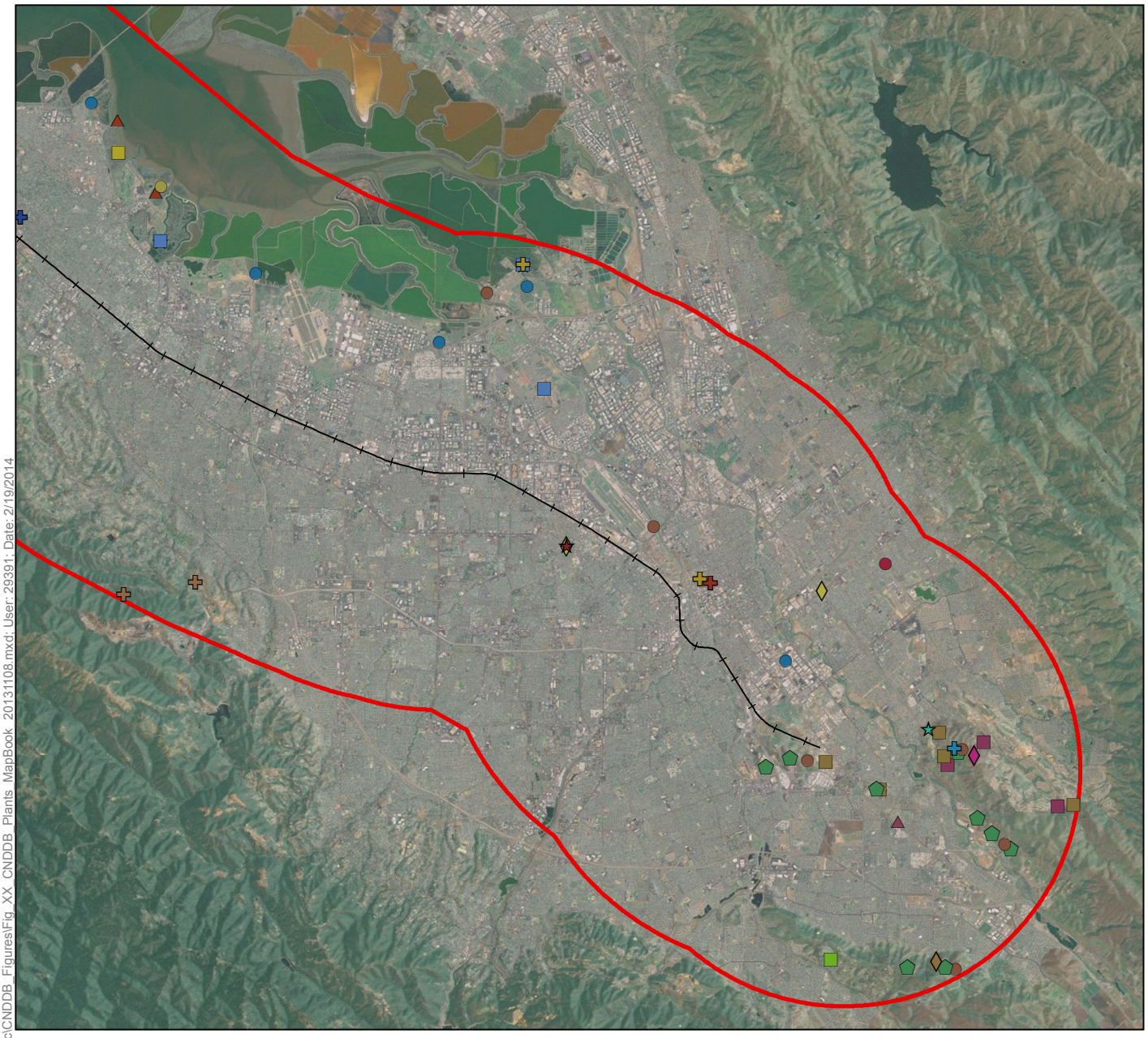

Figure 3.3-2c
Special Status Plant Occurrences within 5 miles of the Caltrain Peninsula Corridor Electrification Project Area

Table 3.3-2. Special-Status Wildlife Species with Potential to Occur in the Project Corridor

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Invertebrates				
Branchinecta lynchi Vernal pool fairy shrimp	T/--	Central Valley, central and south Coast Ranges from Tehama County to Santa Barbara County. Isolated populations also in Riverside County.	Common in vernal pools; also found in sandstone rock outcrop pools.	None—no suitable habitat present in project corridor.
Callophrys mossii bayensis San Bruno elfin butterfly	E/--	San Bruno Mountain, Montara Mountains, and northern end of Santa Cruz Mountains in San Mateo County.	North-facing slopes and ridges facing Pacific Ocean from 600 to 1,100 feet in elevation.	None—no suitable habitat present within project corridor.
Danaus plexippus Monarch butterfly	--/-- (overwintering trees)	Winter roost sites extend along the coast from northern Mendocino County to Baja California.	Roosts located in wind-protected tree groves (Eucalyptus, Monterey pine, Cypress), with nectar and water sources nearby.	High potential for individuals—eight CNDDB occurrences within 5 miles of project corridor, suitable habitat present within project corridor. This species has no legal protection, but known overwintering sites are afforded legal protection. Overwintering sites are relatively well known because this species has high site fidelity. There are no known overwintering sites in the project corridor.
Euphydryas editha bayensis Bay checkerspot butterfly	T/--	Disjunct occurrences in San Mateo and Santa Clara Counties.	Associated with specific host plants that typically grow on serpentine soils.	None—no suitable habitat present within project corridor.
Haliotes cracherodii Black abalone	E/--	Santa Barbara County.	Mid to low rocky intertidal areas.	None—no suitable habitat present within project corridor, outside of species range.
Haliotes sorenseni White abalone	E/--	Coastal California, Oregon, and Mexico.	Intertidal marine and subtidal habitats.	None—no suitable habitat present within project corridor.
Lepidurus packardi Vernal pool tadpole shrimp	E/--	Shasta County south to Merced County.	Vernal pools and ephemeral stock ponds.	None—no suitable habitat present within project corridor.
Plebejus icarioides missionensis Mission blue butterfly	E/--	San Bruno Mountain in San Mateo County; Twin Peaks in San Francisco County.	Hill and ridgetops, as well as slopes with south exposure with caterpillar food plants, Lupinus spp.	None—species is known to occur on San Bruno Mountain and adjacent hills, but there is no suitable habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Speyeria callippe callippe Callippe silverspot butterfly	E/--	San Bruno Mountain in San Mateo County, and a single location in Alameda County.	Open hillsides where wild pansy (*Viola pedunculata*) grows; larvae feed on Johnny jump-up plants, whereas adults feed on native mints and non-native thistles.	None—species is known to occur on San Bruno Mountain and adjacent hills, but there is no suitable habitat present within project corridor.
Speyeria zerene myrtleae Myrtle's silverspot butterfly	E/--	Historically known from San Mateo County north to the mouth of the Russian River in Sonoma County. No butterflies have been observed recently at the known population sites near Pacifica and San Mateo in San Mateo County.	Coastal terrace prairie, coastal bluff scrub, and associated non-native grassland habitats where the larval foodplant, *Viola* sp., occurs.	None—no suitable habitat present within project corridor.
Fish				
Acipenser medirostris Green sturgeon	T/SSC	Upper Sacramento River and Feather River.	Ocean water, bays, and estuaries while not spawning. Spawn in the mainstem of freshwater rivers with connection to marine habitat and suitable deep pools.	None—no suitable habitat present within project corridor.
Eucyclogobius newberryi Tidewater goby	E/SSC	Lagoons of coastal streams from the Smith River (Del Norte County) to the south in Agua Hedionda Lagoon (San Diego County). Extirpated from San Francisco Bay (Moyle 2002).	Coastal lagoons along California. Prefers water with high dissolved oxygen levels and salinities less than 10 parts per thousand (ppt) (Moyle 2002).	None—no suitable habitat present within project corridor.
Hypomesus transpacificus Delta smelt	T/E	Primarily in the Sacramento–San Joaquin Estuary, but has been found as far upstream as the mouth of the American River on the Sacramento River and Mossdale on the San Joaquin River; range extends downstream to San Pablo Bay.	Estuary habitat in the Delta where fresh and brackish water mix in the salinity range of 2–7 ppt (Moyle 2002).	None—no suitable habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Mylopharodon conocephalus Hardhead	--/SSC	Tributary streams in the San Joaquin drainage; large tributary streams in the Sacramento River and the main stem.	Low to mid-elevation streams and clear, deep pools and runs with slow velocities. Also occur in reservoirs.	None—no suitable habitat present within project corridor.
Oncorhynchus kisutch Central California coast coho salmon	E/E	From Punta Gorda in northern California south to and including the San Lorenzo River in central California, tributaries to San Francisco Bay, excluding the Sacramento-San Joaquin River system	Coastal streams with water temperatures < 15°C. Need cool, clear water with instream cover. Spawn in tributaries to large rivers or streams directly connected to the ocean (Moyle 2002).	None—no suitable habitat present within project corridor.
Oncorhynchus mykiss Central California coast steelhead	T/--	Coastal drainages along the central California coast.	Cold, clear water with clean gravel of appropriate size for spawning. Most spawning occurs in headwater streams. Steelhead migrate to the ocean to feed and grow until sexually mature.	Moderate—occurs in Mills Creek, Permanente Creek, Stevens Creek, San Mateo Creek, San Francisquito Creek, Los Gatos Creek, and Guadalupe River. Uses aquatic habitat crossed by the project corridor for migration to upstream habitat.
Oncorhynchus tshawytscha Central Valley spring-run Chinook salmon	T/T	Upper Sacramento River and Feather River.	Occurs in well-oxygenated, cool, riverine habitat with water temperatures from 8.0°C to 12.5°C. Habitat types are riffles, runs, and pools (Moyle 2002).	None—no suitable habitat present within project corridor,
Reptiles				
Caretta caretta Loggerhead turtle	T/--	On the Pacific coast they are found from near Santa Cruz Island south to Chile. They are occasionally seen farther north.	Continental shelves, bays, lagoon, and estuaries in temperate and tropical waters.	None—no suitable habitat present within project corridor
Chelonia mydas Green turtle	T/--	East and West Coasts of United States and throughout open ocean.	Completely herbivorous; needs adequate supply of seagrasses and algae	None—no suitable habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Dermochelys coriacea Leatherback turtle	E/--	Monterey Bay, the north end of Pigeon Point Beach in San Mateo County, and southeast of Santa Cruz, Santa Cruz County.	Pelagic, living in the open ocean and occasionally entering the shallower water of bays and estuaries.	None—no suitable habitat present within project corridor.
Lepidochelys olivacea Olive (Pacific) ridley sea turtle	T/--	Near Noyo in Mendocino County, near Table Bluff in Humboldt County, and Stinson Beach and Tamales Bay in Marin County.	Marine. Found well out to sea and in protected, relatively shallow bays and lagoons and the shallow water between reefs and the shore.	None—no suitable habitat present within project corridor.
Masticophis lateralis euryxanthus Alameda whipsnake	T/T	Restricted to Alameda and Contra Costa Counties; fragmented into 5 disjunct populations throughout its range.	Valleys, foothills, and low mountains associated with northern coastal scrub or chaparral habitat; requires rock outcrops for cover and foraging.	None—no suitable habitat present within project corridor, outside of species range.
Thamnophis sitralis tetrataenia San Francisco garter snake	E/E, FP	Northern San Mateo County southward along the coast and the eastern slope of the Santa Cruz Mountains to the Santa Clara County line.	Favors ponds, lakes, slow moving streams and marshy areas containing abundant vegetation, which it uses for cover; nearby upland habitat is important during fall and winter	Moderate—13 CNDDB occurrences within 5 miles of project corridor, no suitable habitat present within project corridor but suitable habitat located near project corridor adjacent to San Francisco International Airport.
Emys marmorata Western pond turtle	--/SSC	From the Oregon border of Del Norte and Siskiyou Counties south along the coast to San Francisco Bay, inland through the Sacramento Valley, and on the western slope of Sierra Nevada.	Ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms and with watercress, cattails, water lilies or other aquatic vegetation in woodlands, grasslands, and open forests.	High—19 CNDDB occurrences within 5 miles of project corridor, suitable habitat present within project corridor.
Amphibians				
Ambystoma californiense California tiger salamander	T/T, SSC	Central Valley, including Sierra Nevada foothills, up to approximately 1,000 feet in elevation, and coastal region from Sonoma County south to Santa Barbara County.	Small ponds, lakes, or vernal pools in grasslands and oak woodlands for larvae; rodent burrows, rock crevices, or fallen logs for cover for adults and for summer dormancy.	High—14 CNDDB occurrences within 5 miles of project corridor, low-quality habitat present within project corridor in the Communications Hill area.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Rana draytonii California red-legged frog	T/SSC	Found along the coast and coastal mountain ranges of California from Mendocino County to San Diego County and in the Sierra Nevada from Butte County to Stanislaus County.	Permanent and semipermanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation; may aestivate in rodent burrows or cracks during dry periods.	High—51 CNDDB occurrences within 5 miles of project corridor, suitable habitat present within project corridor adjacent to San Francisco International Airport.
Mammals				
Antrozous pallidus Pallid bat	--/SSC	Widespread throughout California.	Roosts in fissures in caves, tunnels, mines, hollow trees, and locations with stable temperatures.	Moderate—six CNDDB occurrences within 5 miles of project corridor, suitable manmade habitat present within project corridor.
Arctocephalus townsendi Guadalupe fur seal	T/--	Along California coast.	Island shores with solid rock and large lava blocks, usually at the base of tall cliffs.	None—no suitable habitat present within project corridor.
Balaenoptera borealis Sei whale	E/--	Throughout the world's oceans.	Marine, generally in deep water, along edge of continental shelf and in open ocean.	None—no suitable habitat present within project corridor.
Balaenoptera musculus Blue whale	E/--	Throughout the world's oceans; seen with some regularity in deep coastal canyons off central and southern California.	Mainly pelagic; generally prefers cold waters and open seas, but young are born in warmer waters of lower latitudes.	None—no suitable habitat present within project corridor
Balaenoptera physalus Finback (fin) whale	E/--	Worldwide in temperate and polar waters. In the eastern North Pacific, summers north to the Chukchi Sea, winters north to California.	Pelagic; usually found in largest numbers 25 miles or more from shore. Young are born in the warmer waters of the lower latitudes.	None—no suitable habitat present within project corridor
Eumetopias jubatus Steller (Northern) sea-lion	E/--	Coastal waters of the North Pacific Ocean from California and northern Honshu, Japan, and Korea, north to the Bering Strait	Coastal waters near shore and over the continental slope; sometimes rivers are ascended in pursuit of prey.	None—no suitable habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Corynorhinus townsendii Townsend's big-eared bat	--/PTE,SSC	Coastal regions from Del Norte County south to Santa Barbara County.	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings. Very sensitive to disturbances and may abandon a roost after one onsite visit.	Low—low-quality suitable foraging habitat present within project corridor, no suitable roosting habitat within project corridor. Nearest CNDDB occurrence located 6.8 miles north of project corridor on Angel Island.
Lasiurus blossevillii Western red bat	--/SSC	Scattered throughout much of California at lower elevations.	Primarily riparian and wooded habitats. Occurs at least seasonally in urban areas. Day roosts in trees within the foliage. Fruit orchards and sycamore riparian habitats in the Central Valley.	None—no suitable habitat present within project corridor.
Lasiurus cinereus Hoary bat	--/--C	Widespread throughout California.	Roosts in trees, typically within forests.	Moderate—14 CNDDB occurrence within 5 miles of project corridor, low-quality suitable habitat present within project corridor.
Myotis thysanodes Fringed myotis	--/--C	Throughout California except the southeastern deserts and the Central Valley.	A wide variety of habitats from low desert scrub to high-elevation coniferous forests. Day and night roosts in caves, mines, trees, buildings, and rock crevices.	Low—one CNDDB occurrence within 5 miles of project corridor, low-quality suitable habitat present within project corridor.
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	--/SSC	West side of Mount Diablo to coast and San Francisco Bay.	Chaparral habitat and forest habitats with a moderate understory.	None—no suitable habitat present within project corridor.
Nyctinomops macrotis Big free-tailed bat	--/SSC	Distribution in California is uncertain because occurrences are very rare; most likely to be found in southern California, but has been recorded in Berkeley, Alameda County.	Arid, rocky areas; roosts in crevices in cliffs.	None—no suitable habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Physeter catodon Sperm whale	E/--	Throughout the world's oceans.	Pelagic, prefers deep water, sometimes around islands or in shallow shelf waters.	None—no suitable habitat present within project corridor.
Reithrodontomys raviventris Salt-marsh harvest mouse	E/E,FP	The San Francisco Bay Estuary and Suisun Marsh.	Saline to brackish salt marsh habitat.	None—no suitable habitat present within project corridor.
Sorex vagrans halicoetes Salt-marsh wandering shrew	--/SSC	San Mateo, Santa Clara, Alameda, and Contra Costa Counties	Salt marshes from 6 to 9 feet above mean sea level (MSL).	None—no suitable habitat present within project corridor.
Taxidea taxus American badger	--/SSC	The majority of the northern, western, and central United States south to Baja California.	Found in dry grasslands and open forests. Needs friable soil for digging burrows.	None—no suitable habitat present within project corridor.
Vulpes macrotis mutica San Joaquin kit fox	E/T	San Joaquin Valley and adjacent open foothills to the west; recent records from 17 counties extending from Kern County north to Contra Costa County.	Saltbush scrub, grassland, oak, savanna, and freshwater scrub.	None—no suitable habitat present within project corridor.
Birds				
Asio flammeus Short-eared owl	--/SSC	Permanent resident along the coast from Del Norte County to Monterey County although very rare in summer north of San Francisco Bay, in the Sierra Nevada north of Nevada County, in the plains east of the Cascades, and in Mono County; small, isolated populations.	Freshwater and salt marshes, lowland meadows, and irrigated alfalfa fields; needs dense tules or tall grass for nesting and daytime roosts.	None—no suitable habitat present within project corridor.
Athene cunicularia hypugaea Western burrowing owl	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast.	Level, open, dry, heavily grazed or low stature grassland or desert vegetation with available burrows.	High—47 CNDDB occurrences within 5 miles of project corridor, low-quality suitable habitat present within project corridor near the San Jose Airport and Communications Hill.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Brachyramphus marmoratus Marbled murrelet	T/E	Nesting sites from the Oregon border to Eureka and between Santa Cruz and Half Moon Bay; winters in nearshore and offshore waters along the entire California coastline.	Mature, coastal coniferous forests for nesting; nearby coastal water for foraging; nests in conifer stands greater than 150 years old and may be found up to 35 miles inland; winters on subtidal and pelagic waters often well offshore.	None—no suitable habitat within the study area.
Charadrius alexandrines nivosus Western snowy plover	T/SSC	Population defined as those birds that nest adjacent to or near tidal waters, including all nests along the mainland coast, peninsulas, offshore islands, and adjacent bays and estuaries. Twenty breeding sites are known in California from Del Norte to Diego County.	Coastal beaches above the normal high tide limit in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually sparse or absent.	None—no suitable habitat present within project corridor.
Circus cyaneus Northern harrier	--/SSC	Throughout lowland California. Has been recorded in fall at high elevations.	Grasslands, meadows, marshes, and seasonal and agricultural wetlands.	Moderate—two CNDDB occurrences within 5 miles of project corridor, low-quality foraging and nesting habitat present within grasslands in project corridor.
Diomedea albatrus Short-tailed albatross	E/SSC	Widespread in temperate and subarctic North Pacific.	Pelagic, nests on ground on small oceanic islands.	None—no suitable habitat present within project corridor.
Elanus leucurus White-tailed kite	--/FP	Lowland areas west of Sierra Nevada from the head of the Sacramento Valley south, including coastal valleys and foothills, to western San Diego County at the Mexico border.	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging.	Moderate—six CNDDB occurrences within 5 miles of project corridor, low-quality foraging and nesting habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Falco peregrines anatum American peregrine falcon	D/D, FP	Permanent resident along the north and south Coast ranges. May summer in the Cascade and Klamath Ranges and through the Sierra Nevada to Madera County. Winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range.	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large prey populations.	Low (foraging only)—two CNDDB occurrences within 5 miles of project corridor, no suitable nesting habitat present within project corridor.
Geothlypis trichas sinuosa Saltmarsh common yellowthroat	--/SSC	Found only in the San Francisco Bay Area in Marin, Napa, Sonoma, Solano, San Francisco, San Mateo, Santa Clara, and Alameda Counties.	Freshwater marshes in summer and salt or brackish marshes in fall and winter; requires tall grasses, tules, and willow thickets for nesting and cover.	Low (foraging only)—14 CNDDB occurrences within 5 miles of project corridor, no suitable nesting habitat present within project corridor.
Laterallus jamaicensis conturniculus California black rail	--/T, FP	Permanent resident in the San Francisco Bay and eastward through the Delta into Sacramento and San Joaquin Counties; small populations in Marin, Santa Cruz, San Luis Obispo, Orange, Riverside, and Imperial Counties.	Tidal salt marshes associated with heavy growth of pickleweed; also brackish marshes or freshwater marshes at low elevations.	None—no suitable habitat present within project corridor.
Melospiza melodia pusillula Alameda song sparrow	--/SSC	Marshes along the southern portion of San Francisco Bay.	Brackish marshes associated with pickleweed; may nest in tall vegetation or among the pickleweed.	None—no suitable habitat present within project corridor.
Pelecanus occidentalis californicus California brown pelican	D/D, FP	Pacific coast from Canada through Mexico.	Coastal areas. Nests on islands and occasionally along Arizona's lakes and rivers.	None—no suitable habitat within the study area.
Progne subis Purple martin	--/SSC	Coastal mountains south to San Luis Obispo County, west slope of the Sierra Nevada, and northern Sierra and Cascade ranges. Absent from the Central Valley except in the greater Sacramento area. Isolated, local populations in southern California.	Nests in abandoned woodpecker holes in oaks, cottonwoods, and other deciduous trees in a variety of wooded and riparian habitats. Also nests in vertical drainage holes under elevated freeways and highway bridges.	Low—suitable nesting habitat present within project corridor.

