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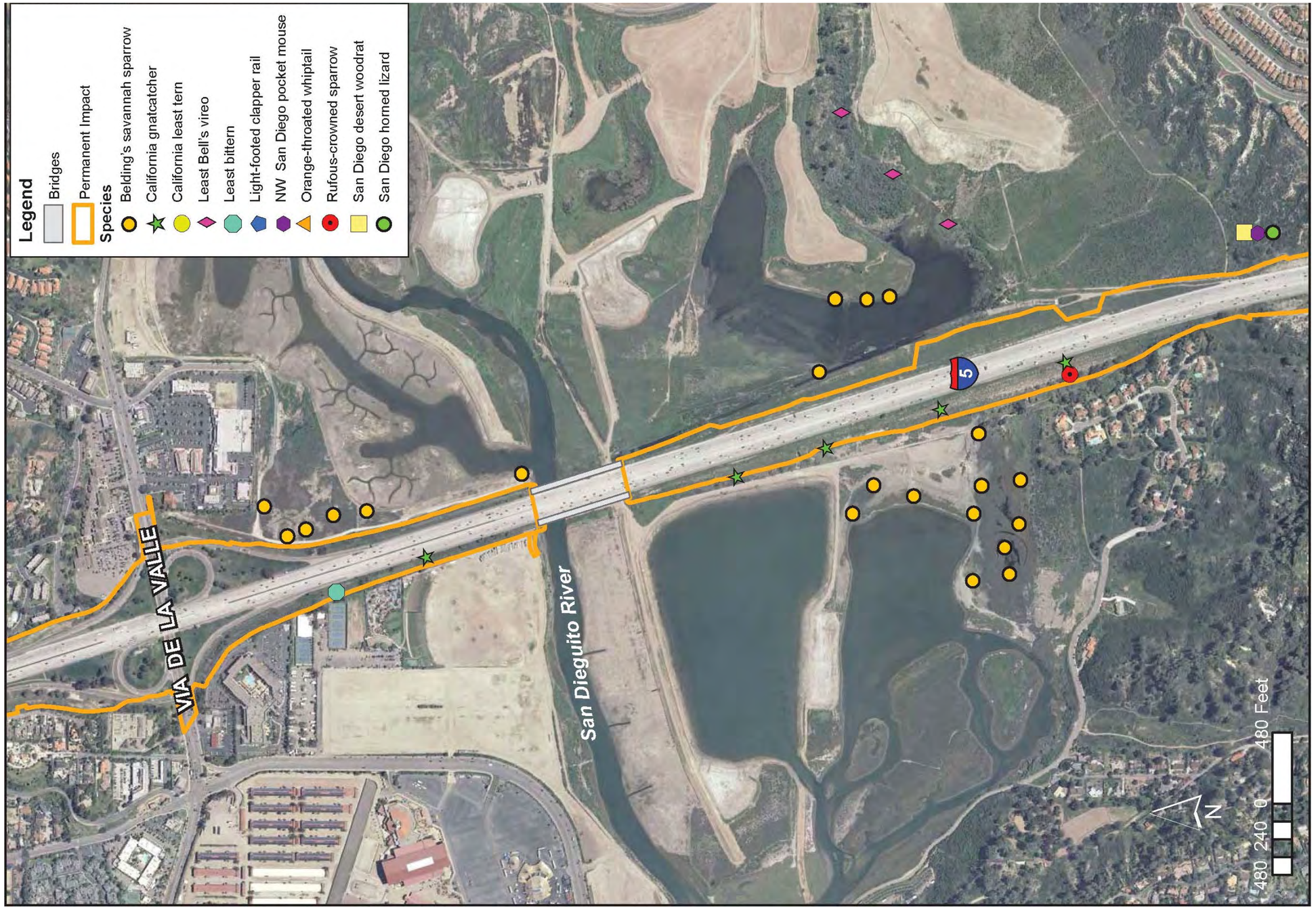


Figure 3-20.1c: Sensitive Wildlife Locations

Figure 3-20.1d: Sensitive Wildlife Locations

Figure 3-20.1e: Sensitive Wildlife Locations

Figure 3-20.1f: Sensitive Wildlife Locations

Figure 3-20.1g: Sensitive Wildlife Locations

3.21 Threatened and Endangered Species

The 8+4 Buffer alternative has been refined since the Draft EIR/EIS was publically circulated in 2010. This alternative was presented as the locally preferred alternative (LPA) in the August 2012 Supplemental Draft EIR/EIS, and has now been identified as the Preferred Alternative. The refined 8+4 Buffer alternative has the least amount of impact of any build alternative and also meets purpose and need.

3.21.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is FESA: 16 USC, Section 1531, et seq. See also 50 CFR Part 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 FHWA, are required to consult with the USFWS and the NOAA/National Marine Fisheries Service (NMFS) 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 formal consultation under Section 7 may include a Biological Opinion with an Incidental Take statement, a Letter of Concurrence, and/or documentation of a no effect finding. 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, 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 CDFW 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 CDFW. For projects listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

3.21.2 Affected Environment

The section is based upon the NES (June 2008), Manchester Avenue / Interstate 5 Interchange Project NES Report (January 2004); I-5 Widening Project Pacific Pocket Mouse Habitat Analysis and Trapping Program San Diego County, California (June 2003); I-5 Lagoons Marine Resource Investigation (June 2006); and the Noise Report for Sensitive Wildlife Receptors within the I-5 NCC Project (September 2006), which are incorporated by reference. The section below discusses listed threatened and endangered species observed within the BSA. These species are shown on *Figures 3-20.1a* through *3-20.1g.*

Arctostaphylos glandulosa ssp. Crassifolia FE
Del Mar manzanita CNPS List 1B
Ericaeae (heath family)

This plant is restricted to San Diego County and northern Baja California. This species is a fire-adapted shrub restricted to sandstone terraces and bluffs, and is associated with a subtype of chaparral known as southern maritime chaparral. About 25 populations exist in San Diego County, including nearby areas at Del Mar and the Torrey Pines State Reserve. The Del Mar manzanita is a federally listed endangered species and is considered endangered by the CNPS. In the BSA, approximately 70 plants were observed at the top of the slopes on both sides of I-5, just north of Del Mar Heights Road to Birmingham Drive (*Figures 3-19.1b* and *3-19.1e*).

