

Section 2.3
Biological Environment

2.3 Biological Environment

2.3.1 Natural Communities

2.3.1.1 Regulatory Setting

This section of the document discusses natural communities of concern. The focus of this section is on biological communities, not individual plant or animal species. This section also includes information on wildlife corridors, fish passage, and habitat fragmentation. Wildlife corridors are areas of habitat used by wildlife for seasonal or daily migration. Habitat fragmentation involves the potential for dividing sensitive habitat and thereby lessening its biological value.

Habitat areas that have been designated as critical habitat under the Federal Endangered Species Act are discussed in Section 2.3.5, Threatened and Endangered Species. Wetlands and other waters are also discussed above in the preceding Section 2.3.2.

2.3.1.2 Affected Environment

A biological study area (also termed the project study site) approximately 18 acres in size (7.8 hectares) was surveyed to reveal foreseeable direct and indirect effects of the proposed project. Potential biological and ecological effects were stated in an earlier Preliminary Environmental Analysis Report (PEAR) (Parsons, 2005), then refined more recently in a Natural Environment Study (NES) (Parsons, 2006). Figure 2.3.1-1 shows the outline of the Biological Survey Area.

Field observations were made presuming likely routes of access by construction equipment at convenient entry points into the proposed project limits. Machinery needed along Horno Creek would approach from Spring Street and the existing southbound exit ramp. Elsewhere, equipment would enter the project area from Ortega Highway. These potential disturbances, in addition to proposed design features, have been considered.

Three types of riparian woodland occur along stream courses in this region of Orange County. Coast live oak (*Quercus agrifolia*) defines one; cottonwood (*Populus fremontii*) and willow (*Salix spp.*) together make a second; and sycamore (*Platanus racemosa*) and alder (*Alnus rhombifolia*) together distinguish the third. These biotic communities do not exist within the study area. None remains closer than several miles from the project area; the type once nearest to the study area (i.e., cottonwood and willow) is entirely gone because of channelization of stream courses southwest of the study area.

The western boundary of the Southern Orange County Planning Process Southern Sub-region Natural Community Conservation Plan/Habitat Conservation Plan (SSNCCP) (Southern Orange County Coordinated Planning Process, 2004) follows I-5. Only residential and commercially developed lands occur on its western edge, including the project study area. None of the generalized biotic communities mapped within the SSNCCP occur inside the construction limits of the proposed action.

2.3.1.3 Environmental Consequences

No Build Alternative. No type of natural community recognized by a California Natural Heritage program occurs within the study area. None remains close enough to facilitate dispersal of plant seeds or juvenile animals reaching the study area with any regularity. Moreover, residential and commercial development of the surrounding lands would preclude natural establishment of native communities within the study area. A decision not to reconstruct this interchange would not promote recovery of natural communities still barely hanging on anywhere east of the project study area.

Build Alternatives. No recognized type of natural community occurs within the study area. Neither of the build alternatives would affect any sensitive natural communities along where ground disturbance would occur.