Table 3.3-2. Continued

Scientific and Common Names	Status[a] Federal/State	Geographic Distribution	Habitat Requirements	Potential Occurrence in Project Corridor[b]
Rallus longirostris obsoletus California clapper rail	E/E, FP	Along the Pacific Coast in Monterey and San Luis Obispo Counties.	From tidal mudflats to tidal sloughs.	None—no suitable habitat present within project corridor.
Sternula antillarum browni California least tern	E/E, FP	Along the Pacific Coast of California from San Francisco to Baja California.	Nests on open beaches kept free of vegetation by natural scouring from tidal action.	None—no suitable habitat present within project corridor.

[a] Status explanations:

Federal

E = listed as endangered under the Endangered Species Act (ESA)
T = listed as threatened under the ESA
PT = proposed for federal listing as threatened under the ESA
C = species for which USFWS has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded
D = delisted
-- = no listing

State

E = listed as endangered under California Endangered Species Act (CESA)
T = listed as threatened under CESA
PTE = proposed for state listing as threatened or endangered under the CESA
FP = fully protected under the California Fish and Game Code
SSC = species of special concern in California
D = delisted
-- = no listing

[b] Definitions of levels of potential occurrence

High: Known occurrences of the species within the study area, or CNDDB or other documents record the occurrence of the species within a 5-mile radius of the study area; and suitable habitat is present within the study area.
Moderate: CNDDB or other documents record the occurrence of the species within a 5-mile radius of the study area; and low-quality suitable habitat is present within the study area.
Low: CNDDB or other documents record the occurrence of the species within a 5-mile radius of the study area; or suitable habitat is present within the study area.
None: CNDDB or other documents do not record the occurrence of the species within a 5-mile radius of the study area; and suitable habitat is not present within the study area.

[c] Townsend's big-eared bat, pallid bat, Western red bat, and fringed myotis all have additional status listing designations by the Western Bat Working Group (WBWG) of H (high priority), and hoary bat has the additional status listing designation of M (medium priority). These listings are conservation priorities based on available information on species distribution, status, ecology, and known threats. Additional information on these listings is provided in Section 3.3.1.2 *Environmental Setting*.

CNDDB = California Natural Diversity Database

Table 3.3-3. Special-Status Plants Known to Occur or that May Occur in the Project Corridor

