

3.5 BIOLOGICAL RESOURCES

This section describes the common and sensitive vegetation, terrestrial wildlife, and aquatic biological resources known or with potential to occur in the Plan area. Biological resources include common vegetation and habitat types, sensitive natural communities and other areas of ecological significance, and special-status plant and animal species. Potential impacts of Plan implementation are analyzed, and mitigation measures are identified for those impacts determined to be significant. The information and analysis presented are regional in scope, as appropriate for a program-level EIR.

Comments received on the Notice of Preparation expressed the importance of analyzing effects on wildlife movement corridors, fish passage, threatened and endangered species and their habitats, shallow water habitats (e.g., eelgrass beds, tidal mudflats, salt and brackish tidal marshes, other wetlands), and native plants, as well as the effects of artificial lighting on wildlife. These items are addressed in this section for the proposed Plan. Effects of the alternatives are addressed in Chapter 4, “Alternatives.”

The CEQA Guidelines note that comments received during the NOP scoping process can be helpful in “identifying the range of actions, alternatives, mitigation measures, and significant effects to be analyzed in depth in an EIR and in eliminating from detailed study issues found not to be important.” (CEQA Guidelines Section 15083.) Neither the CEQA Guidelines nor Statutes require a lead agency to respond directly to comments received in response to the NOP, but they do require that they be considered. Consistent with these requirements, the comments received in response to the NOP have been carefully reviewed and considered by MTC and ABAG in the preparation of the impact analysis in this section. Appendix B includes all NOP comments received.

3.5.1 Environmental Setting

SPECIAL-STATUS SPECIES

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, State, or local resource agencies. As noted previously, the high diversity of vegetation and wildlife found in the Bay Area is a result of soil, topographic, and microclimate diversity that combine to promote relatively high levels of endemism.¹ This, in combination with the rapid pace of development in the region, has resulted in a relatively high degree of endangerment for local flora and fauna. Several species known to occur in the Bay Area are considered special-status species because of their recognized rarity or vulnerability to habitat loss or population decline. Some of these species are listed and receive specific protection defined in federal or State endangered species laws. Other species have not been formally listed as threatened or endangered but have been designated as “rare” or “sensitive” on the basis of adopted policies and expertise of State resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies, such as counties, cities, and special districts, to meet local conservation objectives.

¹ “Endemism” refers to the degree to which organisms or taxa are restricted to a geographical region or locality and are thus individually characterized as endemic to that area.

Special-status species are species, subspecies, or varieties in one or more of the following categories, regardless of their legal or protection status:

- ▲ officially listed by California under the California Endangered Species Act (CESA) or the federal government under the Endangered Species Act (ESA) as endangered, threatened, or rare;
- ▲ a candidate for State or federal listing as endangered, threatened, or rare under CESA or ESA;
- ▲ taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in CCR Section 15380 of the State CEQA Guidelines;
- ▲ species identified by the California Department of Fish and Wildlife (CDFW) as species of special concern;
- ▲ species listed as fully protected under the California Fish and Game Code;
- ▲ species afforded protection under local planning documents; and
- ▲ taxa considered by the CDFW to be “rare, threatened, or endangered in California” and assigned a California Rare Plant Rank (CRPR) of 1 or 2. The CDFW system includes rarity and endangerment ranks for categorizing plant species of concern, and ranks 1 and 2 are summarized as follows:
 - CRPR 1A: plants presumed to be extinct in California;
 - CRPR 1B: plants that are rare, threatened, or endangered in California and elsewhere;
 - CRPR 2A: plants presumed to be extinct in California but common elsewhere; and
 - CRPR 2B: plants that are rare, threatened, or endangered in California but more common elsewhere.

The term “California species of special concern” is applied by CDFW to animals not listed under the ESA or CESA but that are considered to be declining at a rate that could result in listing, or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW’s fully protected status was California’s first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes, for relocation to protect livestock, or as part of a natural community conservation plan (NCCP).

A list of special-status plant and wildlife species was generated through a query of the California Natural Diversity Database (CNDDDB), a California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants search, and a U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) electronic records search of the nine counties in the Plan area (CNDDDB 2020, CNPS 2020, USFWS 2020). Generalized habitat for these special-status plant and wildlife species that may occur in the plan area and their listing status are provided in **Table C-1** in Appendix C. Additional occurrences of special-status plant and animal species not reported in the California Natural Diversity Database are likely and presumed to exist in habitats suitable for the species throughout the Plan area.

CRITICAL HABITAT

The USFWS and National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) designate critical habitat for certain species that they have listed as threatened or endangered. "Critical habitat" is defined in Section 3(5)(A) of the ESA as those lands (or waters) within a listed species' current range that contain the physical or biological features that are considered essential to the species' conservation, as well as areas outside the species' current range that are determined to be essential to its conservation. Critical habitat may include an area that is not currently occupied by the species but that may be needed for its recovery. Given the large scale at which critical habitat is mapped, it may also include areas that are not suitable for a species and would not be occupied. A critical habitat designation applies only to activities performed by federal agencies or that involve a federal permit, license, or funding, and that are likely to destroy or adversely affect the area of critical habitat. Critical habitat has been designated for 30 species in the Bay Area. Of these, critical habitat units for California red-legged frog, California tiger salamander, Central Coast steelhead, Alameda whipsnake, and marbled murrelet are the most widespread throughout the region.

See **Figures 3.5-1** through **3.5-4** for the locations of critical habitat units throughout the Bay Area and **Table 3.5-1** for a summary of critical habitat by county.

SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those native plant communities that are defined by CDFW as having limited distribution Statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018). These communities may not contain special-status plants or their habitat (CDFW 2018). CDFW designates sensitive natural communities based on their State rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2018). Oak woodlands are protected in California by State law and many local policies and plans, and federal, State, and most local agencies also consider wetlands and riparian habitat as sensitive communities.

Sensitive natural communities are generally identified at the alliance level of vegetation classification hierarchy using the Manual of California Vegetation (Sawyer et al. 2009). Known occurrences of sensitive natural communities are included in the CNDDDB; however, no new occurrences have been added to the CNDDDB since the mid-1990s when funding was cut for this portion of the CNDDDB program. No Statewide law requires protection of all sensitive natural communities, but CEQA requires consideration of the potential impacts of a project on biological resources of Statewide or regional significance. Sensitive communities in the Bay Area include coastal salt marsh; brackish and freshwater wetlands, including marshes, seasonal wetlands, and vernal pools; riparian forests and woodlands; and several types of coastal scrub, chaparral, and perennial grasslands.

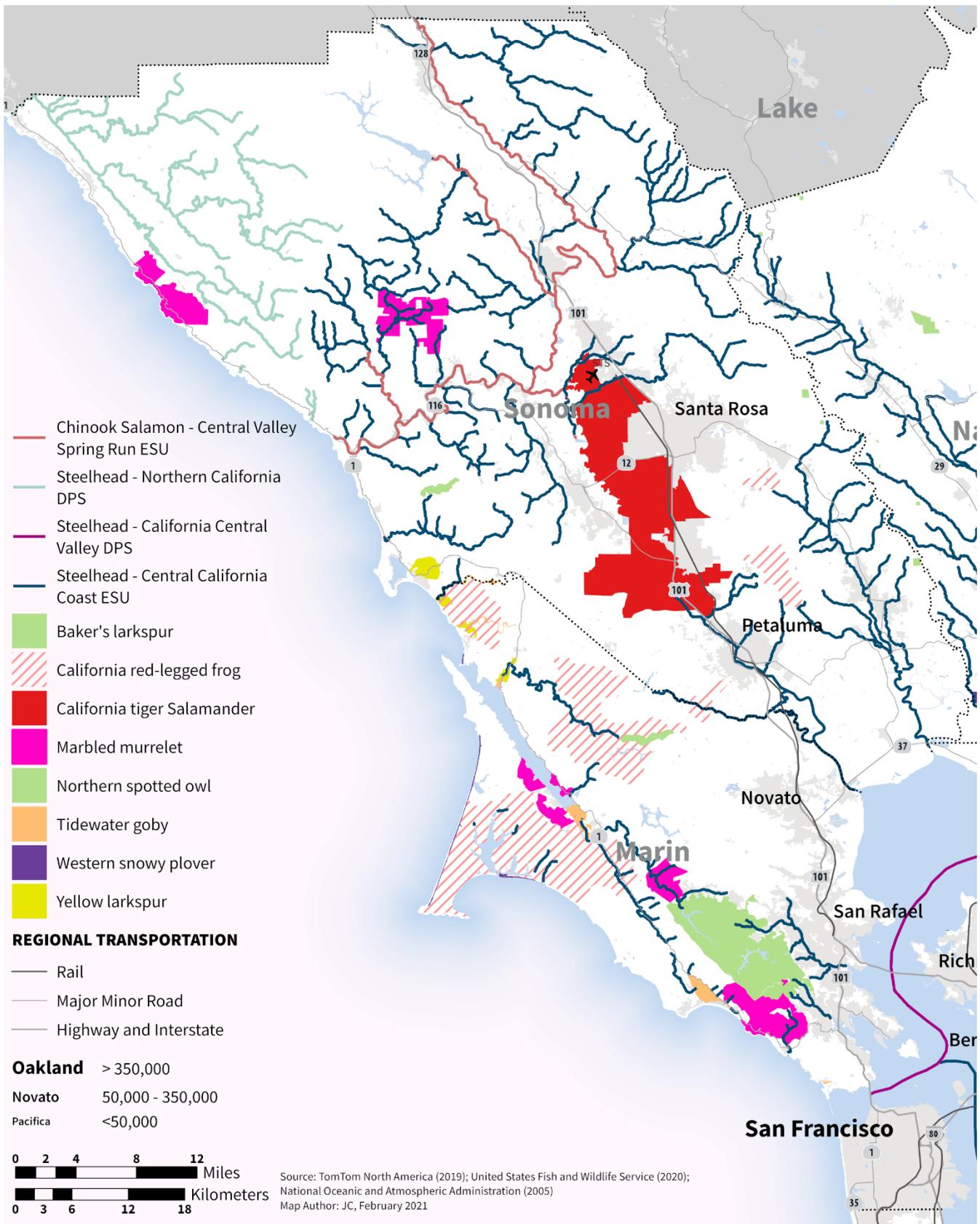


Figure 3.5-1: Critical Habitat: Sonoma and Marin Counties

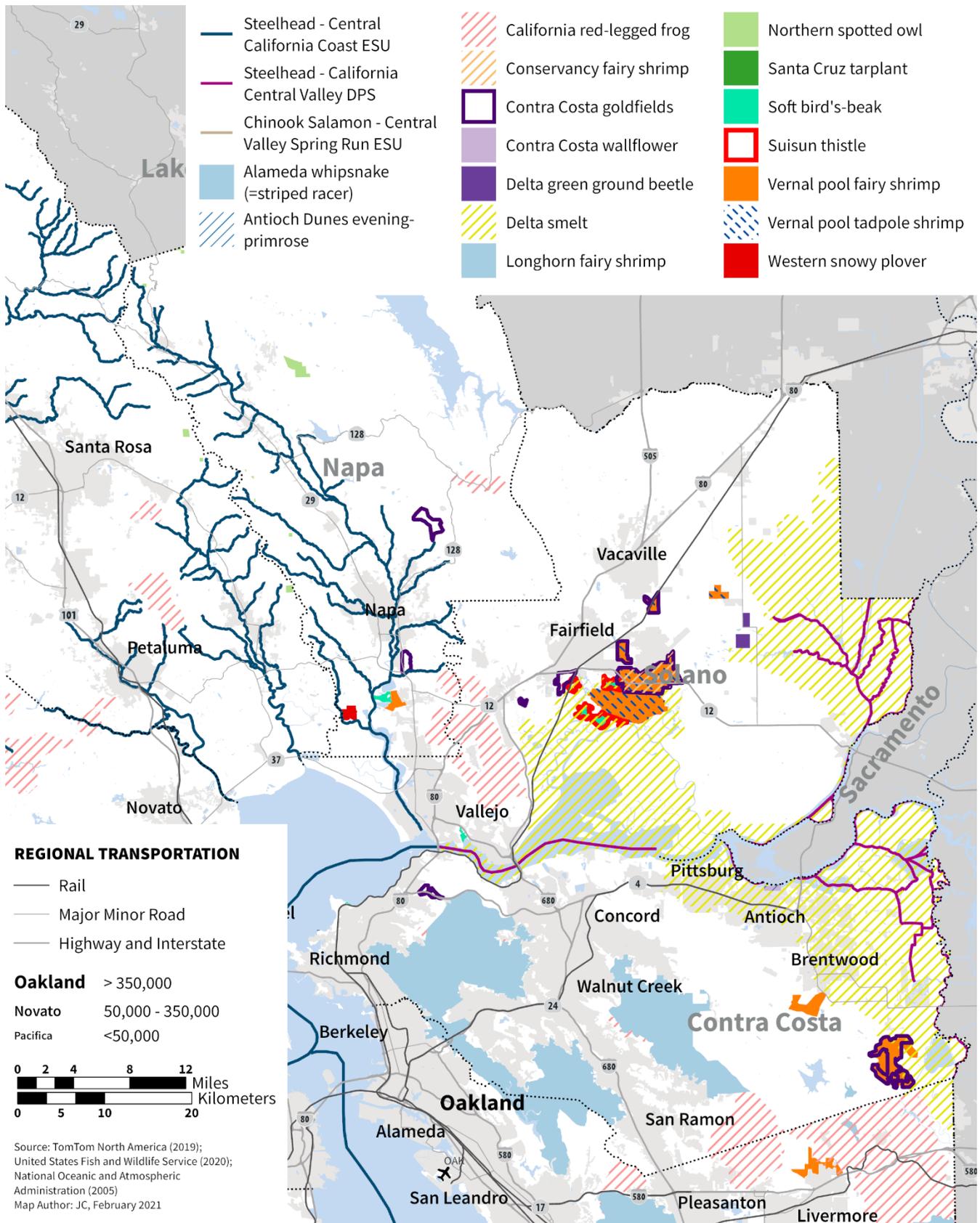


Figure 3.5-2: Critical Habitat: Napa, Solano, and Contra Costa Counties



Figure 3.5-3: Critical Habitat: San Francisco and San Mateo Counties

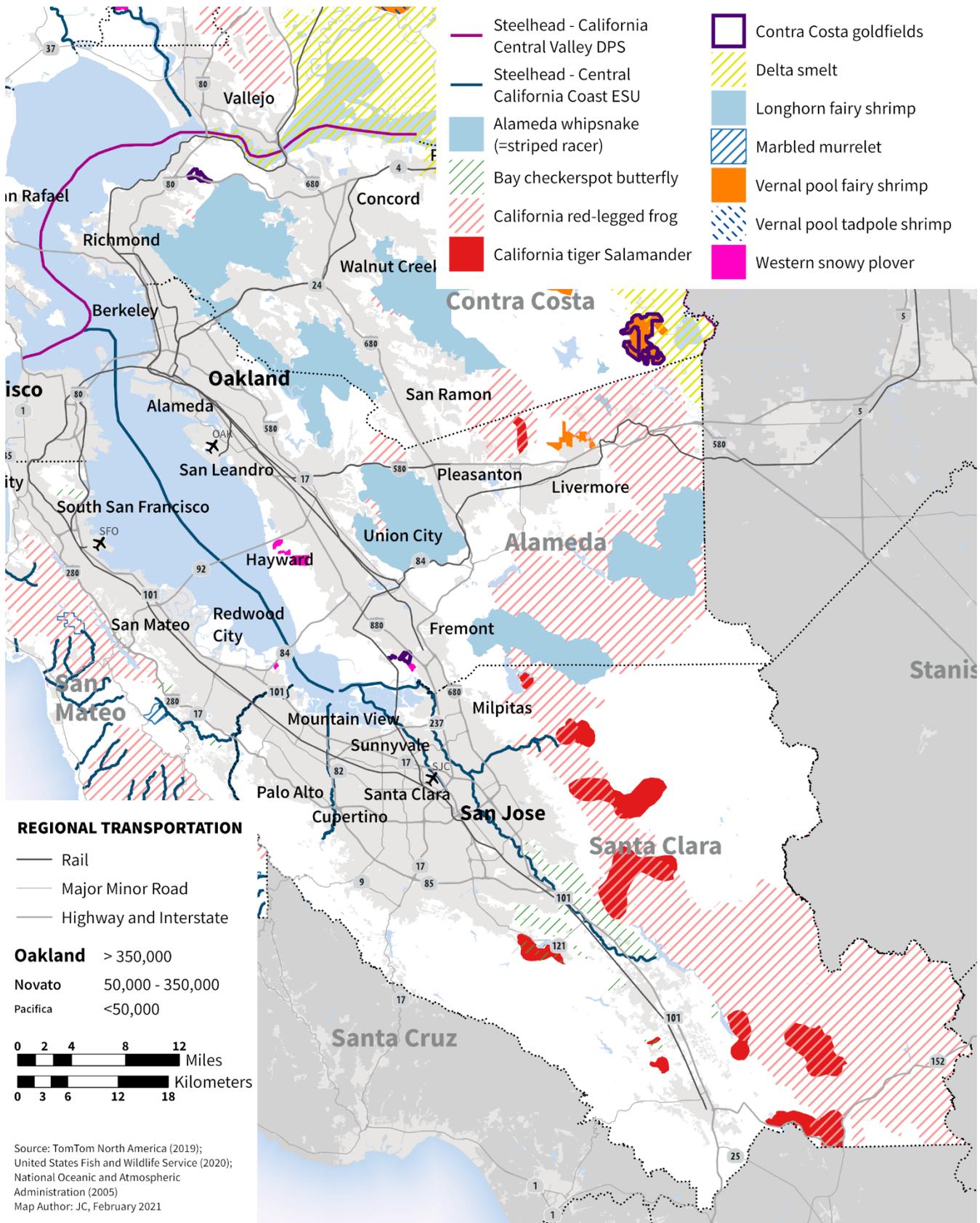


Figure 3.5-4: Critical Habitat: Alameda and Santa Clara Counties

Table 3.5-1: Critical Habitat in the Bay Area

Species	County								
	Contra Costa	Alameda	Santa Clara	San Mateo	San Francisco	Marin	Sonoma	Napa	Solano
Antioch Dunes evening primrose	✓								
Baker's larkspur						✓	✓		
Contra Costa goldfields	✓	✓						✓	✓
Contra Costa wallflower	✓								
Franciscan manzanita					✓				
Santa Cruz tarplant	✓								
Soft bird's beak	✓							✓	✓
Suisun thistle									✓
Yellow larkspur						✓	✓		
Delta smelt	✓	✓							✓
Chinook salmon California coastal ESU							✓		
Chinook salmon Central Valley spring-run ESU									✓
Steelhead northern California DPS							✓		
Steelhead South/Central California Coast DPS			✓						
Steelhead Central California Coast DPS			✓	✓		✓	✓	✓	
Steelhead California Central Valley DPS	✓								✓
Tidewater goby				✓		✓	✓		
Bay checkerspot butterfly			✓	✓					
Delta green ground beetle									✓
Conservancy fairy shrimp									✓
Longhorn fairy shrimp	✓	✓							
Vernal pool fairy shrimp	✓	✓						✓	✓
Vernal pool tadpole shrimp		✓							✓
California red-legged frog	✓	✓	✓	✓		✓	✓	✓	✓
California tiger salamander		✓	✓				✓		✓
Alameda whipsnake	✓	✓	✓						
Marbled murrelet				✓		✓	✓		
Northern spotted owl						✓	✓	✓	
Western snowy plover		✓		✓		✓			
Stellar sea lion				✓					

Notes: DPS = distinct population segment; ESU = evolutionarily significant unit.