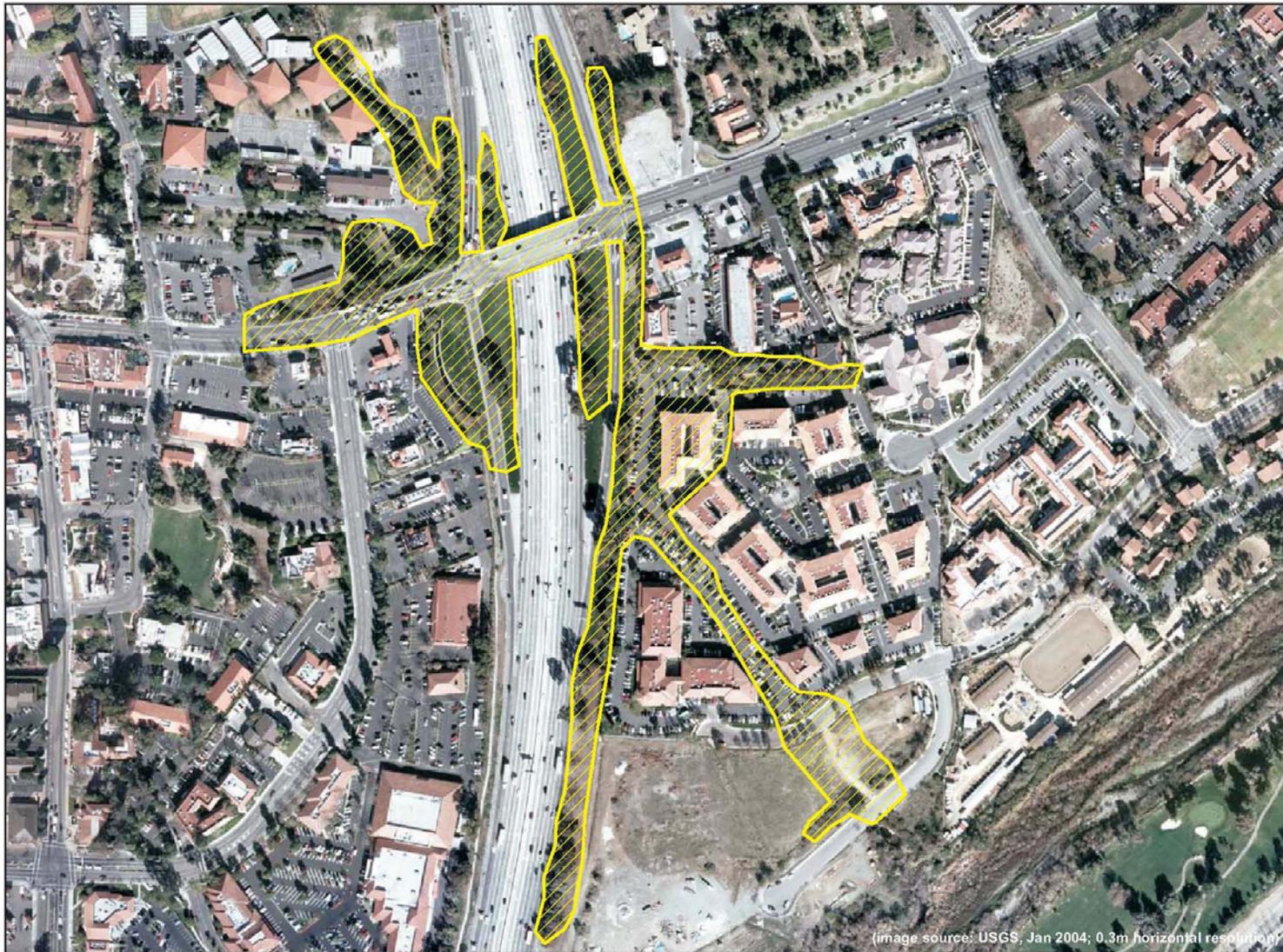
2.3.2 Wetlands and Other Waters

2.3.2.1 Regulatory Setting

Wetlands and other waters are protected under many laws and regulations. The federal Water Pollution Control Act of 1987 (later known more widely as the Clean Water Act [CWA]) (33 U.S.C. 1344) is the primary law regulating wetlands and waters. The CWA regulates the discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States include navigable waters, interstate waters, territorial seas, and other waters that may be used in interstate or foreign commerce. To classify wetlands for the purposes of the CWA, a three-parameter approach is used that includes the presence of hydrophytic (i.e., aquatic) vegetation, wetland hydrology, and hydric soils (i.e., soils subject to saturation/inundation). All three parameters must be present, under normal circumstances, for an area to be designated as a jurisdictional wetland under the CWA.

Under Section 404 of the CWA, no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded. The United States Army Corps of Engineers (USACE), with oversight by the United States Environmental Protection Agency (EPA), is charged with upholding and issuing permits for the Section 404 program.

The Executive Order for the Protection of Wetlands (Executive Order [E.O.] 11990) also regulates the activities of federal agencies with regard to wetlands. This Executive Order states that a federal agency, such as the Federal Highway Administration (FHWA), cannot undertake or provide assistance for new construction located in wetlands unless the head of the agency finds (1) that there is no practicable alternative to the construction, and (2) the proposed project includes all practicable measures to minimize harm.



**Figure 2.3.1-1
Biological Survey Area**

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At the state level, wetlands and waters in the project area are regulated by the California Department of Fish and Game (CDFG) and the State Water Resources Control Board (SWRCB)/Regional Water Quality Control Board (RWQCB). Sections 1600–1607 of the Fish and Game Code require any proponent of a project that will substantially divert or obstruct the natural flow of or substantially change the bed or bank of a river, stream, or lake to notify CDFG before beginning construction. If CDFG determines that the project may substantially and adversely affect fish or wildlife resources, then a Lake or Streambed Alteration Agreement will be required. CDFG jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider. Wetlands under jurisdiction of USACE may or may not be included in the area covered by a Streambed Alteration Agreement obtained from CDFG.

RWQCBs were established under the Porter-Cologne Water Quality Control Act to oversee water quality. RWQCB also issues water quality certifications in compliance with Section 401 of the CWA. See Section 2.2.2, Water Quality and Storm Water Runoff, for additional details.