Acanothomintha ilicifolia FE/SE
San Diego thornmint CNPS List 1B
Lamiaceae (mint family)

The San Diego thorn-mint is a small annual herb found in broken clay soils within grassy openings in chaparral, coastal sage scrub, and vernal pool communities in San Diego County and northern Baja California (Reiser 1994). This species flowers from April to May. The microhabitat associated with this species is quite distinctive and was not detected during surveys. It is, therefore, unlikely that this species occurs in the vicinity of the project. None was seen during surveys for this report. No impacts to this species are anticipated.

Ambrosia pumilla FE
San Diego ambrosia CNPS List 1B
Asteraceae (sunflower family)

The San Diego ambrosia is a rhizomatous perennial herb that flowers June through September. This species is federally listed as endangered. It is found in chaparral, coastal scrub, valley and foothill grassland, and vernal pool communities in coastal San Diego County, western Riverside County, and northern Baja California. It is often found in disturbed areas within these communities. Many occurrences within the San Diego County have been extirpated. This species is seriously threatened by development. No San Diego ambrosia was observed during any surveys conducted for the I-5 project, and there are no locations recorded in the California Natural Diversity Database (CNDDB) within the BSA. The closest recorded occurrence of this species is 2.5 mi east of I-5 along SR-76.

Baccharis vanessae FT/SE
Encinitas baccharis CNPS List 1B
Asteraceae (sunflower family)

Encinitas baccharis is a perennial, broom-like, and dioecious shrub. This species is endemic to San Diego County, occurring locally in chaparral along the coast from Encinitas to Mira Mesa. This species is federally listed as threatened and State listed as endangered. This species was not observed and would have been identified if it occurred within the project area. The closest known occurrence is approximately 1230 ft east of I-5 near Encinitas Boulevard.

Brodiaea filifolia FT/SE
thread-leaved brodiaea CNPS List 1B
Liliaceae (lily family)

The thread-leaved brodiaea is a bulbiferous perennial herb found in CSS, cismontane woodland, valley and foothill grasslands, and in clay soils in vernal pools. This species is federally listed as threatened and State listed as endangered. It is seriously threatened by residential development, agriculture and vehicles damaging plants. No thread-leaved brodiaea were observed during surveys conducted for the project. The closest known location is approximately 1.86 mi east of I-5 near SR-78.

Chorizanthe orcuttiana Parryi FE/SE
Orcutt's spineflower CNPS List 1B
Polygonaceae (buckwheat family)

Orcutt's spineflower is an annual herb found in chaparral, coastal coniferous forest, and coastal scrub communities from Del Mar to Point Loma, San Diego County (Hickman 1993). It flowers March through April. Most historical habitat has been urbanized. The last known habitat has been developed. The known extant populations are at Oak Crest Park in Encinitas and at Point Loma. This species was not observed during surveys and habitats within the project limits are likely too disturbed to support this species. Therefore, this species is not expected to occur within the project limits.

Chloropyron maritimum FE/SE
salt marsh bird's beak CNPS List 1B
Orobanchaceae (orobanche family)

Salt marsh bird's beak is a federal and State listed endangered species. It is a hemiparasitic plant that uses saltgrass as its primary host plant. This species occurs in saltmarsh and dunes habitat in southern California. This species was not observed during any of the surveys of the project limits. Salt marsh bird's beak is not known to occur in San Diego County north of the San Diego River (CNDDB 2012). This species is not expected to occur within the project limits.

Eryngium aristulatum var. parishii FE/SE
San Diego button celery CNPS List 1B
Apiaceae (carrot family)

San Diego button-celery is an herbaceous annual or perennial plant. This species is federally listed as endangered and is State listed as endangered. This taxon is associated with clay bottom vernal pools. San Diego button-celery is found in Riverside and San Diego Counties, and in Baja California, Mexico. In San Diego County, the species is found on Camp Pendleton, Carlsbad, San Marcos, Miramar Naval Air Station, Clairemont Mesa, and Otay Mesa. There are no vernal pools in the BSA; therefore, the San Diego button celery is not expected to occur within the project limits.

Hazardia orcuttii (Gray) Greene — Candidate/FT
Orcutt's hazardia — CNPS List 1B
Asteraceae (sunflower family)

Orcutt's hazardia is an evergreen shrub found in chaparral and coastal scrub communities. It flowers August through October. It is known from only one occurrence in California, from Lux Canyon in San Diego County. This species was not observed during surveys and would have been identified if it occurred within the project area.

Monardella linoides ssp. *viminea* (Greene) Abrams — FE/SE
Willowy monardella — CNPS List 1B
Lamiaceae (mint family)

The willowy monardella is a perennial herb that inhabits coastal coniferous forest, chaparral, riparian forest, riparian scrub, and riparian woodland communities. It flowers June through August. It is threatened by road improvements, vehicles, non-native plants, and urbanization. This species was not observed during surveys and would have been identified if it occurred within the project area.

Navarretia fossalis — FT
Spreading navarretia — CNPS List 1B
Polemoniaceae (phlox family)

Spreading navarretia is federally listed as threatened and is considered rare by the CNPS. It is a spring-blooming annual plant (April through June). This species typically occurs below 1475 ft in elevation. It is primarily found in vernal pools, although it occasionally occurs in ditches or other artificial depressions. Spreading navarretia occurs in western Riverside and southwestern San Diego Counties and in northwestern Baja California, Mexico. Historically, spreading navarretia occurred in relatively few of the San Diego County vernal pools. In San Diego County, this species is found in Carlsbad, San Marcos, Ramona, and Otay Mesa. It is not expected to occur in the BSA due to a lack of suitable habitat.

Orcuttia californica Vasey — FE/SE
California Orcutt grass — CNPS List 1B
Poaceae (grass family)

California Orcutt grass is federally and state endangered. It is found in vernal pools and slump ponds of the coastal mesas (Beauchamp, 1986). It can be found in Los Angeles, Riverside, and San Diego County, as well as in Baja California, Mexico. It was not observed during surveys. It is not expected to occur in the project area due to a lack of suitable habitat.

Phacelia stellaris — Candidate/--
Brand's phacelia — CNPS List 1B
Boraginaceae (borage family)

Brand's phacelia is a small annual herb that grows in coastal dunes and in coastal sage scrub. This species is a candidate for federal listing. Extant populations are known from near the border fence with Mexico and from the Silver Strand in Imperial Beach. There are no known extant

occurrences north of Imperial Beach in San Diego County. This species was not observed during surveys for the project. This species is not expected to occur within the project limits.