NATURAL COMMUNITIES OF THE BAY AREA

The Bay Area supports numerous distinct natural communities² composed of a diversity of vegetative types that provide habitat for a wide variety of plant and wildlife species. Broad habitat categories in the region include grasslands, coastal scrub and chaparral, woodlands and forests, riparian systems and freshwater aquatic habitat, and wetlands. Urban and otherwise disturbed habitats, such as agricultural fields, also provide natural functions and values as wildlife habitat and are also considered in this EIR, as are the aquatic and estuarine resources of the Bay Area. The following discussion summarizes the natural communities located within the Bay Area and references special-status species associated with these communities.³

Grasslands

Natural Community Summary

Grasslands within the Bay Area include two basic types: nonnative annual grasslands and perennial grasslands, including, among others, serpentine bunchgrass and valley needlegrass grasslands (Holland 1986). Nonnative annual grasslands make up the vast majority of grassland habitat occurring throughout the Bay Area and consist of a sparse to dense cover of primarily introduced annual grasses associated with a variety of broadleaf herbs and, occasionally, native or introduced perennial grasses. The most abundant species are typically nonnative annual grasses in the genera *Bromus*, *Avena*, *Festuca*, and *Hordeum*. Broadleaf species common to Bay Area grasslands are quite variable but often include filaree (*Erodium* spp.), yellow star-thistle (*Centaurea solstitialis*), lupines (*Lupinus* spp.), peppergrass (*Lepidium* spp.), Indian paintbrush (*Castilleja* spp.), and California poppy (*Eschscholzia californica*). In addition to considerable site-to-site variation that is largely based on soils and management practices, there is also much year-to-year variation in species composition in response to the timing and amount of precipitation.

Serpentine bunchgrass and valley needlegrass grasslands are both native perennial grasslands with limited distribution in the Bay Area. The first has limited distribution because of its dependency upon serpentine soils, which are scattered throughout the Coast Ranges. Serpentine bunchgrass grasslands are most widespread in Marin County, on the San Mateo peninsula, and in southern Santa Clara County. This open grassland community is dominated by native perennial bunchgrasses of the genera *Bromus*, *Melica*, *Poa*, *Calamagrostis*, and *Festuca*. Native herbaceous associates include California poppy, tarweed (*Hemizonia* spp.), and lotus (*Lotus* spp.). Valley needlegrass grasslands typically occur on seasonally moist, fine-textured soils and often intergrade with oak woodland communities. This formerly extensive grassland type is dominated by clump-forming purple needlegrass (*Stipa pulchra*) and a variety of native and introduced grasses and herbs.

Grassland habitats of all types are used by a wide variety of wildlife. Reptile species typically found in grasslands include western fence lizard (*Sceloporus occidentalis*), western terrestrial garter snake (*Thamnophis elegans*), and western rattlesnake (*Crotalus viridis*). Mammals within this habitat include black-tailed jackrabbit (*Lepus californicus*), western harvest mouse (*Reithrodontomys megalotis*),

² Natural communities are assemblages of species that reoccur because of responses to similar combinations of environmental conditions and are not dependent on human intervention. For this discussion, native vegetation pertains to those species present in California before European settlement, whereas species such as wild oats and brome grasses, which were introduced with colonization and dominate much of the current California landscape, are considered nonnative. Vegetation communities dependent on human intervention, such as irrigated agriculture or landscaped or urbanized areas, are considered introduced communities.

³ Certain plant and wildlife species are protected under federal and/or State endangered species laws or are otherwise protected through a variety of mechanisms. These species are collectively referred to as "special-status species." See Appendix C for categories of special-status species.

California vole (*Microtus californicus*), and coyote (*Canis latrans*). Bird species that use grasslands for foraging habitat include raptors such as turkey vulture (*Cathartes aura*), American kestrel (*Falco sparverius*), and red-tailed hawk (*Buteo jamaicensis*), as well as a variety of insect- and seed-eating birds, such as white-crowned sparrow (*Zonotrichia leucophrys*), Brewer's blackbird (*Euphagus cyanocephalus*), mourning dove (*Zenaida macroura*), meadowlark (*Sturnella neglecta*), and lesser goldfinch (*Carduelis psaltria*).

Special-Status Plants

Many special-status plant species associated with grasslands occur in particular microhabitats (e.g., specific soil or hydrologic conditions) or areas that support a relatively low abundance of introduced annual grasses and forbs. Many species are now restricted to serpentine soils or thin soils with low nutrient content that introduced species are unable to colonize. These include white-rayed pentachaeta (*Pentachaeta bellidiflora*), San Francisco popcorn flower (*Plagiobothrys diffusus*), most beautiful jewel-flower (*Streptanthus albidus* ssp. *peramoenus*), Tiburon jewel-flower (*Streptanthus niger*), Tiburon Indian paintbrush (*Castilleja affinis* ssp. *neglecta*), Tamalpais lessingia (*Lessingia micradenia* var. *micradenia*), Contra Costa goldfields (*Lasthenia conjugens*), fountain thistle (*Cirsium fontinale* var. *fontinale*), Santa Cruz tarplant (*Holocarpha macradenia*), Marin western flax (*Hesperolinon congestum*), Brewer's western flax (*Hesperolinon breweri*), Diablo helianthella (*Helianthella castanea*), diamond-petaled California poppy (*Eschscholzia rhombipetala*), caper-fruited tropidocarpum (*Tropidocarpum capparideum*), and recurved larkspur (*Delphinium recurvatum*). Most of these species may also occur in vegetation communities other than grassland with their distribution generally restricted to specific soil types, hydrologic regimes, elevation range, and geographic distribution. See **Table C-1** in Appendix C for a complete list of special-status species with potential to occur in the Plan area.

Special-Status Wildlife

A variety of special-status wildlife species are associated with grassland habitats of the Bay Area, including crotch bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), callippe silverspot butterfly (*Speyeria callippe callippe*), mission blue butterfly (*Icaricia icarioides missionensis*), bay checkerspot butterfly (*Euphydryas editha bayensis*), California tiger salamander (*Ambystoma californiense*), western spadefoot toad (*Scaphiopus hammondi*), California red-legged frog (*Rana draytonii*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), San Joaquin whipsnake (*Masticophis flagellum ruddocki*), white-tailed kite (*Elanus leucurus*), northern harrier (*Circus hudsonius*), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), grasshopper sparrow (*Ammodramus savannarum*), and San Joaquin kit fox (*Vulpes macrotis mutica*).

Coastal Scrub and Chaparral

Natural Community Summary

Coastal scrub and sage scrub plant communities in the Bay Area are characterized on the basis of the dominant species: California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), coyote brush (*Baccharis pilularis*), and black sage (*Salvia mellifera*) (Sawyer et al. 2009). Coastal scrub communities are particularly dominant in the drier southern slopes and on exposed rocky slopes and bluffs within the Coast Ranges in the Bay Area. Coastal scrub is best considered as a collection or assemblage of different vegetation series, with various intergrades between the above-described plant communities. Coastal scrubs often intergrade with various chaparral types and occur in a vegetative mosaic with grasslands and woodlands based on soil type, slope, aspect, and available moisture. Generally, these are communities of dense, low shrubs with sparse understory except in scattered grassy openings.

Chaparral is dominated by hard-leaved evergreen shrubs, generally with little or no herbaceous ground cover or overstory trees. Chamise (*Adenostoma fasciculatum*) and a variety of manzanita species (*Arctostaphylos* spp.) are the dominant or codominant species throughout Bay Area chaparral communities. Gaps in chaparral support primarily grassland species, ranging from nonnative herbaceous annuals and grasses to native perennial bunchgrasses, small ferns, and bulbiferous species.

Coastal scrub and chaparral habitat provide dense vegetative cover for many common small mammals and reptiles, including deer mouse (*Peromyscus maniculatus*), California mouse (*Peromyscus californicus*), brush rabbit (*Sylvilagus bachmani*), western fence lizard, common garter snake (*Pituophis catenifer*), common kingsnake (*Lampropeltis getulus*), and western rattlesnake. Bird species that nest in shrub dominated habitats include California quail (*Callipepla californica*), California scrub jay (*Aphelocoma californica*), bushtit (*Psaltriparus minimus*), California thrasher (*Toxostoma redivivum*), spotted towhee (*Pipilo maculatus*), sage sparrow (*Amphispiza belli*), and Bewick's wren (*Thryomanes bewickii*). Coastal scrub and chaparral provide important foraging habitat for black-tailed deer (*Odocoileus hemionus columbianus*) and other large mammals that prey upon smaller mammals and reptiles in scrub and chaparral habitat, including coyote, gray fox (*Urocyon cinereoargenteus*), and raccoon (*Procyon lotor*).

Special-Status Plants

Similar to Bay Area grasslands, distribution of rare plants and wildlife in scrub and chaparral communities often coincides with the distribution of uncommon geological features. In the case of coastal scrub plant communities, an array of plants and wildlife have adapted to serpentine-derived soils in both scrub habitats and grasslands. Conditions such as slope, aspect, precipitation, temperature, degree of exposure, and the presence of suitable soil conditions often control the distribution of rare species.

Special-status serpentine-adapted scrub species include coyote ceanothus (*Ceanothus ferrisae*), Presidio clarkia (*Clarkia franciscana*), Nicasio ceanothus (*Ceanothus decomutus*), Mt. Diablo bird's beak (*Cordylanthus nidularius*), Marin checker lily (*Fritillaria affinis* var. *tristulis*), fragrant fritillary (*Fritillaria liliacea*), Crystal Springs lessingia (*Lessingia arachnoidea*), smooth lessingia (*Lessingia micradenia* var. *glabrata*), Sharsmith's harebell (*Campanula sharsmithiae*), Marin checkerbloom (*Sidalcea hickmanii* var. *viridis*), San Francisco campion (*Silene verecunda* var. *verecunda*), pink creamsacs (*Castilleja rubicundula* var. *rubicundula*), Tiburon paintbrush, and Tamalpais jewel-flower (*Streptanthus batrachopus*). Plants not specifically adapted to serpentine habitats include Mt. Day rockcress (*Boechea rubicundula*), San Francisco Bay spineflower (*Chorizanthe cuspidata* var. *cuspidata*), woolly-headed spineflower (*Chorizanthe cuspidata* var. *villosa*), yellow larkspur (*Delphinium luteum*), supple daisy (*Erigeron supplex*), Mt. Diablo buckwheat (*Eriogonum truncatum*), coast wallflower (*Erysimum ammophilum*), robust monardella (*Monardella villosa* var. *globosa*), Lime Ridge navarretia (*Navarretia gowenii*), Marin County navarretia (*Navarretia rosulata*), Napa checkerbloom (*Sidalcea hickmanii* ssp. *napaensis*), north coast phacelia (*Phacelia insularis* var. *continentis*), and Metcalf Canyon jewel flower (*Streptanthus albidus* ssp. *albidus*). In addition to these species, 17 species of manzanita and eight species of ceanothus considered to be of special status occur in Bay Area chaparral habitats.

Special-Status Wildlife

Relatively few special-status wildlife species are found within coastal scrub or chaparral habitats. Some of these are highly specialized invertebrates whose life histories are intimately dependent upon serpentine-associated species, including callippe silverspot butterfly and two non-serpentine-dependent species, San Bruno elfin butterfly (*Incisalia mossii bayensis*) and mission blue butterfly.

In Contra Costa, Alameda, and northeastern Santa Clara Counties, chaparral and scrub habitats and adjacent grasslands support Alameda whipsnake, which is federally and State listed as threatened. Other special-status wildlife occurring in Bay Area chaparral and scrub communities include northern

California legless lizard (*Aniella pulchra*), California glossy snake (*Arizona elegans occidentalis*), San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), ringtail (*Bassariscus astutus*), pallid bat (*Antrozous pallidus*), and coast horned lizard (*Phrynosoma blainvillii*). See **Table C-1** in Appendix C for a complete list of special-status species with potential to occur in the Plan area.

Woodlands and Forest

Natural Community Summary

The diverse topography, soils, and climate of the Bay Area region support a wide range of woodland and forest types, from the oak savannas of the dry interior to the redwood forests of the coastal hills and mountains.

Bay Area woodlands either are dominated by a single oak species, including coast live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), California black oak (*Quercus kelloggii*), or valley oak (*Quercus lobata*), or are classified as mixed hardwood woodlands composed of a variety of tree species, including one or more oaks, and most often, big-leaf maple (*Acer macrophyllum*), tan oak (*Notholithocarpus densiflorus*), California bay (*Umbellularia californica*), madrone (*Arbutus menziesii*), and California buckeye (*Aesculus californica*). Woodland understory vegetation is dependent on canopy cover, which can range from oak savanna with widely spaced trees and annual grasslands as understory, to a denser but still relatively open mixed woodland canopy often seen on north- and east-facing slopes or in canyons, which supports both shrubs and herbaceous vegetation. Here the shrub layer of the understory often contains toyon (*Heteromeles arbutifolia*), snowberry (*Symphoricarpos albus*), poison oak (*Toxicodendron diversilobum*), gooseberry (*Ribes* spp.), ocean spray (*Holodiscus discolor*), and California blackberry (*Rubus ursinus*). The herb layer can consist of nonnative grasses, such as soft chess (*Bromus mollis*) and ripgut brome (*Bromus diandrus*), and perennial native bunchgrasses, such as blue wildrye (*Elymus glaucus*), intermixed with native and nonnative wildflowers, including mission bells (*Fritillaria affinis*), chickweed (*Stellaria media*), bedstraw (*Galium aparine*), mugwort (*Artemesia douglasiana*), fiesta flower (*Pholistoma auritum*), and miner's lettuce (*Claytonia perfoliata*). Where canopy cover is most dense, understory is sparse or absent and is typically made up of herbaceous species.

Bay Area oak and mixed woodlands provide water, foraging, nesting, cover, and migratory and dispersal corridors for a variety of wildlife species. Insect eaters such as ash-throated flycatcher (*Myiarchus cinerascens*), oak titmouse (*Parus inornatus*), and dark-eyed junco (*Junco hyemalis*) are woodland foliage gleaners. Bark gleaner species, such as California scrub jay, Steller's jay (*Cyanocitta stelleri*), and acorn woodpecker (*Melanerpes formicivorus*), feed on insects, as well as acorns. California quail and California towhee (*Pipilo crissalis*) are ground foragers in this habitat. Cooper's hawk (*Accipiter cooperi*) and sharp-shinned hawk (*Accipiter striatus*) are often associated with woodland habitat, where they hunt small birds. Mammals such as gray squirrel (*Sciurus griseus*) forage and nest in the canopy of the trees, whereas long-tailed weasels (*Mustela frenata*) hunt on the ground for shrews (*Sorex* spp.) and California voles. Larger mammals, such as black-tailed deer, use the oak understory for shelter and food from acorns, berries, and foliage. Amphibians such as Pacific slender salamander (*Batrachoseps attenuatus*), arboreal salamander (*Aneides lugubris*), and ensatina (*Ensatina eschscholtzii*) live under the cover of fallen leaf litter.

Bay Area forest types are generally found at higher elevations of the Coast Ranges in areas with adequate moisture and are either dominated by a mix of hardwood species on drier slopes, as noted above for mixed woodlands, sometimes with one or more coniferous tree species, including coast redwood (*Sequoia sempervirens*) and Douglas fir (*Pseudotsuga menziesii*), or are dominated by conifers, with tanoak and big-leaf maple as common associates. Typical understory species include wood rose (*Rosa gymnocarpa*), coastal wood fern (*Dryopteris arguta*), ocean spray, bracken fern (*Pteridium aquilinum*), yerba buena (*Clinopodium douglasii*), hazelnut (*Corylus cornuta*), creeping

snowberry (*Symphoricarpos mollis*), and poison oak. Blue blossom (*Ceanothus thyrsiflorus*) and toyon are common in sunnier openings.

Redwood forest typically occupies coastal areas where fog drip and precipitation create moist and humid conditions. Redwood and Douglas fir dominate the canopy, their fallen needles forming a thick layer of duff. Several hardwood tree species are also associated with redwood forest, including tanoak, California bay, big-leaf maple, madrone, and several oak species. The redwood forest understory is often sparse where canopy is dense, and slopes are steep but contains a diversity of species generally not found in adjacent plant communities. These include huckleberry (*Vaccinium ovatum*), hazelnut, thimbleberry (*Rubus parviflorus*), sword fern (*Polystichum munitum*), and redwood sorrel (*Oxalis oregana*). Redwood violet (*Viola sempervirens*), western trillium (*Trillium ovatum*), red clintonia (*Clintonia andrewsiana*), and several fern species often occur on moister slopes along ravines.

Mixed hardwood forest wildlife is similar to that described above for woodland habitats. Redwood and Douglas fir forest wildlife is generally lower in diversity than other forest types, in part because the canopy density of second-growth forest precludes the establishment of many understory plants. Moist conditions in the understory support amphibians, such as yellow-eyed salamander (*Ensatina eschscholzii xanthopicta*) and California slender salamander (*Batrachoseps attenuatus*), as well as coastal rubber boa (*Charina bottae*). Birds found in the redwood forest include brown creeper (*Certhia americana*), varied thrush (*Ixoreus naevius*), chestnut-backed chickadee (*Poecile rufescens*), and Steller's jay.

Special-Status Plants

Special-status plant species associated with woodland habitats are often also found in adjacent chaparral and scrub habitats. In the Bay Area, these species include Anderson's manzanita (*Arctostaphylos andersonii*), rayless ragwort (*Senecio aphanactis*), hooked popcorn-flower (*Plagiobothrys uncinatus*), Mt. Diablo phacelia (*Phacelia phacelioides*), Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*), showy madia (*Madia radiata*), Mt. Hamilton lomatium (*Lomatium observatorium*), Jepson's linanthus (*Linanthus jepsonii*), coast lily (*Lilium maritimum*), Contra Costa goldfields, drymaria-like western flax (*Hesperolinon drymarioides*), Diablo helianthella, talus fritillary (*Fritillaria falcata*), Hillsborough chocolate lily (*Fritillaria biflora* var. *ineziana*), San Mateo woolly sunflower (*Eriophyllum latilobum*), Brandegee's eriastrum (*Eriastrum brandegeae*), western leatherwood (*Dirca occidentalis*), Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*), robust spineflower (*Chorizanthe robusta* var. *robusta*), Keck's checkerbloom (*Sidalcea keckii*), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*), Marin manzanita (*Arctostaphylos virgata*), twisted horsehair lichen (*Bryoria spiralifera*), Mt. Diablo fairy lantern (*Calochortus pulchellus*), large-flowered fiddleneck (*Amsinckia grandiflora*), and Sharsmith's onion (*Allium sharsmithae*).

Special-Status Wildlife

Special-status wildlife species associated with woodlands include those described for grassland and riparian habitats, as well as purple martin (*Progne subis*) and other species, such as tree swallow (*Tachycineta bicolor*), Bullock's oriole (*Icterus bullockii*), and many other nesting birds, which are protected under the Migratory Bird Treaty Act and the California Fish and Game Code (see Section 3.5.2, "Regulatory Setting," below). Bay Area forests in San Mateo, Marin, Sonoma, and Napa Counties support the federally listed and State-listed marbled murrelet (*Brachyramphus marmoratus*) and the federally listed and California species of special concern northern spotted owl (*Strix occidentalis caurina*). Special-status amphibians that may occur within forest and woodland habitats include California giant salamander (*Dicamptodon ensatus*) and Santa Cruz black salamander (*Aneides niger*). Forest and woodland habitats in the Bay Area also support special-status mammal species, including Sonoma tree vole (*Arborimus pomo*), ringtail, and mountain lion (*Puma concolor*).

Riparian

Natural Community Summary

Riparian plant communities are tree- or shrub-dominated communities that occur along streams, rivers, and other aquatic features. Riparian forests, woodlands, and scrub are often separated from one another depending on the amount and density of tree canopy versus shrub canopy. Forests support a closed or nearly closed canopy of trees with variable understory, while woodlands have an open canopy of trees with an understory that is primarily grassy or herbaceous. Shrubs, rather than trees, dominate riparian scrub habitat, which is common both in the coastal mountains of San Mateo, Marin, and Sonoma Counties and in the more arid regions of the east and south Bay Area. The composition and density of riparian vegetation is very much dependent upon the duration of flowing or near-surface water, the amplitude and periodicity of flow (brief, high-velocity flows versus more sustained flows), and the texture of the substrate (cobble, gravel, sand, silt, clay). Different reaches of a stream may support different types of riparian vegetation. The major rivers, streams, and other surface waters that support riparian vegetation in the Bay Area are presented in **Figure 3.10-1** of Section 3.10, "Hydrology and Water Quality." The most well-developed riparian vegetation occurs in relatively undisturbed reaches of the largest Bay Area streams, including Sonoma Creek, the Russian River, the Napa River, Putah Creek, Alameda Creek, Coyote Creek, the Guadalupe River, San Francisquito Creek, Llagas Creek, and others listed in Section 3.10.