2.3.2.2 Affected Environment

The only remnant of an ecological community once native to this region exists along Horno Creek, where the creek still has a natural bottom and unarmored banks north of Ortega Highway. The natural bottom and bank slopes end approximately 125 ft (38.1 m) north of the embankment for Ortega Highway where headworks for a large box culvert beneath the highway begin. South of Ortega Highway, Horno Creek is fully channelized for conveyance beneath I-5. Horno Creek passes beneath Ortega Highway through a box culvert approximately 200 ft (60.96 m) long. South of Ortega Highway, it is conveyed in an exposed concrete channel (rectangular), approximately 20 ft (6.09 m) wide by 9 ft (2.74 m) deep, and approximately 250 ft (76.2 m) long to the embankment for I-5. There the creek enters a second box culvert, which conveys water underground approximately 1,500 ft (457.2 m) to the southeast, where it emerges above ground again and empties into San Juan Creek.

Horno Creek has incised its channel through a geologically older floodplain, leaving benches to either side approximately 8 ft (2.44 m) high. Upstream of Ortega Highway, the creek's narrow corridor, with the bank tops approximately 20 ft (6.1 m) apart at the most, affords space for a sparse growth of willows (probably red willow, *Salix laevigata*), a couple of western sycamores (*Platanus racemosa*), and an elderberry (*Sambucus mexicanus*). These do not form canopy or understory layers of a riparian community; they are too few and far apart. While appearing healthy individually, these isolated individuals cannot form the core of an ecologically functional community on Horno Creek. Aside from those few native individuals, nearly all of the trees on the east bank of Horno Creek upstream from Ortega Highway are California peppers (*Schinus molle*), growing amid fewer Brazilian peppers (*S. terebinthifolius*) and domestic olive trees (*Olea europaea*). Olive trees comprise a solid band on the west bank of Horno Creek. A scattering of California fan palms (*Washingtonia filifera*) along the east side could well be freeway landscaping. An herbaceous layer on the banks contains dense stands of a native ragweed (*Ambrosia psilostachya*), occasional stinging nettle (*Urtica* sp.), a vetch of undetermined

species (it was not in flower), a small group of poison hemlock (*Conium maculatum*), and a few dock (*Rumex* sp.). A bulrush (*Scirpus* sp.) still has a toe-hold in the bottom of the creek at one location, but this patch is no more than 20 ft² (1.85 m²) in area. On the creek's west bank is a single large mulefat (*Baccharis salicifolia*). A few jimson weed (*Datura* sp.) and telegraph weed (*Heterotheca grandiflora*) were found in 2006. A leak found in April 2004 from an irrigation system released enough water to allow a small patch of cattails (*Typha latifolia*) to persist amongst the peppers where the southbound off-ramp joins Ortega Highway; the cattails would otherwise not occur in this setting. By October 2006, the leak had been repaired, and the stand of cattails no longer remains.

Invasive alien plant species and landscape ornamentals given to opportunistic spreading by seed and vegetative propagation are crowding out the few native species. Noted among the non-native species seen in the study area were Saint Augustine grass (*Stenotaphrum secundatum*), considerable Algerian ivy (*Hedera canariensis*), sweet fennel (*Foeniculum vulgare*), Bermuda oxalis (*Oxalis pes-caprae*), wild radish (*Raphanus raphanistrum*), castor bean (*Ricinis communis*), a perennial rye grass (*Lolium* sp.), Johnson grass (*Sorghum halepense*), and patches of iceplant (*Carpobrotus edulis*) creeping downward toward the creek from the shoulders of the freeway off-ramp. A thicket of giant reed (*Arundo donax*) lines approximately 75 ft (23 m) along the top of both banks just above Ortega Highway. Eucalyptus, a shrubby ornamental acacia (*Acacia* sp.), and olive trees also occupy parts of the creek's banks in the same immediate area. Many California pepper trees surround the upper end of the box culvert on the north side of Ortega Highway.

2.3.2.3 Environmental Consequences

No Build Alternative. Removal of scattered trees and herbaceous understory species associated with stream banks would not be required. The thoroughly developed environs of this isolated portion of Horno Creek would not likely foster improved aquatic or stream bank conditions.

Alternative 3. Alternative 3 adds a northbound loop on-ramp in the southeast quadrant where buildings and parking lots have only horticultural landscaping. Approximately 250 ft (76.2 m) of the existing concrete channel would be covered in the southwest quadrant of the interchange.

Alternative 5. Alternative 5 places a southbound loop on-ramp and pushes out the off-ramp farther west and across an additional portion of Horno Creek in the northwest quadrant. Implementation of Alternative 5 would necessitate extending the concrete channel approximately 425 ft (130 m) farther up Horno Creek. The enclosed box culvert would be lengthened by approximately 175 ft (53 m). The olive trees on its west bank would be removed, as would the willows and a sycamore tree.