Pogogyne abramsii FE/SE
San Diego mesa mint CNPS List 1B
Lamiaceae (mint family)

San Diego mesa mint is an annual aromatic herb in the mint family. This species is federally listed as endangered and is State listed as endangered. San Diego mesa mint is endemic to San Diego County. This spring-blooming (April-June) annual plant is restricted to vernal pools on mesa tops. Its distribution is centered on the mesas north of San Diego, including Miramar Naval Air Station, Tierrasanta, and Kearny Mesa. San Diego mesa mint is not expected to occur in the BSA due to a lack of suitable habitat.

Pacific pocket mouse FE/SSC
Perognathus longimembris pacificus

The Pacific pocket mouse is a federal endangered species and a CDFW species of special concern. The Pacific pocket mouse is the smallest subspecies of the little pocket mouse (*Perognathus longimembris*) and one of the smallest rodents in the world. Its length from nose to tail can be up to 5.24 in and it weighs 0.25 to 0.32 ounces. The Pacific pocket mouse is mostly brown (various shades of), free from bristles or spines, and whitish below. Body color varies within geographical locations. It is an endemic species to the southern California coast from Los Angeles County to near the Mexico-San Diego border. Its habitat requirements are fine-grain and sandy substrates in CSS; however, in San Diego County they have also been found in open patches of ground surrounded by weeds.

Protocol live-trapping for the Pacific pocket mouse conducted for five nights was completed in five locations within the highest quality habitat near the San Dieguito and San Elijo Lagoons in 2003. No pocket mice were caught during the trapping effort. No pocket mice are expected to occur within the project limits.

Light-footed clapper rail FE/SE and CFP
Rallus longirostris levipes

The light-footed clapper rail occurred historically along the southern California coast from Santa Barbara County south to San Quintin, Baja California. Populations have declined due to limited distribution and destruction/degradation of coastal salt marsh habitat. About 253 pairs were reported in 2000, 90 percent of these were reported in just three wetland areas: Anaheim Bay and Newport Bay (Orange County) and Tijuana Estuary (San Diego County). Light-footed clapper rails are typically found in salt marshes dominated by cordgrass, but they also can be found in habitats dominated by cattail (*Typha* spp.) and sedges (*Scirpus* spp.). Nesting occurs from mid-March to the beginning of July.

Focused surveys for the light-footed clapper rail were completed along the San Luis Rey River, Buena Vista Lagoon, Batiquitos Lagoon, San Elijo Lagoon, and San Dieguito Lagoon in 2003, and in Los Peñasquitos Lagoon in 2004 within 500 ft of the existing I-5. Light-footed clapper rails were detected within 500 ft of I-5 in Buena Vista and San Elijo Lagoons (*Figures 3-20.1b*

and *3-20.1d* through *3-20.1f*). One pair was observed in the northwestern quadrant of Buena Vista Lagoon, and a single and two more pairs were observed by Zembal (2003) farther east of I-5. Two single males and one pair were detected in San Elijo Lagoon east of I-5 in the marsh adjacent to the I-5 fill slope. No clapper rails were observed in Los Peñasquitos Lagoon within 500 ft of I-5. However, two pairs of rails and a single male rail were detected south of the survey area and north of the City of San Diego's pump station. Updated information from surveys completed by Zembal (2011) at Batiquitos, Agua Hedionda, and Buena Vista Lagoons identified additional light-footed clapper rail at Batiquitos Lagoon, adjacent to the La Costa park and ride, next to the freeway slope northeast of the bridge, and on the north shore of the east basin (Zembal/Konecny pers. comm.). Light-footed clapper rail have moved closer to I-5 within the past eight years with the increase in cordgrass-dominated low marsh adjacent to the fill slopes. It appears that appropriate habitat is more important than noise levels to the clapper rails. During 2011, the light-footed clapper rail previously located at the southwestern corner of the I-5 / SR-78 Interchange was not detected. The clapper rail locations at Agua Hedionda were more than 3000 ft from the project area.

California least tern FE/SE and CFP
Sterna antillarum browni

The California least tern historically nested on coastal beaches from Monterey County to Cabo San Lucas, Baja California. However, substantial population declines have been documented in the last 50 years. The San Dieguito Ecological Reserve has a colony managed by the CDFW. There are also known nesting areas for least terns in San Elijo and Batiquitos Lagoons. The breeding areas are outside of the grading limits; however, some foraging habitat may be impacted during construction. California least terns were observed foraging in San Elijo and Batiquitos Lagoon within the BSA in 2003 (*Figures 3-20.1d* and *3-20.1e*); they also are present at San Dieguito Lagoon.

Western snowy plover FT/SSC
Charadrius alexandrines nivosus

The Pacific coast population of the western snowy plover was listed as federally threatened on April 5, 1993. Western snowy plovers forage on both the dry sand of the upper beach and along the wet sand at the beach-surf interface. In Orange and San Diego Counties, the snowy plover is a common winter migrant and winter visitor and a fairly common localized breeding resident. The species is declining because of development and degradation of feeding and nesting habitat, increased human disturbance at nest sites, vehicular destruction of nests, and increased predation by introduced predator populations. The snowy plover is known to occur in some of the coastal lagoons; however, there is no nesting area within the project footprint. Some foraging habitat for this species may be impacted by this project at Batiquitos and Agua Hedionda Lagoons.

Coastal California gnatcatcher FT/SSC
Polioptila californica californica

This species is listed as threatened by the USFWS and is a CDFW Species of Special Concern. It is a non-migratory resident whose range covers the coastal plains of southern California and northern Baja California. In San Diego County, it occurs in coastal lowlands generally below

1968 ft in elevation and is an obligate resident of CSS. However, it is able to utilize other vegetation types such as chaparral and riparian habitats for portions of its territory. The decline of the coastal California gnatcatcher is attributed to the loss and fragmentation of CSS due to urban and agricultural development.

California gnatcatchers were generally found along the fill slopes and a few cut slopes adjacent to the lagoons and in a few adjacent canyons with coastal sage scrub habitat (*Figures 3-20.1a, 3-20.1c* through *3-20.1e,* and *3-20.1g*). Multiple protocol surveys in the corridor have been completed during multiple years, including 2003, 2005, 2007, 2008, and 2012. *Table 3.21.1* lists the number of territories of California gnatcatchers identified by general area within the larger BSA for I-5. There is critical habitat for the California gnatcatcher within the BSA surrounding San Elijo Lagoon, just south of Batiquitos Lagoon, and near the San Luis Rey River (*Figures 3-21.1a* through *3-21.1d*).