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Acanthomintha duttonii San Mateo thornmint	E/E/1B.1	Central Coast, San Francisco Bay Area: two occurrences in San Mateo County.	Annual grassland and open areas in chaparral and coastal scrub, on serpentine vertisol clay soil, below 900 feet above mean sea level (MSL).	Apr–Jun	None—there is no suitable habitat present within project corridor.
Allium peninsulare var. *franciscanum* Franciscan onion	–/–/1B.2	Central Coast, San Francisco Bay region: Santa Clara, San Mateo, and Sonoma Counties.	Clay and often serpentine soils in cismontane woodland, valley and foothill grassland, below 1,000 feet above MSL.	May–Jun	Low—nine CNDDB occurrences within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Amsinckia lunaris Bent-flowered fiddleneck	–/–/1B.2	Inner North Coast Ranges, San Francisco Bay Area, west-southern Sacramento Valley, and west-northern San Joaquin Valley.	Coastal bluff scrub, valley and foothill grasslands, cismontane woodlands, 101,645 feet above MSL.	Mar–Jun	Low—three CNDDB occurrences within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Arctostaphylos franciscana Franciscan manzanita	P/–/1B.1	Historical occurrence in San Francisco; believed extinct in the wild.	Coastal scrub on serpentine soils, below 990 feet above MSL.	Feb–Apr	None—no suitable habitat within the project corridor.
Arctostaphylos imbricata San Bruno Mountain manzanita	–/E/1B.1	Western San Francisco Bay: San Bruno Mountain, San Mateo County.	Chaparral and coastal scrub on rocky outcrops.	Feb–May	None—no suitable habitat within the project corridor.
Arctostaphylos montana ssp. *ravenii* Presidio manzanita	E/E/1B.1	Presidio of San Francisco.	Chaparral, coastal prairie, coastal scrub, serpentine soils.	Feb–Mar	None—no suitable habitat within the project corridor.
Arctostaphylos montaraensis Montara manzanita	–/–/1B.2	Endemic to San Mateo County, San Bruno Mountain, Montara Mountains.	Maritime chaparral, coastal scrub, 650–1,640 feet above MSL.	Jan–Mar	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Arctostaphylos regismontana Kings Mountain manzanita	–/–/1B.2	Western San Francisco Bay region, northern Santa Cruz Mountains: Santa Cruz and San Mateo Counties.	Broadleaved upland forest, chaparral, North Coast coniferous forest, on granitic or sandstone soils.	Jan–Apr	None—no suitable habitat within the project corridor.
Arenaria paludicola Marsh sandwort	E/E/1B.1	Known only from three occurrence near Black Lake on Nipomo Mesa, San Luis Obispo County. Historically more wide ranging through Central and South Coast.	Boggy meadows, freshwater marshes, and swamps, below 1,000 feet above MSL.	May–Aug	None—no suitable habitat within the project corridor.
Astragalus tener var. *tener* Alkali milk-vetch	–/–/1B.2	Southern Sacramento Valley, northern San Joaquin Valley, east San Francisco Bay Area.	Playas, on adobe clay in valley and foothill grassland, vernal pools on alkaline soils, annual grassland on alkaline soil, seasonal wetlands; below 197 feet above MSL.	Mar–Jun	None—no suitable habitat within the project corridor.
Balsamorhiza macrolepis Big-scale balsamroot	–/–/1B.2	Scattered occurrences in the Coast Ranges and Sierra Nevada foothills.	Rocky annual grassland and fields, foothill woodland hillsides, sometimes serpentinite soils, below 4,600 feet above MSL.	Mar–Jun	None—no suitable habitat within the project corridor.
California macrophylla Round-leaved filaree	–/–/1B.1	Scattered occurrences in the Sacramento and San Joaquin Valleys, southern North Coast Ranges, San Francisco Bay Area, South Coast Ranges, Channel Islands, Transverse Ranges, and Peninsular Ranges.	Grasslands, on friable clay soils.	Mar–May	Low—one CNDDB occurrence within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Carex comosa Bristly sedge	–/–/2.1	Scattered occurrences throughout California, Oregon, and Washington.	Wet places and lake margins.	May–Sep	Low—one CNDDB occurrence within 5 miles of project corridor; low-quality suitable habitat present within project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Centromadia parryi ssp. *congdonii* Congdon's tarplant	–/–/1B.1	Eastern San Francisco Bay Area, Salinas Valley, and Los Osos Valley.	Alkaline soils in annual grassland, on lower slopes, flats, and swales, sometimes on saline soils, below 755 feet above MSL.	May–Oct (Nov)	Low—five CNDDB occurrences within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Centromadia parryi ssp. *parryi* Pappose tarplant	–/–/1B.2	Butte, Colusa, Glenn, Lake, Napa, San Luis Obispo, San Mateo, Solano, and Sonoma Counties.	Often alkaline soils, chaparral, coastal prairie, meadows and seeps, marshes and swamps (coastal salt), valley and foothill grassland (vernally mesic).	May–Nov	None—no suitable habitat within the project corridor.
Chloropyron maritimum ssp. *palustre* (*Cordylanthus maritimus* ssp. *palustris*) Point Reyes bird's-beak	–/–/1B.2	Coastal northern California from Humboldt to Santa Clara County.	Coastal salt marsh; below 33 feet above MSL.	Jun–Oct	None—no suitable habitat within the project corridor.
Chorizanthe robusta var. *robusta* Robust spineflower	E/–/1B.1	Coastal central California from San Mateo to Monterey County.	Coastal bluff scrub, coastal dunes openings in cismontane woodland, on sandy soil.	May–Sep	None—no suitable habitat within the project corridor.
Cirsium andrewsii Franciscan thistle	–/–/1B.2	Coastal California from Sonoma County to San Mateo County.	Moist areas in coastal prairie, coastal scrub, and mixed evergreen forest, sometimes on serpentine soils, 0–440 feet above MSL.	Mar–Jul	None—no suitable habitat within the project corridor.
Cirsium fontinale var. *campylon* Mt. Hamilton fountain thistle	–/–/1B.2	Mt. Hamilton Range, eastern San Francisco Bay Area: Alameda, Santa Clara, and Stanislaus Counties.	Freshwater seeps and streams on serpentine outcrops, chaparral, cismontaine woodland, valley and foothill grassland, 1,000–2,500 feet above MSL.	Apr–Oct	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Cirsium fontinale var. *fontinale* Fountain thistle	E/E/1B.1	Endemic to San Mateo County.	Seeps in chaparral and grassland, on serpentine soils.	Jun–Oct	None—no suitable habitat within the project corridor.
Cirsium occidentale var. *compactum* Compact cobwebby thistle	–/–/1B.2	San Francisco and San Luis Obispo Counties.	Chaparral, coastal dunes, coastal prairie, coastal scrub.	Apr–Jun	None—no suitable habitat within the project corridor.
Clarkia franciscana Presidio clarkia	E/E/1B.1	San Francisco Bay, Presidio, Oakland hills: Alameda and San Francisco Counties.	Serpentine grassland, coastal scrub.	May–Jul	None—no suitable habitat within the project corridor.
Collinsia corymbosa Round-headed Chinese-houses	–/–/1B.2	North Coast and northern Central Coast from Del Norte County to Marin County.	Coastal dunes, below 65 feet above MSL.	Apr–Jun	None—no suitable habitat within the project corridor.
Collinsia multicolor San Francisco collinsia	–/–/1B.2	Coastal California from San Francisco to Monterey County.	Closed-cone coniferous forest, coastal scrub.	Mar–May	None—no suitable habitat within the project corridor.
Dirca occidentalis Western leatherwood	–/–/1B.2	San Francisco Bay region: Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma Counties.	Moist areas in broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland, 82–1,394 feet above MSL.	Jan–Apr	None—no suitable habitat within the project corridor.
Dudleya abramsii ssp. *setchellii* Santa Clara Valley dudleya	E/–/1B.1	Endemic to Santa Clara County.	Cismontane woodland, valley and foothill grassland, on rocky serpentine sites.	May–Jun	Low—nine CNDDB occurrences within 5 miles of project corridor; low-quality suitable habitat present within project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Eriophyllum latilobum San Mateo woolly sunflower	E/E/1B.1	One known occurrence in San Mateo County.	Open areas in coast live oak woodland, often on roadsides, sometimes on serpentine soils, 150–500 feet above MSL.	May–Jun	None—no suitable habitat within the project corridor
Eryngium aristulatum var. *hooveri* Hoover's button-celery	–/–/1B.1	South San Francisco Bay Area, South Coast Ranges in Alameda, San Benito, Santa Clara, and San Luis Obispo Counties.	Vernal pool, 10–148 feet above MSL.	July	None—no suitable habitat within the project corridor.
Fritillaria biflora var. *ineziana* Hillsborough chocolate lily	–/–/1B.1	Endemic to Hillsborough area in San Mateo County.	Serpentine grassland.	Mar–Apr	None—no suitable habitat within the project corridor.
Fritillaria liliacea Fragrant fritillary	–/–/1B.2	Coast Ranges from Marin County to San Benito County.	Adobe soils of interior foothills, coastal prairie, coastal scrub, annual grassland, often on serpentine soils, below 1,350 feet.	Feb–Apr	None—no suitable habitat within the project corridor
Gilia capitata ssp. *chamissonis* Blue coast gilia	–/–/1B.1	Marin, San Francisco, and Sonoma Counties.	Coastal dunes and coastal scrub.	Apr–Jul	None—no suitable habitat within the project corridor.
Gilia millefoliata Dark-eyed gilia	–/–/1B.2	Coastal California from Del Norte to San Francisco County.	Coastal dunes; 10–65 feet above MSL.	Apr–Jul	None—no suitable habitat within the project corridor.
Helianthella castanea Diablo helianthella	–/–/1B.2	San Francisco Bay Area: Alameda, Contra Costa, Marin[c], San Francisco[c], and San Mateo Counties.	At chaparral/oak woodland ecotone, often in partial shade, on rocky soils, 80–3,800 feet above MSL.	Apr–Jun	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Hemizonia congesta ssp. *congesta* White seaside tarplant	–/–/1B.2	Mendocino, Marin, San Francisco, San Mateo, and Sonoma Counties.	Valley and foothill grassland, sometimes roadsides.	Apr–Nov	Low—two CNDDB occurrences within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Hesperevax sparsiflora var. *brevifolia* Short-leaved evax	–/–/1B.2	Humboldt, Mendocino, Marin, Santa Cruz, San Francisco, and Sonoma Counties.	Coastal dunes, sandy soils in coastal bluff scrub, below 700 feet above MSL.	Apr–Jun	None—no suitable habitat within the project corridor.
Hesperolinon congestum Marin dwarf-flax (=western flax)	T/T/1B.1	Marin, San Francisco, and San Mateo Counties.	Chaparral, serpentine grassland.	Apr–Jul	None—no suitable habitat within the project corridor
Horkelia cuneata var. *sericea* Kellogg's horkelia	–/–/1B.1	Coastal California from Marin County to Santa Barbara County.	Openings in closed-cone coniferous forest, coastal scrub, maritime chaparral, on sandy or gravelly soils.	Apr–Sep	None—no suitable habitat within the project corridor.
Horkelia marinensis Point Reyes horkelia	–/–/1B.2	Scattered occurrences in North Coast and northern Central Coast: Mendocino, Marin, Santa Cruz, and San Mateo Counties.	Coastal dunes, coastal scrub, perennial grassland on sandy soils, 15–1,150 feet above MSL.	May–Sep	None—no suitable habitat within the project corridor.
Lasthenia conjugens Contra Costa goldfields	E/–/1B.1	Scattered occurrences in Coast Range valleys and southwest edge of Sacramento Valley: Alameda, Contra Costa, Mendocino, Monterey, Napa, Santa Barbara[c], Santa Clara[c], and Solano Counties.	Alkaline or saline vernal pools and swales, below 700 feet above MSL.	Mar–Jun	None—no suitable habitat within the project corridor
Layia carnosa Beach layia	E/E/1B.1	Scattered occurrences along coastal California from Humboldt County to Santa Barbara County.	Coastal dunes, coastal scrub on sandy soil.	Mar–Jul	None—no suitable habitat within the project corridor.
Leptosiphon rosaceus Rose leptosiphon	–/–/1B.1	Marin, San Francisco[c], San Mateo, and Sonoma* Counties.	Coastal bluff scrub.	Apr–Jul	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Lessingia arachnoidea Crystal Springs lessingia	–/–/1B.2	San Mateo County, one location reported in Sonoma County.	Serpentine grassland and open grassy areas in serpentine chaparral, cismontane woodland.	Apr–Jul	None—no suitable habitat within the project corridor.
Lessingia germanorum San Francisco lessingia	E/E/1B.1	San Francisco and San Mateo Counties.	Coastal scrub, on remnant dunes.	Jun–Nov	None—no suitable habitat within the project corridor.
Malacothamnus aboriginum Indian Valley bush mallow	–/–/1B.2	Inner South Coast Ranges: San Benito, Fresno, and Monterey Counties.	Rocky areas in chaparral and oak woodland, often in burned areas, 492–5,577 feet above MSL.	Apr–Oct	None—no suitable habitat within the project corridor.
Malacothamnus arcuatus Arcuate bush-mallow	–/–/1B.2	Santa Clara, Santa Cruz, and San Mateo Counties.	Chaparral, 49–1,165 feet above MSL.	Apr–Sep	None—no suitable habitat within the project corridor.
Malacothamnus davidsonii Davidson's bush-mallow	–/–/1B.2	Los Angeles, Monterey, and San Luis Obispo Counties.	Coastal scrub, chaparral, and riparian woodland in sandy washes, 900–2,800 feet above MSL.	Jun–Sep	None—no suitable habitat within the project corridor.
Malacothamnus hallii Hall's bush-mallow	–/–/1B.2	Alameda, Contra Costa, Merced, Santa Clara, and Stanislaus Counties.	Chaparral and coastal scrub, 30–2,500 feet above MSL.	May–Sep	None—no suitable habitat within the project corridor.
Microseris paludosa Marsh microseris	–/–/1B.2	Coastal California from Mendocino County to San Luis Obispo County.	Grassland, coastal scrub, closed-cone-coniferous forest, cismontane woodland.	Apr–Jul	Low—one CNDDB occurrence within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Monolopia gracilens Woodland woollythreads	–/–/1B.2	Contra Costa, Alameda (reported), Santa Clara, San Mateo, Santa Cruz, Monterey, San Luis Obispo Counties.	Cismontane woodland, openings in broadleaved forest, openings in north coast coniferous forest, openings in chaparral, and serpentine valley and foothill grassland, 328–3,937 feet above MSL.	Mar–Jun (Feb)	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Pentachaeta bellidiflora White-rayed pentachaeta	E/E/1B.1	One occurrence in San Mateo County, historically known also from Marin and Santa Cruz Counties.	Annual grassland, often on serpentine soils.	Mar–May	None—no suitable habitat within the project corridor
Plagiobothrys chorisianus var. *chorisianus* Choris' popcornflower	–/–/1B.2	Southwest San Francisco Bay Area, northern Central Coast: Santa Cruz, San Francisco and San Mateo Counties.	Chaparral, coastal prairie, coastal scrub, in mesic areas.	Mar–Jun	None—no suitable habitat within the project corridor.
Plagiobothrys diffusus San Francisco popcornflower	–/E/1B.1	Alameda and Santa Cruz County.	Coastal prairie, valley and foothill grassland.	Mar–Jun	None—not known to occur in the counties in which the project is located.
Polemonium carneum Oregon polemonium	–/–/2.2	Alameda, Del Norte, Humboldt, Marin, San Francisco, Siskiyou, San Mateo, and Sonoma Counties.	Coastal prairie, coastal scrub, and lower montane coniferous forest.	Apr–Sep	None—no suitable habitat within the project corridor.
Potentilla hickmanii Hickman's cinquefoil	E/E/1B.1	Monterey, San Mateo, and Sonoma[c] Counties.	Freshwater marshes, seeps, and small streams in open areas in coastal scrub or coniferous forest.	Apr–Aug	None—no suitable habitat within the project corridor.
Sanicula maritima Adobe sanicle	–/R/1B.1	Coastal Monterey and San Luis Obispo Counties. Historically known from the San Francisco Bay area: Alameda[c] and San Francisco[c] Counties.	Moist clay or ultramafic soils, in meadows and grassland.	Feb–May	None—no suitable habitat within the project corridor.
Silene verecunda ssp. *verecunda* San Francisco campion	–/–/1B.2	Northern Central Coast, San Francisco Bay Area: San Francisco, and San Mateo, Santa Cruz Counties; also Sutter County.	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland, in sandy areas, 100–2,100 feet above MSL.	Mar–Aug	Low—six CNDDB occurrences within 5 miles of the project and limited suitable habitat is present within the project corridor.
Streptanthus albidus ssp. *albidus* Metcalf Canyon jewel-flower	E/–/1B.1	Endemic to Santa Clara County.	Valley and foothill grassland, on serpentine soils.	Apr–Jul	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