For Alternative 5, Horno Creek could be additionally covered with a box culvert for the entire length of the school site.

2.3.2.4 Avoidance, Minimization, and/or Mitigation Measures

No specific avoidance, minimization, or mitigation measures are required. As part of the required permit acquisition process, findings from jurisdictional delineation specific to the project's footprint, application for a Section 404 permit as required by the CWA, and application for a Section 1602 permit from CDFG will be furnished prior to construction of either build alternative.

2.3.3 Plant Species

2.3.3.1 Regulatory Setting

The U.S. Fish and Wildlife Service (USFWS) and CDFG share regulatory responsibility for the protection of special-status plant species. Special-status species are selected for protection because they are rare and/or subject to population and habitat declines. Special status is a general term for species that are afforded varying levels of regulatory protection. The highest level of protection is given to threatened and endangered species; these are species that are formally listed or proposed for listing as endangered or threatened under the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Please see the Threatened and Endangered Species Section 2.3.5 in this document for detailed information regarding these species.

This section of the document discusses all the other special-status plant species, including CDFG fully protected species and species of special concern, USFWS candidate species, and non-listed California Native Plant Society (CNPS) rare and endangered plants.

The regulatory requirements for FESA can be found at 16 U.S.C. 1531, et. seq. See also 50 CFR 402. The regulatory requirements for CESA can be found at California Fish and Game Code, Section 2050, et. seq. Department projects are also subject to the Native Plant Protection Act, found at Fish and Game Code, Section 1900–1913, and the California Environmental Quality Act, Public Resources Code, Sections 2100–21177.

City of San Juan Capistrano Municipal Code, Heritage Tree Provisions

The City's Municipal Code, Section 9-2.349 includes provisions for the City's designation and protection of "Heritage Trees". The main points of the City's Heritage Tree Provisions are summarized below.

A tree shall be deemed a heritage tree and shall be protected from removal when such tree has a trunk diameter at breast height (dbh) of 36 inches or greater, and is a specimen of the following species: *Schinus molle* (California Pepper); *Quercus spp.* (oak); *Cedar spp.* (cedar); *Eucalyptus globulus* (blue gum eucalyptus); *Juglans spp.* (walnut); *Olea europaea* (olive); *Platanus spp.* (sycamore); *Populus spp.* (cottonwood); or as otherwise designated by the Planning Commission based on the tree's unique and intrinsic value to the community because of its size, age, historic association or ecological value.

A heritage tree shall not be removed without Planning Commission review and approval of a heritage tree removal permit, based on an affirmative finding that the tree is unsuitable for the planting area (e.g., the tree has outgrown the available space or there

are excessive trees on the site requiring thinning to maintain tree health) or the heritage tree is diseased, infested, structurally unsound, or dead.

Any proposal for ground-disturbing activity within the drip line or critical root zone of a heritage tree shall require Administrative Approval by the Planning Director pursuant to Section 9-2.303(4) prior to issuance of permits, to ensure that such work will not adversely impact the health of the heritage tree. The Planning Director may require a report prepared by a Qualified Tree Expert to document that such work will not adversely impact the tree.

2.3.3.2 Affected Environment

Beyond the comparatively short portion of Horno Creek upstream from the upper end of its concrete lining, very few native plants were encountered in the survey area. Solitary mulefat bushes grow in four other locations. Sycamores that were noted in a few places (mostly adjacent to freeway rights-of-way [ROWs]) seem to have been planted as landscape ornamentals. Most everything else appears to have been planted to reflect historic values of the area or as ornamentals, including iceplant along freeway shoulders; sweet gum trees (*Liquidambar styraciflua*) planted along the north side of Ortega Highway west of I-5; ox-eye daisy (*Chrysanthemum leucanthemum*); eucalyptus (*Eucalyptus* spp.); California pepper tree (*schinus molle*), including a specimen located on the San Juan Elementary School site adjacent to Spring Street that is purported to be the oldest living pepper tree in the United States and designated by the City as an official Heritage Tree; Mexican fan palms (*Washingtonia robusta*); India hawthorne (*Rhaphiolepis indica*); bougainvillea (*Bougainvillea* sp.); paper bark trees (*Melaleuca* sp.); various species of ornamental acacia (*Acacia* spp.), citrus (*Citrus* sp.) and privets (*Ligustrum* sp.) now grown large and treelike east of the Mission Inn; a very stately ash tree (*Fraxinus* sp.) immediately east of the Capistrano Beach Cities YMCA building on Spring Street; and large cedars (*Cedrus* sp.) and an ornamental alder species (*Alnus* sp.) on the grounds of San Juan Elementary School and adjacent to Horno Creek. Opportunistic species have come up as volunteers where protected from disturbance, including tree of heaven (*Ailanthus altissima*) and pampas grass (*Cortaderia selloana*).