Table 3.21.1: Summary of Coastal California Gnatcatchers Territories Identified within the Study Area between 2003 and 2012

Location	Summary of California gnatcatcher Territories Identified During All Years
Genesee North	5
San Dieguito SW	3-4
San Dieguito NW	1 only, seen 2003, dispersing indiv
San Elijo Lagoon	5-6
Manchester East	3-4
Manchester West	2-3
Batiquitos East	2
Batiquitos West	2
Brooks Street	2
Lawrence Canyon	2
TOTAL	26-31

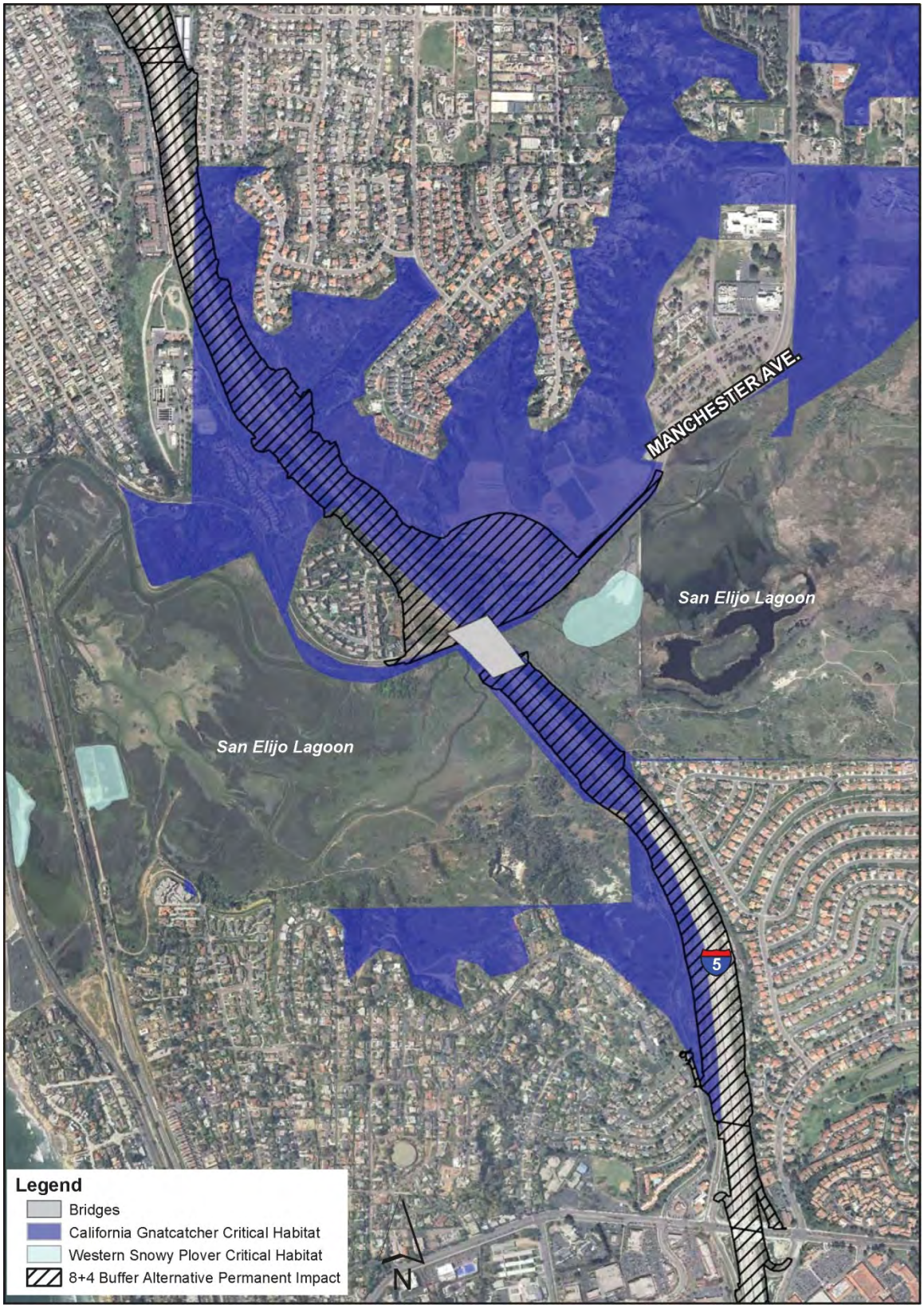


Figure 3-21.1a: California Gnatcatcher and Western Snowy Plover Critical Habitat

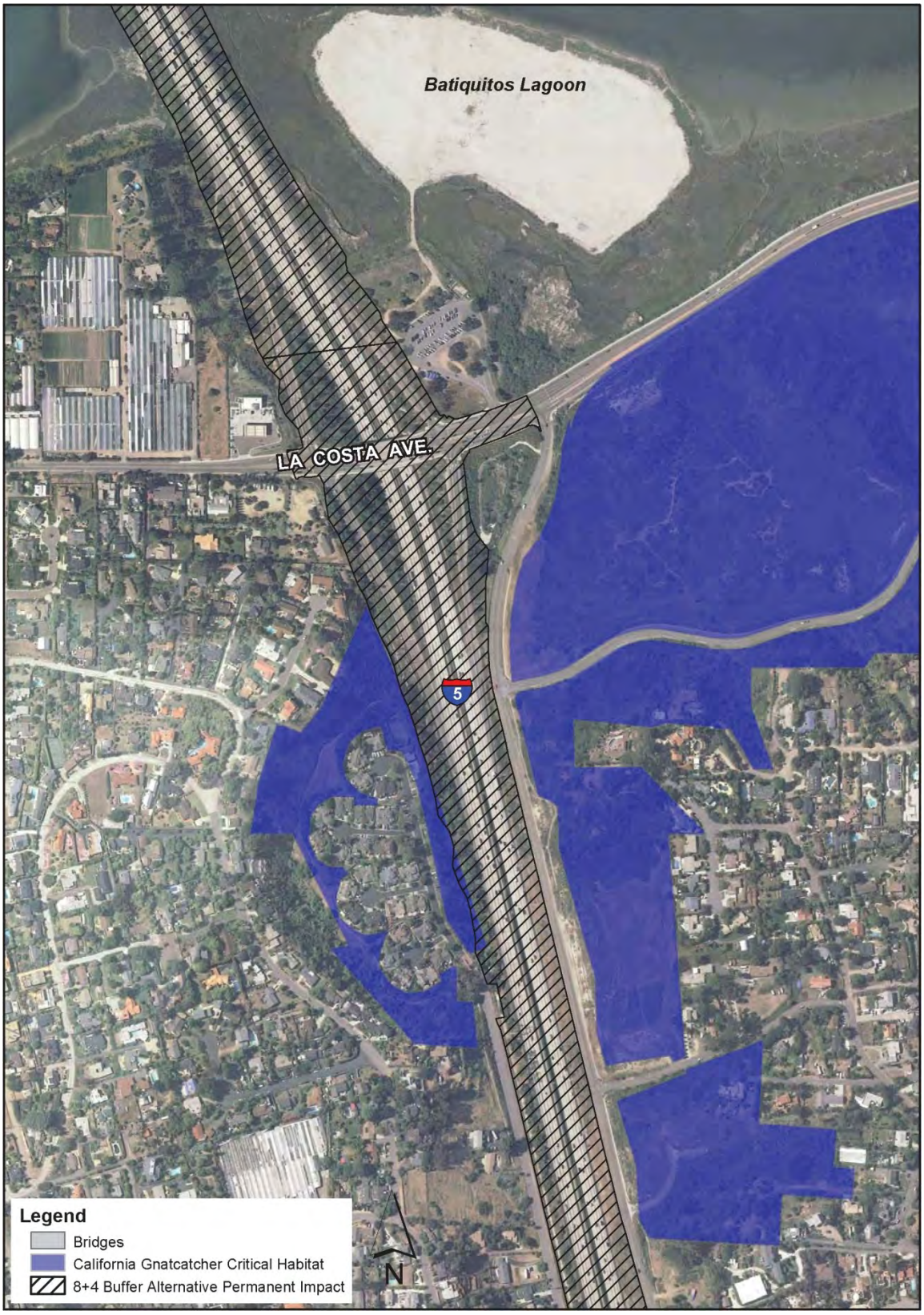


Figure 3-21.1b: California Gnatcatcher Critical Habitat

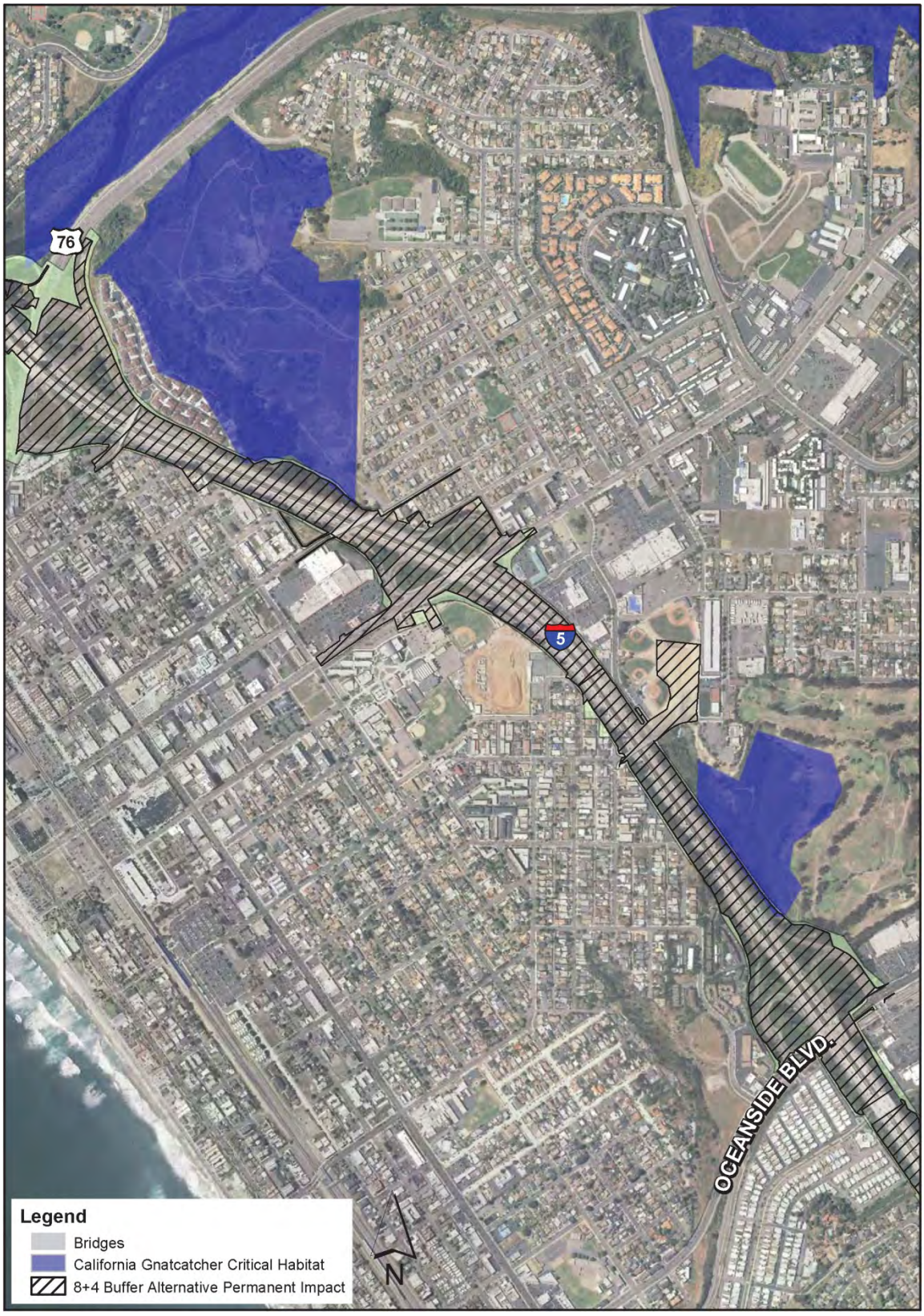


Figure 3-21.1c: California Gnatcatcher Critical Habitat

Figure 3-21.1d: California Gnatcatcher, Least Bell's Vireo, Southwestern Willow Flycatcher, and Tidewater Goby Critical Habitat

Least Bell's vireo FE/SE
Vireo bellii pusillus

The least Bell's vireo was once widespread from Tehama County in northern California to northwestern Baja California. This migratory species nests in willows, also using a variety of other shrub and tree species for nest placement. Declines have occurred due to habitat loss and fragmentation, and nest parasitism by the brown-headed cowbird (*Molothrus ater*). Recent population numbers have trended upward. Two vireo territories were detected in the willow woodland east of I-5 near the San Dieguito River; however, they are outside the BSA. Protocol surveys for least Bell's vireo along Moonlight Creek in Encinitas were negative in both 2003 and 2004. Least Bell's vireo were detected during California gnatcatcher protocol surveys near Brooke Street and Lawrence Canyon in Oceanside in small patches of riparian habitat (*Figures 3-20.1c and 3-20.1f*). The vireos were over 426 ft and 738 ft from I-5.