Species	Status[a] Federal/State/ CRPR	California Distribution	Habitats	Blooming Period	Potential Occurrence in Project Corridor[b]
Streptanthus albidus ssp. *peramoenus* Most beautiful jewel-flower	–/–/1B.2	Eastern San Francisco Bay area, Central south coastal outer ranges: Alameda, Contra Costa, Monterey, and Santa Clara Counties.	Chaparral, annual grassland, on ridges and slopes on serpentine outcrops, 450–3,200 feet above MSL.	Apr–Jun	None—no suitable habitat within the project corridor.
Stuckenia filiformis (*Potamogeton filiformis*) Slender-leaved pondweed	–/–/2.2	Scattered locations in Contra Costa, El Dorado, Lassen, Merced, Mono, Modoc, Mariposa, Placer, and Sierra Counties; presumed extirpated in Santa Clara County.	Freshwater marsh, shallow emergent wetlands and freshwater lakes, drainage channels; 984–7,054 feet above MSL.	May–July	None—no suitable habitat within the project corridor.
Sueda californica California seablite	E/–/1B.1	Morro Bay, San Luis Obispo County, historically found in south San Francisco Bay.	Margins of tidal salt marsh, below 49 feet above MSL.	Jul–Oct	None—no suitable habitat within the project corridor.
Trifolium amoenum Showy rancheria clover	E/–/1B.1	Coast Range foothills, San Francisco Bay region from Mendocino County to Santa Clara County.	Low elevation grasslands, including swales and disturbed areas, sometimes on serpentine soils.	Apr–Jun	Low—two CNDDB occurrences within 5 miles of project corridor; low-quality suitable habitat present within project corridor.
Trifolium hydrophilum Saline clover	–/–/1B.2	Sacramento Valley, central western California.	Salt marsh, mesic alkaline areas in grasslands, vernal pools.	Apr–Jun	None—no suitable habitat within the project corridor.
Triquetrella californica Coastal triquetrella	–/–/1B.2	Scattered localities in Coastal California: Contra Costa, Mendocino, San Diego, and San Francisco Counties.	On soil in coastal bluff scrub and coastal scrub, 33–328 feet above MSL.	N/A	None—no suitable habitat within the project corridor.

Table 3.3-3. Continued

[a] Status explanations:

Federal

E = listed as endangered under the Endangered Species Act (ESA)
P = proposed for listing under the ESA
– = no listing

State

E = listed as endangered under the California Endangered Species Act
– = no listing

California Rare Plant Rank (CRPR)

1B = List 1B species: rare, threatened, or endangered in California and elsewhere
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere

CRPR Code Extensions:

0.1 = seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat
0.2 = fairly endangered in California (20–80% of occurrences threatened)

[b] Definitions of levels of potential occurrence:

Moderate: Plant known to occur in the region from the CNDDB or other documents regarding the vicinity of the Proposed Project, or habitat conditions are of suitable quality.

Low: Plant not known to occur in the region from the CNDDB or other documents regarding the vicinity of the Proposed Project; or habitat conditions are of poor quality.

None: Plant not known to occur in the region from the CNDDB or other documents regarding the vicinity of the Proposed Project; or suitable habitat is not present in any condition.

[c] Species has not been observed here, but is expected to also occur at this location.

CNDDB = California Natural Diversity Database

Non-Listed Species Considered

Project effects on Cooper's hawk, great blue heron, snowy egret, and other nesting birds were considered in this analysis due to the protection of active nests under MBTA and California Department of Fish and Game Code Sections 3503 and 3503.5.

Project effects on monarch butterfly overwintering sites were also considered in this analysis because such sites are locally significant. No known monarch butterfly overwintering sites are known to occur within or near the project corridor.

Tree Survey

Trees in the Caltrain corridor consist of a variety of native and non-native species. The project arborist (HortScience), conducted multiple assessments along the project route to identify trees that maybe affected by the Proposed Project. HortScience assessed the tree canopy along the entire route using aerial photography and video photography shot from the front of a train. Using that information, HortScience identified the areas of highest tree density for targeted on-the-ground surveys in following listed below. Both sides of the ROW were surveyed unless otherwise noted.

- Burlingame, from milepost (MP) 15.1 to MP 16.3 (from Trousdale Drive to North Lane).
- Atherton, from MP 27.2 to MP 28.1 (the entire length of Atherton in the Caltrain ROW).
- Menlo Park, from MP 28.1 to MP 29.7 (the entire length of Menlo Park in the Caltrain ROW).
- Palo Alto, from MP 29.7 to MP 31.8 (from the northern city limit to Oregon Expressway).
- Sunnyvale, from MP 37.9 to MP 38.6 (both sides from N. Mary Avenue to N. Mathilda Avenue, and north side only from N. Mathilda to Sunnyvale city limit), and from MP 39.7 to MP 40.3 (from just north of N. Wolfe Road to a point 0.5 mile south of N. Wolfe Road, south side only)

These surveys were completed in summer 2013. In October 2013, HortScience supplemented the pedestrian surveys with a two-day survey from the Caltrain ROW of areas of lesser tree canopy density using a maintenance vehicle (a Hi-Rail Truck also called a Hy-Rail or a road-rail vehicle). Using the survey data, aerial photography and video photography, HortScience then prepared a tree inventory (Appendix F, *Tree Inventory and Canopy Assessment*) and assessed the potential effects of the Proposed Project on trees based on the needs for vegetation clearance to provide for electrical safety in the electrical safety zone (ESZ)[2].

Some trees stand within the Caltrain ROW while others are on adjacent public or private property. This vegetation, which provides visual screening between the railroad ROW and adjacent land uses, may encroach into vertical and horizontal clearances for installation and safe operations and maintenance of the OCS components. Potential project impacts on such vegetation were therefore considered. A prior estimate of the number of trees along the entire Caltrain service corridor (San Francisco to Gilroy) is approximately 19,000 trees in and immediately adjacent to the ROW.

Some of the trees within the tree study area are heritage trees as defined by local tree ordinances (see Appendix F). In addition, several locations contain trees with historic significance.

[2] The ESZ is the distance from the railway outside track centerlines to the outer edge of the vegetation clearance zone. This distance would be up to 24 feet (up to 12 feet to the OCS pole alignment + 2 feet for the width of the pole + 10 feet for the vegetation clearance).

- Burlingame Eucalyptus Row: The City of Burlingame has identified concern about the historic row of eucalyptus along the Caltrain ROW within the City (called the Jules Francard Grove). A separate row of eucalyptus (the Howard-Ralston Eucalyptus Tree Rows along El Camino Real) is on the National Register of Historic Places, but would not be affected by the Proposed Project.
- A landmark redwood tree, also known as "El Palo Alto," is identified by the City of Palo Alto as Heritage Tree #1 and is designated as California Historical Landmark No. 2. The tree trunk is located approximately 26 feet from the Caltrain ROW, with tree branches and foliage located within 5 feet of the ROW. The tree is estimated to be more than 110 feet high and more than 1,000 years old (San Jose Mercury News 2004).

3.3.2 Impact Analysis

An analysis of the effects on biological resources along the project corridor, its methods and significance criteria, and associated mitigation measures are described below.

3.3.2.1 Methods for Analysis

Potential adverse effects on special-status species in the study area were evaluated based on a review of the available literature regarding the status and known distribution of the special-status species within the study area, and data collected from a survey of the new facilities locations within the project area conducted by ICF biologists on June 26, 2013. Principle sources consulted during the analysis are listed here.

- USFWS list of endangered and threatened species that may occur in or be affected by projects in the U.S. Geological Survey's (USGS) 7.5-minute quadrangles of Mountain View, Cupertino, Palo Alto, Montara Mountain, San Jose West, San Jose East, Woodside, Redwood Point, San Francisco South, San Mateo, and San Francisco North, current as of June 7, 2013 (U.S. Fish and Wildlife Service 2013) (see Appendix G). The individual quadrangles in which the Proposed Project would be located were used because of the developed nature of the majority of the project corridor and the fact that the corridor occupies a relatively small portion of each quadrangle; therefore, a nine-quadrangle search was not conducted.
- CDFW's Natural Diversity Database (CNDDB) query results for the USGS's 7.5-minute quadrangles of Mountain View, Cupertino, Palo Alto, Montara Mountain, San Jose West, San Jose East, Woodside, Redwood Point, San Francisco South, San Mateo, and San Francisco North, current as of June 7, 2013 (California Department of Fish and Wildlife 2013) (see Appendix G). The rationale for using the individual quadrangle search for this query was the same as the USFWS query.
- CNPS's Electronic Inventory query results for the USGS's 7.5-minute quadrangles of Mountain View, Cupertino, Palo Alto, Montara Mountain, San Jose West, San Jose East, Woodside, Redwood Point, San Francisco South, San Mateo, and San Francisco North, current as of June 7, 2013 (California Native Plant Society 2013) (see Appendix G).
- The Proposed Project's *Tree Inventory and Canopy Assessment* prepared by HortScience, Inc. (Appendix F).
- The JPB's Caltrain Electrification Project (SF–San Jose) Biological Resources Report prepared by Garcia and Associates (2008a).

- The Peninsula Corridor Joint Powers Board's (JPB's) Caltrain Electrification Project Focused PS7 Biological Resources Report prepared by Garcia and Associates (2008b).
- The Peninsula Corridor JPB's Caltrain Electrification Project TPS1 Alternate Sites Biology Review prepared by Garcia and Associates (2008c).
- The Proposed Project's NES prepared by Parsons (2002a).
- The Proposed Project's Preliminary Wetland Delineation Report prepared by Parsons (2002b).
- The *Santa Clara Valley Habitat Plan* (ICF International 2012).

After review of all data sources, a final list of candidate, sensitive, and special-status species with potential to occur in the vicinity of the project corridor was compiled. Each of those species was evaluated for its potential to occur within the project corridor and to be affected by Project activities. In addition, the presence of suitable habitat was evaluated. Special-status plant species that might occur in the project corridor are presented in Table 3.3-3. Candidate, sensitive, and special-status wildlife species are presented in Table 3.3-2. For informational purposes, these tables also include species that have been determined to have no potential to occur within the study area. Special-status wildlife and plant species occurrences within 5 miles of the project corridor are respectively shown in Figures 3.3-1 and 3.3-2.

To refine the list of species potentially affected by construction of the Proposed Project, species in Tables 3.3-2 and 3.3-3 were evaluated for their potential to occur in the project corridor.

- Species rated as having "no potential to occur" have no suitable habitat in the study area, are not known to occur within 5 miles of the project corridor, or are thought to have been extirpated from the region.
- Species rated as having "low potential to occur" are those species whose known distribution does not include the project area; species for which little appropriate habitat or only marginal habitat is present in the study area; species for which no records occur within 5 miles of the project corridor, or species that have not been observed during recent surveys.
- Species rated as having "moderate or high potential to occur" are those species for which suitable habitat characteristics are present in the study area, even though the species was not detected during focused surveys.

Species rated as having "moderate or high potential to occur" or "known to occur" in the study area and migratory bird nests were considered in the impact analysis. Where impacts would be significant, mitigation measures were identified to reduce these impacts to a less-than-significant level.

Based on Tables 3.3-2 and 3.3-3, the following special-status species were determined to have potential to occur at certain locations within or along the project corridor.

- Plants:
    - Franciscan onion (*Allium peninsulare* var. *franciscanum*)
    - Bent-flowered fiddleneck (*Amsinckia lunaris*)
    - Round-leaved filaree (*California macrophylla*)
    - Bristly sedge (*Carex comosa*)

- Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*)
- Santa Clara Valley dudleya (*Dudleya abramsii* ssp. *setchellii*)
- Marsh microseris (*Microseris paludosa*)
- White-seaside tarplant (*Hemizonia congesta* ssp. *congesta*)
- San Francisco campion (*Silene verecunda* ssp. *verecunda*)
- Showy rancheria clover (*Trifolium amoenum*)

- Wildlife:
  - Central California coast steelhead (*Oncorhynchus mykiss*)
  - San Francisco garter snake (*Thamnophis sitralis tetrataenia*)
  - Western pond turtle (*Emys marmorata*)
  - California tiger salamander (*Ambystoma californiense*)
  - California red-legged frog (*Rana draytonii*)
  - Townsend's big-eared bat (*Corynorhinus townsendii*)
  - Pallid bat (*Antrozous pallidus*)
  - Hoary bat (*Lasiurus cinereus*)
  - Fringed myotis (*Myotis thysanodes*)
  - Western burrowing owl (*Athene cunicularia hypugaea*)
  - Northern harrier (*Circus cyaneus*)
  - White-tailed kite (*Elanus leucurus*)
  - American peregrine falcon (*Falco peregrines anatum*)
  - Saltmarsh common yellowthroat (*Geothlypis trichas sinuosa*)
  - Purple martin (*Progne subis*)

Therefore, Project construction has the potential to result in impacts on these 10 special-status plant species and 15 special-status wildlife species.

Appendix F, *Tree Inventory and Canopy Assessment*, prepared by HortScience, Inc. was referenced for the tree impact data and the tree impact analysis used in the preparation of this document.

3.3.2.2 Thresholds of Significance

In accordance with Appendix G of the State CEQA Guidelines, the Proposed Project would be considered to have a significant effect if it would result in any of the conditions listed below.