Typical dominant species in the forest, woodland, and scrub habitats along Bay Area rivers and streams are Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), various species of willow (*Salix* spp.), coast live oak, valley oak, and white alder (*Alnus rhombifolia*). Where they are not modified by urbanization, lower stream reaches typically intergrade into broad freshwater to brackish emergent wetlands dominated by cattails (*Typha* spp.) and bulrush (*Scirpus* spp.). Where the riparian habitat has been degraded, through either alteration of the hydrology or direct disturbance to vegetation, including along many urban stream reaches, the nonnative blue gum eucalyptus (*Eucalyptus globulus*), fennel (*Foeniculum vulgare*), poison hemlock (*Conium maculatum*), perennial pepperweed (*Lepidium latifolium*), giant reed (*Arundo donax*), or French broom (*Genista monspessulana*) are often dominant, as seen in portions of most large Bay Area streams. Upper stream reaches are also often lacking riparian cover because of long-standing grazing, agricultural practices, or channelization because of urbanization. Most remaining riparian vegetation is afforded regulatory protection by CDFW. A discussion of specific regulations is provided in Section 3.5.2, "Regulatory Setting," below.

Within the urbanized portions of the Bay Area, riparian habitats, even though often degraded, support the densest and most diverse wildlife communities available. The diversity of plant species, multilayered vegetation, and perennial water provide a variety of foods and microhabitat conditions for wildlife. Mature willows, oaks, sycamores, and other riparian trees provide high-quality nesting habitat for the region's birds.

Special-Status Plants

Special-status riparian plants in the Bay Area include western leatherwood, Mason's lilaeopsis (*Lilaeopsis masonii*), Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), and Davidson's bush mallow (*Malacothamnus davidsonii*). See **Table C-1** in Appendix C for a complete list of special-status species with potential to occur in the Plan area.

Special-Status Wildlife

Special-status birds that nest in Bay Area riparian corridors include yellow warbler (*Setophaga petechia*), yellow-breasted chat (*Icteria virens*), and long-eared owl (*Asio otus*). Habitat destruction, habitat fragmentation, and nest parasitism by the brown-headed cowbird (*Molothrus ater*) are suspected causes of the decline of some riparian bird species. Western red bat (*Lasiurus blossevillii*), a

California species of special concern, often roosts in tree foliage in riparian corridors. Riparian forest habitat also supports special-status mammals, including ringtail and mountain lion.

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), federally listed as threatened, is dependent upon the elderberry bush (*Sambucus nigra ssp. caerulea*) throughout its entire life history. Elderberry bushes occur Statewide and commonly occur in riparian corridors but may also be present in isolated stands or in woodlands outside riparian habitats. The range of valley elderberry longhorn beetle includes portions of Solano County and eastern Contra Costa and Alameda Counties.

Aquatic Habitat

Natural Community Summary

Rivers and Streams

Rivers and streams of the Bay Area have several common ecological attributes:

- ▲ As a result of urbanization, many smaller streams on the San Francisco Peninsula, in south San Francisco Bay, in the East Bay, and in portions of the North Bay have been channelized or otherwise developed for flood control or agriculture.
- ▲ Most of these waterways are small, seasonal streams, and in the case of urbanized streams, many maintain perennial flows from urban runoff sources during late summer months.
- ▲ There are a handful of native streams and rivers in each county that account for the majority of freshwater flows to San Francisco Bay and provide the greatest opportunities for special-status plants and wildlife species.

The Bay Area is drained by many small to midsized rivers and creeks spread throughout the region. The Sacramento–San Joaquin River Delta (Delta) contributes the majority of the freshwater input to San Francisco Bay; however, this discussion concentrates on other tributaries in the region that provide important riverine and aquatic habitat. In the North Bay, Petaluma River, Sonoma Creek, and Napa River account for much of the freshwater flows into San Pablo Bay. Relatively smaller, though biologically important, contributions are made by Gallinas Creek, Novato Creek, Corte Madera Creek, and Miller Creek in Marin County. In general, there are few impediments or obstructions in these creeks and their watersheds. These tributaries are less channelized, offering habitat for listed native salmonids, including coho salmon (*Oncorhynchus kisutch*) and steelhead (*Oncorhynchus mykiss irideus*). The Russian River in Sonoma County also provides good habitat for salmonids. Solano County watersheds, including the Putah Creek watershed, are also relatively undeveloped. Lake Berryessa limits the availability of headwater habitats in Putah Creek to anadromous fish, but this creek still provides valuable aquatic resources.

Stream resources in the East Bay, in the South Bay, and on the San Francisco Peninsula have been degraded by urban development, particularly adjacent to and within stream courses. As a result of these changes, only a handful of major streams in these areas support native fisheries and special-status fisheries. These include Alameda Creek, which drains the largely undeveloped watershed of the Sunol Valley and Livermore-Amador Valley; Coyote Creek, Guadalupe River, and Los Gatos Creek in the South Bay; and San Francisquito Creek, Permanente Creek, and San Mateo Creek on the San Francisco Peninsula. In Gilroy and Morgan Hill, Llagas Creek transports flows southward to the Pajaro River. Major dams or other fish impediments that prevent fish from reaching the upper watersheds are present in all of these streams, with the exception of San Francisquito Creek.

Habitat for common fish species occurs primarily in the streams listed in Section 3.10, “Hydrology and Water Quality,” although other, smaller streams in the Bay Area can and do support them.

Lacustrine

Lacustrine habitats are permanent water bodies that do not support emergent vegetation (except around their margins) and are not subject to tidal exchange; they include natural and constructed lakes and ponds, oxbows, flooded gravel pits, and flooded islands. Vegetation can include submerged plants, such as pondweeds (*Potamogeton* spp.) and algae in deepwater habitat, while near-shore habitat may support smartweeds (*Polygonum* spp.), cattails, spikerush (*Eleocharis* spp.), and other freshwater wetland vegetation. Lakes and ponds may support willow scrub along the shoreline. Bay Area reservoirs are typically stocked with game fish, including rainbow trout (*Oncorhynchus mykiss*), striped bass (*Morone saxatilis*), largemouth bass (*Micropterus salmoides*), sunfish (*Lepomis* spp.), brown bullhead catfish (*Ameiurus nebulosus*), and channel catfish (*Ictalurus punctatus*), among others. Resident waterfowl using lacustrine habitat include a variety of ducks, such as mallard (*Anas platyrhynchos*), and American coot (*Fulica americana*), Canada goose (*Branta canadensis*), and wading birds, such as great blue heron (*Ardea herodias*), snowy egret (*Egretta thula*), and great egret (*Ardea alba*).

Special-Status Plants

With the exception of several species, such as eel-grass pondweed (*Potamogeton zosteriformis*) and watershield (*Brasenia schreberi*), there are few special-status plants occurring in freshwater aquatic habitat of the region.

Special-Status Wildlife

As noted above, special-status fish occur in a limited number of rivers and streams in the Bay Area. Species include the federally listed tidewater goby (*Eucyclogobius newberryi*); coho salmon central California evolutionarily significant unit (ESU); steelhead northern California distinct population segment (DPS), central California coast DPS, and south/central California coast DPS; chinook salmon California coastal ESU (*Oncorhynchus tshawytscha*); and Sacramento splittail (*Pogonichthys macrolepidotus*). Several species of limited distribution and rarity occur exclusively in the lower reaches of drainages near and within the Delta, such as longfin smelt (*Spirinichus thaleichthys*) and Delta smelt (*Hypomesus transpacificus*), which is State and federally listed as threatened.

Suitable steelhead and coho spawning habitat is found in streams and rivers where there is less development. Steelhead require higher-gradient, upper reaches of streams, with access to the ocean during emigration and spawning, and cool year-round water temperatures for the juveniles' rearing habitat. Steelhead populations are documented from San Francisquito Creek, Green Valley Creek, Suisun Creek, San Pablo Creek, Coyote Creek, Steven's Creek, Guadalupe River, Corte Madera, Miller Creek, Novato Creek, Sonoma Creek, Napa River, Huichica Creek, Petaluma River, San Lorenzo Creek, San Leandro Creek, and Alameda Creek, and they are known to sporadically migrate into and occasionally breed in smaller streams throughout the Bay Area.

California freshwater shrimp (*Syncaris pacifica*), federally listed as endangered, occurs in low-gradient, structurally diverse perennial streams in the northern Bay Area (USFWS 1998). Of the 17 streams that support this species, those in the Bay Area include Sonoma Creek, the Napa River, and Huichica Creek, which drain to San Pablo Bay, and Laguna de Santa Rosa (Santa Rosa Creek) and its tributaries, which drain to the Russian River. The 1998 Recovery Plan for this species addresses the long-term protection of aquatic and riparian habitat as criteria for species delisting.

Bridges of various rivers and streams provide nesting opportunities for birds protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code (see Section 3.5.2, "Regulatory Setting," below), including barn swallow (*Hirundo rustica*) and cliff swallow (*Petrochelidon pyrrhonota*), and purple martin, a California species of special concern. Bat colonies may also roost under bridges in the Bay Area, including *Myotis* species, Mexican free-tailed bat (*Tadarida brasiliensis*),

and Townsend's big-eared bat (*Corynorhinus townsendii*). Breeding and nonbreeding bat roosts are protected by California Fish and Game Code Section 4150.

California red-legged frog, federally listed as threatened, breeds in the upper reaches of most Bay Area riparian corridors and in the lower reaches within select drainage systems and ponds. The greatest concentrations of this species in the Bay Area occur near Sears Point, in several drainages and channels that traverse Interstate 580 in the Livermore-Amador Valley, and in drainages on the San Francisco Peninsula, although potential and occupied habitat occurs elsewhere throughout the region. Foothill yellow-legged frog (*Rana boylei*) breeds within perennial cobble streams with suitable pool habitat throughout the Bay Area.

San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), federally and State listed as endangered, occurs on the San Francisco Peninsula, where riparian habitats meet open water and freshwater marshlands. Habitats within the peninsula corridor occur in marshlands near San Francisco International Airport and in tributary streams to the Crystal Springs Reservoir (near Interstate 280). Some riparian habitats in the Bay Area also support small populations of western pond turtle (*Actinemys marmorata*).

Special-status birds that use lacustrine habitat in the Bay Area include bald eagle (*Haliaeetus leucocephalus*), which is the State listed as endangered and fully protected, and osprey (*Pandion halietus*), which is protected under Section 3503.5 of the California Fish and Game Code (see Section 3.5.2, "Regulatory Setting," below, for further details). Migratory waterfowl species that forage, overwinter, rear their brood, or otherwise rely on lacustrine habitat in the Bay Area at some time during the year include wood duck (*Aix sponsa*), gadwall (*Anas strepera*), American wigeon (*Anas americana*), northern pintail (*Anas acuta*), green-winged teal (*Anas carolinensis*), canvasback (*Aythya valisineria*), bufflehead (*Bucephala albeola*), common goldeneye (*Bucephala clangula*), hooded merganser (*Lophodytes cucullatus*), common merganser (*Mergus merganser americanus*), and ruddy duck (*Oxyura jamaicensis*). See **Table C-1** in Appendix C for a complete list of special-status species with potential to occur in the Plan area.

San Francisco Bay Aquatic Resources

Natural Community Summary

The San Francisco Bay and Delta make up the Pacific Coast's largest estuary, encompassing roughly 1,600 square miles of waterways and draining more than 40 percent of California's fresh water. The Sacramento and San Joaquin Rivers flow from northern California's inland valleys into the Delta's winding system of islands, sloughs, canals, and channels before emptying into San Francisco Bay and the Pacific Ocean. Major transportation corridors bridge the open waters of San Francisco Bay, and many others are located close to the bay.

The marine environment varies widely between the six transportation corridors that cross the open waters of the San Francisco Bay. Most of the transbay corridors consist of open water habitat—that is, habitat below the low-tide line (also known as subtidal habitat).

Eelgrass (*Zostera marina*) may occur near the footings of bridges in the transbay corridors and is considered a sensitive habitat by CDFW. Eelgrass is an important habitat for many organisms and may influence benthic community structure by stabilizing sediments, providing forage and detritus food sources, and creating a refuge and nursery for small organisms. Eelgrass beds also provide an important attachment substrate for Pacific herring eggs and thus support an important Bay Area commercial fishery (USFWS 1994). As the largest estuary on the west coast, the San Francisco Bay also supports millions of birds that depend on the bay for rest and refueling on migratory routes.

More than 100 species of fish are described from the San Francisco Bay system (USFWS 1983). The majority of these are native species that live year-round in San Francisco Bay, though a few, such as striped bass (*Morone saxatilis*), have been introduced. Anadromous fish also use San Francisco Bay seasonally during their migrations to and from spawning grounds throughout the Bay Area and in California's Central Valley. The species composition within the bay varies by season and changes to reflect the regularly changing physical conditions created by the freshwater flow from the San Joaquin and Sacramento Rivers and other tributaries into San Francisco Bay. Native fish commonly found within the bay include such diverse species as starry flounder (*Platichthys stellatus*), California halibut (*Paralichthys californicus*), leopard shark (*Triakis semifasciata*), tule perch (*Hysterocarpus traski*), Pacific herring (*Clupea harengus pallasii*), northern anchovy (*Engraulis mordax*), and sturgeons (*Acipenser* spp.). Nonnative fish species in the bay include largemouth bass, threadfin shad (*Dorosoma petenense*), and yellowfin goby (*Acanthogobius flavimanus*).

The benthic invertebrate community of the bay is composed of various annelids, mysid shrimp, copepods, amphipods, shrimp, crabs, and other macroinvertebrates. All of these organisms provide important food sources for estuary fish and bird species.

Riprap occurs along many areas of the bay shore and can provide some, but not all, of the habitat values and functions that naturally occurring rocky shore habitat would provide, including a substrate for marine plant and sessile intertidal organisms, such as mussels (*Mytilus* spp.) and barnacles. Rocky shore habitat also provides cover for invertebrates such as rock crabs (*Cancer antennarius* and *Cancer productus*) and for fish such as plainfin midshipmen (*Porichthys notatus*), which are known to seek cover and to spawn under concrete slabs. The marine plants, clams, mussels, barnacles, annelids, and crustaceans inhabiting rocky shore habitat are food sources for larger marine invertebrates, fishes, birds, and marine mammals.

Special-Status Wildlife

The two marine mammals most commonly found in San Francisco Bay are the California sea lion (*Zalophus californianus*) and the harbor seal (*Phoca vitulina*). Both species forage in the open waters of the bay and bask on exposed rocks, piers, or wharves throughout the bay. The federal Marine Mammal Protection Act protects both species.

NOAA Fisheries recognizes several threatened and endangered species that occur in San Francisco Bay. These include loggerhead sea turtle (*Caretta caretta*), leatherback turtle (*Dermochelys coriacea*), olive ridley sea turtle (*Lepidochelys olivacea*), and several fish species, including coho salmon, steelhead, Delta smelt, and Sacramento splittail. The goby, smelt, and splittail are resident species; the salmonids, however, are expected to use open water habitats of the bay only seasonally or infrequently. Although California brown pelican (*Pelecanus occidentalis californicus*) and Steller sea lion (*Eumetopias jubatus*) are now delisted, brown pelican is still a fully protected species under the California Fish and Game Code, and Steller sea lion is still protected under the Marine Mammal Protection Act.

Wetlands

Natural Community Summary

Coastal Marsh and Estuaries

Coastal salt marshes around San Francisco Bay (including historically diked tidal marshes) are dominated by perennial pickleweed (*Salicornia pacifica*), alkali heath (*Frankenia salina*), spearscale (*Atriplex triangularis*), marsh gumplant (*Grindelia stricta* var. *angustifolia*), saltgrass (*Distichlis spicata*), and other salt-tolerant plants that are also tolerant of regular inundation or soil saturation. Tidal salt marshes are typically bisected by a network of sloughs and small channels that facilitate tidal reach into the interior of the marsh. These channels are subject to more frequent and deeper flooding and

therefore support different plant species, such as smooth cordgrass (*Spartina foliosa*) and alkali bulrush (*Scirpus maritimus*). As tidal effects and salinity decrease, coastal salt marsh intergrades with brackish marsh, especially in areas where larger rivers meet the bay.

In more extensive slough systems, such as those in the North Bay and South Bay, the transition zones between sloughs and creeks are increasingly dominated by species adapted to brackish and fresh water, such as California bulrush (*Scirpus californicus*) and cattails. Extensive coastal marsh communities are present in the lower reaches of Sonoma Creek and the Napa River and in patches along U.S. Highway 101 in Palo Alto and Mountain View.

There are relatively few terrestrial animals in the salt marsh; however, the nonnative red fox (*Vulpes vulpes*) and house mouse (*Mus musculus*), as well as the native California vole and black-tailed jackrabbit can be found in marshes around the bay. Resident bird species include marsh wren (*Cistothorus palustris*), and raptors typical of Bay Area salt marsh habitats include northern harrier, red-tailed hawk, and American kestrel. Migratory shorebirds that forage in the mudflats during low tide include black-necked stilt (*Himantopus mexicanus*), American avocet (*Recurvirostra americana*), long-billed curlew (*Numenius americanus*), marbled godwit (*Limosa fedoa*), and several sandpipers. During high tide, a few of the ducks that may be found in salt marsh environments include northern shoveler, American wigeon, northern pintail, gadwall (*Anas strepera*), and canvasback.

Freshwater Wetlands

Freshwater emergent wetlands, or marshes, occur along slow-moving streams and rivers, along lakeshores, and in stockponds and other artificial water bodies and are dominated by perennial vegetation, such as cattails, bulrush, or spikerush. Freshwater marsh habitat provides nesting and foraging opportunities, as well as cover, for a number of bird species, amphibians, and small mammals. Species commonly associated with freshwater emergent wetlands include great blue heron, great egret, black phoebe (*Sayornis nigricans*), red-winged blackbird (*Agelaius phoeniceus*), raccoon, Sierran treefrog (*Pseudacris sierra*), and California vole. Larger mammals may use these wetlands for water or forage.

Freshwater seeps and wet meadows occur on permanently moist soil and are dominated by perennial grasses, sedges (*Carex* spp.), and rushes (*Juncus* spp.). In the Bay Area, these wetlands typically occur on grazed hillsides or at the base of grassland slopes. Seasonal wetland habitat consists of vernal pools, alkali marshes, alkali sink scrub habitats, and other seasonal wetlands with intermittent hydrologic conditions. Seasonal wetlands are dominated by herbaceous vegetation and pond surface water or maintain saturated soils at the ground surface for enough of the year to support facultative or obligate wetland plant species.

Vernal pools are seasonal freshwater pools that form in depressions over an impermeable soil layer (claypan or hardpan) or parent material. The vegetation in vernal pools consists primarily of annuals with low cover and a short life cycle. Vernal pools support a distinctive flora with a high number of endemic and rare species. Ephemeral seasonal wetlands habitat that supports vernal pool species occurs in the eastern Livermore-Amador Valley, Solano County, the city of Fremont, and the Brentwood area; near the Napa County Airport; and in the Santa Rosa Plain. In addition, alkali meadows and seeps in Contra Costa County support a similar assemblage of vernal pool endemic species.

Special-Status Plants

Special-status plants found in Bay Area salt marshes include Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre*), soft bird's beak (*Chloropyron molle* ssp. *molle*), Humboldt bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*), and California seablite (*Suaeda californica*). Rare plants in brackish marshes include Delta tule pea (*Lathyrus jepsonii* var. *jepsonii*), Suisun thistle (*Cirsium hydrophilum* var. *hydrophilum*), and Suisun marsh aster.

Special-status plants of seasonal wetlands and vernal pools include Solano grass (*Tuctoria mucronata*), vernal pool smallscale (*Atriplex persistens*), Jepson's coyote thistle (*Eryngium jepsonii*), Santa Lucia dwarf rush (*Juncus luciensis*), San Joaquin saltbush (*Atriplex joaquiniana*), Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), Contra Costa goldfields, alkali-sink goldfields (*Lasthenia chrysantha*), Point Reyes meadowfoam (*Limnanthes douglasii* ssp. *sulphurea*), and alkali milk vetch (*Astragalus tener* var. *tener*). Several highly endangered species occur in vernal pools of the Santa Rosa Plain, including Burke's goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), and Sonoma sunshine (*Blennosperma bakeri*), which are all listed as federal and State endangered species.