2.3.3.3 Environmental Consequences

No Build Alternative. A decision not to implement any design alternative would leave all vegetation around the interchange as it currently exists. Species already planted throughout the study area for their horticultural qualities would likely be sustained and replaced as needed, but plants native to this region of Orange County would not be expected to become re-established within the study area.

Alternative 3. Alternative 3 would not directly or indirectly affect the California Pepper Heritage Tree located on the San Juan Elementary School site adjacent to Spring Street; however, Alternative 3 could result in the removal of iceplant, eucalyptus, and some landscape ornamentals in each of the other three quadrants.

Impacts to biological resources attributable to direct effects on plants in the project study area would not constitute a loss of regional significance, because the existing assemblage

of plants is already greatly disturbed by surrounding development and considerably influenced by encroachment of non-native species. Aside from the California Pepper Heritage Tree discussed above, nothing else found growing in the study area has any particular regional importance in southern California.

Alternative 5. A portion of Horno Creek, north of Ortega Highway and extending through the San Juan Elementary School site, could be covered over to match existing grade using a box culvert. This design component of Alternative 5 would offset the loss of school land (Alternative 5 would affect a greater amount of school land) and olive trees that border Horno Creek's west bank within the school grounds. Implementation of Alternative 5, which would disturb the most acreage, would require permanent removal of plants from approximately 3.13 acres (1.26 hectares). Most of the land disturbance would be between Horno Creek and I-5, and between Spring Street and Ortega Highway for approximately 1.89 acres (0.76 hectare). The isolated sycamores and willows in the lower portion of Horno Creek would be in the way of the new southbound ramps. Some olive trees on the west side of Horno Creek would be removed (the numbers determined by length of the box culvert). The ash tree next to the YMCA building would be removed. A Mexican fan palm, eucalyptus, privets, iceplant, and other species east of the Mission Inn would also be removed, as would many California pepper trees. Sweet gum trees along Ortega Highway would be removed where the southbound off-ramp leads directly to Del Obispo Street. Elsewhere, iceplant, eucalyptus, and some landscape ornamentals would be removed in each of the other three quadrants.

A California pepper tree specimen designated by the City as a Heritage Tree is situated adjacent to Spring Street and the San Juan Elementary School classroom building that must be removed under Alternative 5, such that construction activities associated with Alternative 5 would have potential to damage the Heritage Tree. All necessary protection measures in accordance with City Municipal Code, Section 9-2.349 would be taken to ensure that construction work under Alternative 5 would not cause damage to the California Pepper Heritage Tree. Measures MM BIO-6 and MM BIO-7 are included to avoid adverse effects to the California Pepper Heritage Tree if Alternative 5 is adopted and constructed.

Impacts to biological resources attributable to direct effects on plants in the project study area would not constitute a loss of regional significance, because the existing assemblage of plants is already greatly disturbed by surrounding development and considerably influenced by encroachment of non-native species. Aside from the California Pepper Heritage Tree discussed above, nothing else found growing in the study area has any particular regional importance in southern California.

2.3.3.4 Avoidance, Minimization, and/or Mitigation Measures

A Temporary Measures

Measures MM BIO-6 and MM BIO-7 are not applicable to Alternative 3 (the Preferred Alternative) and would apply only if Alternative 5 is adopted and constructed.

MM BIO-6 The City of San Juan Capistrano has designated the California Pepper Tree located on the San Juan Elementary School site adjacent to Spring Street as a Heritage Tree that is protected by the City's Municipal Code, Section 9-2.349. If Alternative 5 is adopted and constructed, the construction plans and specifications shall include provisions developed by a qualified botanist to ensure that construction activities near the Heritage Tree's drip line are conducted in a manner that would not harm the tree and that the tree's critical root zone is protected from damage.

MM BIO-7 If Alternative 5 is adopted, any associated proposal for construction or ground-disturbing activities near the drip line or critical root zone of the California Pepper Heritage Tree shall follow the requirements of the City of San Juan Capistrano Municipal Code, Section 9-2.349. The requirements state that the proposal will require Administrative Approval by the City of San Juan Capistrano Planning Director prior to issuance of permits, pursuant to City of San Juan Capistrano Municipal Code, Section 9-2.303(4). The City Planning Director and Planning Department staff shall review the plans to ensure that the proposed work will not adversely impact the health of the Heritage Tree. The Planning Director may elect to forward the application to the Planning Commission for review.

B Permanent Measures

None required.