Belding's savannah sparrow SE
Passerculus sandwichensis beldingi

The Belding's savannah sparrow is resident to coastal salt marshes from Santa Barbara County to northern Baja California. In 2006, 32 coastal salt marshes were surveyed and 3,139 breeding territories were identified in 2006. Surveys within the I-5 BSA, within Belding's savannah sparrow habitat were completed during the spring of 2005 and reported sightings during light-footed clapper rail were also noted. In addition, the CDFW provided the results of their surveys for Belding's savannah sparrows at Buena Vista Lagoon for 2005. Belding's savannah sparrows were found in Los Peñasquitos, San Dieguito, San Elijo, Batiquitos, and Buena Vista Lagoons (*Figures 3-20.1b* through *3-20.1f*). Additional surveys were completed at San Dieguito in 2006 that identified more Belding's savannah sparrows in the northeastern portion of the BSA (*Figure 3-20.1c*).

Southwestern willow flycatcher FE/SE
Empidonax trailli extimus

The southwestern willow flycatcher is listed as State and federally endangered. This subspecies is an uncommon spring and fall migrant and a very rare summer resident. It is found among trees or large shrubs throughout San Diego County. Nesting is restricted to willow thickets in riparian woodland; the local breeding population in San Diego County is now extremely small. Its diet consists of berries, insects, and some seeds. It feeds by hovering and gleaning, and nests are commonly parasitized by brown-headed cowbirds. Willow flycatchers arrive in southern California later in the spring than do other breeding migratory passerines. They usually arrive about mid-May, but individuals have been documented as early as the first part of May. Surveys for the southwestern willow flycatcher were completed in the riparian habitat in the San Luis Rey River after one was heard vocalizing during a wetland survey. However, subsequent surveys did not detect the southwestern willow flycatcher again. It is likely that the bird detected was migrating through the area at the time. No other suitable habitat is present within the BSA. The San Elijo Lagoon Conservancy has records of migrant southwestern willow flycatchers at San Elijo Lagoon outside the BSA.

Tidewater goby FE/SSC
Eucyclogobius newberryi

The tidewater goby is listed as endangered by the USFWS and is a CDFW SSC. This small, nondescript fish is endemic to coastal lagoons and lower stream reaches in brackish to fresh, slow moving to still, but not stagnant water. The substrate usually consists of sand and mud, with abundant emergent and submerged vegetation. It feeds on aquatic insects and small crustaceans. The tidewater goby is thought to be a good indicator of the health of small lagoon ecosystems because of their sensitivity to habitat degradation through fresh water supply diversion, pollution, and siltation that often accompanies urban development. Its low mobility, restricted habitat, and short lifespan make it vulnerable to destruction by human disturbance. Decline of this species is probably due to the effects of lowering and eliminating flows in lower reaches of coastal streams; water pollution, particularly by sewage; and filling and channelization of streams. In San Diego County, the tidewater goby has been recorded from San Mateo Creek, San Onofre Creek, Las Pulgas Creek, Agua Hedionda Lagoon, and Buena Vista Lagoon. No other tidewater gobies were observed during fisheries surveys at San Elijo, Batiquitos, and Agua Hedionda Lagoons. Due to the large size, depth, and numbers of predatory fish in the lagoons, tidewater goby are not anticipated within the study area at any of the six lagoons. Tidewater goby were recently discovered in the San Luis Rey River and are presumed extant.

Tidewater goby surveys were completed in 2012 at Batiquitos and Buena Vista Lagoons at the request of the USFWS. There was no suitable habitat for tidewater goby at Batiquitos Lagoon within the BSA; and no tidewater goby were identified in protocol surveys at Buena Vista Lagoon.

Southern steelhead trout – Southern ESU FE/SSC
Oncorhynchus mykiss

Steelhead trout were historically found from Alaska to Baja California, Mexico; southern steelhead trout used coastal drainages from south of San Francisco Bay to Baja California. Urbanization and alteration of the streams from the headwaters to the coast are the major factors affecting the steelhead populations. Water diversions, riparian habitat loss, sediment loads within the streams, and introduced predators are also threats to the steelhead.

The NOAA fisheries listed the southern steelhead trout (within the southern California steelhead evolutionarily significant unit [ESU]) as endangered. Malibu Creek was the southernmost extent of the listed steelhead population in 1997. NOAA fisheries proposed to extend the range of the endangered steelhead to include the population in San Mateo Creek. Steelhead trout were discovered in San Mateo Creek in 1999. In 2002, the range of the southern California steelhead ESU was extended to Baja, Mexico. In May 2007, a steelhead trout was reported by CDFW personnel in the lower San Luis Rey River.

Critical Habitat

Critical habitat for the least Bell's vireo, southwestern willow flycatcher, western snowy plover, tidewater goby, and the California gnatcatcher occurs within the BSA (*Figures 3-21.1a* through *3-21.1d*). Critical habitat for the southwestern willow flycatcher and least Bell's vireo within the BSA occurs along the San Luis Rey River near the I-5 / SR-76 Interchange. Critical habitat for the western snowy plover occurs adjacent to the BSA at San Elijo Lagoon. Tidewater goby

critical habitat occurs along the San Luis Rey River within the BSA. Critical habitat for the California gnatcatcher occurs within CSS around San Elijo Lagoon, Batiquitos Lagoon, Lawrence Canyon, and near the Center City Golf Course in Oceanside. A lagoon-specific listed species summary is provided for each lagoon below.