Special-Status Wildlife

Rare and endangered wildlife species that occur in tidal marshes of the Bay Area include California Ridgway's rail (*Rallus obsoletus obsoletus*), California black rail (*Laterallus jamaicensis coturniculus*), western snowy plover (*Charadrius alexandrinus nivosus*), Alameda song sparrow (*Melospiza melodia pusillula*), San Pablo song sparrow (*Melospiza melodia samuelis*), salt marsh common yellowthroat (*Geothlypis trichas sinuosa*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Pablo vole (*Microtus californicus sanpabloensis*), Suisun shrew (*Sorex ornatus sinuosus*), and salt marsh wandering shrew (*Sorex vagrans*).

Freshwater emergent wetlands and adjacent grassland habitats in Solano County support populations of giant garter snake (*Thamnophis gigas*), federally and State listed as threatened. Freshwater emergent wetlands throughout the region support California red-legged frog, and vernal pools and other seasonal wetlands of sufficient depth and duration of inundation support California tiger salamander in the Santa Rosa Plain, East Bay, and elsewhere. Special-status invertebrates found in seasonal wetlands and vernal pools, primarily in the East Bay and Solano County, include longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardii*).

Jurisdictional Waters

As described in detail in Section 3.5.2, "Regulatory Setting," below, activities such as discharge of fill or alteration that would affect most streams, rivers, and wetlands in the Bay Area are regulated by the U.S. Army Corps of Engineers (USACE), the San Francisco Regional Water Quality Control Board (RWQCB), and CDFW. The Bay Conservation and Development Commission (BCDC) regulates activities in and adjacent to San Francisco Bay, and the California Coastal Commission regulates activities along the California coast.

Jurisdictional wetlands in the Bay Area include tidal, brackish, and freshwater marshes; seasonal wetlands; seeps; and vernal pools. Rivers and streams are considered "other waters" and are regulated as such by the wetland permitting agencies. Compliance with regulations concerning wetlands and other waters would be required on a project-level basis under the proposed Plan.

Urban/Agricultural/Ruderal

Natural Community Summary

Urban

Urban development and landscaped areas support few biological resources and provide limited wildlife habitat but do provide foraging or nesting habitat for generalist,⁴ and sometimes nonnative, wildlife species that can tolerate human presence and activities. These include birds and small mammals such as

⁴ "Generalist" species can occupy and thrive in a variety of natural or developed areas.

California scrub jay, California towhee, house finch (*Carpodacus mexicanus*), house sparrow (*Passer domesticus*), raccoon, Virginia opossum (*Didelphis virginica*), and house mouse. Although these areas often do not provide suitable habitat for many specialized species of native wildlife because of higher human activity levels and the resources available, they may support a greater diversity of native wildlife species under appropriate conditions.

Agricultural

The Bay Area supports agricultural lands farmed for feed and grain, produce, orchards, vineyards, and other crops, such as commercial nurseries. Agricultural lands do not typically provide habitat for a wide variety of species but when situated in proximity to undeveloped open space, rivers, and marshes may attract many of the wildlife species associated with these habitats to forage in croplands. Common species occurring in agricultural lands include small mammals, such as voles and mice, and birds, such as mourning doves, European starlings (*Sturnus vulgaris*), and several blackbird species. Special-status species commonly associated with agricultural lands include giant garter snake and burrowing owl. Croplands are also important foraging habitats for numerous raptors, including the red-tailed hawk, northern harrier, and white-tailed kite.

Ruderal

Ruderal (disturbed and weedy) habitats are most prevalent in areas subject to frequent and often severe vegetation and soil disturbances, including overgrazed rangeland, disced or fallow fields, construction sites, levees, vehicle parking lots, and railroad or other public utility rights-of-way. This habitat type occurs throughout the region and is replacing annual grasslands where pressures are particularly high. Where vegetated, these sites are dominated by opportunistic, weedy nonnative plant species, such as perennial pepperweed, black mustard (*Brassica nigra*), mayweed (*Anthemis cotula*), wild radish (*Raphanus sativus*), yellow star-thistle, Italian thistle (*Carduus pycnocephalus*), fennel, poison hemlock, pampas grass (*Cordata jubata*), and bristly ox-tongue (*Helminthotheca echioides*).

Ruderal habitats provide limited foraging or nesting habitat for disturbance-tolerant and nonnative birds and small mammals, such as house sparrow, European starling, house finch, mourning dove, golden-crowned sparrow (*Zonotrichia atricapilla*), Norway rat (*Rattus norvegicus*), house mouse, California ground squirrel (*Otospermophilus beechyi*), and other rodents. Killdeer (*Charadrius vociferous*) commonly forage and nest on gravel or bare ground, including open dirt and fractured pavement. Ruderal habitat can also provide refuge for reptiles, such as western fence lizard, alligator lizard (*Elgaria multicarinata*), and gopher snake.

Special-Status Plants

Special-status plants are not expected to regularly occur in urban, agricultural, or ruderal environments because of the degree of disturbance to soils and vegetation, as well as habitat fragmentation, found in these areas. However, although these plants are not expected to regularly occur, they can occasionally be found within these areas.

Special-Status Wildlife

In general, most special-status wildlife species are not expected to occur in urban or other highly disturbed areas. The exception to this would be bats and birds. For example, bats could use underutilized or abandoned buildings in urban areas for roosting, and raptors such as Cooper's hawk and red-tailed hawk are known to nest with regularity in urban areas as well. Bats and raptors are also known to forage in agricultural fields. Burrowing owl sometimes nests within agricultural areas and in ruderal grasslands adjacent to urban development.

MIGRATORY CORRIDORS AND LINKAGES

The Bay Area encompasses large areas of wildlands that provide habitat for both common and rare plants and wildlife. Some of these areas were mapped as Essential Connectivity Areas (ECAs) for the California Essential Habitat Connectivity Project, which was commissioned by the California Department of Transportation and CDFW with the purpose of making transportation and land use planning more efficient and less costly, while helping reduce dangerous wildlife-vehicle collisions (Spencer et al. 2010). The ECAs were not developed for the purposes of defining areas subject to specific regulations by CDFW or other agencies.

The ECAs are not regulatory delineations but are identified as lands likely important to wildlife movement between large, mostly natural areas at the Statewide level. The ECAs form a functional network of wildlands that are considered important to the continued support of California's diverse natural communities. The ECAs were not developed for the needs of particular species but were based primarily on the concept of ecological integrity, which considers the degree of land conversion, residential housing impacts, road impacts, and status of forest structure (for forested areas) (Spencer et al. 2010). The Conservation Land Network (CLN) has also been established as a scientifically based analysis that focuses on biodiversity and local migratory conditions previously unavailable in the Bay Area and identifies the most essential lands needed to sustain biological diversity. The CLN analysis presents data at a somewhat finer resolution than the ECAs, which are shown in **Figure 3.5-5**. In addition, consideration was given to the degree of conservation protection and areas known to support high biological values, such as mapped critical habitat and hotspots of species endemism (Spencer et al. 2010). ECAs were mapped on a Statewide level and should be considered coarse-scale polygons that can inform land planning efforts but that should eventually be replaced by more detailed linkage designs, developed at finer resolution at the regional and ultimately local scale based on the needs of particular species and ecological processes. There are a total of 13 ECAs mapped within the nine-county Bay Area (see Figure 3.5-5). As seen in this figure, ECAs occur within all nine Bay Area counties and are typically centered along the region's mountain ranges. These areas are composed primarily of wildlands but may also include some agricultural and developed areas (mostly rural residential) and many are bisected by major roadways.

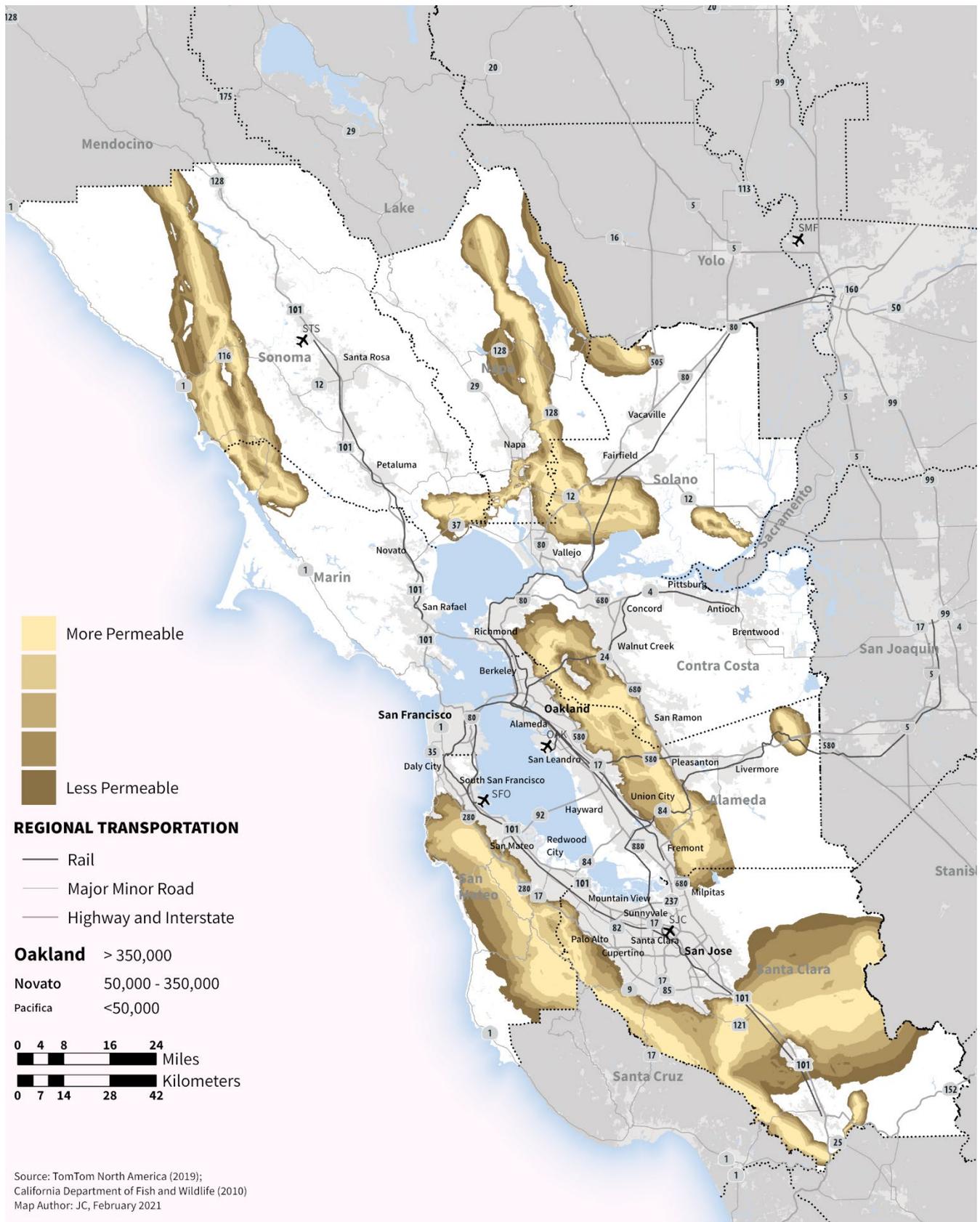


Figure 3.5-5: Essential Connectivity Areas

3.5.2 Regulatory Setting

The regulations and policies of various federal and State agencies (e.g., USACE, U.S. Environmental Protection Agency [EPA], USFWS, CDFW) mandate protection of wetlands, some special-status plant and wildlife species, and aquatic and terrestrial communities in the region. USACE has primary federal responsibility for administering regulations that concern waters and wetlands, while USFWS, NOAA Fisheries, and CDFW have lead responsibility for determining potential project effects on federally listed and State-listed species and other species of concern.

FEDERAL REGULATIONS

National Environmental Policy Act

The National Environmental Policy Act of 1969 (NEPA) was one of the first laws to establish a broad national framework for protecting the environment. Its purposes include “[t]o declare a national policy which will encourage productive and enjoyable harmony between man and his environment; [and] to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” NEPA ensures that all branches of government consider the environment before undertaking major federal actions that could significantly affect the environment.

Environmental assessments and environmental impact statements, which assess the likelihood of impacts from alternative courses of action, are required from all federal agencies and are the most visible NEPA requirements. The documents must include discussion of the environmental impacts of the alternatives, including the proposed action; any adverse environmental effects that cannot be avoided if the proposal is implemented; the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity; and any irreversible or irretrievable commitments of resources that would be involved in the proposal if it is implemented.

Federal Endangered Species Act

Under the ESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 United States Code [USC] 1533[c]). Pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed or proposed species may be present in the project region and whether the proposed project would result in a “take”⁵ of such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the ESA, or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3][4]). Project-related impacts on these species or their habitats would be considered significant in this EIR. The “take” prohibition of the ESA applies to any action that would adversely affect a single member of an endangered or threatened species.

⁵ “Take,” as defined in Section 9 of the ESA, is broadly defined to include intentional or accidental “harassment” or “harm” to wildlife. “Harass” is further defined by the U.S. Fish and Wildlife Service as an intentional or negligent act or omission that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding, and sheltering. “Harm” is defined as an act that actually kills or injures wildlife. It may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Marine Mammal Protection Act

The Marine Mammal Protection Act (50 CFR 216) prohibits, with certain exceptions, the take of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. This act defines “take” as hunting, harassing, capturing, or killing any marine mammal or attempting to do so. “Harassment” is defined as any act of “pursuit, torment, or annoyance” that has the potential to injure a marine mammal or cause disruption of essential behavioral patterns, including feeding, sheltering, migration, breeding, nursing, or breathing. The majority of the act’s provisions are related to commercial fishing and subsistence hunting. The act also outlines procedures for obtaining permits for take of small numbers of marine mammals, incidental to otherwise legal activities. Under this act, NOAA Fisheries has regulatory authority for the protection of sea lions, seals, dolphins, porpoises, and whales, and USFWS has authority regarding sea otters, walrus, manatees, and polar bears.

Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act

The federal Migratory Bird Treaty Act (16 USC, Section 703, Supplement I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

The federal Bald and Golden Eagle Protection Act prohibits persons within the United States (or other places subject to U.S. jurisdiction) from “possessing, selling, purchasing, offering to sell, transporting, exporting or importing any bald eagle or any golden eagle, alive or dead, or any part, nest or egg thereof.” This act also prohibits “taking” of bald and golden eagles, with “take” defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” Disturbance includes causing direct injury, a decrease in productivity, or nest abandonment.

Clean Water Act

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States. Although the purpose of the act is primarily to maintain water quality for both human and environmental benefits, regulations developed pursuant to this act deal extensively with permitting of actions in wetlands. These regulations provide more specific protection for wetland habitats—most of which are important ecologically—than any other laws. EPA has primary authority under the CWA to set standards for water quality and for effluents, but USACE has responsibility for permitting dredge and fill in wetlands.

Section 404 of the CWA requires project proponents to obtain a permit from USACE before performing any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with Section 401 of the CWA, projects that apply for a USACE permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the action would uphold State water quality standards.

Marine Protection, Research, and Sanctuaries Act of 1972

This legislation allowed for establishment of marine sanctuaries, such as the Cordell Bank, Gulf of the Farallones, and Monterey Bay National Marine Sanctuaries off the coast of Marin and Sonoma Counties and the San Francisco Peninsula, respectively. This act provides increased protection from a variety of

human influences on the marine resources within the sanctuaries. Among their important uses, the national marine sanctuaries provide an essential fishery, recreational opportunities, and habitat for a myriad of rare and common shorebirds, marine mammals, and other wildlife. Section 103 of this act regulates the transportation of dredged materials in ocean waters. This act is implemented through a permit granted by USACE, which uses EPA's ocean disposal criteria to regulate the disposal of dredged materials.

Magnuson-Stevens Fishery Management and Conservation Act

The Magnuson-Stevens Fishery Management and Conservation Act (Magnuson-Stevens Act) (16 USC Section 1801 et seq.) is the primary law governing management of commercial and recreational marine fisheries in the United States. The purpose of this federal law is sevenfold: conserve fishery resources, support enforcement of international fishing agreements, promote fishing in line with conservation principles, provide for the implementation of fishery management plans to achieve optimal yield, establish regional fishery management councils to steward fishery resources, develop underutilized fisheries, and protect essential fish habitat (EFH).

The Magnuson-Stevens Act requires federal agencies to consult with NOAA Fisheries when a project has the potential to adversely affect EFH. State agencies are not required to consult with NOAA Fisheries; however, NOAA Fisheries is required to develop EFH conservation recommendations for any State agency activity that would affect EFH. Similar in concept to Critical Habitat in ESA, EFH protection measures recommended by NOAA Fisheries or a regional fisheries management council are advisory and not prescriptive.

Rivers and Harbors Act of 1899

Section 10 of the Rivers and Harbors Act prohibits the obstruction or alteration of any navigable water of the United States. Under this act, USACE must authorize any excavation or deposition of materials into such waters or any work that could affect the course, location, condition, or capacity of such waters.

Coastal Zone Management Act of 1972

This act established the authority for creating coastal zone management areas and the California Coastal Commission. Coastal zone management criteria are established by the commission and must be followed by federal, other government, or private entities performing any activities within the coastal zone.

U.S. Department of Transportation Act, Section 4(F)

Per Section 4(f) of the U.S. Department of Transportation Act (49 U.S. Code Section 303), the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned and accessible parks, recreation areas, and wildlife and waterfowl refuges of national, state, or local significance or land from historic sites of national, state or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.

STATE REGULATIONS

California Endangered Species Act

Under CESA, CDFW has the responsibility for maintaining a list of threatened and endangered species (California Fish and Game Code Section 2070). CDFW also maintains a list of "candidate species," which are species formally noticed as being under review for addition to either the list of endangered species or the list of threatened species. In addition, CDFW maintains lists of "species of special concern," which serve as "watch lists." Pursuant to the requirements of CESA, an agency reviewing a proposed project

within its jurisdiction must determine whether any species State listed as endangered or threatened could be present on the project site and determine whether the proposed project could have a potentially significant impact on such species. In addition, CDFW encourages informal consultation on any proposed project that may affect a candidate species. Project-related impacts on species on the CESA endangered or threatened lists would be considered significant in this EIR. Impacts on “species of concern” would be considered significant under certain circumstances, discussed below.

California Fish and Game Code

Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the order Falconiformes or Strigiformes), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

Section 4150—Protection of Nongame Mammals

Section 4150 states that all mammals occurring naturally in California that are not game mammals, fully protected mammals, or fur-bearing mammals are “nongame mammals.” Nongame mammals or parts thereof may not be taken or possessed except as provided in the code or in accordance with regulations adopted by the California Fish and Game Commission. Nongame mammals that may be taken or possessed are primarily those that cause crop damage.

Section 1602—Streambed Alteration

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports fish or wildlife resources are subject to regulation by CDFW under Section 1602 of the California Fish and Game Code. Under Section 1602, it is unlawful for any person, governmental agency, or public utility to do any of the following without first notifying CDFW:

- ▲ substantially divert or obstruct the natural flow of, or substantially change or use any material from, the bed, channel, or bank of any river, stream, or lake; or
- ▲ deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel that has banks and supports fish or other aquatic life. This definition includes watercourses with a surface or subsurface flow that supports or has supported riparian vegetation (CCR Title 14, Section 1.72). CDFW jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. A streambed alteration agreement must be obtained for any diversion or alteration that would substantially adversely affect a fish or wildlife resource in a river, stream, or lake.

Section 1360–1372—Oak Woodlands Conservation Act and California

The California Oak Woodlands Conservation Act (Fish and Game Code sections 1360–1372) was enacted to protect oak woodland habitats that were being diminished by development, firewood harvesting,

and agricultural conversions. The Oak Woodlands Conservation Program was established as a result of the act and is intended to provide project funding opportunities for private landowners, conservation organizations, and cities and counties to conserve and restore oak woodlands. The program authorizes the Wildlife Conservation Board to purchase oak woodland conservation easements and provide grants for land improvements and oak restoration efforts.

Section 21083.4 of CEQA requires counties to determine if a project within their jurisdiction may result in conversion of oak woodlands that would have a significant adverse effect on the environment. If the lead agency determines that a project would result in a significant adverse effect on oak woodlands, mitigation measures to reduce the significant adverse effect of converting oak woodlands to other land uses are required.