2.3.4 Animal Species

2.3.4.1 Regulatory Setting

Many state and federal laws regulate impacts to wildlife. The USFWS, the National Oceanic and Atmospheric Administration (NOAA) Fisheries and CDFG are responsible for implementing these laws. This section discusses potential impacts and permit requirements associated with wildlife not listed or proposed for listing under the state or federal Endangered Species Act. Species listed or proposed for listing as threatened or endangered are discussed in Section 2.3.5 below. All other special-status animal species are discussed here, including CDFG fully protected species and species of special concern, and USFWS or NOAA Fisheries candidate species.

Federal laws and regulations pertaining to wildlife include the following:

- National Environmental Policy Act
- Migratory Bird Treaty Act
- Fish and Wildlife Coordination Act

State laws and regulations pertaining to wildlife include the following:

- California Environmental Quality Act

- Sections 1600 – 1603 of the Fish and Game Code
- Sections 3503, 3513, and 3800 of the Fish and Game Code
- Sections 4150 and 4152 of the Fish and Game Code

2.3.4.2 Affected Environment

Diurnal animals noted along Horno Creek above Ortega Highway include monarch (*Danaus plexippus*) and swallowtail butterflies (*Papilio* sp.), Pacific tree frog (*Hyla regilla*), song sparrow (*Melospiza melodia*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), and California towhee (*Pipilo crissalis*). Mallard ducks (*Anas platyrhynchos*) were found in October 2006 walking along the bottom of the concrete section above Ortega Highway, and tracks made by raccoons (*Procyon lotor*) were found just west of the creek at Spring Street. Slightly farther west of the creek, western kingbird (*Tyrannus verticalis*) and orange crowned warbler (*Vermivora celata*) were noted. Western fence lizards (*Sceloporus occidentalis*) live in weep holes along the retaining wall on the east side of the northbound on-ramp. No raptors were seen flying in the area, nor was there evidence of preferred roosting sites (i.e., whitewash on leaves, trunks, or ground) or nests (i.e., active or old). No owl pellets were found in the proposed project footprint. During a second field review conducted October 5, 2006, no direct or indirect signs of bats or any other animal species of special status or concern were observed.

Within the study area, Horno Creek flows through a concrete-lined channel from upstream of Ortega Highway nearly to the west side of the southbound on-ramp. The upper portions of walls along the open stretches and soffits where these conveyance channels go underground could offer suitable surfaces for the mud nests of barn and cliff swallows. No swallows of any species were seen during the survey. If structural joints exist deeper within the culverts, various bats could use them as maternity roosts (Mexican free-tail and Yuma myotis, chiefly). The untrimmed fronds of large fan palms that surround the sign for the Mission Inn might also be an important rookery for other bats (i.e., western yellow, especially, although the species has not been documented in Orange County, and possibly big brown bat, although this species commonly favors the underside of tree bark).

A Wildlife Movement

I-5 is considered to be a barrier against movement of large mammals from east to west. Similarly, Ortega Highway prevents north-south movement. The extent of development in the study area adjacent to the roadways themselves has affected constituent elements that are essential to a migratory corridor. The study area does not allow for ecologically meaningful movement of large mammals from one area to another.

2.3.4.3 Environmental Consequences

A Temporary Impacts

Alternative 3. Impacts to biological resources would not constitute a loss of regional significance since the existing fauna is already greatly disturbed by surrounding

development. No animal species found within the proposed project footprint has any particular regional importance.

The Migratory Bird Treaty Act (MBTA) prohibits actions that lead to the destruction of eggs in nests or the death of immature birds of those species whose life history includes migration beyond international boundaries. Construction effects would likely result in direct mortality of their eggs or chicks if removal of trees or structures where active nests are present occurs. The chances of nests being present are greater during the common nesting and fledging season of many bird species in southern California, which occurs from early spring through late summer. Measures MM BIO-1 and MM BIO 2 are proposed to avoid adverse effects to nesting birds.

Alternative 5. Implementation of Alternative 5, which would disturb the most acreage, would disturb approximately 3.13 acres (1.26 hectares); mostly between Horno Creek and I-5, and between Spring Street and Ortega Highway. Animals that favor aquatic settings would be displaced from approximately 1.89 acres (0.76 hectare). Impacts to biological resources would not constitute a loss of regional significance since the existing fauna is already greatly disturbed by surrounding development. No animal species found within the proposed project footprint has any particular regional importance.

The MBTA prohibits actions that lead to the destruction of eggs in nests or the death of immature birds of those species whose life history includes migration beyond international boundaries. Construction effects would likely result in direct mortality of their eggs or chicks if removal of trees or structures where active nests are present occurs. The chances of nests being present are greater during the common nesting and fledging season of many bird species in southern California, which occurs from early spring through late summer. Measures MM BIO-1 and MM BIO-2 are proposed to avoid adverse effects to nesting birds.