Los Peñasquitos Lagoon

Sensitive species known from the vicinity include Belding's savannah sparrow, western snowy plover (for which critical habitat is located at the coast line of the lagoon), light-footed clapper rail, and coastal California gnatcatcher. Tidewater goby are unlikely to occur in Los Peñasquitos Lagoon due to lagoon size, number of lagoon predators, and distance from known populations of this fish. No further evaluation of this fish is provided for this lagoon.

San Dieguito Lagoon

Sensitive plant and animal species with potential to occur at San Dieguito Lagoon include Belding's savannah sparrow, light-footed clapper rail, western snowy plover (with associated proposed critical habitat), California least terns, and coastal California gnatcatchers. Tidewater goby are unlikely to occur in the San Dieguito lagoon due to high flows in the river channel, distance from the mouth of the estuary, and the large number of predators within the lagoon. In addition, monitoring of fish populations associated with the SONGS mitigation has not identified any tidewater goby. Therefore, no further evaluation of this fish is provided for this lagoon.

San Elijo Lagoon

Light-footed clapper rail have been detected in the cattails east of I-5, as well as in one location west of the I-5 bridge. Belding's savannah sparrows have been identified in the pickleweed west of and adjacent to I-5. Coastal California gnatcatchers have been observed on the fill slopes on both sides of I-5, and critical habitat for this species is located at the lagoon. Critical habitat for snowy plover is located in the eastern basin, approximately 400 feet east of I-5.

Batiquitos Lagoon

Five listed species are known to occur at Batiquitos Lagoon in the vicinity of I-5. Three pairs of threatened coastal California gnatcatchers were identified on the south-facing northern slopes of Batiquitos Lagoon. One pair was identified on the fill slope on the northwestern side of I-5. Federal and State-listed light-footed clapper rail have been identified in the vicinity of I-5 to the northwest, north, and southeast. State-listed Belding's savannah sparrows have been observed on the eastern side of I-5. In addition, there is a large nesting area easterly of I-5 that is used by both the endangered California least tern and the western snowy plover.

Tidewater goby surveys were completed within the biological survey area (within a 500 ft radius of I-5) in 2012, and no appropriate habitat and no tidewater goby were detected. Tidewater goby are unlikely to occur in Batiquitos Lagoon due to high flows in the river channel, distance from the mouth of the estuary, and the large number of predators within the lagoon.

Agua Hedionda Lagoon

Sensitive bird species with potential to occur at Agua Hedionda Lagoon include Belding's savannah sparrow, light-footed clapper rail, and coastal California gnatcatcher; however, no point locations in close proximity to I-5 have been recorded for these species at the lagoon due to lack of appropriate habitat near I-5. Based on review of the current depth and open nature of the lagoon and large number of predators in the lagoon, tidewater goby is considered unlikely to occur.

Buena Vista Lagoon

Wildlife in Buena Vista Lagoon consists primarily of small mammals and birds, with potentially sensitive species presence including light-footed clapper rail and Belding's savannah sparrow. The light-footed clapper rail is known to nest in cattails within the lagoon. Belding's savannah sparrows also nest within the lagoon, but are not found adjacent to I-5 due to the limited amount of appropriate habitat. Striped mullet (*Mughil cephalus*) were the only native fish species identified in the lagoon during sampling in 2003 (Everest 2004). This fish is neither threatened nor endangered and is not a special status species. Although the tidewater goby has been previously recorded at Buena Vista Lagoon, the presence of the tidal weir lowers expectation of their current presence. Previous sampling for the tidewater goby has not detected the species; and sampling in 2012 within 500 ft of I-5 did not detect any tidewater goby.

3.21.3 Environmental Consequences

There would be both permanent and temporary impacts to threatened and endangered species as a result of the four build alternatives. Impacts that are common to all four build alternatives are summarized below. Impacts specific to each of the four build alternatives also are discussed below.

California least terns and western snowy plovers were identified foraging within the lagoons at certain times of the year. No nesting areas for either of these species would be directly impacted. However, there are least tern/snowy plover nesting areas relatively close to where construction would be completed at San Dieguito and Batiquitos Lagoons. Construction noise and activities may affect birds nesting at these sites. In addition, night lighting due to construction related activities may result in potential adverse effects on breeding behaviors of sensitive species.

Widening of I-5 over the San Luis Rey River would require widening the existing bridge. All four build alternatives have the same impact footprint in this area. The existing bent would likely be extended for the widening on the edge of the channel. This would impact steelhead trout habitat; however, there would still be a relatively deep open water channel under I-5 after construction is completed. Therefore, the project would not impact movement of steelhead trout within the San Luis Rey River during or after construction. Avoidance practices and conservation measures are proposed below to minimize any temporary impacts to steelhead trout during construction.

There would be a similar impact to potential habitat for tidewater goby from the widening of the bents at the San Luis Rey River and temporary impacts to habitat during construction.

Critical Habitat

Designated critical habitat for the least Bell's vireo, southwestern willow flycatcher, tidewater goby, and the California gnatcatcher all fall within the project footprint of the four build alternatives (*Figures 3-21.1a* through *3-21.1d*). The least Bell's vireo and southwestern willow flycatcher habitat is near the San Luis Rey River (*Figure 3-21.1d*). Much of the critical habitat shown on the maps is in areas that are currently developed or vegetated with ornamental vegetation such as ice plant and they do not have the primary constituent elements of critical habitat. Permanent impacts to 0.03 ac of least Bell's vireo and southwestern willow flycatcher critical habitat with primary constituent elements would occur. An additional 0.25 ac of

southwestern willow flycatcher and 0.20 ac of least Bell's vireo critical habitat would temporarily be impacted during construction. Following construction (including the removal of the old loop ramp, and construction of a park and ride and connection to the existing bike trail) the habitat would be restored. The existing ornamental and disturbed habitat near the San Luis Rey River would be revegetated with southern willow scrub near the river and with coastal sage scrub between the park and ride and wetland habitat as a buffer. All temporary impacts in flycatcher and vireo critical habitat areas would be revegetated with southern willow scrub.

Tidewater goby critical habitat occurs along the San Luis Rey River in a location similar to the vireo and flycatcher critical habitat. Construction of any of the build alternatives at the San Luis Rey Bridge would temporarily impact about 0.2 ac of goby critical habitat, and permanent footings in the river would permanently impact approximately 500 square ft of critical habitat with primary constituent elements. An additional 1.55 ac of proposed critical habitat that does not have primary constituent elements for goby also would be impacted.