Natural Community Conservation Plan Act

An NCCP is a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity that began under the State's NCCP Act (Fish and Game Code Section 2800), legislation broader in its orientation and objectives than the ESA and CESA. An NCCP identifies and provides for the regional or areawide protection of plants, animals, and their habitats while allowing compatible and appropriate economic activity. The primary objective of the NCCP program is to conserve natural communities at the ecosystem level while accommodating compatible land use. The program is intended to anticipate and prevent the controversies and gridlock caused by species' listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process. Like regional habitat conservation plans (HCPs), NCCPs can allow for take of listed species while promoting overall conservation of the species through landscape-level protections. In 2011, SB 618 authorized CDFW to permit the incidental take of Fully Protected species if the species is covered and conserved in an NCCP.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Water Quality Control Act, waters of the State fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater, as well as actions to control point and nonpoint sources of pollution to achieve and maintain these standards. The RWQCB's jurisdiction includes federally protected waters, as well as areas that meet the definition of "waters of the State." Waters of the State are defined as any surface water or groundwater, including saline waters, within the boundaries of the State. In addition to water quality certifications under Section 401 of the federal CWA, discharges to waters of the State, including wetlands, must meet the RWQCB waste discharge requirements.

Delta Conveyance (Formerly California WaterFix and Bay Delta Conservation Plan)

In May 2019, the California Department of Water Resources (DWR) took formal action to rescind State and federal permit applications for the California WaterFix project. As of August 2020, USACE issued a Notice of Intent for the development of an Environmental Impact Statement for the Delta Conveyance Project, which is a single tunnel project to modernize State Water Project infrastructure in the Delta. DWR expects permitting to be complete in mid-2024.

Sacramento-San Joaquin Delta Reform Act of 2009

In November 2009, the California Legislature enacted the Sacramento-San Joaquin Delta Reform Act (Delta Reform Act) (California Water Code Section 10610 et seq.), also known as Senate Bill (SB) 1 (Stats. 2009, 7th Ex. Sess., ch. 5) (SB X7-1), one of several bills passed at that time related to water supply reliability, ecosystem health, and the Delta. The Delta Reform Act created the Delta Stewardship Council (DSC), charged with developing and adopting the Delta Plan. The Delta Plan is a comprehensive, long-term management plan for the Delta that creates new rules and

recommendations to further the State's coequal goals for the Delta: Improve Statewide water supply reliability and protect and restore a vibrant and healthy Delta ecosystem, all in a manner that preserves, protects, and enhances the unique agricultural, cultural, and recreational characteristics of the Delta. The Delta Plan was unanimously adopted by DSC on May 16, 2013, and became effective with legally enforceable regulations on September 1, 2013. The following regulatory policies and recommendations are applicable to biological resources:

- ▲ Complete Bay Delta Conservation Plan (Recommendation WR R12).
- ▲ Restore Habitats at Appropriate Elevations (23 CCR Section 5006)).
- ▲ Protect Opportunities to Restore Habitat (23 CCR Section 5007).
- ▲ Expand Floodplains and Riparian Habitats in Levee Projects (23 CCR Section 5008).
- ▲ Prioritize and Implement Projects That Restore Delta Habitat (Recommendation ER R2).
- ▲ Avoid Introductions of and Habitat Improvements for Invasive Nonnative Species (23 CCR Section 5009).
- ▲ Prioritize and Implement Actions to Control Nonnative Invasive Species (Recommendation ER R7).

The Delta Plan was amended in February 2016 to include refined performance measures, which were again amended in April 2018. A September 2016 amendment made permanent an exemption for single-year water transfers to be considered as covered actions. Also, in April 2018, the Delta Plan was amended to revise Chapter 3 to include new text and recommendations for conveyance, storage, and operations, and to revise Chapter 7 to include new text and policy for setting priorities for State investments in Delta levees.

Under the Delta Reform Act, DSC is charged with reviewing and advising local and regional agencies regarding the consistency of local and regional planning documents, including the proposed Plan, with the Delta Plan. DSC's input includes reviewing the consistency of local and regional plans with the ecosystem restoration needs of the Delta and whether the lands set aside for natural resource protection are sufficient to meet the Delta's ecosystem needs. The Delta Reform Act requires that "covered actions," as defined, which include plans, programs, or projects within the primary or secondary zones of the Delta, be consistent with the Delta Plan.

The Delta Reform Act expressly provides that "covered actions" do not include (1) regional transportation plans, such as the proposed Plan, and (2) plans, programs, projects, activities (and any infrastructure necessary to support those plans, programs, projects, or activities) within the secondary zone of the Delta that has been determined to be consistent with the proposed Plan (California Water Code Section 85057.5). However, DSC reviews any plan that includes land within the Delta zones, whether or not it is a covered action. Metropolitan planning organizations that have a planning area crossing these boundaries are required to follow a consultation procedure with DSC. This procedure includes early coordination to determine consistency of a proposed plan with the Delta Plan. MTC and ABAG consulted with DSC on December 12, 2019, and January 22, 2020, on the application of the law, the geography under DSC authority, and the policies established by the DSC, and will follow the Delta Reform Act's consultation requirements.

California Native Plant Protection Act

State listing of plant species began in 1977 with the passage of the California Native Plant Protection Act (NPPA), which directed CDFW to carry out the legislature's intent to "preserve, protect, and enhance endangered plants in this state." The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare and to require permits for collecting, transporting, or selling such plants. CESA expanded upon the original NPPA and enhanced legal protection for plants. CESA established threatened and endangered species categories and grandfathered all rare animals—but not rare plants—into the act as threatened species. Thus, there are three listing categories for plants in California: rare, threatened, and endangered.

California Coastal Act

The California Legislature enacted the California Coastal Act in 1976 to regulate coastal development throughout the State. The act created a “coastal management zone” that generally extends 3 miles seaward and up to 5 miles inland from the mean high tide line. In particularly important and generally undeveloped areas where there can be considerable impact on the coastline from inland development, the coastal zone may extend to a maximum allowable limit. In developed urban areas, the coastal zone generally extends inland for a much shorter distance. Each city or county government whose jurisdiction includes land in the coastal zone must develop a Local Coastal Program for the area. The Local Coastal Program guides planning, conservation, and use of coastal resources; must be consistent with the Coastal Act; and must be certified by the California Coastal Commission. Any person wishing to develop land within the coastal zone must obtain a permit from the relevant city or county, and the development plan must be consistent with the policies of the act.

Z’berg-Nejedly Forest Practice Act

The Z’berg-Nejedly Forest Practice Act (FPA) ensures that logging on privately owned lands in California is done in a manner that will preserve and protect fish, wildlife, forests, and streams. This act established a nine-member State Board of Forestry whose mandate was the control over forest practices and forest resources in California. The Board of Forestry sets forest management policies that are implemented by the California Department of Forestry and Fire Protection (CAL FIRE).

The FPA requires that a Timber Harvest Plan (THP) be prepared by a Registered Professional Forester (RPF) for timber harvest on virtually all nonfederal land. THPs are submitted to CAL FIRE for its review and approval. The THP process is the functional equivalent of an EIR under CEQA.

California Forest Practice Rules

Additional rules enacted by the State Board of Forestry are also enforced to protect fish, wildlife, forests, and stream resources. The purpose of the Forest Practice Rules is to implement the provisions of the FPA in a manner consistent with other laws, including but not limited to, the Timberland Productivity Act of 1982, CEQA, the Porter-Cologne Water Quality Control Act, and CESA. The provisions of the rules are followed by RPFs in preparing THPs, and by the CAL FIRE director in reviewing such plans to achieve the FPA policies. CAL FIRE ensures that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the FPA and Board rules apply to all commercial harvesting operations for landowners of small parcels, ranchers owning hundreds of acres, and large timber companies with thousands of acres.

A THP that does not comply with all forestry and environmental regulations is returned to the RPF. It is approved only after the RPF and landowner agree to make the changes necessary to ensure compliance with all laws. CAL FIRE follows up on approved THPs with site inspections and can shut down operations and cite or fine RPFs, Licensed Timber Operators, and landowners if illegal operations are found.

California Wildlife Action Plan 2015

CDFW developed the State Wildlife Action Plan, 2015 Update (SWAP 2015) as a comprehensive plan for conserving California’s fish and wildlife and their vital natural habitats for future generations. SWAP 2015 establishes a strategic vision of the integrated conservation efforts needed to sustain the tremendous biodiversity of fish and wildlife resources found in the State. Significant climate-related changes to California’s environment have been documented in the last decade, including sea level rise, natural community shifts, increased prevalence of invasive species, increased number and intensity of wildfires, and prolonged drought. SWAP 2015 has considered these climate-induced effects, as well as other pressures on wildlife populations and habitats, and identifies Statewide and regional conservation strategies to protect the State’s natural resources.

Employing an ecosystem approach to conserve and manage diverse habitats and species, SWAP 2015 provides a blueprint for actions necessary to address the highest priorities for conserving California's aquatic, marine, and terrestrial resources. Its implementation relies on making important and helpful conservation information more accessible to resource managers and the public, and on developing lasting partnerships with a broad array of governments, agencies, organizations, businesses, and citizens. SWAP 2015 describes key conservation factors crucial to the sustainability of California ecosystems, and for each geographic province, it provides specific conservation strategies that will reduce or ameliorate adverse impacts on ecological systems or enhance the quality vital to the natural landscapes of California.

REGIONAL AND LOCAL REGULATIONS

Habitat Conservation Plans

East Contra Costa County Habitat Conservation Plan/Natural Community Conservation Plan

The *East Contra Costa County HCP/NCCP* (2006), overseen by the East Contra Costa County Habitat Conservancy, covers the eastern one-third of Contra Costa County (174,018 acres). It allows Contra Costa County, the Contra Costa County Flood Control and Water District, the East Bay Regional Park District, and the cities of Brentwood, Clayton, Oakley, and Pittsburg to streamline environmental permitting for activities and projects in the region that are covered by the HCP. The HCP also provides for comprehensive species, wetlands, and ecosystem conservation, and contributes to the recovery of endangered species in California while allowing for limited take of 28 listed and nonlisted ("covered") species. By implementing the HCP, the above-mentioned signatories will have a 30-year permit from USFWS and CDFW that authorizes take of covered species and will avoid project-by-project permitting that is generally costly and time consuming.

Santa Clara Valley Habitat Plan

The City of San José, Santa Clara County, the Santa Clara Valley Transportation Authority, the Santa Clara Valley Water District, the City of Gilroy, and the City of Morgan Hill initiated a collaborative process to prepare and implement an HCP/NCCP for the Santa Clara Valley. The final HCP/NCCP, called the *Santa Clara Valley Habitat Plan*, and associated EIR were released in 2012. In 2013, the HCP/NCCP was adopted by all local participating agencies, and permits were issued from USFWS and CDFW. The HCP/NCCP targets specific areas of the county where land development activities and the continued survival of endangered, threatened, or other species of concern are in conflict. The goal of the HCP/NCCP is to provide the means for conservation of these species, thereby contributing to their recovery while allowing for compatible and appropriate development to occur.

Conservation Strategies

East Alameda County Conservation Strategy

The East Alameda County Conservation Strategy (EACCS) is a collaborative effort to preserve endangered species by developing and adopting a guide to long-term protection of endangered species. The inventory area for this conservation strategy includes the cities of Dublin, Pleasanton, and Livermore, as well as unincorporated areas of eastern Alameda County. Annual grassland, seasonal and permanent wetlands, riparian woodland, oak woodland, and scrub communities within the inventory area are known to support several listed or sensitive wildlife species, including California tiger salamander, San Joaquin kit fox, Alameda whipsnake, and California red-legged frog.

The EACCS describes current biological conditions in the region, which present a baseline for species habitat with which to compare future development. It also provides a long-term regional conservation strategy to protect species by prioritizing habitats that should be protected or restored.

From a regulatory perspective, the EACSS is intended to streamline and simplify the issuance of Section 404 permits for future projects. It standardizes avoidance, minimization, mitigation, and compensation requirements to comply with federal, State, and local laws and regulations relating to biological and natural resources in the study area. The core of the EACCS for the covered species is the application of standardized mitigation ratios for each species to offset project impacts. In May 2012, USFWS issued a Programmatic Biological Opinion (Programmatic BO) for USACE-permitted projects using the EACCS for projects that may affect one or more of the species covered in the EACCS and Programmatic BO. The Programmatic BO is issued to USACE for permits, enforcement actions, or mitigation banks that are under the agency's jurisdiction. Eligible projects may be appended to the Programmatic BO to obtain individual incidental take authorization. To be eligible, individual projects must be consistent with the EACCS and fall under the list of activities covered by the Programmatic BO. Covered activities include residential, commercial, and industrial development and associated infrastructure (roads and utilities); infrastructure projects, such as transmission lines, road construction and maintenance, trail construction and maintenance, bridge construction and maintenance, solar projects, wind energy projects, and culvert installation and maintenance; and restoration projects, including pond and stream restoration and enhancement, fish barrier removal and modification, and wetland construction and maintenance.

Santa Rosa Plain Conservation Strategy

The Santa Rosa Plain Conservation Strategy (2005) creates a long-term program to mitigate potential adverse effects on listed species related to future development on the Santa Rosa Plain, which is located in central Sonoma County, bordered on the south and west by the Laguna de Santa Rosa, on the east by the foothills, and on the north by the Russian River. The plain and adjacent areas are characterized by vernal pools, seasonal wetlands, and associated grassland habitat that supports several species of flora and fauna listed under the ESA as threatened or endangered, including the threatened California tiger salamander and four endangered plant species: Burke's goldfields, Sonoma sunshine, Sebastapol meadowfoam, and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*).

The conservation strategy was created to (1) provide a plan for local agencies, developers, and community groups that would preserve and enhance populations and habitat of the listed species; (2) support the issuance of a USFWS authorization for incidental take of California tiger salamander and listed plants that may occur in the course of carrying out a broad range of activities on the plain; and (3) protect stakeholders' (public and private) interests. It is based in part on the Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan (1995).

The conservation strategy addresses various aspects of urban and rural growth and its effects on the above-listed species, mitigation for impacts on these listed species and wetlands, and the conservation and recovery of the listed species and their habitat. It identifies the Southwest Santa Rosa Preserve System and nine "conservation areas" throughout the plain as the locations where mitigation for project-related impacts on listed species and vernal pools should be directed. The designation of conservation areas is based on the following factors: (1) known distribution of California tiger salamander, (2) presence of suitable California tiger salamander habitat, (3) presence of large blocks of natural or restorable land, (4) adjacency to existing preserves, and (5) known location of the listed plants. A critical component of the conservation strategy is that 350-900 acres of actual preserve land ultimately will be established within each conservation area.

While local jurisdictions participating in the conservation strategy have adopted the Santa Rosa Plain Conservation Strategy Planning Agreement, numerous important implementation issues still must be resolved before the conservation strategy can be put into full effect. However, the USFWS Programmatic BO (2007) can still be invoked for projects that have suitable habitat for California tiger salamander, Burke's goldfields, Sonoma sunshine, Sebastapol meadowfoam, and many-flowered navarretia and that would affect wetlands in the Santa Rosa Plain.

Bay Conservation and Development Commission Acts and Plans

Suisun Marsh Preservation Act of 1977 and Suisun Marsh Protection Plan

The *Nejedly-Bagley-Z'berg Suisun Marsh Act* was enacted in 1974 to require the San Francisco BCDC and CDFW to prepare a plan (later called the *Suisun Marsh Protection Plan*) to preserve the integrity and ensure continued wildlife use of the Suisun Marsh, approximately 85,000 acres of tidal marsh, managed wetlands, and waterways in southern Solano County. The Suisun Marsh is the largest remaining brackish wetland complex in San Francisco Bay, more than 10 percent of California's remaining wetland area, and a wildlife habitat of international importance. The Suisun Marsh Preservation Act (PRC Sections 29000–29612) was enacted in 1977 to incorporate the findings and policies contained in the *Suisun Marsh Protection Plan* of 1976 into State law, and to empower BCDC to implement the plan through its regulatory authority.

The *Suisun Marsh Protection Plan*, in brief, proposes (1) a primary management area encompassing the 89,000 acres of tidal marsh, managed wetlands, adjacent grasslands, and waterways over most of which BCDC now has jurisdiction and (2) a secondary management area of approximately 22,500 acres of significant buffer lands. Under specific guidelines in each area, Solano County would be responsible for preparing and administering a local protection program. BCDC would represent the State's interest, serving as the land use permitting agency for major projects in the primary management area, and as an appellate body with limited functions in the secondary management area.

San Francisco Bay Plan

The San Francisco Bay Plan (Bay Plan) was developed by BCDC in 1968, and its provisions are currently maintained and carried out by BCDC. Since the adoption of the Bay Plan, implementing legislation has been amended several times, but the general character, scope of authority, and area of jurisdiction are largely unchanged. The Bay Plan provides the findings and policies to guide future uses of the bay and shoreline, certain waterways, salt ponds and managed wetlands, and the maps that apply these policies to BCDC's jurisdiction.

City and County General Plans

The most comprehensive land use planning for the San Francisco Bay Area region is provided by city and county general plans, which local governments are required by State law (California Government Code Section 65300 et seq.) to prepare as a guide for future development. Issues pertaining to biological resources are described primarily in the conservation and open space elements of general plans. These elements typically address tree removal and protection policies, conservation of native vegetation, preservation of open space and wildlife habitat corridors, and protection of sensitive species.

Tree Protection Policies and Regulations

Many jurisdictions also have adopted Tree Protection regulations in local municipal codes, as well as Oak Woodlands Conservation plans enacted pursuant to Section 1360-1372 of the California Fish and Game Code, described above.

3.5.3 Impact Analysis

SIGNIFICANCE CRITERIA

The following significance criteria are based on CEQA Guidelines Appendix G, the criteria used in the Plan Bay Area 2040 EIR (2017), and professional judgment. Under these criteria, implementation of the proposed Plan would have a potentially significant adverse impact if it would:

- ▲ have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NOAA Fisheries (Criterion BIO-1a);
- ▲ have substantial adverse impacts on designated critical habitat for federally listed plant and wildlife species (Criterion BIO-1b);
- ▲ have a substantial adverse effect on riparian habitat, State- or federally protected wetlands (including but not limited to marsh, vernal pool, coastal), or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW or USFWS, through direct removal, filling, hydrological interruption, or other means (Criterion BIO-2);
- ▲ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites (Criterion BIO-3);
- ▲ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or with provisions of an adopted Habitat Conservation Plan (HCP); Natural Community Conservation Plan (NCCP); or other approved local, regional, or State HCP (Criterion BIO-4); or
- ▲ have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species (Criterion BIO-5).

METHOD OF ANALYSIS

This program-level EIR evaluates potential impacts on biological resources based on the location of the proposed Plan's footprints associated with the forecasted development pattern (i.e., the land use growth footprint), sea level rise adaptation infrastructure (i.e., sea level rise adaptation footprint), and transportation projects (i.e., transportation system footprint) relative to the known distribution of and potential distribution of sensitive biological resources throughout the Bay Area. The effects of the proposed Plan policies are presented qualitatively and are generally captured in the evaluation of the physical effects of the project. Quantitative results are presented for the region (i.e., the entire growth footprint, often summarized by county) and for the portions of the land use growth footprint specifically within transit priority areas (TPAs). TPAs are presented as a subset of the regional and county totals. Information provided by county includes both incorporated and unincorporated areas in the county.

For this impact assessment, a geographic information system (GIS) was used to digitally overlay the proposed Plan's footprints associated with forecasted land use development, sea level rise adaptation infrastructure, and transportation projects onto documented locations of critical habitat for federally listed species and wetlands and other waters. Potential impacts were determined by evaluating whether the projected footprints would occur within the potential range of a special-status species, whether projected growth and projects would potentially directly encroach upon an area of ecological

significance (e.g., sensitive natural community or habitat, designated critical habitat, important wildlife corridor), or whether the planned development and projects could involve the filling of wetlands. Existing data and other resources used to identify potentially affected biological resources included the CNDDDB (CNDDDB 2020), NWI mapping (NWI 2020), and mapping by the California Essential Habitat Connectivity Project. A quantitative analysis of the potential for impacts (e.g., acres of critical habitat, acres of mapped wetland types potentially affected) was performed.