- 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 CDFW or USFWS [including bat species given "Red or High" and "Yellow or Medium" regional priority in the Western Bat Working Group's Regional Priority Matrix (Western Bat Working Group 2007)].

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.
- Have a substantial adverse effect on federally protected wetlands or waters as defined by CWA Section 404 or state protected wetlands or waters through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

3.3.2.3 Impacts and Mitigation Measures

Changes resulting from Project Variant 1 are described below each impact analysis.

Impact BIO-1a	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 or U.S. Fish and Wildlife Service during Proposed Project construction
Level of Impact	Significant
Mitigation Measures	BIO-1a: Implement general biological impact avoidance measures BIO-1b: Implement special-status plant species avoidance and revegetation measures BIO-1c: Implement California red-legged frog and San Francisco garter snake avoidance measures BIO-1d: Implement western pond turtle avoidance measures BIO-1e: Implement Townsend's big-eared bat, pallid bat, hoary bat, and fringed myotis avoidance measures BIO-1f: Implement western burrowing owl avoidance measures BIO-1g: Implement northern harrier, white-tailed kite, American peregrine falcon, saltmarsh common yellowthroat, purple martin, and other nesting bird avoidance measures BIO-1h: Conduct biological resource survey of future contractor-determined staging areas BIO-1i: Minimize impacts on Monarch butterfly overwintering sites
Level of Impact after Mitigation	Less than significant

As discussed in Appendix G, *Biological Resources Information*, a limited number of special-status species have suitable habitat within or adjacent to the project corridor.

For the most part, the Proposed Project would disturb areas of a ruderal and previously disturbed character with limited potential for special-status species. The overall scale of potential disturbance would be very limited because the Proposed Project construction within the Caltrain ROW would primarily consist of installing OCS poles with a limited permanent footprint for pole foundations (the OCS poles would be 1 to 2 feet in diameter). For the TPFs within the ROW, the overall footprint

would be only 1.1 acres. For the two TPSs outside the ROW, the overall footprint would be only 1.8 acres and both traction power substations would be in highly urbanized areas with limited habitat value.

Special-status plant species have the potential to occur in undeveloped areas with suitable habitat, namely areas that support natural land cover. As noted in Appendix G, such areas are only found in limited portion of the Caltrain ROW, which is dominated by disturbed and ruderal conditions. However, where suitable habitat occurs, project construction would have the potential to result in direct take of special-status plant species through crushing and indirect take of special-status plant species through habitat modification or loss, if they are actually present.

Project construction would not directly affect streams and thus would not directly affect aquatic species. However, the Proposed Project does have the potential to release pollutants into storm drain systems and directly into the drainages themselves. These pollutants would degrade the physical conditions of the water features and could result in direct or indirect mortality of Central California steelhead, other aquatic and partially aquatic species (i.e., San Francisco garter snake, western pond turtle, California tiger salamander, and California red-legged frog,), and species that depend on aquatic prey (i.e., great blue heron and snowy egret). Releases of pollutants could also result in habitat loss. Releases of contaminants from construction equipment and supplies could affect the creeks passing under the project corridor; however, implementation of the Storm Water Pollution Prevention Plan (SWPPP) for the Proposed Project and the mitigation measures specified below would avoid and reduce the amount of runoff into the creeks during construction as required by the CWA Section 401 Permit that would need to be obtained prior to Project initiation. Implementation of the Proposed Project's SWPPP is expected to avoid impacts on aquatic habitat in the drainages crossed by the Proposed Project and consequently, on central coast steelhead. Details of the Proposed Project's SWPPP are further explained in Section 3.9, *Hydrology and Water Quality*.

Although most of the project area is disturbed and ruderal and the potential for special-status terrestrial wildlife species to occur is low, there remains a small potential that these species might be encountered during construction. If and where species are present, ground disturbance activities could result in the direct or indirect mortality or injury of individuals belonging to special-status species through crushing, parental abandonment of young, reduced fitness, reduction in number of available prey, and degradation or loss of habitat. Where tree or other vegetation removal is necessary, the Proposed Project could disturb bat roosting and bird nesting habitat. Birds or bats that utilize bridge structures under or over the Caltrain ROW may be disturbed by the installation of overbridge protection. Other temporary impacts on special-status wildlife species resulting from construction activities would include air pollution from dust and construction equipment and construction noise and vibration. Although the potential to encounter special-status species is low, construction activities and related effects would still have potential to disturb habitat and individual San Francisco garter snake, western pond turtle, California tiger salamander, California red-legged frog, pallid bat, hoary bat, fringed myotis, western burrowing owl, northern harrier, white-tailed kite, American peregrine falcon, saltmarsh common yellow throat, purple martin, and other nesting birds.

Potential staging areas within the Caltrain ROW were assessed for sensitive biological resources. Trees are present at many of the potential staging areas in the ROW and could provide bird nesting or bat roosting sites; Mitigation Measures BIO-1e and BIO-1g would apply. In addition, a number of the staging areas in the ROW have wetlands or waters that may provide habitat for special-status species and that could be affected by construction; the relevant mitigation measures noted below for

amphibian and fish special-status species would apply as appropriate. The locations of contractor-determined staging areas outside the ROW are not yet known and activities in these areas could affect special-status species, as well as other sensitive biological resources. Effects in these areas would be temporary as the boundaries of these staging areas would be moved to avoid sensitive resources pursuant to Mitigation Measure BIO-1h.

Although no known Monarch butterfly overwintering sites are found within the project area, if an overwintering site were to develop between 2014 and the time of construction and were to be disturbed, this would be considered a significant impact. Despite the low likelihood of this occurring, implementation of Mitigation Measure BIO-1i is recommended to avoid disrupting overwintering sites.

All sensitive habitat and wetland areas would be identified for avoidance during project design where feasible. With the implementation of such measures in Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, BIO-1f, BIO-1g, BIO-1h, BIO-1i and HYD-1 (refer to Section 3.9, *Hydrology and Water Quality*), construction of the Proposed Project is expected to have a less-than-significant impact on special-status species.

Under Project Variant 1, as described in Chapter 2, *Project Description*, the Project's terminus and PS7 would be located approximately 1.2 miles farther north than currently proposed. This would avoid construction within the JPB ROW adjacent to Communication Hill, which is an area of special-status species occurrences. Because construction activities would occur in a slightly smaller area, project construction would have slightly less impact to special-status species. However, Mitigation Measures BIO-1a, BIO-1b, BIO-1c, BIO-1d, BIO-1e, BIO-1f, BIO-1g, BIO-1h, BIO-1i and HYD-1 would all still apply and this impact's significance determination would not change.

Mitigation Measure BIO-1a: Implement general biological impact avoidance measures

The following practices will be implemented when each applies as determined by the construction schedule and specific construction activities.

- A Worker Environmental Awareness Training Program for construction personnel will be conducted by a qualified biologist retained by JPB. The program will provide workers with information on their responsibilities with regard to the special-status species, including central California steelhead, San Francisco garter snake, western pond turtle, California tiger salamander, California red-legged frog, Townsend's big-eared bat, pallid bat, hoary bat, fringed myotis, Cooper's hawk, great blue heron, western burrowing owl, northern harrier, white-tailed kite, American peregrine falcon, saltmarsh common yellow throat, and purple martin. The training will provide a physical description of the special-status species that have potential to occur and be affected by construction activities to each construction crew prior to the initiation of the crew's construction activities. The worker awareness training will also detail each species' habitat and legal protections, a photo of relevant species, and contact information for the primary biologist.
- Precautions to prevent pollution of streams, waterways, and other bodies of water during construction.
- Dust control through watering of appropriate surfaces.
- Clearing and grubbing procedures that specify that only trees and plants designated for removal will be removed.

- Excavation techniques to ensure the stability of subsurface materials as well as retention of excavated materials within the construction areas.
- Materials and fluids generated by construction activities will be placed at least 30 meters (100 feet) from wetland areas or drainages and covered until they are disposed of at a permitted site.
- All natural communities and wetland areas located outside the construction zone that could be affected by construction activities will be temporarily fenced off and designated Environmentally Sensitive Area(s) to prevent accidental intrusion by workers and equipment.
- Sensitive habitat and wetland (including other waters of the United States and waters of the state) areas will be identified during Project design and avoided during construction to the maximum extent feasible.

Mitigation Measure BIO-1b: Implement special-status plant species avoidance and revegetation measures

During the design phase, prior to construction, JPB will retain a qualified botanist to survey any areas of proposed construction disturbance that contain undeveloped habitat suitable to support Franciscan onion, bent-flowered fiddleneck, round-leaved fillaree, bristly sedge, Congdon's tarplant, Santa Clara Valley dudleya, marsh microseris, white seaside tarplant, San Francisco campion, or showy rancheria clover. The qualified botanist will survey appropriate areas of suitable habitat for these species during each species' blooming period (Table 3.3-3).

If no special-status plants are identified during the design-period surveys, then no further action is necessary. If one or more special-status species is found within areas proposed for disturbance in the project corridor, then the occurrence will be avoided, if feasible. If avoidance is not possible, then a revegetation and monitoring plan would be developed and executed by a qualified botanist retained by JPB that would consist of collection of seed prior to disturbance, reseeding and revegetation after disturbance, and monitoring. Most of the project construction consists of installing OCS poles and wires which have a minimal footprint and, thus, revegetation will be possible in areas where special-status plants may be disturbed. The plan will include revegetation success criteria of 80% of the reseeded target area, in perpetuity conservation of restoration areas, weed management, limiting human access, monitoring for at least 5 years and until success is demonstrated for 3 consecutive years, and remediation measures if success is not achieved by year 5. Monitoring will continue until the success criteria are completely satisfied.

Mitigation Measure BIO-1c: Implement California red-legged frog and San Francisco garter snake avoidance measures

- Implement the Worker Environmental Awareness Training Program described under Mitigation Measure BIO-1a: Implement general biological impact avoidance measures.
- All potential California red-legged frog and San Francisco garter snake habitat that can be avoided by construction activities will be flagged by a USFWS-approved biologist prior to grading or other construction activities. All California red-legged frog and San Francisco garter snake habitat will be protected by a 10-foot buffer with exclusionary fencing to make it easily avoided by construction crews.

- The construction site will be monitored by a qualified and federally permitted biologist during all phases of construction to remove any California red-legged frogs and San Francisco garter snakes found in the construction area. Individual frogs and snakes will be moved immediately to a site that is a minimum of 330 feet from the construction boundary. The relocation site will be determined prior to commencement of construction activities.
- Construction activities near drainages identified as potential migration corridors will take place between May 15 and October 31 when the California red-legged frog and San Francisco garter snake are least likely to be present in the project corridor.
- To discourage California red-legged frogs from entering the project impact areas via the freshwater ditches west of the impact areas, the ditches will be equipped with lightweight, one-way flow gates. These will be designed so that water can easily pass from the project site to the ditches, but small vertebrates such as the frog cannot move upstream from the ditches to the project site.

Mitigation Measure BIO-1d: Implement western pond turtle avoidance measures

Prior to the start of construction activities at sites that may support western pond turtle (defined as any undeveloped areas within 400 feet of creeks), JPB will retain a qualified biologist to conduct preconstruction surveys for pond turtles in all suitable habitats in the vicinity of the project corridor. Surveys will take place at each area of suitable habitat that will be disturbed no more than 7 days prior to the onset of site preparation and construction activities with the potential to disturb turtles or their habitat. If preconstruction surveys identify active nests, the biologist will establish no-disturbance buffer zones around each nest using temporary orange construction fencing. The demarcation should be permeable to allow young turtles to move away from the nest following hatching. The radius of the buffer zone and the duration of exclusion will be determined in consultation with the CDFW. The buffer zones and fencing will remain in place until the young have left the nest, as determined by the qualified biologist. If western pond turtles are found in the project corridor, a qualified biologist will remove and relocate them to suitable habitat outside of the project limits, consistent with CDFW protocols and permits. Relocation sites will be subject to agency approval.

Mitigation Measure BIO-1e: Implement Townsend's big-eared bat, pallid bat, hoary bat, and fringed myotis avoidance measures

Prior to the start of construction activities at sites offering suitable bat roosting habitat, JPB will retain a qualified biologist to conduct preconstruction surveys for Townsend's big-eared bat, pallid bat, hoary bat, and fringed myotis. Surveys will take place no more than 7 days prior to the onset of site preparation and construction activities with the potential to disturb bats or their habitat and will include close inspection of potential bat roosts, such as trees and any built features within the work footprint. If special-status bats are found in the project footprint and avoidance of roosting areas is not possible, a qualified wildlife biologist will consult with CDFW staff to identify the appropriate protection measures. JPB will be responsible to ensure that CDFW requirements are implemented. Multiple survey visits and survey methods may be required at a single site to determine presence or absence of roosting bats, specifically Townsend's big-eared bat, depending on season and roost type.

Mitigation Measure BIO-1f: Implement western burrowing owl avoidance measures

Prior to any construction activity planned to begin during the fall and winter non-nesting season (September 1 through January 31) during the survey or at any time during the construction process, JPB will retain a qualified wildlife biologist to conduct a preconstruction survey for burrowing owls. Surveys will be conducted at each area of suitable habitat that will be disturbed no more than 7 days prior to ground disturbing activities and will cover all suitable burrowing owl habitat subject to disturbance pursuant to the March 7, 2012 California Department of Fish and Game Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). If any western burrowing owls are found within the disturbance area, JPB will notify CDFW and will proceed under CDFW direction.