B Permanent Impacts

No Build Alternative. A decision not to implement any design alternative would leave the environs around the interchange unchanged. Animal species that inhabit the study area would not be expected to change in either numbers within species or diversity of species. The extent of residential and commercial development immediately surrounding the interchange also precludes any ecologically effective rehabilitation of the study area by animal species native to this region of Orange County if the interchange was not reconstructed.

Alternatives 3 and 5. The project build alternatives do not present any potential for long-term effects to animal species during project operation that is not otherwise present with the existing interchange configuration under current conditions.

2.3.4.4 Avoidance, Minimization, and/or Mitigation Measures

A Temporary Measures

Findings from jurisdictional delineation specific to the project's footprint, application for a Section 404 permit as required by the CWA, and application for a Section 1603 permit from CDFG will be furnished prior to construction of either build alternative.

MM BIO-1 To the extent practical, all removal of vegetation and other structures providing nesting habitat, as well as excavation for footings, culverts, and pilings, should be scheduled to occur between September 1 and January 31 to avoid the nesting and fledging season of many bird species common to southern California. This would be consistent with MBTA requirements.

MM BIO-2 If the removal of vegetation and other structures providing nesting habitat, as well as excavation for footings, culverts, and pilings, cannot be postponed until after the breeding season (September 1 and January 31), then nesting surveys must be completed by a qualified biologist prior to beginning clearing and grubbing. If surveys reveal active nests closer than approximately 200 ft (60 m) and species addressed by MBTA, then all removal of vegetation and ground preparation must be delayed until fledglings have left the nest.

B Permanent Measures

None required.

2.3.5 Threatened and Endangered Species

2.3.5.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 U.S.C. 1531, et seq. See also 50 CFR 402. This act and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration, are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NOAA Fisheries) to ensure that they are not undertaking, funding, permitting or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 is a Biological Opinion or an incidental take permit. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code, Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project caused losses of listed species

populations and their essential habitats. The California Department of Fish and Game (CDFG) is the agency responsible for implementing CESA. Section 2081 of the Fish and Game Code prohibits “take” of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFG. For projects requiring a Biological Opinion under Section 7 of the FESA, CDFG may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

2.3.5.2 Affected Environment

A review of available literature on formally listed species, those with declining populations, and types of biotic communities known from the vicinity of the project site was performed. Sources of information included the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS, 2004), the CDFG California Natural Diversity Database (CNDDDB).

Reconnaissance surveys were made to ascertain whether the six species identified in the literature search, indirect evidence of their presence, or habitat conditions exist in the area that would be affected directly by implementation of the proposed project. The survey was concentrated where unpaved surfaces and plants remain in the residual spaces between I-5 and Ortega Highway. It encompassed roughly 18 acres (equivalent to 7.25 hectares) of those remnant unhardened surfaces within the maximum project limits (Alternative 5) required for interchange reconstruction. The most attention was given to Horno Creek upstream of Ortega Highway, as its channel proved to be the only unaltered ground within the proposed project footprint. For safety concerns, the four slender areas between the freeway ramps and I-5 (2.6 acres [1.05 hectares]) were studied from the Ortega Highway bridge (with 10× binoculars) and other vantage points; these are included in the acreage total. All trees, arborescent shrubs, and perennial plant species that decorate the embankments were noted, as were general habitat conditions of Horno Creek and the shoulders and embankments of I-5. Locations of noteworthy trees were also recorded on site plans or aerial photographs. Since children were present on the school grounds, which curtailed access, only the immediate banks and Horno Creek channel were investigated to approximately 550 ft (168 m) upstream of Spring Street.

The six listed species identified in the literature search are listed in Table 2.3.5-1. All are protected either as threatened (T) or endangered (E) pursuant to FESA. No taxa listed solely under CESA were reported in the vicinity.

**Table 2.3.5-1
Six Species Potentially Extant at Project Site**

Vascular Plants	Bony Fish	Birds
thread-leaved brodiaea (T) <i>Brodiaea filifolia</i>	tidewater goby (E) <i>Eucyclogobius newberryi</i>	coastal California gnatcatcher (T) <i>Poliopitila californica californica</i>
Laguna Beach dudleya (T) <i>Dudleya stolonifera</i>	–	least Bell’s vireo (E) <i>Vireo bellii pusillus</i>

**Table 2.3.5-1
 Six Species Potentially Extant at Project Site**

Vascular Plants	Bony Fish	Birds
crownbeard (T) <i>Verbesina dissita</i>	–	–
Federal and State status: (T) threatened; (E) endangered.		

Source: CDFG, 2003.