The GIS-based approach for this programmatic analysis likely overestimates actual impacts because of the coarse level of the analysis and resource-mapping limitations. For example, as described previously, many special-status species occurrences from the CNDDDB indicate only presence within a general area at the time of observation. In addition, many CNDDDB species locations are historical, and habitat no longer occurs for the species because of urbanization. Therefore, a land use growth footprint, sea level rise adaptation infrastructure footprint, and transportation project polygon intersection with a special-status species polygon simply indicates that the species may, or did once, occur in that area and that projects within those areas may affect that species if habitat for the species still occurs within or adjacent to the specific project site. Conversely, because the CNDDDB is a positive occurrence database (i.e., only known occurrences that were voluntarily reported by an observer are included), it does not predict where all special-status species may occur, and some species may be underrepresented.

This analysis assumes that impacts on biological resources would be most likely to occur where land use development, sea level rise adaptation infrastructure, and transportation projects could affect ecologically sensitive or significant areas. Projects most likely to affect sensitive biological resources are those involving major ground-disturbing activity. Road widenings, highway extensions, interchange projects, bridges, and rail extensions (e.g., the New Transbay Rail Crossing) in rural areas or in or over water bodies or wetlands also have a higher likelihood of affecting sensitive biological resources. Laws and regulations protecting special-status species, areas of ecological significance, and wetland resources are effective incentives for project proponents to design alternatives that either avoid or substantially reduce impacts on these resources.

This evaluation of biological resource impacts assumes that construction and development under the proposed Plan would adhere to applicable federal, State, and local regulations and would conform to applicable standards in the industry, as relevant for individual projects. Where existing regulatory requirements or permitting requirements exist that are law and binding on responsible agencies and project sponsors, it is reasonable to assume that they would be implemented, thereby reducing impacts. For additional information on analysis methodology, refer to Section 3.1.3, "General Methodology and Assumptions."

IMPACTS AND MITIGATION MEASURES

Impact BIO-1a: Have a substantial adverse effect, either directly or through habitat modifications, on species identified as candidate, sensitive, or special status in local or regional plans, policies, or regulations, or by CDFW, USFWS, or NOAA Fisheries (PS)

Special-status species that could occur in the plan area are described in Section 3.5.1, "Environmental Setting," and are listed in **Table C-1** in Appendix C. The list of species that would be potentially affected was generated from a GIS-based analysis of project proximity to documented special-status species occurrences, as well as proximity to critical habitat designated by USFWS and NOAA Fisheries (CNDDDB 2020; USFWS 2020). Additionally, nonlisted species (i.e., not listed under the federal ESA or CESA) that are not consistently tracked by CDFW in the CNDDDB but are afforded protections under the California Fish and Game Code and the Migratory Bird Treaty Act were also considered.

Focused biological resource surveys to determine the locations and extent of special-status species populations have not been conducted in support of this programmatic EIR; detailed and site-specific surveys are more appropriately conducted when project-level detail is available. Therefore, this analysis conservatively assumes that special-status species would be present within the impact footprint of regional growth/land use changes, a sea level rise adaptation infrastructure project, or a transportation project if the project is mapped as containing or located near a known species occurrence. Known occurrences are those mapped in reliable data sources (e.g., CNDDDB, USFWS Environmental Conservation Online System). However, CNDDDB includes historical occurrences for species that may no longer be extant at a given location, and this may lead to an overestimation of development impacts on special-status species in this EIR. Conversely, the CNDDDB records are limited to those voluntarily reported and do not represent a comprehensive inventory of special-status species in an area. These projects could adversely affect special-status plant and wildlife species. While less development is expected to occur outside TPAs, it would have the same general types of impacts.

Land Use Impacts

Construction and Operation

As described in Chapter 2, "Project Description," the regional growth forecast for the Bay Area projects that by 2050 the region will support an additional 2.7 million residents and 1.4 million jobs, resulting in 1.4 million new households. The proposed Plan designates growth geographies and identifies a set of land use strategies to accommodate the projected growth that result in focused housing and job growth concentrated primarily in or adjacent to already urban and built-up areas and along existing transit corridors. As shown in **Table 2-16** in Chapter 2, "Project Description," the land use growth footprint covers 39,400 acres of land in the Bay Area. In addition, the proposed Plan incorporates environmental strategies that would limit new construction outside of the existing development or areas otherwise suitable for growth and would protect high-priority natural lands (e.g., wildland-urban interface lands). These strategies include environmental corridors, stream conservation areas, and riparian buffers. Nonetheless, implementation of the land use development pattern under the proposed Plan could result in regional impacts on special-status species. Potential regional effects on special-status species could occur as a result of habitat fragmentation, increased human intrusion into wildland areas, introduction of invasive species, disruption of migratory corridors, and a resulting regional reduction in biological diversity.

Potential localized effects on special-status species include the temporary and permanent removal or conversion of vegetation and habitat necessary for species breeding, feeding, dispersal, or sheltering. Construction of projects and ongoing operations could result in direct mortality of special-status plants and wildlife, entrapment of wildlife in open trenches, and general disturbance because of noise or vibration during pile driving, earthmoving, and other construction activities for species present in disturbance areas. Construction-generated fugitive dust accumulation on surrounding vegetation and construction-related erosion, runoff, and sedimentation could degrade the quality of adjacent vegetation communities, affecting their ability to support special-status plants and wildlife. Habitat fragmentation and disruption of migratory corridors could also occur on a local level, potentially affecting local populations by making them more vulnerable to extirpation.

Because land use changes under the proposed Plan could result in the disturbance or loss of special-status plant and wildlife species and habitats, this impact would be potentially significant (PS).

Sea Level Rise Adaptation Impacts

Construction and Operation

As described in Chapter 2, "Project Description," sea level rise adaptation infrastructure could include the implementation of elevated highways/roadways, levees, sea walls, tidal gates, and marsh land restoration. Potential effects of sea level rise adaptation infrastructure on special-status plant and

wildlife species are generally like those described above for land use development under the proposed Plan. In this case, most potential impacts on special-status species would occur in association with adaptation infrastructure that would result in earthmoving or vegetation removal activities (e.g., elevated highway/roadway, levees, sea walls, tidal gates) that are currently within or adjacent to occupied habitat or habitat suitable for special-status species. While marsh land restoration projects would likely benefit special-status species that occur in marsh habitats, overall, these projects could also result in temporary adverse effects on these resources.

Because the implementation of sea level rise adaptation infrastructure may result in construction that results in the disturbance or loss of special-status plant and wildlife species and habitats, this impact would be potentially significant (PS).

Transportation System Impacts

Construction

Construction of proposed transportation projects could affect adjacent wetlands, woodlands, shrublands, and grasslands, as well as associated plant and wildlife species. Because the proposed transportation projects are mainly concentrated along existing transportation corridors, where existing conditions in adjacent habitat areas typically represent the result of past and ongoing disturbance, regional habitat loss and fragmentation is expected to be lower than if projects were entirely new construction or sited in previously undeveloped areas. Nonetheless, these and other transportation projects - particularly new rail projects located in areas that have not been subject to previous ground disturbance - could contribute to regional and local habitat loss and fragmentation.

Implementation of proposed transportation projects would include construction of a new Transbay rail crossing between Oakland and San Francisco. Future construction methods for the crossing are not known at this time. In-water construction activities associated with construction of a tunnel could result in noise, vibration, or other physical impacts on the aquatic bay environment, potentially resulting in adverse effects on special-status aquatic wildlife and habitat, including special-status fish, marine mammals protected by the federal Marine Mammal Protection Act (e.g., harbor seal, California sea lion) and habitats designated as EFH. Due to these potential effects and the potential for habitat loss and fragmentation noted above, construction impacts would be potentially significant (PS).

Operation

Long-term increases in the volume of vehicular traffic and major expansions of existing roads or development of new roads in rural areas are expected to result in increased vehicle-related wildlife mortalities and injuries of common and special-status wildlife species. This effect would be most pronounced in rural areas, where roads traverse larger expanses of natural habitats.

Because the proposed Plan transportation projects may result in the disturbance or loss of special-status plant and wildlife species and habitats, this impact would be potentially significant (PS).

Conclusion

Implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects could result in adverse effects on special-status species, particularly with respect to habitat loss, fragmentation, and degradation. Because the proposed Plan could result in the disturbance or loss of special-status plant and wildlife species and habitats, this impact would be **potentially significant (PS)**. Mitigation Measure BIO-1(a) addresses this impact and is described below.

Mitigation Measures

Mitigation Measure BIO-1(a) Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, that include those identified below:

- ▲ Implementing agencies shall require project sponsors to prepare biological resource assessments for specific projects proposed in areas known or likely to contain habitat suitable for special-status plants and wildlife. The assessment shall be conducted by qualified professionals pursuant to adopted protocols and agency guidelines, where applicable. Where the biological resource assessments establish that mitigation is required to avoid and minimize direct and indirect adverse effects on special-status plant and wildlife species, or compensate for unavoidable effects, mitigation shall be developed consistent with the requirements or standards of CEQA, USFWS, CDFW, and local regulations and guidelines, in addition to requirements of any applicable and adopted HCP/NCCP or other applicable plans developed to protect species or habitat.
- ▲ In support of CEQA, NEPA, CDFW, USFWS, and NOAA Fisheries review and permitting processes for individual proposed Plan projects, pre-project biological surveys shall be conducted as part of the environmental review process to determine the presence and extent of sensitive habitats and species in the project vicinity. Surveys shall follow established methods and shall be conducted at times when the subject species is most likely to be identified. In cases where impacts on State- or federally listed plant or wildlife species are possible, formal protocol-level surveys may be required on a species-by-species basis to determine the local presence and distribution of these species. Coordination with CDFW, USFWS, and NOAA Fisheries, as appropriate, shall be conducted early in the planning process at an informal level for projects that could adversely affect federal or State candidate, proposed, threatened, or endangered species to determine the need for consultation or permitting actions. Projects shall obtain incidental take authorization from the permitting agencies, as required, before project implementation.
- ▲ A species and habitat compensation plan shall be prepared for unavoidable direct impacts on special-status plant species and shall be reviewed and approved by the resource agencies and lead agency prior to project approval. The plan shall identify effective methods for reestablishing the affected species and habitat, including but not limited to seed collection, salvage of root masses, and planting seeds and/or root masses in an area with suitable conditions. The plan shall also specify a monitoring program designed to evaluate success in reestablishing the affected species and habitat, and remedial measures that shall be followed if the project is not meeting specified performance criteria. The monitoring program shall be designed to evaluate the current and probable future health of the resources, and their ability to sustain populations in keeping with natural populations following the completion of the program. Remedial measures are highly dependent upon the species and habitats in question, but generally shall include but not be limited to invasive species management, predator control, access control, replanting and reseedling of appropriate habitat elements, regarding, and propagation and seed bulking programs.
- ▲ Project designs shall be reconfigured, whenever practicable, to avoid special-status species and sensitive habitats. Projects shall minimize ground disturbances and transportation project footprints near sensitive areas to the extent practicable.
- ▲ Temporary access roads and staging areas shall not be located within the areas containing sensitive plants or wildlife species wherever feasible, to avoid or minimize impacts on these species.
- ▲ Project activities in the vicinity of sensitive resources shall be completed during the period that best avoids disturbance to plant and wildlife species present to the extent feasible.

- ▲ Individual projects shall minimize the use of in-water construction methods in areas that support sensitive aquatic species, especially when listed species could be present.
- ▲ If equipment needs to operate in any watercourse with flowing or standing water where special-status species may be affected, a qualified biological resource monitor shall be present to alert construction crews to the possible presence of such special-status species.
- ▲ If project activities involve pile driving or vibratory hammering in or near water, interim hydroacoustic threshold criteria for protected fish species shall be adopted as set forth by the Interagency Fisheries Hydroacoustic Working Group, as well as other avoidance methods to reduce the adverse effects of construction to sensitive fish, piscivorous birds, and marine mammal species.
- ▲ A qualified biologist shall locate and fence off sensitive resources before construction activities begin and, where required, shall inspect areas to ensure that barrier fencing, stakes, and setback buffers are maintained during construction.
- ▲ For work sites located adjacent to special-status plant or wildlife populations, a biological resource education program shall be provided for construction crews and contractors (primarily crew and construction foremen) before construction activities begin.
- ▲ Biological monitoring shall be considered for areas near identified habitat for State- and federally listed species, and a “no take” approach shall be taken whenever feasible during construction near special-status plant and wildlife species.
- ▲ Mitigation Measure NOISE-1 shall be implemented when permanent or temporary noise has been identified as a potential impact on wildlife.
- ▲ Nighttime lighting shall be directed at the construction or project site and away from sensitive habitats. Light glare shields shall be used to reduce the extent of illumination onto adjoining areas. Permanent lighting shall be shielded and directed at intended use areas.
- ▲ Fencing and/or walls shall be built to avoid temporary or permanent access of humans or domestic animals from development areas into areas occupied by special status species. Spoils, trash, or any debris shall be removed offsite to an approved disposal facility.
- ▲ Project activities shall comply with existing local regulations and policies, including applicable HCP/NCCPs, that exceed or reasonably replace any of the above measures protective of special-status species.
- ▲ Compensatory mitigation for unavoidable loss of habitat or other impacts on special-status species may be achieved in advance of impacts through the purchase or creation of mitigation credits or the implementation of mitigation projects through Regional Advance Mitigation Planning (RAMP), as deemed appropriate by the permitting agencies.

Significance after Mitigation

To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LTS-M) because these mitigation measures would require pre-project surveys and biological monitoring, avoidance or minimization of project-related disturbance or loss of special-status species, and coordination with permitting agencies as required prior to project implementation.

Projects taking advantage of the CEQA streamlining provisions of SB 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. However, MTC/ABAG cannot require local implementing agencies to adopt the

above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Therefore, this impact would be **significant and unavoidable (SU)** for purposes of this program-level review.

Impact BIO-1b: Have substantial adverse impacts on designated critical habitat for federally listed plant and wildlife species (PS)

Land Use Impacts

Construction and Operation

As shown in **Tables 3.5-2, 3.5-3, and 3.5-4**, land use growth footprints within the Plan area overlap with a total of 3,900 acres of land designated by USFWS as critical habitat for 11 federally listed species. Critical habitat for most species occurs within local units distributed throughout the region. Thus, where local impacts on critical habitat may occur, they could potentially aggregate to produce regionwide effects on the amount and quality of critical habitat. The majority of potential impacts are related to critical habitat for Delta smelt, Contra Costa goldfields, and Alameda striped racer (whipsnake). Development could also potentially affect smaller amounts of critical habitat for several other species, including vernal pool fairy shrimp, vernal pool tadpole shrimp, California red-legged frog, Conservancy fairy shrimp, California tiger salamander, Bay checkerspot butterfly, Franciscan manzanita, and Antioch Dunes evening primrose. Impacts would occur primarily in Contra Costa, Solano, Alameda, and Sonoma Counties.

Table 3.5-2: Acreage of Project Footprint within Critical Habitat

Status	Critical Habitat	Land Use Growth (acres)	Sea Level Rise Adaptation Infrastructure (acres)	Transportation Projects (acres)
Endangered Species	Antioch Dunes Evening Primrose	3	< 1	0
	California Tiger Salamander ¹	80	0	5
	Conservancy Fairy Shrimp	190	0	0
	Contra Costa Goldfields	490	< 1	80
	Franciscan Manzanita	7	0	0
	Suisun Thistle	0	< 1	0
	Tidewater Goby	0	5	0
	Vernal Pool Tadpole Shrimp	< 1	0	< 1
Threatened Species	Alameda Striped Racer (Whipsnake)	470	0	< 1
	Bay Checkerspot Butterfly	30	0	5
	California Red-Legged Frog	250	0	580
	California Tiger Salamander ¹	0	0	1
	Delta Smelt	2,300	320	350
	Vernal Pool Fairy Shrimp	60	0	40
	Western Snowy Plover	0	20	0

Notes: Whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10, between 1,000 and 1,000,000 to the nearest 100).

¹ California tiger salamander is considered endangered in Sonoma County and threatened in Central California.

Sources: Data compiled by MTC and ABAG 2021; U.S. Fish and Wildlife Service 2020

Impacts on critical habitat could include temporary or permanent habitat loss. Degradation of areas that have high conservation value for these species could also occur in association with proposed Plan development, where such development occurs within or adjacent to critical habitat, through the introduction of night lighting, increases in ambient noise levels, and the introduction of invasive species and predators. Plan development could also result in the introduction of, or increases in, additional vehicular or recreational pressures in areas designated as critical habitat. Although direct effects on salmonid critical habitat are not expected, disturbances outside critical habitat could generate erosion, sedimentation, or other water quality impacts on salmonid critical habitat downstream.

Because the land use changes and development under the proposed Plan may result in the loss or degradation of designated critical habitat for federally listed plant and wildlife species, this impact would be potentially significant (PS).

Table 3.5-3: Number of Species and Acreage of Project Footprint within Critical Habitat

Footprint		Number of Species	Total (acres)
Land Use Growth	Endangered Species	6	770
	Threatened Species	5	3,100
Sea Level Rise Adaptation	Endangered Species	4	7
	Threatened Species	2	340
Transportation Project	Endangered Species	3	90
	Threatened Species	6	970

Notes: Whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10, between 1,000 and 1,000,000 to the nearest 100).

Sources: Data compiled by MTC and ABAG in 2021; U.S. Fish and Wildlife Service 2020

Table 3.5-4: Number of Species and Acreage of Land Use Growth Footprint within Critical Habitat

County		Number of Species	Total (acres)
Alameda	County Total	3	270
	Within TPAs	0	0
Contra Costa	County Total	5	3,000
	Within TPAs	1	370
Marin	County Total	0	0
	Within TPAs	0	0
Napa	County Total	1	10
	Within TPAs	0	0
San Francisco	County Total	1	7
	Within TPAs	1	7
San Mateo	County Total	2	30
	Within TPAs	0	0
Santa Clara	County Total	0	0
	Within TPAs	0	0
Solano	County Total	4	430
	Within TPAs	0	0
Sonoma	County Total	1	80
	Within TPAs	0	0
Regional Total ¹	County Total	11	3,900
	Within TPAs	2	380

Notes: TPA acreages are a subset of county acreages. Whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10, between 1,000 and 1,000,000 to the nearest 100).

¹ Total indicates total number of species in the region.

Sources: Data compiled by MTC and ABAG in 2021; U.S. Fish and Wildlife Service 2020

Sea Level Rise Adaptation Impacts

Construction and Operation

As shown in **Tables 3.5-2, 3.5-3, and 3.5-5**, the sea level rise adaptation footprint within the Plan area overlaps with approximately 320 acres of land designated by USFWS as critical habitat for six federally listed species. Critical habitat for most species occurs within local units distributed throughout the region. Thus, if local impacts occur, they could potentially aggregate to produce regionwide effects on the amount and quality of critical habitat. The majority of potential impacts are related to critical habitat for Delta smelt. Development could also potentially affect smaller amounts of critical habitat for several other species, including Suisun thistle, western snowy plover, tidewater goby, Antioch Dunes evening primrose, and Contra Costa goldfields. Impacts would occur primarily in Solano and Contra Costa Counties.

Table 3.5-5: Number of Species and Acreage of Sea Level Rise Adaptation Footprint within Critical Habitat

County	Number of Species	Total (acres)
Alameda	1	10
Contra Costa	2	80
Marin	1	2
Napa	0	0
San Francisco	0	0
San Mateo	1	6
Santa Clara	0	0
Solano	3	210
Sonoma	0	0
Regional Total	6	320

Notes: Whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: Data compiled by MTC and ABAG in 2021; U.S. Fish and Wildlife Service 2020

Potential effects of sea level rise adaptation infrastructure projects on designated critical habitat are generally similar to those described above for land use development under the proposed Plan. In this case, most impacts on critical habitat would occur in association with sea level rise adaptation infrastructure projects that would result in earthmoving activities (e.g., elevated highway/roadway, levees, sea walls, tidal gates) in locations that are currently on the boundary of, or that traverse, critical habitat.

Because the proposed sea level rise adaptation infrastructure projects may result in permanent or temporary disturbance or loss of designated critical habitat for federally listed plant and wildlife species, this impact would be potentially significant (PS).