If construction is planned to occur during the nesting season (February 1 through August 31), surveys for nesting owls will be conducted by a qualified wildlife biologist in the year prior to construction to determine if there is breeding pair within 150 meters (approximately 492 feet) of the construction footprint, unless the biologist determines that a smaller survey buffer around the construction footprint is called for based on preexisting background disturbance and conditions. This will provide the project team advance notice regarding nesting owls in the project area and allow ample time to discuss with CDFW regarding the appropriate course of action if nesting owls are found. In addition, same-year preconstruction surveys for nesting western burrowing owls will be conducted no more than 7 days prior to ground disturbance in all suitable burrowing owl habitat relative to the proposed date of disturbance. If the biologist identifies the presence of a burrowing owl nest in an area scheduled to be disturbed by construction, a 200-meter no-activity buffer will be established and maintained around the nest while it is active. Surveys and buffer establishment will be performed by qualified wildlife biologists, will be coordinated with CDFW, and will be subject to CDFW review and oversight.

Mitigation Measure BIO-1g: Implement northern harrier, white-tailed kite, American peregrine falcon, saltmarsh common yellowthroat, purple martin, and other nesting bird avoidance measures

- Implement the Worker Environmental Awareness Training Program described under Mitigation Measure BIO-1a: Implement general biological impact avoidance measures.
- Preconstruction surveys for nesting migratory birds, including raptors if construction will occur between February 1 and August 31. If active nests are found during the survey, no-disturbance species-specific buffer zones will be established by a qualified biologist and marked with high-visibility fencing, flagging, or pin flags. Typical active nest buffers for non-raptorial birds are 50 feet and 250 feet for raptors.
- Prior to construction activities, a USFWS-approved biologist will conduct a preconstruction survey of all potential nesting habitat for tree and ground-nesting raptors as well as purple martins and other swallow species that use cavities in human-made structures (i.e., overpasses) as nest sites or that construct nests that adhere to the aforementioned human-made structures to record the presence and location of nesting swallows.
- If construction during the breeding season cannot be avoided, then USFWS-approved exclusionary devices such as netting, panels, or metal projectors will be installed over the entrances to the identified cavities and/or nest sites prior to the swallows' arrival in mid-March. No exclusionary devices will be installed after the breeding season begins (i.e., March 15 through August 15), nor will the cavities or external nests be blocked if birds are

occupying them. All installation of exclusionary devices will be supervised by the USFWS-approved biologist.

- Alternatively, no preconstruction surveys for nesting swallows would be conducted; however, all drainage holes or other cavities, or suitable nest substrates associated with human-made structures within the project corridor that may be used by nesting swallows would be fitted with the exclusionary devices described above prior to the birds' arrival in mid-March.
- All exclusionary devices will be monitored and maintained throughout the breeding season to ensure that they are successful in preventing the birds from accessing the cavities or nest sites. Upon the project's completion, the exclusionary devices will be removed from the site unless otherwise authorized by USFWS.
- All proposed new facility sites are recommended for nesting bird surveys in advance of construction activities if trees are to be removed during the breeding season. Although the majority of the proposed facility sites are located within previously disturbed areas, potential exists for birds to nest within suitable habitat present on or adjacent to these sites.

Mitigation Measure BIO-1h: Conduct biological resource survey of future contractor-determined staging areas

JPB will retain a qualified biologist to conduct a survey of future contractor-determined staging areas prior to any project-related activities commencing in such locations. The biologist will identify any wetlands, other waters of the United States or state, sensitive habitat, and suitable habitat for special-status species. The biologist will work with the contractor, who will avoid such sensitive biological resources to the extent possible through the adjustment of the proposed staging area(s). For habitat where special-status species or other protected species could occur (e.g., occasional upland migration habitat) that could be affected by staging activities, other applicable mitigation measures (BIO-1a to BIO-1g, BIO-1i. BIO-2, BIO-3, BIO-5, BIO-6, and HYD-1) will be implemented for impacts that would occur at the contractor-proposed staging locations.

Mitigation Measure BIO-1i: Minimize impacts on Monarch butterfly overwintering sites

Prior to and during construction, a qualified biologist will periodically monitor the project ROW to evaluate whether Monarch butterfly overwintering sites have been established within areas that would be disturbed by the Proposed Project construction. If no overwintering sites are identified, then no further action is necessary. If overwintering sites become established, then project construction will avoid disturbing the sites during the overwintering period. Outside of the overwintering period, Proposed Project construction may proceed without constraint at the overwintering site.

Impact BIO-1b	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 or U.S. Fish and Wildlife Service during Proposed Project operation
Level of Impact	Potentially significant
Mitigation Measure	BIO-1j: Avoid nesting birds and bats during vegetation maintenance
Level of Impact after Mitigation	Less than significant

As of mid-2013, Caltrain operates 92 trains per day between San Jose and San Francisco during the week (Monday through Friday). With the Proposed Project, Caltrain operation will increase to 114 trains per day, with most of the increase during peak hours. While increased train traffic would occur following construction of the Proposed Project, operational conditions along the ROW are not expected to be significantly different from pre-Project conditions with respect to special-status plant and wildlife species except in relation to the OCS vegetation maintenance and train emissions. For terrestrial or aquatic species other than birds and bats, project operations would not adversely change habitat conditions along the project route and no significant impacts on these species are likely to result from operation of the Proposed Project.

With the partial replacement of diesel trains with electrified trains to create a mixed fleet, there would be a substantial reduction of diesel emissions along the Caltrain ROW, which would benefit the health of rare and common species found on and adjacent to the railway. In addition, the Proposed Project would result in a substantial regional reduction in nitrogen oxide emissions, which have been found to have a substantial adverse impact on serpentine grassland communities due to nitrogen deposition having a fertilizing effect that favors growth of non-native annual grasslands over native serpentine species. In specific, this can have a notable effect on the host plant for the threatened Bay checkerspot butterfly, which is a key focal species for the new *Santa Clara Valley Habitat Plan*.

With the OCS, there would be a need for vegetation maintenance to ensure safe clearances are provided between vegetation and energized elements of the OCS in the ESZ. Vegetation clearance activities occur today under existing conditions to maintain a clear accessway for trains, but the level of vegetation clearance in the future would be larger given the OCS clearance needs. Thus, there would be an increased potential to disturb nesting birds and bats due to annual vegetation maintenance. Mitigation Measure Bio-1j would ensure that impacts on nesting birds and bats would be less than significant.

Under Project Variant 1, described in Chapter 2, *Project Description*, the Project's terminus and PS7 would be located approximately 1.2 miles farther north than currently proposed. Therefore, the geographic area in which vegetation clearance would be required would be slightly smaller and potential to disturb nesting birds and bats due to annual vegetation maintenance would be less. However, Mitigation Measure BIO-1j would all still apply and this impact's significance determination would not change.

Mitigation Measure BIO-1j: Avoid nesting birds and roosting bats during vegetation maintenance

- Implement the Worker Environmental Awareness Training Program described under Mitigation Measure BIO-1a: Implement general biological impact avoidance measures.

- Annual vegetation maintenance will be performed between September 1 and January 30, wherever feasible to avoid nesting and roosting seasons.
- If vegetation maintenance needs to occur between February 1 and August 31 in the ESZ, then JPB will retain a qualified biologist to conduct preclearance surveys for nesting migratory birds, including raptors, and roosting bats. If active nests or roosts are found during the survey, no-disturbance species-specific buffer zones will be established by a qualified biologist and marked with high-visibility fencing, flagging, or pin flags. If an active Townsend's big-eared bat roost is found, consultation with CDFW will be conducted to determine appropriate avoidance strategies. Vegetation clearance will then occur after the nesting or roosting activity has ended. If vegetation clearance is necessary due to an emergency, it may proceed as necessary.

Impact BIO-2a	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations during Proposed Project construction
Level of Impact	Significant
Mitigation Measures	BIO-1a: Implement general biological impact avoidance measures BIO-1b: Implement special-status plant species avoidance and revegetation measures BIO-1h: Conduct biological resource survey of future contractor-determined staging areas BIO-2: Implement serpentine bunchgrass avoidance and revegetation measures BIO-5: Implement Tree Avoidance, Minimization, and Replacement Plan
Level of Impact after Mitigation	Less than significant

No project features would be constructed within any stream or riparian areas. However, construction of the Proposed Project could result in removal of some riparian trees and other riparian vegetation where necessary for electrical safety clearances. The implementation of Mitigation Measure BIO-1a would further identify sensitive habitat during Project design and require avoiding such sensitive habitats during construction as feasible. However, removal of riparian vegetation may still be necessary in order to provide electrical safety clearances. This vegetation removal would be considered a significant impact. Mitigation Measure BIO-5: Implement Tree Avoidance, Minimization, and Replacement Plan (see discussion below) would require replacement of removed trees or other riparian vegetation as close to the source of impact as possible, which would result in replacement of riparian trees/vegetation along any areas of disturbed riparian habitat. With these measures, impacts on riparian trees and vegetation would be less than significant.

Impacts on wetlands and waters are discussed separately under Impact BIO-3 below.

There is a small area (0.2 mile) of the project alignment in San Jose south of the proposed location of PS7 at Communications Hill that the *Santa Clara Valley Habitat Plan* maps as serpentine bunchgrass grassland. Serpentine bunchgrass grassland is a sensitive natural community designated by CDFW because the community often supports rare plant and wildlife species. In this area, the only proposed Project activities would be installation of OCS poles and wires adjacent to the existing tracks. It is unknown whether or not there is actual serpentine bunchgrass grassland in the area adjacent to the existing tracks. If present, the total permanent disturbance would only consist of

perhaps 10 OCS poles (5 on each side) with a permanent footprint of perhaps 125 square feet. Mitigation Measures BIO-1a and BIO-1b would apply to this area and would require minimization, avoidance, and revegetation if special-status plants are identified in this area, which would address rare plants that may occur within this vegetation community. Implementation of Mitigation Measures BIO-2 and BIO-1h would ensure that impacts to serpentine bunchgrass grassland would be less than significant.

If Project Variant 1, described in Chapter 2, *Project Description*, is implemented, then PS7 would be located farther north and no portion of the Project alignment, including the associated OCS, would be within serpentine bunchgrass grassland. Mitigation Measures BIO-2 would not be required due to avoidance of serpentine bunchgrass grassland. Therefore, with implementation of Project Variant 1, this impact's significance determination would not change.

Mitigation Measure BIO-2: Implement serpentine bunchgrass avoidance and revegetation measures

- The area of the alignment through Communications Hill in San Jose will be surveyed by a qualified botanist during the design phase.
- If serpentine bunchgrass grassland is identified, OCS pole placement will be designed to minimize permanent loss of this community.
- Where this community is temporarily disturbed by construction, the disturbed area will be revegetated with serpentine bunchgrass grassland.
- Where this community is permanently disturbed by permanent facilities, an area of equal size will be planted with serpentine bunchgrass grassland species and maintained and monitored until self-sufficient without intervention. Planting will occur at a location with suitable soils to support this community. The planting location will be as near as possible to the impact area within the Communications Hill area.

Impact BIO-2b	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations during Proposed Project operation
Level of Impact	Less than significant

While increased train traffic would occur following construction of the Proposed Project, operational conditions for sensitive habitats are not expected to be significantly different from pre-Project conditions and impacts on natural communities due to operation of the Proposed Project are expected to be less than significant.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would not result in any change to this impact analysis because it would not change normal train operations.

Impact BIO-3a	Have a substantial adverse effect on federally protected waters or wetlands as defined by Section 404 of the Clean Water Act or state waters or wetlands through direct removal, filling, hydrological interruption, or other means during Proposed Project construction
Level of Impact	Significant
Mitigation Measure	BIO-1a: Implement general biological impact avoidance measures BIO-1h: Conduct biological resource survey of future contractor-determined staging areas BIO-3: Avoid or compensate for impacts on wetlands and waters HYD-1: Implement construction dewatering treatment
Level of Impact after Mitigation	Less than significant

A few potentially jurisdictional state and federal waters and wetlands occur within the project corridor. If construction were to take place within those areas, construction could disturb or result in the loss of waters or wetlands.

For the OCS poles, there is sufficient project design flexibility in the placement of OCS poles to avoid impacts on all potentially jurisdictional waters that cross the Caltrain ROW, including all stream, creek, and ditch crossings along the entire length of the corridor. Potentially jurisdictional wetlands and waters of the United States that parallel the existing tracks occur sufficiently far outside of the Caltrain ROW that they would not be affected by Proposed Project construction. Detailed field surveys and measurements were conducted and reported in the prior NES to confirm that the line of poles can be constructed without encroaching into wetlands or waters that lie longitudinally along the edge of the Caltrain ROW. Mitigation Measures BIO-1a and BIO-1h would require JPB to identify wetlands and waters during Project design and avoid such sensitive habitats during construction, where feasible. It should be feasible to avoid all waters and wetlands along the entire Caltrain ROW for OCS pole installation, but if permanent loss any waters/wetlands is necessary, then Mitigation Measure BIO-3 would apply.

Regarding TPFs, wetlands or waters were found at only one location: TPS1 Option 3. Construction of a traction power substation at the TPS1 Option 3 site could result in an impact on 0.006-acre of a potential jurisdictional wetland. No wetlands or waters of the United States or state were identified at the TPS1 Option 1, ~~or~~ Option 2, or Option 4 sites. If the Option 1, ~~or~~ Option 2, or Option 4 sites were selected, then no impacts on waters or wetlands would occur in relation to TPS1. If the TPS1 Option 3 site is selected, then Mitigation Measure BIO-3 would be implemented, which would reduce impacts to a less-than-significant level.

For potential construction staging areas within the ROW, potential wetlands or waters were identified at nine different potential staging areas. Potential construction staging areas outside the ROW have not yet been identified but may contain waters or wetlands. Mitigation Measures BIO-1a: Implement general biological impact avoidance measures, BIO-1h: Conduct biological resource survey of future contractor-determined staging areas, and BIO-3: Avoid or compensate for impacts on wetlands and waters would apply to all staging areas containing waters or wetlands.