Habitat conditions favorable to any of the three threatened and endangered animal species noted in Table 2.3.5-1 do not exist within the survey area. Of the three, tidewater gobies historically came the closest to the project study area, having been collected (last in 1968) from San Juan Creek 0.95 mile (1.5 km) southwest of the interchange. San Juan Creek has been completely channelized, and all intervening lands between it and the project study area have been completely developed since that collection date. Similarly, conditions where direct project effects would occur are entirely unsuitable for the brodiaea, dudleya, or the bigleaf crownbeard; all three plant species have been mapped in locales more than one mile away from the study area.

No other species, plant, or animal designated as special status because they are rare and/or subject to population and habitat declines, but not designated as threatened or endangered, are recorded closer than 0.5 mile from the project study area. Coulter’s salt bush (*Atriplex coulteri*) occurred on the banks of Trabuco Creek, upstream of its confluence with San Juan Creek, and was gone from this locale when the water courses were channelized.

2.3.5.3 Environmental Consequences

Alternatives 3 and 5. The six special-status listed species noted in Table 2.3.5-1 do not currently inhabit the site of the proposed interchange alterations and do not occur within the boundary of direct or indirect project effects. Designated critical habitat for these special-status species does not include any land within or near the project study area. As such, the project construction and long-term operation would not result in adverse effects and measures to avoid, reduce, or compensate for incidental impacts are not necessary.

2.3.5.4 Avoidance, Minimization, and/or Mitigation Measures

A Temporary Measures

None required.

B Permanent Measures

None required.

2.3.6 Invasive Species

2.3.6.1 Regulatory Setting

On February 3, 1999, President Clinton signed Executive Order 13112 requiring federal agencies to combat the introduction or spread of invasive species in the United States.

The order defines invasive species as “any species, including its seeds, eggs, spores, or other biological material capable of propagating that species, that is not native to that ecosystem whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Federal Highway Administration guidance issued August 10, 1999, directs the use of the state’s noxious weed list to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

2.3.6.2 Affected Environment

Eight invasive pest plant species have claimed most of the available soil at the interchange. At least four appear to have been planted for their horticultural qualities, rather than their inherent value within natural biotic communities. Two horticultural varieties planted deliberately at the interchange are included on the list of most invasive wildland pest plants: the gum tree, which is very likely the blue gum (*Eucalyptus globulus*), although without being able to see flowers in April 2004 or October 2006, certain identification is problematic; and iceplant (*Carpobrotus edulis*). California pepper trees (*Schinus molle*) flourish along Horno Creek, especially at the box culvert above the embankment. Brazilian pepper tree (*S. terebinthefolius*) is also present in the same place. The banks of Horno Creek and down to the water are choked by lush growth of giant reed (*Arundo donax*). The stately ornamental pampas grass (*Cortadeira selloana*), once widely planted for landscaping effects but now regarded as a pernicious invader, grows along a footpath between the northbound exit ramp and commercial buildings on the south side of Ortega Highway in the southeast quadrant of the interchange. Tree of heaven (*Ailanthus altissima*) persists in out of the way spots close to this path. European fountain grass (*Pennisetum setaceum*) was also found at several places along this footpath.

2.3.6.3 Environmental Consequences

A Temporary Impacts

Alternatives 3 and 5. Standard Department project requirements would be implemented to limit the proliferation of invasive species in the project site during the construction period and temporary adverse effects would be avoided. Measures MM BIO-3 through MM BIO-5 are proposed to further reduce temporary impacts.

B Permanent Impacts

No Build Alternative. A decision not to implement any design alternative would leave the environs around the interchange unchanged. The numbers and extent of plants now regarded as ecologically deleterious and non-native would not be reduced. Since all eight of the invasive species are very widespread throughout southern California, if nothing were implemented in the project study area, then the regional composition of plant species would not change in any perceptible way.

Alternatives 3 and 5. Standard Department project requirements would be implemented to provide a permanent landscaping palette consistent with restoration of native species appropriate to operational requirements of freeway embankments to facilitate the succession or native plants and limit the proliferation of invasive species in the project

site. With adherence to standard project provisions for landscaping and maintenance requirements, long-term adverse effects would be avoided.

2.3.6.4 Avoidance, Minimization, and/or Mitigation Measures

A Temporary Measures

MM BIO-3 The Contractor shall clean all equipment and vehicles with water to remove dirt, seeds, vegetative material, or other debris that could contain or hold seeds of noxious weeds before or arriving to and leaving the project site

MM BIO-4 The Contractor shall notify the Resident Engineer a minimum of 14 days prior to obtaining material from a commercial or state-furnished borrow site. The Engineer will inspect the site or stockpile for the presence of noxious weeds or invasive plants.

MM BIO-5 As directed by the Engineer, the Contractor shall chemically or mechanically kill existing noxious weeds and invasive plants in the work area and follow appropriate disposal methods.

B Permanent Measures

None required.

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