Transportation System Impacts

Construction and Operation

As shown in **Tables 3.5-2, 3.5-3, and 3.5-6**, the transportation project footprint within the Plan area overlaps with approximately 1,100 acres of land designated by USFWS as critical habitat for eight federally listed species. As noted in the land use discussion above, critical habitat for some species occurs within local units distributed throughout the region; therefore, local impacts could potentially combine to produce regional effects. The majority of potential impacts are related to critical habitat for California red-legged frog, Delta smelt, vernal pool fairy shrimp, and Contra Costa goldfields, with smaller amounts of critical habitat for California tiger salamander, vernal pool tadpole shrimp, Bay

checkerspot butterfly, and Alameda striped racer (whipsnake) potentially affected. Impacts would occur primarily in Contra Costa, Santa Clara, Alameda, and Solano Counties.

Table 3.5-6: Number of Species and Acreage of Transportation Projects Footprint within Critical Habitat

County	Number of Species	Total (acres)
Alameda	1	230
Contra Costa	5	430
Marin	0	0
Napa	1	8
San Francisco	0	0
San Mateo	1	< 1
Santa Clara	3	330
Solano	5	50
Sonoma	1	5
Regional Total	9	1,100

Notes: Numbers less than 1 are shown as "<1"; whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10, between 1,000 and 1,000,000 to the nearest 100). Figures may not sum due to independent rounding.

California tiger salamander is considered endangered in Sonoma County and threatened in Central California and are counted separately as two different populations of the same species.

Source: Data compiled by MTC and ABAG in 2021; Critical Habitat, U.S. Fish and Wildlife Service (2020)

Potential effects of transportation projects on designated critical habitat are generally similar to those described above for land use development under the proposed Plan. In this case, most impacts on critical habitat would occur in association with widening (or otherwise expanding) roads that are currently on the boundary of, or that traverse, critical habitat, as well as constructing new rail projects within the boundaries of, or that traverse, critical habitat.

Because the proposed transportation projects may result in permanent or temporary disturbance or loss of designated critical habitat for federally listed plant and wildlife species, this impact would be potentially significant (PS).

Conclusion

Implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects has the potential to result in localized impacts, particularly with respect to habitat loss and degradation, and could adversely affect critical habitat for one or more species on a regional scale. Because the proposed Plan may result in the disturbance or loss of critical habitat, this impact would be **potentially significant (PS)**. Mitigation Measure BIO-1(b) addresses this impact and is described below.

Mitigation Measures

Mitigation Measure BIO-1(b) Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, for projects that could affect designated critical habitat for federally listed plant and wildlife species that include those identified below:

- ▲
 Coordination with USFWS and NOAA Fisheries, as appropriate based on the species, shall be conducted early in the environmental review process to determine the need for further mitigation, consultation, or permitting actions. Formal consultation is required for any project with a federal nexus when a listed species or designated critical habitat is likely to be adversely affected. Any conservation measures required by USFWS or NOAA Fisheries as part of formal consultation (e.g., through issuance of a biological opinion) would be implemented.

- ▲ Reconfigure project design to avoid or minimize adverse effects on protected species within designated critical habitats.
- ▲ Implementing agencies and/or project sponsors shall comply with existing local regulations and policies, including applicable HCP/NCCPs.
- ▲ Additionally, implementation of Mitigation Measure BIO-1(a), above, which includes an initial biological resource assessment and, if necessary, compensatory mitigation for unavoidable loss of habitat or other impacts on special-status species. Compensatory mitigation may be achieved in advance of impacts through the purchase or creation of mitigation credits or the implementation of mitigation projects through RAMP, as deemed appropriate by the permitting agencies.

Significance after Mitigation

To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LTS-M). These mitigation measures would require coordination or consultation with USFWS and NOAA Fisheries, as appropriate based on the species, for projects that could adversely affect critical habitat; avoidance or minimization of adverse effects on protected species within critical habitats; and compliance with applicable regulations and policies that protect critical habitat. Projects taking advantage of the CEQA streamlining provisions of SB 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, to address site-specific conditions.

As noted above in the Regulatory setting, pursuant to the requirements of the ESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally listed or proposed species may be present in the project region and whether the proposed project would result in a “take” of such species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the ESA, or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. The “take” prohibition of the ESA applies to any action that would adversely affect a single member of an endangered or threatened species. “Take,” as defined in Section 9 of the ESA, is broadly defined to include intentional or accidental “harassment” or “harm” to wildlife. “Harm” is defined as an act that actually kills or injures wildlife. It may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Further, because Mitigation Measure BIO-1(b) is tied to existing regulations that are law and binding on responsible agencies and project sponsors, it is reasonable to determine that they would be implemented. Therefore, with the incorporation of Mitigation Measure BIO-1(b), this impact would be **less than significant with mitigation (LTS-M)**.

Impact BIO-2: Have a substantial adverse effect on riparian habitat, State- or federally protected wetlands (including but not limited to marsh, vernal pool, coastal), or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFW or USFWS, through direct removal, filling, hydrological interruption, or other means (PS)

Land Use Impacts

Construction and Operation

Table 3.5-7 summarizes the potential impacts that development within the land use growth footprint could have on State- or federally protected jurisdictional waters, including wetlands, “other waters” (e.g., streams, rivers, lakes, San Francisco Bay), and riparian habitat, based on NWI mapping (NWI 2020). Less than 2 percent of the land use growth footprint, located primarily in Alameda, Contra Costa, San Mateo, Santa Clara, Solano, and Sonoma Counties, was identified where future forecasted development could potentially affect wetlands and other waters directly or indirectly. The majority of

potentially affected wetlands were associated with estuarine and marine deepwater habitats around San Francisco Bay and the Carquinez Strait, or freshwater emergent wetlands and freshwater ponds in a variety of locations. The jurisdictional waters impact summaries in these tables were developed using a GIS-based analysis that compared proximity of land use growth footprints to existing NWI-mapped wetland features, where the land use growth footprint intersects, bridges, or could otherwise affect jurisdictional waters (NWI 2020). Because the analysis examined only mapped streams and wetlands, numerous smaller features not included in the NWI mapping that could be affected are not reflected. Conversely, proximity of the land use growth footprint to jurisdictional waters provides only a coarse indicator of actual impacts.

Table 3.5-7: Acreage of Land Use Growth Footprint within Wetlands

County		Estuarine and Marine Deepwater (acres)	Estuarine and Marine Wetland (acres)	Freshwater Emergent Wetland (acres)	Freshwater Forested/Shrub Wetland (acres)	Freshwater Pond (acres)	Lake (acres)	Riverine (acres)
Alameda	County Total	110	3	20	3	20	4	10
	Within TPAs	60	2	8	1	4	4	5
Contra Costa	County Total	2	20	70	10	30	0	40
	Within TPAs	<1	2	3	1	0	0	5
Marin	County Total	5	7	<1	0	3	<1	8
	Within TPAs	2	<1	<1	0	2	<1	1
Napa	County Total	0	0	5	<1	<1	0	9
	Within TPAs	0	0	0	0	0	0	<1
San Francisco	County Total	6	5	<1	0	5	0	<1
	Within TPAs	2	<1	<1	0	5	0	<1
San Mateo	County Total	40	10	20	2	30	9	10
	Within TPAs	20	1	7	0	4	0	6
Santa Clara	County Total	<1	<1	9	10	40	0	10
	Within TPAs	0	<1	<1	9	20	0	4
Solano	County Total	<1	<1	40	<1	20	0	30
	Within TPAs	<1	0	2	0	0	0	1
Sonoma	County Total	10	2	10	10	20	0	20
	Within TPAs	<1	0	<1	<1	2	0	<1
Regional Total	County Total	170	50	180	40	160	10	150
	Within TPAs	90	5	20	10	30	5	20

Notes: TPA acreages are a subset of county acreages. Numbers less than 1 are shown as "<1"; whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: MTC/ABAG 2021; U.S. Fish and Wildlife Service 2020

Potential impacts of land use development projects under the proposed Plan on wetlands include the temporary disturbance, or permanent loss, of jurisdictional waters, including wetlands; loss or degradation of stream or wetland function; incremental degradation of wetland habitats; and fragmentation of streams and wetlands. Jurisdictional waters in the region vary from relatively small, isolated roadside areas, wet meadows, and vernal pools to major streams and rivers, bays and estuaries, and tidal, brackish, and freshwater marshes. Any fill of jurisdictional waters associated with proposed land development would be a significant impact.

In addition to direct habitat loss, implementation of forecasted development under the proposed Plan could increase the potential for stormwater runoff to carry a variety of pollutants into wetlands, rivers, streams, and San Francisco Bay through increases in the extent of impervious surfaces. Construction runoff often carries grease, oil, and heavy metals (because of ground disturbance) into natural drainages. Furthermore, particulate materials generated by construction could be carried by runoff into natural waterways and could increase sedimentation impacts.

Adverse effects on State- and federally protected wetlands would be addressed, if feasible, through avoidance of these resources. Where avoidance is not possible, and in accordance with USACE, EPA, USFWS, RWQCB, and CDFW guidelines, a standard of “no net loss” of wetland acreage and value is required. Mitigation to compensate for project-related loss of wetland acreage and functions would be based on project-specific wetland mitigation plans, subject to approval by USACE, RWQCB, CDFW, BCDC, and the California Coastal Commission where applicable. Impacts on jurisdictional waters would be potentially significant (PS).

Sea Level Rise Adaptation Impacts

Construction and Operation

Table 3.5-8 summarizes the potential impacts that sea level rise adaptation infrastructure could have on jurisdictional waters, including wetlands, “other waters,” and riparian habitat, based on NWI mapping (NWI 2020). Approximately 2,500 acres of land, located primarily in Alameda, Marin, San Mateo, Santa Clara, and Solano Counties, were identified where sea level rise adaptation infrastructure could have the potential to affect wetlands and other waters directly or indirectly (**Table 3.5-8**).

Table 3.5-8: Acreage of Sea Level Rise Adaptation Footprint within Wetlands

County	Estuarine and Marine Deepwater (acres)	Estuarine and Marine Wetland (acres)	Freshwater Emergent Wetland (acres)	Freshwater Forested/Shrub Wetland (acres)	Freshwater Pond (acres)	Lake (acres)	Riverine (acres)
Alameda	100	160	20	0	40	50	30
Contra Costa	20	60	20	0	10	0	4
Marin	80	140	60	< 1	7	20	20
Napa	0	0	0	0	0	0	0
San Francisco	20	< 1	< 1	0	< 1	0	0
San Mateo	70	170	30	0	20	120	4
Santa Clara	60	250	40	< 1	10	310	9
Solano	50	250	90	0	10	30	9
Sonoma	5	20	4	0	3	0	9
Regional Total	400	1,100	260	1	100	540	80

Notes: Numbers less than 1 are shown as “<1”; Whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: Data compiled by MTC and ABAG in 2021; U.S. Fish and Wildlife Service 2020

Potential effects of sea level rise adaptation infrastructure projects on wetlands and other waters are generally similar to those described above for land use development under the proposed Plan. In this case, most impacts on wetlands and other waters would occur in association with sea level rise adaptation infrastructure projects that would result in earthmoving activities (e.g., elevated highway/roadway, levees, sea walls, tidal gates) in areas that contain or are adjacent to wetlands or other waters. Additionally, while marshland restoration projects would likely result in an overall

beneficial impact on wetlands and other waters, these projects could also result in temporary adverse effects on these resources.

Adverse effects on State- and federally protected wetlands would be addressed, if feasible, through avoidance of these resources. Where avoidance is not possible, and in accordance with USACE, EPA, USFWS, RWQCB, and CDFW guidelines, a standard of “no net loss” of wetland acreage and value is required. Mitigation for wetland impacts would be based on project-specific wetland mitigation plans, subject to approval by USACE, RWQCB, CDFW, BCDC, and CCC where applicable. Impacts on jurisdictional waters would be potentially significant (PS).

Transportation System Impacts

Construction and Operation

Table 3.5-9 summarizes the potential impacts proposed transportation projects could have on jurisdictional waters, including wetlands, “other waters” (e.g., streams, rivers, lakes, San Francisco Bay), and riparian habitat. Approximately 680 acres of land, located primarily in Alameda, Solano, San Francisco, Santa Clara, San Mateo, and Contra Costa Counties, were identified where transportation projects could have the potential to affect wetlands and other waters directly or indirectly (**Table 3.5-9**). As described above, the jurisdictional waters impact summaries in the tables were developed using a GIS-based analysis that compared transportation project proximity to existing NWI-mapped wetland features, where the project intersects, bridges, or could otherwise affect jurisdictional waters.

Table 3.5-9: Acreage of Transportation Projects Footprint within Wetlands

County	Estuarine and Marine Deepwater (acres)	Estuarine and Marine Wetland (acres)	Freshwater Emergent Wetland (acres)	Freshwater Forested/Shrub Wetland (acres)	Freshwater Pond (acres)	Lake (acres)	Riverine (acres)
Alameda	80	60	20	2	4	<1	10
Contra Costa	20	8	7	<1	<1	0	10
Marin	0	0	<1	0	0	0	7
Napa	<1	1	<1	0	0	0	2
San Francisco	170	3	0	0	<1	0	0
San Mateo	20	30	7	0	4	<1	10
Santa Clara	<1	0	3	10	7	0	40
Solano	10	40	8	3	10	20	10
Sonoma	<1	7	4	<1	1	<1	8
Regional Total	301	149	50	20	20	20	100

Notes: Numbers less than 1 are shown as “<1”; whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: Data compiled by MTC and ABAG in 2021; U.S. Fish and Wildlife Service 2020

Potential effects of transportation projects are similar to those discussed above for land use changes and development. Where feasible, State- and federally protected wetlands would be avoided. Where avoidance is not possible, and in accordance with USACE, EPA, USFWS, RWQCB, and CDFW guidelines, a standard of “no net loss” of wetland acreage and value is required. Mitigation for wetland impacts would be based on project-specific wetland mitigation plans, subject to approval by USACE, RWQCB, CDFW, and potentially CCC and BCDC. Impacts on jurisdictional waters resulting from implementation of transportation projects would be potentially significant (PS).

Conclusion

As discussed above, implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects could result in the potential to affect jurisdictional waters and other sensitive habitats. This would be a **potentially significant (PS)** impact. Mitigation Measure BIO-2 addresses this impact and is discussed below.

Mitigation Measures

Mitigation Measure BIO-2 Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, that include those identified below:

- ▲ Implementing agencies shall require project sponsors to prepare biological resource assessments for specific projects proposed in areas containing, or likely to contain, jurisdictional waters or other sensitive or special-status communities. These assessments shall be conducted by qualified professionals in accordance with agency guidelines and standards. Where the biological resource assessments establish that mitigation is required to avoid and minimize direct and indirect adverse effects on State- or federally protected wetlands, or compensate for unavoidable effects, mitigation shall be developed consistent with the requirements or standards of USACE, EPA, RWQCB, and CDFW, and local regulations and guidelines, in addition to requirements of any applicable and adopted HCP/NCCP or other applicable plans developed to protect these resources. In keeping with the "no net loss" policy for jurisdictional waters (i.e., wetlands and other waters of the United States or State), project designs shall be configured, whenever possible, to avoid wetlands and other waters and avoid disturbances to wetlands and riparian corridors to preserve both the habitat and the overall ecological functions of these areas. Projects shall minimize ground disturbances and transportation project footprints near such areas to the extent practicable.
- Project sponsors shall consult with USFWS, NMFS, USFS, CDFW where state-designated sensitive or riparian habitats provide potential or occupied habitat for federally listed rare, threatened, and endangered species afforded protection pursuant to the federal ESA, the MBTA during the breeding season, the California ESA, or Fully Protected Species afforded protection pursuant to the State Fish and Game Code and with the CDFW pursuant to the provisions of Section 1600 of the State Fish and Game Code as they relate to Lakes and Streambeds.
- ▲ Where avoidance of jurisdictional waters is not feasible, project sponsors shall minimize fill and the use of in-water construction methods, and place fill only with express permit approval from the appropriate resource agencies (e.g., USACE, RWQCB, CDFW, BCDC, and CCC) and in accordance with applicable existing regulations, such as the Clean Water Act or local stream protection ordinances.
- ▲ Project sponsors shall arrange for compensatory mitigation in the form of mitigation bank credits; on-site or off-site enhancement of existing waters; or wetland creation in accordance with applicable existing regulations and subject to approval by USACE, RWQCB, CDFW, BCDC, and/or CCC. If compensatory mitigation is required by the implementing agency, the project sponsor shall develop a restoration and monitoring plan that describes how compensatory mitigation will be achieved, implemented, maintained, and monitored. At a minimum, the restoration and monitoring plan shall include clear goals and objectives, success criteria, specifics on restoration/creation/enhancement (e.g., plant palette, soils, irrigation design standards and requirements), specific monitoring periods and reporting guidelines, and a maintenance plan. The following minimum performance standards (or other standards as required by the permitting agencies) shall apply to any wetland compensatory mitigation:

- Compensation shall be provided at a minimum 1:1 ratio for restoration, preservation, and creation but shall in all cases be consistent with mitigation ratios set forth in locally applicable plans (e.g., general plans, HCP/NCCPs) or in project-specific permitting documentation. Compensatory mitigation may be a combination of on-site restoration/creation/enhancement or off-site restoration, preservation, or enhancement. Compensatory mitigation may be achieved in advance of impacts through the purchase or creation of mitigation credits or the implementation of mitigation projects through RAMP, as deemed appropriate by the permitting agencies.
- In general, any compensatory mitigation shall be monitored for a minimum of 5 years and will be considered successful when at least 75 percent cover (or other percent cover considered appropriate for the vegetation type) of installed vegetation has become successfully established.
- If the restoration is not meeting success criteria, remedial measures shall be implemented and would typically include, but are not limited to, replanting, reseeding, grading adjustments, supplemental irrigation, access control, increased weed control, and extended maintenance and monitoring periods. After final success criteria have been met and relevant permitting agencies have approved the mitigation project as complete, all mitigation areas shall be permanently conserved (e.g., conservation easement) and managed in perpetuity.
- ▲ Salvage and stockpile topsoil (i.e., the surface material from 6 to 12 inches deep) and perennial native plants, when recommended by the qualified wetland biologist, for use in restoring native vegetation to areas of temporary disturbance within the project area. Salvage of soils containing invasive species, seeds and/or rhizomes shall be avoided as identified by the qualified wetland biologist.
- ▲ In accordance with CDFW guidelines and other instruments protective of sensitive or special-status natural communities, project sponsors shall avoid and minimize impacts on sensitive natural communities and habitats when designing and permitting projects. Where applicable, projects shall conform to the provisions of special area management or restoration plans, such as the Suisun Marsh Protection Plan and the East Contra Costa County HCP, which outline specific measures to protect sensitive vegetation communities.
- ▲ If any portion of a sensitive natural community is permanently removed or temporarily disturbed, the project sponsor shall compensate for the loss. If such mitigation is required by the implementing agency, the project sponsor shall develop a restoration and monitoring plan that describes how compensatory mitigation will be achieved, implemented, maintained, and monitored. At a minimum, the restoration and monitoring plan shall include clear goals and objectives, success criteria, specifics on restoration/creation/enhancement (e.g., plant palette, soils, irrigation design standards and requirements), specific monitoring periods and reporting guidelines, and a maintenance plan. The following minimum performance standards (or other standards as required by the permitting agencies) shall apply to any compensatory mitigation for sensitive natural communities:
 - Compensation shall be provided at a minimum 1:1 ratio for restoration and preservation but shall in all cases be consistent with mitigation ratios set forth in locally applicable plans (e.g., general plans, HCP/NCCPs) or in project-specific permitting documentation. Compensatory mitigation may be a combination of on-site restoration/creation/enhancement or off-site restoration, preservation, or enhancement. Compensatory mitigation may be achieved in advance of impacts through the purchase or creation of mitigation credits or the implementation of mitigation projects through RAMP, as deemed appropriate by the permitting agencies.

- In general, any compensatory mitigation shall be monitored for a minimum of 5 years and will be considered successful when at least 75 percent cover (or other percent cover considered appropriate for the vegetation type) of installed vegetation has become successfully established.
- If the restoration is not meeting success criteria, remedial measures shall be implemented and would typically include, but are not limited to, replanting, reseeding, grading adjustments, supplemental irrigation, access control, increased weed control, and extended maintenance and monitoring periods. After final success criteria have been met and relevant permitting agencies have approved the mitigation project as complete, all mitigation areas shall be permanently conserved (e.g., conservation easement) and managed in perpetuity.
- ▲ All construction materials, staging, storage, dispensing, fueling, and maintenance activities shall be located in upland areas outside of sensitive habitat, and adequate measures shall be taken to prevent any potential runoff from entering jurisdictional waters. Fueling of equipment shall take place within existing paved roads. Contractor equipment shall be checked for leaks prior to operation and repaired, as necessary.
- ▲ Construction activities shall be scheduled, to the extent feasible, to avoid sensitive times for biological resources and to avoid the rainy season when erosion and sediment transport is increased.
- ▲ Compliance with existing local regulations and policies, including applicable HCP/NCCPs, that exceed or reasonably replace any of the above measures protective of wetlands and other waters or sensitive natural communities.