With the implementation of Mitigation Measures BIO-1a, BIO-1h, and BIO-3, direct impacts on waters and wetlands would be less than significant overall.

Regarding indirect effects, the JPB will develop and implement a SWPPP, as described in Section 3.9, *Hydrology and Water Quality*. In addition, Mitigation Measure HYD-1 will address any indirect water quality impacts on wetlands related to dewatering that may occur during construction.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would reduce the area of OCS construction potentially lowering impacts on waters and wetlands. No waters or wetland are apparent on the PS7 Variant locations. Thus, this variant would not change the impact determination of the Proposed Project.

Mitigation Measure BIO-3: Avoid or compensate for impacts on wetlands and waters

- Wetlands and waters will be avoided as required by Mitigation Measure BIO-1a, where feasible.
- If wetlands and waters cannot be avoided, then JPB will compensate for any permanent losses on a minimum 1:1 ratio (or at a greater ratio if determined to be required in permitting by the USACE or San Francisco Regional Water Quality Control Board [SFRWQCB]). Compensation will be provided by either creation of wetlands or waters to replace those losses and/or enhancement of existing waters or wetlands and/or purchase of adequate credits from a mitigation bank approved by USACE and SFRWQCB.

Impact BIO-3b	Have a substantial adverse effect on federally protected wetlands or waters as defined by Section 404 of the Clean Water Act or state protected wetlands or waters through direct removal, filling, hydrological interruption, or other means during Proposed Project operation
Level of Impact	Less than significant

While increased train traffic would occur following construction of the Proposed Project, operational conditions along the ROW are not expected to be significantly different from pre-Project conditions except that the amount of diesel particular deposition would be significantly reduced with the replacement of diesel trains with electric trains.

The additional permanent project facilities (traction power substations, switching station, and paralleling stations) would have limited areas of new impervious surfaces that would result in limited increases in stormwater generation potential. As discussed in Section 3.9, *Hydrology and Water Quality*, these facilities would be located in San Mateo County and Santa Clara County and would comply with the respective countywide stormwater programs, which would result in less-than-significant indirect impacts on the water quality and hydrology of waters and wetlands.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would not result in any change to this impact analysis because it would not change normal train operations.

Impact BIO-4a	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 during Proposed Project construction
Level of Impact	Less than significant

Project construction would not modify any creek crossings or waterways; therefore, the Proposed Project would not result in any interference with fish or wildlife movement along creeks or waterways. No other contiguous natural areas or unique habitat types that support migration (e.g.,

grasslands) exist in the project corridor. Consequently, Proposed Project construction is not expected to disturb any existing migratory corridors and impacts would be less than significant.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would not result in any change to this impact analysis because it would not affect any additional corridors or nursery areas during construction.

Impact BIO-4b	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 during Proposed Project operation
Level of Impact	Less than significant

While increased train traffic would occur following construction of the Proposed Project, operational conditions are not expected to be significantly different from pre-Project conditions relative to fish or wildlife movement along stream corridors. The Proposed Project would not block movement along stream corridors, which are the only intact movement corridors along the project corridor. Thus, Proposed Project operation would have less-than-significant impacts on fish or wildlife movement or nursery sites.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would not result in any change to this impact analysis because it would not change normal train operations.

Impact BIO-5a	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, during Proposed Project construction
Level of Impact	Significant
Mitigation Measure	BIO-5: Implement Tree Avoidance, Minimization, and Replacement Plan
Level of Impact after Mitigation	Less than significant

Trees that are located along or within 10 feet of the OCS alignment would need to be removed or pruned in order to provide adequate safety clearance from the energized elements of the OCS (see Figure 2-8 in Chapter 2, *Project Description*). It is ordinary JPB maintenance practice to comply with California Public Utility Commission requirements by pruning trees and other mature vegetation from adjacent properties that lean into or hang over the Caltrain ROW and pose a potential hazard to safe train operations. The tree maintenance program would need to be expanded to provide the new clearance around the OCS.

JPB engaged a certified arborist to assess the extent of tree pruning that would be required to comply with electrical safety clearances. An assessment was made of the density of tree canopy on both sides of the ROW and the potential need for removal or pruning of leaning trees or overhanging branches located within the future electrical safety zone. The arborist also assessed the condition and age of the trees, and has identified trees that are either dead, dying, or over-mature and recommended their removal. The analysis of potential tree removal was done using the worst-case assumption that the OCS design would include the use of side poles located on either side of the rails. The poles within the ESZ were assumed to be ~~up to 12~~ 9 to 11 feet from the centerline of the outermost rail, ~~the poles were assumed to be 1 to 2 feet in diameter,~~ and vegetation clearance was assumed out to 10 feet from the poles. Thus vegetation clearance was assumed to be required up to ~~24~~ 21 feet from the centerline of the outermost rail at any location on both sides of the ROW. In

areas of multi-track (i.e., more than 2 tracks), the ESZ would be up to 18 feet from the centerline of the outer electrified track. This is the reasonable worst-case pole alignment scenario based on the Proposed Project's ~~35 percent~~ preliminary design.

The majority of the trees and vegetation that would require removal or pruning are eucalyptus, oleander, and other windrow species; some coast live oaks and other native and horticultural species would also need to be removed or pruned. Table 3.3-4 provides a profile of the estimated trees to be removed by city. As discussed in Appendix F, *Tree Inventory and Canopy Assessment*, some of the trees to be removed or pruned are designated heritage trees in local tree ordinances. Further details on specific tree impacts are provided in Appendix F. Appendix J provides maps of potential tree impacts in both surveyed areas (in which case tree by tree impacts are shown) and non-surveyed areas (in which case canopy impacts are shown.

The Proposed Project would affect the historic rows of eucalyptus trees in Burlingame (the Jules Francard Grove). It is estimated that approximately 30 trees would require pruning in this grove and one eucalyptus would require removal. The "El Palo Alto" redwood tree has its trunk located outside the electrical safety zone for the Proposed Project and would not be removed. Some of the tree branches are within the electrical safety zone. Minor pruning would be necessary to keep tree branches out of the San Francisquito bridge truss (which is similar to maintenance done presently) and to avoid vegetation contact with the OCS, but the pruning is not expected to compromise the health of the tree. Further details on impacts on "El Palo Alto" are provided in Appendix F.

JPB is exempt from local land use regulations within its ROW, including tree ordinances, because it is a federally-regulated rail carrier and, as a joint powers authority of City and County of San Francisco, the San Mateo County Transit District, and the Santa Clara Valley Transit Authority benefits from the exemption contained in Public Utilities Code Section 103200. Therefore, JPB is "co-equal" to the cities and counties located along the project route. Where Caltrain may acquire electrical safety easements outside of its current ROW, Caltrain would be exempt from local ordinances within the easement area as well. Thus, local tree ordinances would not legally apply to tree removal or pruning associated with the Proposed Project.

Pursuant to Mitigation Measure BIO-5, JPB will avoid and/or minimize impacts on trees along the ROW by locating OCS poles and alignment to minimize tree removal and pruning where consistent with safety, operations, and maintenance requirements. Options to reduce impact include removing trees only as necessary to provide adequate safety clearance; locating OCS poles and alignment to minimize tree removals; and use of center poles, two-track cantilever poles, portals, or offset insulator poles ~~where adequate separation exists between rail~~ lines and where consistent with operational and safety requirements.

As discussed in Chapter 2, *Project Description*, vegetation must be maintained so that at any time there is at least 4 feet of clearance between vegetation and energized elements of the OCS. Default assumptions for the amount of annual growth (3 feet) and potential tree sway in high winds (up to 3 feet) were used to identify the potential 10-foot areas of clearance for trees.

Table 3.3-4. Estimated Tree Removal and Pruning Estimates by Jurisdiction

Jurisdiction	Milepost	DEIR – 24' ESZ			FEIR – 21'/18' ESZ		
		Canopy in Electrical Safety Zone (Acres)	Tree Removal[a]	Tree Pruning	Canopy in Electrical Safety Zone (Acres)	Tree Removal[a]	Tree Pruning
San Francisco	0–5.2	0.23	51	9	0.16	35	22
Brisbane	5.2–7.9	0.18	14	22	0.10	8	18
South San Francisco	7.9–10.4	0.96	77	152	0.15	12	88
San Bruno	10.4–11.9	0.13	10	21	0.02	1	12
Unincorporated San Mateo County	11.9–12.5	0.61	49	98	0.51	41	90
Millbrae	12.5–13.8	0.29	23	46	0.24	19	42
Burlingame	13.8–16.7	2.52	85	154	1.92	38	150
San Mateo	16.7–21.1	1.76	141	279	0.67	53	106
Belmont	21.1–22.6	0.42	34	67	0.33	27	59
San Carlos	22.6–24.5	0.97	78	154	0.56	45	121
Redwood City	24.5–26.6	0.84	67	133	0.56	45	112
Unincorporated San Mateo County	26.4–27.5	0.68	50	144	0.33	14	131
Atherton	27.4–28.2	1.35	142	206	0.95	60	262
Menlo Park	28.1–29.7	2.33	188	441	1.49	58	527
Palo Alto	29.7–33.6	3.27	177	481	1.95	73	428
Mountain View	33.5–37.5	2.03	284	291	1.01	142	146
Sunnyvale	37.5–41.5	3.46	497	418	1.74	211	509
Santa Clara	40.8–45.3	1.20	96	191	0.73	58	154
San Jose	45.3–51.1 ~~52.0~~	1.95	157	311	0.68	55	210
~~Unincorporated Santa Clara County~~	~~51.4–52.0~~	~~0.00~~	~~0~~	~~0~~	~~0.00~~	~~0~~	~~0~~
Total		**25.18**	**2,220**	**3,616**	**14.09**	**995**	**3,186**
95% Confidence Interval[b]			*1,905–2,536*				

Source: Appendix F, *Tree Inventory and Canopy Assessment*

[a] Removal totals include some trees that are dead or dying and need to be removed for safety reasons. Such dead or dying trees would need to be removed with or without the Proposed Project.

[b] As discussed in Appendix F, a survey of 100 percent of the project corridor was not completed. Instead, the most dense areas of tree canopy were surveyed and trees in the other areas were estimated using a Hyrail survey, video, and aerial imagery. As a result, there is some uncertainty in the total removal estimates. A confidence interval was calculated for the total estimates and is presented as the range. There is 95 percent confidence that the total number of trees to be removed is contained within the range.

During the individual tree assessment required by Mitigation Measure BIO-5, some trees may be determined to have less annual growth or tree sway and thus may be allowable slightly closer than 10-feet to the OCS pole alignment.

Limited effects may also occur due to trenching and compaction which could affect tree roots of non-removed trees. Trees within 10 feet of the OCS will be required to be removed. Thus, OCS foundations may affect some tree roots from trees that are more than 10 feet from the OCS. However, tree roots in general grow radially out from the trunk and thus the area of effect for a single foundation would only be 3 to 4 square feet which is likely to be only a small portion of any trees roots and would not be expected to significantly affected. Where utilities must be undergrounded by trenching, the soil over the trench would be compacted. It should be noted that the portion of the ROW under and adjacent to the tracks has been graded and compacted over the years and thus any additional compactions at and immediately adjacent to the tracks would not be a substantial change in existing conditions. Compaction will also occur at the TPF sites for the transformer pads, but again trees will be removed within 10 feet of the TPF electrical equipment and thus any remaining trees will be less affected by compaction. Thus, tree effects due to trenching and compaction would only be in limited construction locations. Mitigation measure BIO-5, requires assessment of these limited areas and replacement of trees if root effects would substantially imperil tree health.

As noted below, Mitigation Measure BIO-5 requires the evaluation of different pole types, including center poles, two-track cantilever poles, offset insulator poles and portals to reduce the amount of tree removal and pruning along the line. Caltrain completed feasibility assessment of five test areas along the ROW to examine the potential effectiveness of this mitigation. The conclusions below are preliminary, further engineering evaluation would be necessary to confirm exactly what pole alignment designs are possible in all of these areas and to examine all construction, maintenance, access, safety, and operational requirements. Thus, the information below should be considered preliminary, but indicative of the potential to reduce tree removal in these test areas.

- North Fair Oaks area in San Mateo County (MP 26.4 to MP 27.4): A combination of portals and offset insulator poles[3] could be used in this area to reduce the ESZ from the DEIR worst-case 24 feet to 18 feet on both sides of the ROW. The Draft EIR identified tree impacts in this area as 50 trees removed and 174 trees pruned. A combination of portals and offset insulator poles could result in a reduction to 14 trees removed and 43 trees pruned. This alternative pole design could also reduce the ROW encroachment on private land from 32 to 15 parcels.
- City of Atherton (MP 27.4 to MP 28.1): A combination of portals, two-track cantilevers, center poles and offset insulator side poles could be used in this area to reduce the ESZ from the DEIR worst-case 24 feet to 18 feet on both sides of the ROW for this entire section with the section of center poles only requiring a 16 foot offset. The DEIR identified tree impacts in Atherton as 142 trees removed and 206 trees pruned. A combination of portals, two-track cantilevers, center poles and offset insulator side poles could potentially reduce tree impacts in this area to only 7 trees removed and 274 trees pruned. This alternative pole design could also eliminate (or

[3] Offset insulator poles include energized elements of the OCS on the trackside of the OCS poles, which thus reduces the ESZ area needed relative to poles that otherwise include energized elements of the OCS on the outer edge of the poles. A figure showing the offset insulator poles has been added to Section 3.3, Biological Resources, under discussion of Mitigation Measure BIO-5.

substantially reduce) the ROW encroachment on private land in Atherton and could also reduce the area of ROW encroachment for the ESZ in the Holbrook-Palmer Park.