Significance after Mitigation

To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LTS-M). These measures would require that sensitive habitat (e.g., jurisdictional waters, sensitive natural communities) be avoided to the extent feasible and that sensitive habitats that cannot be avoided are restored following construction, or if the habitat cannot be restored, that the project proponent compensates for unavoidable losses in a manner that results in no net loss of sensitive habitats and meets applicable regulatory requirements.

Projects taking advantage of the CEQA streamlining provisions of SB 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. Similar to Impact BIO-2(b), because Mitigation Measure BIO-2 is tied to existing regulations that are law and binding on responsible agencies and project sponsors, it is reasonable to determine that they would be implemented. Therefore, with the incorporation of Mitigation Measure BIO-2, this impact would be **less than significant with mitigation (LTS-M)**.

Impact BIO-3: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridor, or impede the use of native wildlife nursery sites (PS)

Land Use Impacts

Construction and Operation

As discussed in Section 3.5.1, "Environmental Setting," the Bay Area encompasses large areas of wildlands that provide habitat for both common and rare plants and wildlife, and some of these areas were mapped as Essential Connectivity Areas (ECAs). The ECAs are not regulatory delineations but have been identified by the California Essential Habitat Connectivity Project as lands likely important

to wildlife movement between large, mostly natural areas at the Statewide level. ECAs were mapped on a Statewide level and should be considered areas identified at a coarse scale that can inform land-planning efforts; however, ECAs do not include more detailed linkage designs developed at a finer resolution based on the needs of particular species and ecological processes. As shown in Figure 3.5-5, a total of 15 ECAs occur within the nine Bay Area counties and are typically centered along the region's mountain ranges. These areas are composed primarily of wildlands but may also include some agricultural and developed areas (mostly rural residential) and many are bisected by major roadways.

The proposed Plan's land use growth footprint overlaps with approximately 1,700 acres of mapped ECAs, primarily in Contra Costa (700 acres), Solano (330 acres), Santa Clara (210 acres), San Mateo (170 acres), Alameda (150 acres), and Napa Counties (150 acres) (**Table 3.5-10**). However, the land use growth footprint is concentrated primarily in or adjacent to already urban and built-up areas and along existing transit corridors where migratory corridors for wildlife have already been fragmented and degraded to the point that their function as linkages is either limited or lost entirely. On a local level, waterways, riparian corridors, and contiguous or semicontiguous expanses of habitat are likely to facilitate wildlife movement, even through urbanized areas in the region. In some cases, land use development projects may directly encroach on wildlife corridors, particularly when direct habitat removal occurs or when sites are located adjacent to open space or streams.

Table 3.5-10: Acreage of Land Use Growth Footprint within Essential Connectivity Areas

County		Total (acres)
Alameda	County Total	150
	Within TPAs	30
Contra Costa	County Total	700
	Within TPAs	70
Marin	County Total	0
	Within TPAs	0
Napa	County Total	150
	Within TPAs	0
San Francisco	County Total	0
	Within TPAs	0
San Mateo	County Total	170
	Within TPAs	0
Santa Clara	County Total	210
	Within TPAs	20
Solano	County Total	330
	Within TPAs	8
Sonoma	County Total	<1
	Within TPAs	0
Regional Total	County Total	1,700
	Within TPAs	120

Notes: TPA acreages are a subset of county acreages. Numbers less than 1 are shown as "<1"; whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10, between 1,000 and 1,000,000 to the nearest 100). Figures may not sum due to independent rounding.

Sources: MTC/ABAG 2021; California Department of Fish and Wildlife 2010

Nursery sites are locations where fish or wildlife concentrate for hatching and/or raising young, such as nesting rookeries for birds (e.g., herons, egrets), spawning areas for native fish, fawning areas for mule deer (*Odocoileus hemionus*), and maternal roosts for bats. The locations of nursery sites in the

State are generally not mapped. While most of these sites would likely occur in undeveloped natural areas and the land use growth footprint is located primarily in or adjacent to already urbanized areas, development projects may result in loss or abandonment of wildlife nursery sites.

Construction of land use development and ongoing operations could result in substantial encroachment on local wildlife corridors or loss of wildlife nursery sites; therefore, this would be a potentially significant (PS) impact.

Sea Level Rise Adaptation Impacts

Construction and Operation

The proposed Plan's sea level rise adaptation footprint overlaps with approximately 380 acres of mapped ECAs, primarily in Solano (300 acres) and Sonoma Counties (80 acres) (**Table 3.5-11**). Potential effects of sea level rise adaptation infrastructure on wildlife corridors are generally similar to those described above for land use development under the proposed Plan. In some cases, sea level rise adaptation infrastructure may directly encroach on wildlife corridors, particularly when direct habitat removal occurs or when sites are located adjacent to open space or streams. Implementation of sea level rise adaptation infrastructure also may result in loss or abandonment of wildlife nursery sites. Substantial encroachment on local wildlife corridors or loss of wildlife nursery sites would be a potentially significant (PS) impact.

Table 3.5-11: Acreage of Sea Level Rise Adaptation Footprint within Essential Connectivity Areas

County	Total (acres)
Alameda	0
Contra Costa	0
Marin	0
Napa	< 1
San Francisco	0
San Mateo	0
Santa Clara	0
Solano	300
Sonoma	80
Regional Total	380

Notes: Numbers less than 1 are shown as "<1"; whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10). Figures may not sum due to independent rounding.

Sources: Data compiled by MTC and ABAG in 2021; California Department of Fish and Wildlife 2010

Transportation System Impacts

Construction and Operation

Transportation projects could result in impacts on ECAs because of major transportation projects in Alameda, Contra Costa, Napa, Santa Clara, Solano, and Sonoma Counties and to a lesser degree in San Mateo County. The proposed Plan's transportation project footprint overlaps with approximately 1,900 acres of mapped ECAs (**Table 3.5-12**). The majority of potential effects would occur in Santa Clara (810 acres), Alameda (520 acres), Solano (310 acres), and Contra Costa (130 acres) Counties. Many of these transportation projects are expansions or enhancements of existing highways or other transportation routes with existing urban corridors established along them. In these areas, migratory corridors have already been fragmented and degraded to the point that their function as linkages is either limited or has been lost entirely. However, some transportation projects, particularly new rail projects, could be located in areas that have not been subject to previous disturbance and fragmentation.

Table 3.5-12: Acreage of Transportation Projects Footprint within Essential Connectivity Areas

County	Total (acres)
Alameda	520
Contra Costa	130
Marin	0
Napa	90
San Francisco	0
San Mateo	2
Santa Clara	810
Solano	310
Sonoma	60
Regional Total	1,900

Notes: Whole numbers have been rounded (between 0 and 10 to the nearest whole number, between 11 and 999 to the nearest 10, between 1,000 and 1,000,000 to the nearest 100). Figures may not sum due to independent rounding.

Sources: Data compiled by MTC in 2021; California Department of Fish and Wildlife 2010

As discussed for projected land development within land use growth footprints, proposed transportation projects may directly encroach on local wildlife corridors, particularly when direct habitat removal occurs or when sites are located adjacent to open space or streams. Additionally, as described above, transportation projects may result in loss or abandonment of wildlife nursery sites. Substantial encroachment on local wildlife corridors or loss of wildlife nursery sites would be a potentially significant (PS) impact.

Conclusion

Because implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects has the potential to result in land use changes and localized effects that would directly encroach on local wildlife corridors or result in loss or abandonment of wildlife nursery sites, this impact would be **potentially significant (PS)**. Mitigation Measure BIO-3 addresses this impact and is described below.

Mitigation Measures

Mitigation Measure BIO-3(a) Implementing agencies shall require project sponsors to prepare detailed analyses for specific projects affecting ECA lands to determine the wildlife species that may use these areas and the habitats those species require. Projects that would not affect ECA lands but that are located within or adjacent to open space lands, including wildlands and agricultural lands, shall also assess whether significant wildlife corridors are present, what wildlife species may use them, and what habitat those species require. The assessment shall be conducted by qualified professionals and according to applicable agency standards.

Implementing agencies and/or project sponsors shall implement measures, where feasible and necessary based on project- and site-specific considerations, that include those identified below:

- ▲ Design projects to minimize impacts on wildlife movement and habitat connectivity and preserve existing and functional wildlife corridors.
- ▲ Design projects to promote wildlife corridor redundancy by including multiple connections between habitat patches.
- ▲ Conduct wildlife movement studies for projects that may fragment or constrict regional or local corridors and impede use to nursery sites. These studies will include, but would not be limited to, the following objectives: identify activity levels and directional wildlife movement trends within

the study area, assess current functionality of existing underpasses, and determine what species or groups of species exhibit sensitivity to the existing roadways. Movement studies shall identify project-specific measures to avoid or mitigate impacts on corridors and movement to nursery sites that may include, but are not limited to, developing alternative project designs that allow wider movement corridors to remain; provide for buffer zones adjacent to corridors, such as passive recreation zones; implement physical barriers that prevent human and/or domestic predator entry into the corridor or block noise and lighting from development; incorporate shielded and directed lighting in areas near corridors; implement a "natives only" landscaping policy within 200 feet of identified wildlife corridors; incorporate periodic larger habitat patches along a corridor's length; minimize the number of road crossings of identified wildlife corridors; and replace roadway culverts with bridges to allow for wildlife movement.

- ▲ For projects that cannot avoid significant impacts on wildlife movement corridors or native wildlife nursery areas, consult with CDFW to determine appropriate measures to minimize direct and indirect impacts and implement measures to mitigate impacts on wildlife corridors or native wildlife nursery sites.
- ▲ Conduct site-specific analyses of opportunities to preserve or improve habitat linkages with areas on- and off-site.
- ▲ Analyze habitat linkages and wildlife movement corridors on a broad scale for long linear projects with the possibility of adversely affecting wildlife movement to avoid critical narrow choke points that could reduce function of recognized movement corridor.
- ▲ Construct wildlife-friendly overpasses and culverts.
- ▲ Fence major transportation corridors in the vicinity of identified wildlife corridors.
- ▲ Use wildlife-friendly fences that allow larger wildlife, such as deer, to cross over and smaller wildlife to move under.
- ▲ For projects that require the placement of stream culverts in a fish spawning stream, follow USACE, NOAA Fisheries, USFWS, and CDFW permit conditions and design requirements to allow fish passage through the culverts.
- ▲ Limit wildland conversions in identified wildlife corridors.
- ▲ Retain wildlife-friendly vegetation in and around developments.
- ▲ Monitor and maintain fencing, under crossings, and/or other crossing structures as needed to ensure corridor permeability and functionality. Development and implementation of a fencing and wildlife crossing structure maintenance plan is recommended to maintain permeability for wildlife across corridors.
- ▲ Prohibit construction activities within 500 feet of occupied breeding areas for wildlife afforded protection pursuant to Title 14 Section 460 of the California Code of Regulations protecting fur-bearing mammals, during the breeding season.
- ▲ Comply with existing local regulations and policies, including applicable HCP/NCCPs, that exceed or reasonably replace any of the above measures to protect wildlife corridors.

Mitigation Measure BIO-3(b) Implementing agencies and/or project sponsors shall implement the following measures, where feasible and necessary based on project- and site-specific considerations:

- ▲ Implement Mitigation Measures BIO-1(a) and BIO-2.

Significance after Mitigation

To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LTS-M). These mitigation measures would require assessing whether significant wildlife corridors are present in project areas, minimizing wildland conversions in identified wildlife corridors, implementing wildlife-friendly design features, and complying with regulations and policies to protect wildlife corridors and wildlife nursery sites.

Projects taking advantage of the CEQA streamlining provisions of SB 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. However, MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Unlike Mitigation Measures BIO-1(b) and BIO-2, the above mitigation measure is not directly tied to existing regulations that are law and binding on responsible agencies and project sponsors. Therefore, this impact would be **significant and unavoidable (SU)** for purposes of this program-level review.

Impact BIO-4: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, or with provisions of an adopted Habitat Conservation Plan (HCP); Natural Community Conservation Plan (NCCP); or other approved local, regional, or State HCP (LTS)

Land Use, Sea Level Rise Adaptation, and Transportation System Impacts

Construction and Operation

Local Ordinances. Most counties and cities in the region have local ordinances and policies in place that protect native and nonnative trees in urban landscapes, as well as in unincorporated county lands. These ordinances and policies vary in their definitions of protected trees (e.g., certain species, minimum diameter at breast height, trees that form riparian corridors) and in the requirements for ordinance or policy compliance. Land use changes and development could result in removal of trees that are protected by local policies or ordinances. The land use development pattern, sea level rise adaptation infrastructure, and transportation projects that may result from implementation of the proposed Plan could also result in conflicts with other local policies or ordinances that protect locally significant biological resources, such as creek or wetland protection ordinances. However, for most land use development projects and transportation projects, ground disturbances would occur within existing urban and built-up areas and existing transportation corridors. Because ground disturbances would be limited mostly to these existing disturbed areas, the potential removal of native trees and disturbances to other biological resources protected by local policies or ordinances are expected to be moderate.

All future land use development, sea level rise adaptation infrastructure, and transportation projects would be required to follow city and county development requirements, including compliance with local policies, ordinances, and applicable permitting procedures related to protection of biological resources. Additionally, project-level planning, environmental analysis, and compliance with existing local regulations and policies would identify potentially significant tree removal or other potential conflicts with local policies; minimize or avoid those impacts through the design, siting, and permitting process; and provide mitigation for any significant effects as a condition of project approval and permitting. Therefore, the potential for approved development projects, sea level rise adaptation projects, and transportation projects to conflict with local policies or ordinances protecting biological resources would be less than significant (LTS).

HCPs and Other Approved Plans. The San Bruno Mountain Area HCP (County of San Mateo 1982) was adopted by the County of San Mateo and the Cities of Brisbane, Daly City, and South San Francisco in 1982; however, no projects under the proposed Plan are located on lands covered under this HCP. Projects under the proposed Plan would occur on lands covered by several other adopted plans, as well as plans pending formal adoption, within the region. The East Contra Costa County HCP and NCCP (ECCC HCP/NCCP) (ECCC HCPA 2006) was adopted by Contra Costa County and the Cities of Brentwood, Clayton, Oakley, and Pittsburg and went into effect in 2008. Some of the proposed Plan's land use growth footprint and proposed sea level rise adaptation infrastructure projects are located within the ECCC HCP/NCCP urban development areas. Development within ECCC HCP/NCCP urban development areas, generally defined as areas within the county urban limit line, is a "covered activity." The Santa Clara Valley Habitat Plan (SCVHP) (County of Santa Clara et al. 2012) was approved and adopted in 2013 by the County of Santa Clara; the Santa Clara Valley Transportation Authority; the Santa Clara Valley Water District; and the Cities of San Jose, Gilroy, and Morgan Hill. Development within TPAs and in the land use growth footprint under the proposed Plan in Santa Clara County may qualify for coverage under the SCVHP. The Santa Rosa Plain Conservation Strategy (USFWS 2005) and the East Alameda County Conservation Strategy (EACCSSC 2010) have not yet been adopted, as of March 2021, by their local agency partners, but nonetheless influence projects requiring Section 7 or 10 consultation under the federal ESA within their boundaries. Programmatic biological opinions have been issued in each case that guide the development of avoidance and minimization measures for projects within areas covered by each conservation strategy, as well as compensatory mitigation measures. The Solano Multispecies Habitat Conservation Plan has not yet been adopted, as of March 2021, but may be approved and adopted during the Plan Bay Area planning horizon. Finally, several projects occur within the California Coastal Zone and are subject to the requirements of local coastal plans.

The land use development pattern, sea level rise adaptation infrastructure, and transportation projects in the proposed Plan located within the ECCC HCP/NCCP and SCVHP boundaries must demonstrate consistency with the HCP/NCCP. For example, sponsors of covered projects are required to comply with the ECCC HCP/NCCP mitigation measures. For the ECCC HCP/NCCP, covered projects must submit a complete HCP/NCCP application package; submit required fees; fulfill the appropriate HCP survey requirements for wildlife, plants, wetlands, and sensitive habitats; and comply with all applicable conservation measures, outlined in Chapter 6 of the HCP. Activities that are not covered under that plan, as well as other projects elsewhere in the region where plans are underway or have not yet formally been adopted, must pursue individual project permitting for impacts on biological resources until such time as the specific activity/project is identified as a covered activity in an applicable plan. Typically, once a plan or conservation strategy has been developed for an area, wetland and wildlife agency permitting conditions and requirements for projects within that area will be consistent with that plan or strategy whether or not it has been adopted, as is the case for projects in the Santa Rosa Plain, for example. Because consistency with an adopted HCP or other conservation plan is a legal requirement, and because the design, approval, and permitting of future land use development pattern, sea level rise adaptation infrastructure, and transportation projects within an area covered by an HCP or other conservation plan are intended and expected to comply with that requirement, the impacts related to potential conflicts with the provisions of adopted HCPs, NCCPs, or other approved local, regional, or State habitat conservation plans would be less than significant (LTS).

Conclusion

As discussed above, implementation of the proposed Plan's land use development pattern, sea level rise adaptation infrastructure, and transportation projects would be required to follow city and county development requirements, including compliance with local policies, ordinances, and applicable permitting procedures related to protecting biological resources. Additionally, consistency with an adopted HCP or other conservation plan is a legal requirement, and the design, approval, and

permitting of future development and transportation projects within an area covered by an HCP or other conservation plan are intended and expected to comply with that requirement. Therefore, the potential for approved land use development and transportation projects to conflict with local policies or ordinances protecting biological resources, or with the provisions of adopted HCPs, NCCPs, or other approved local, regional, or State HCPs, would be **less than significant (LTS)**.

Mitigation Measures

None required.

Impact BIO-5: Have the potential to substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species (PS)

Land Use, Sea Level Rise Adaptation, and Transportation System Impacts

Construction and Operation

As described in Impacts BIO-1a, BIO-1b, and BIO-2, implementation of the projected land use development pattern, sea level rise adaptation infrastructure, and transportation projects under the proposed Plan could adversely affect special-status species and sensitive natural communities. The degree to which Plan implementation could jeopardize a special-status species or sensitive natural community by substantially reducing the abundance, distribution, or viability of the species or natural community is unknown; however, because of their declining status, special-status species and sensitive natural communities are considered the most vulnerable to potential loss of viability. This impact would be **potentially significant (PS)**. Mitigation Measure BIO-5 addresses this impact and is described below.

Common species and habitats in the Plan area are relatively abundant and generally adapted to the types and magnitude of disturbances expected under the proposed Plan; therefore, Plan implementation is not expected to substantially reduce the abundance or distribution of any common species or habitat.

Mitigation Measures

Mitigation Measure BIO-5 Implementing agencies and/or project sponsors shall implement the following measures, where feasible and necessary based on project- and site-specific considerations:

- ▲ Implement Mitigation Measures BIO-1(a), BIO-1(b), BIO-2, and BIO-3(a).

Significance after Mitigation

To the extent that a local agency requires an individual project to implement all feasible mitigation measures described above, the impact would be less than significant with mitigation (LTS-M), for the same reasons described previously for implementation of Mitigation Measures BIO-1(a), BIO-1(b), BIO-2, and BIO-3(a).

Projects taking advantage of the CEQA streamlining provisions of SB 375 (PRC Sections 21155.1, 21155.2, and 21159.28) must apply the mitigation measures described above, as applicable, to address site-specific conditions. However, MTC/ABAG cannot require local implementing agencies to adopt the above mitigation measures, and it is ultimately the responsibility of a lead agency to determine and adopt mitigation. Although Mitigation Measures BIO-1(b) and BIO-2 are directly tied to existing regulations that are law and binding on responsible agencies and project sponsors, they would not apply to all areas considered sensitive natural communities. Therefore, this impact would be **significant and unavoidable (SU)** for purposes of this program-level review.

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