- City of Menlo Park (MP 28.1 to MP 29.7): A combination of offset insulator side poles, center poles, two-track cantilevers, and portals could be used in this area to reduce the ESZ from the DEIR worst-case 24 feet to 18 feet on both sides of the ROW and in one short area with a center pole, the ESZ can be reduced to 16 feet. The DEIR identified tree impacts in Menlo Park as 188 trees removed and 441 trees pruned. A combination of offset insulator side poles, center poles, two-track cantilevers, and portals could reduce the tree removals to only 7 trees removed, but tree prunings may increase slightly (to 501 trees pruned). This alternative pole design could also eliminate or substantially reduce the ROW encroachment on private residential and could reduce the amount on ROW encroachment on once Commercial parcel in Menlo Park.
- A portion of the City of Sunnyvale (MP 39.8 to MP 40.5): This segment is all multi-track so portals would be used here and would reduce the ESZ from the Draft EIR worst-case 24 feet to 18 feet on both sides of the ROW. The Draft EIR identified tree impacts in this area as 55 trees removed and 94 trees pruned. The use of portals could reduce this impact to 5 trees removed and 225 trees pruned. The use of portals could also reduce the ROW encroachment on private land in this segment from 16 to 9 parcels.
- A portion of the City of Santa Clara (MP 45.3 to MP 45.8): This segment is all multi-track so portals would be used here and would reduce the ESZ from the DEIR worst-case 24 feet to 18 feet on both sides of the ROW. The DEIR identified tree impacts in this area as 9 trees removed and 17 trees pruned. The use of portals could eliminate all tree removal or pruning in this area The use of portals could also reduce the ROW encroachment on private land in this segment from 17 to 4 parcels.

Where tree removal is unavoidable after implementation of avoidance and minimization measures, then, in accordance with Mitigation Measure BIO-5, JPB will replace trees using the performance standards noted below.

If Project Variant 1, described in Chapter 2, *Project Description*, is implemented, fewer trees in San Jose would be removed because electrification would end closer to Tamien Station, approximately 1.2 miles north of the current terminus. However, Mitigation Measure BIO-5 would still be required and implementation of Project Variant 1 would not change this impact's level of significance determination.

Mitigation Measure BIO-5: Implement Tree Avoidance, Minimization, and Replacement Plan

A Tree Avoidance, Minimization, and Replacement Plan will be developed in consultation with a certified arborist and in consultation with cities, counties, and affected property owners along the project route. A complete field survey of the entire project area will be completed to support plan development by preparing a tree inventory for all affected areas. The plan will contain the following provisions.

- The definition of what is and is not a "tree" for the purposes of this mitigation shall be the same definition used in Appendix F, *Tree Inventory and Canopy Assessment*, which is based on the "tree" definition in each municipality.
- During the design phase, JPB will assess the potential to modify OCS pole alignment and other facility design to avoid and/or minimize the amount of tree removal or pruning

necessary consistent with maintenance, operational, and safety requirements. This may include changes in horizontal alignment of OCS poles, changes in pole design (such as use of center poles, two-track cantilevers, portals, or offset insulator poles and placement of energized elements on the trackside of OCS poles~~,~~ where consistent with construction maintenance, operational, and safety requirements)~~, or other measures~~. JPB will consult with each jurisdiction (including the jurisdictions' arborist as appropriate) along the route during the design phase to identify where tree removals can and ~~can't~~ cannot be avoided with project design measures and methods to minimize pruning.[4]

- Prior to construction, a professional arborist will assess the potential effects to non-removed individual tree roots, including root pruning due to trenching of underground utilities and soil compaction at TPFs, to determine if these activities may jeopardize the health of affected trees. If tree health for trees not planned for removal is compromised substantially such that the tree may die, mitigation would occur at the ratios specified in this measure.
- During construction, trees not scheduled for removal will be protected using barrier fencing.
- Tree pruning during construction will be done in accordance with arboricultural industry recommended practices. Pruning specifications will also follow American National Standards Institute (ANSI) A300 Standards and International Society of Arboriculture (ISA) Best Management Practices. Tree planting near walkways will be consistent with California Public Utilities Commission (CPUC) General Order 118.
- Special care will be taken to minimize construction period effects on El Palo Alto including minimization of any pruning. Pruning of El Palo Alto, if necessary, will be coordinated with the City of Palo Alto arborist, in advance.
- If pruning will result in the loss of 25 percent or more of an individual tree's canopy, then JPB will consider the tree removed and it will be replaced consistent with the replacement requirements described below.
    - For trees removed outside of the Caltrain ROW:
        - Where specific replacement ratios or specifications are provided in the local tree ordinance or guidance (in the Cities of South San Francisco, San Bruno, San Mateo, Belmont, San Carlos, Atherton, Menlo Park, Palo Alto , Sunnyvale and Santa Clara County), Caltrain will replace protected trees using the local requirements (as specifically described in Appendix F, Attachment 1).
        - Where specific replacement ratios or specifications are not provided in local tree ordinances (in the Cities of San Francisco, Brisbane, ~~South San Francisco~~, Millbrae, Burlingame, Redwood City, Mountain View, Santa Clara, and San Jose, and in San Mateo County, as specifically described in Appendix F, Attachment 1), Caltrain will replace protected trees on a 2:1 basis using 15-gallon trees (i.e., two 15-gallon trees would be planted to each protected tree removed).

[4] The JPB will work with the City of San Carlos to determine whether to include the trees to be planted at the Transit Village in replacement requirements. If the trees are not planted by the time of the PCEP construction or do not fall within the ESZ, then there would be no reason to include them in the tree count as these trees would not be removed or trimmed.

- For non-protected trees in all locations outside the ROW, Caltrain will replace trees on a 1:1 basis using 15-gallon trees (i.e., one 15-gallon tree would be planted for each non-protected tree removed).

- For trees within the Caltrain ROW, the following requirements will be followed:
  - Protected trees will be replaced on a 1:1 basis using 15-gallon trees (i.e., one 15-gallon tree would be planted to every tree removed), where feasible. Non-protected trees will be replaced on the same basis.~~, where feasible in non-industrial areas. Non-protected trees in industrial areas will not be replaced~~.
- Trees will be replaced, wherever possible, to provide visual screening of the ROW at locations where tree removal or pruning occurs due to the project.
- On-site replanting will be the first priority, where feasible and consistent with railroad operations, maintenance, and safety.
- Trees will be replaced with a tree of the same species wherever possible, unless that species in a non-native invasive species (see discussion below). Alternative species to the tree removed may be planted with concurrence of the landowner and local municipality. Within the Jules Francard Grove in Burlingame any replanting will consist of blue gum trees to be consistent with the historic plantings. Replacement eucalyptus species, with the exception of red river gum, can be utilized as part of this mitigation.
- If on-site tree replacement cannot occur on the Caltrain ROW (where trees are removed from the ROW) or on adjacent property (where trees are removed outside of the ROW), then tree replacement ~~may~~ will occur on other parts of the affected property (with concurrence of the land owner) or other parts of the local area (with concurrence of the local municipality). Alternatively, JPB ~~may~~ will pay into a local urban forestry fund to support local tree planting programs, provided JPB and local municipalities can agree on the appropriate fund and amount. The replacement requirements described above will apply in determining the equivalent funding amount.

- Consistent with Executive Order 13112 on invasive species, when JPB is replacing trees within its ROW, JPB will use native tree species insofar as it is practicable. Within the Caltrain ROW, JPB will not plant invasive tree species as defined by the Invasive Species Council of California (http://ice.ucdavis.edu/invasives/). For replacement of trees outside the Caltrain ROW, JPB will replant (or pay for others to replant) trees that are desired by the landowner or local municipality. Landowners may prefer that replacement trees be non-native trees to match non-native trees that were removed or to match surrounding vegetation.
- The JPB will be responsible to provide maintenance and monitoring of all replanted trees to assure their survival and/or remedial replanting in case they do not survive.
  - All replanted trees will be maintained for a minimum 5-year period and monitored on an annual basis by a professional arborist.
  - If at the end of 5 years, the tree is considered successfully established, then no further maintenance is required by the JPB. A professional arborist shall make the determination as to planting success.
  - The JPB will be directly responsible for maintaining all trees within the JPB ROW.

- For trees outside the JPB ROW, the JPB will be responsible for maintenance costs for the first five years. If individual tree plantings are determined to be unsuccessful after five years, then the JPB will be required to either replace the tree (and provide an additional 5 years of maintenance) and/or extend the maintenance period on a year to year basis until the tree is successfully established. If the tree planting is successfully established, then all further maintenance will be responsibility of the landowner.

Impact BIO-5b	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, during Proposed Project operation
Level of Impact	Less than significant

While increased train traffic would occur following construction of the Proposed Project, operational conditions are not expected to be significantly different from pre-Project conditions. Routine tree maintenance would be conducted along the project corridor, but these activities would be similar to existing maintenance practices. Further, tree maintenance pruning would take place after mitigation for construction-related tree impacts occurs (see discussion above); therefore, no conflicts with local ordinances are likely to result from operation of the Proposed Project.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would not result in any change to this impact analysis because it would not change project operation.

Impact BIO-6a	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan during Proposed Project construction
Level of Impact	Significant
Mitigation Measure	BIO-6: Pay *Santa Clara Valley Habitat Plan* land cover fee (if necessary)
Level of Impact after Mitigation	Less than significant

Construction activities are expected to result in only limited impacts on natural land cover, primarily at the locations of new facilities in undeveloped areas.

There are no adopted habitat conservation plans (HCPs) or natural community conservation plans (NCCPs) for the project area in San Francisco or San Mateo Counties.

There is an adopted HCP/NCCP in Santa Clara County (the *Santa Clara Valley Habitat Plan* or SCVHCP) that covers a portion of the project area from just south of the Santa Clara Station to the southern end of the project area several miles south of Tamien Station. The Proposed Project is not specifically a covered activity in the SCVHCP; thus, its requirements may not apply to the Proposed Project. Nevertheless, the SCVHCP requirements are reviewed below in the event that the SCVHCP is determined to be able to cover the Proposed Project.

Within the SCVHCP plan area, the only project facilities would be the OCS, TPS2, and PS7. The SCVHCP has a fee payment system to compensate for impacts on covered species habitat. All three TPS2 options and PS7 would be in areas mapped by the SCVHCP as urban land cover and, thus, development of these sites would be consistent with the SCVHCP and require no land cover fee payment. The TPS2 Option 1 site consists of a ruderal grass field surrounded by industrial development but is within the burrowing owl survey and fee zone of the SCVHCP. The TPS2 Options 2 and 3 sites are both in developed areas and would not be subject to any fee or compliance with the SCVHCP. A small portion (0.2 mile) of the project alignment south of PS7 is mapped as serpentine

bunchgrass grassland and is within Landcover Fee Zone A and the Serpentine Fee zone. Another small portion (0.4 mile) immediately south of the grassland area is mapped as urban park land, although there is no park within the Caltrain ROW, and is within Land Cover Fee Zone B. The OCS poles would be placed along the railroad alignment, which is mostly previously disturbed and thus OCS pole construction would have very limited impacts on covered species habitat. It is unclear if the Proposed Project would or would not be subject to fees if the SCVHCP is determined to cover the Proposed Project.

Under Project Variant 1, described in Chapter 2, *Project Description*, PS7 would be located farther north than its current proposed location and the project would avoid serpentine bunchgrass grassland. Therefore, if Project Variant 1 is selected, no portion of the Project alignment would occur in the Landcover Fee Zone A or B or the Serpentine Fee zone.

Although limited development associated with the Proposed Project could affect small areas of covered species habitat within the SCVHCP area, the Proposed Project would not conflict with the SCVHCP because it does not propose development within any area proposed for permanent preservation. Consequently, because the Proposed Project would require compliance with ESA and CESA regardless of whether the SCVHCP does or does not apply, the Proposed Project would have a less-than-significant impact related to the SCVHCP.

At this time, it is unknown whether or not the Proposed Project is covered by the SCVHCP and thus whether JPB could obtain ESA coverage for the portions of the Proposed Project within the SCVHCP area. At this time, it would appear that JPB would obtain a separate authorization under ESA and CESA from USFWS and CDFW as necessary to address any potential take of federally or state-protected species and thus would mitigate for those effects separate from the SCVHCP. If separate authorization is obtained, then Mitigation Measure BIO-6 would not be required. If it is determined that JPB could address impacts within the SCVHCP area through the Plan, then Mitigation Measure BIO-6 would be required.

Mitigation Measure BIO-6: Pay *Santa Clara Valley Habitat Plan* land cover fee (if necessary)

If it is determined that the SCVHCP applies to the Proposed Project, JPB will pay any required compensation fees prior to construction. It is expected that fee payment will only be required in relation to TPS2, Option 1 (burrowing owl fee) and the area along the alignment disturbed for OCS installation south of PS7 (potential payment of land cover fee and serpentine fee).

Impact BIO-6b	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan during Proposed Project operation
Level of Impact	Less than significant

While increased train traffic would occur following construction of the Proposed Project, operational conditions are not expected to be significantly different from pre-Project conditions except that diesel emissions would be substantially lower with the increase in electrified service. The SCVHCP includes a fee for new development to help compensate for impacts on rare butterfly species habitat due to nitrogen deposition from fossil fuel emissions. Because the Proposed Project would lower emissions of nitrogen oxides substantially during operations compared with existing conditions (see discussion in Section 3.2, *Air Quality*), the Proposed Project would help improve conditions for rare butterfly species habitat and would be supportive of the goals of the SCVHCP.

Implementation of Project Variant 1, described in Chapter 2, *Project Description*, would not result in any changes to this impact analysis because it would not change project normal operations.