Critical habitat coverage for the coastal California gnatcatcher includes the freeway, the lagoons, and other habitats that do not exhibit primary constituent elements (*Figures 3-21.1a* through *3-21.1d*). To determine permanent impacts to critical habitat for the coastal California gnatcatcher, only those upland habitats with the primary constituent elements were counted, including approximately 31.7 ac for the 8+4 Buffer alternative, 33.47 ac for the 10+4 Buffer alternative, 34.28 ac for the 8+4 Barrier alternative, and 37.3 ac for the 10+4 Barrier alternative. No critical habitat for the coastal California gnatcatcher would be impacted by the No Build alternative.

Noise Effects on Wildlife

Increased levels of noise have the potential to affect behavioral and physiological responses in noise sensitive wildlife receptors. Adverse responses to increased noise may include hearing loss or the temporary masking of vocalizations used in communication during the breeding season, nest abandonment, and decreased predator awareness, thereby resulting in a decrease in the reproductive and overall fitness of certain animal species. Increased noise from roadway traffic has the potential to create a situation of long-term hearing loss in wildlife species, while the periodic, point-source noise impacts typically associated with construction activities would result in short-term effects to wildlife species.

A study of the ambient noise and predicted noise levels after completion of the project was completed for each lagoon. Because the noise levels for the four build alternatives are similar, the potential long-term indirect effects of noise are based on the 10+4 Buffer alternative for future noise levels.

Bird species utilize sound, in the form of a variety of vocalizations (e.g., mating calls, contact notes, etc.), throughout their daily activities and, therefore, are the focus of the potential effects analysis of this study. Bird species associated with the BSA include the California least tern, western snowy plover, least Bell's vireo, light-footed clapper rail, southwestern willow flycatcher, and Belding's savannah sparrow—all species associated with the wetland/riparian areas within and adjacent to the coastal lagoons along the I-5 corridor. This analysis also addresses potential effects to the coastal California gnatcatcher, an upland bird species, in suitable habitat that occurs between the I-5 corridor and the coastal lagoons.

Temporary increases in noise levels from construction-related activities are considered a direct impact to wildlife. Noise and vibration would vary with distance from construction and elevation below the freeway.

Long-term increases in noise levels from the completed project may affect wildlife species and, therefore, could be considered an indirect effect to sensitive wildlife species. The study corridor is already relatively noisy due to the eight lanes of traffic on I-5 and local traffic throughout the corridor. Ambient noise levels in the lagoons vary with distance from the freeway and elevation below the freeway. Fill slopes are not as loud as cut slopes, but traffic noise is still apparent. Ambient noise ranges from as high as 84 dBA L_{eq} (one-hour average) on the slopes next to the main lanes at San Elijo Lagoon to the mid 60s in the lagoon. The 60-dBA point is approximately 500 ft from the freeway.

There is no single standard or threshold for determining significant noise effects on all bird species. Prior studies that have indicated a possible noise effect threshold for certain species of songbirds have not been scientifically shown to be valid for those species addressed in this report. Therefore, the existing ambient noise levels within the BSA were compared to the predicted noise levels associated with the proposed future vehicle traffic over the five coastal lagoons along the I-5 corridor. The results for each lagoon are discussed in the lagoon impacts below.

Indirect Effects

Indirect impacts to threatened and endangered species can result from increased lighting, increased exposure to invasive species, edge effects, and increased potential for pollution from runoff, as well as long term increases in noise. I-5 is already at least eight lanes in width throughout the project and as such already has had an effect of increased lighting at night, increased access from invasive species as well as bisecting habitats that could result in the edge effects. The remainder of the corridor has experienced development that has further encroached on the habitats. All four build alternative, therefore, would have incremental increases to indirect effects already affecting the habitat from the current configuration of I-5. Indirect effects such as increased dust, lighting, invasive species, and noise would be minimized through the conservation measures listed in *Section 3.17.3*. For the No Build alternative, some of the projects that would go forward may have indirect effects to habitats adjacent to I-5, but would be limited in comparison to the four build alternatives. There is also a potential for construction-related noise impacts to both bird and fish species from pile driving during bridge footing construction at the abutments (the foundation upon which the bridge rests). The reader is referred to *Section 3.17.3* for discussion.

10+4 Barrier

The 10+4 Barrier alternative would permanently impact six Del Mar manzanita plants *(Table 3.21.2)*. No temporary impacts to this plant would occur under this alternative.

The 10+4 Barrier alternative would permanently impact portions of 12 to 15 coastal California gnatcatcher territories (*Table 3.21.2*). The majority of the coastal California gnatcatchers that would be impacted are on the slopes immediately adjacent to San Dieguito, San Elijo, and Batiquitos Lagoons. Portions of the same territories would also be temporarily impacted by construction of this alternative. This alternative would also both temporarily and permanently impact two Belding's savannah sparrow territories.

The 10+4 Barrier alternative would permanently impact the territory of one pair at Batiquitos Lagoon and of one individual light-footed clapper rail at San Elijo Lagoon. In addition, portions of four light-footed clapper rail territories would be temporarily impacted by the 10+4 Barrier alternative (*Figures 3-20.1b* and *3-20.1d* through *3-20.1f*).

Least Bell's vireo and southwestern willow flycatcher were identified within the BSA; however, no nesting areas would be impacted by this project. Some southern willow scrub habitat that may be used by these species as they migrate through to their nesting grounds would be impacted. Approximately 0.26 ac of southern willow scrub and 1.55 ac of disturbed southern willow scrub would be permanently impacted by the 10+4 Barrier alternative (*Table 3.17.1*). The majority of this habitat is disturbed and in small patches unlikely to be used by these two species.

Table 3.21.2: Threatened and Endangered Species Impacted by the Four Alternatives

Species	10+4 Barrier	10+4 Buffer	8+4 Barrier	8+4 Buffer
Del Mar manzanita, Permanent	6 plants	6 plants	6 plants	6 plants
Light-footed clapper rail, Permanent	1 pair, Batiquitos; 1 territory, San Elijo	1 pair, Batiquitos	1 pair, Batiquitos; 1 territory, San Elijo	1 pair, Batiquitos
Light-footed clapper rail, Temporary	2 territories, San Elijo; 1 territory, Batiquitos; 1 individual, Buena Vista	2 territories, San Elijo; 1 territory, Batiquitos; 1 individual, Buena Vista	1 territory, San Elijo; 1 territory, Batiquitos; 1 individual, Buena Vista	1 territory, San Elijo; 1 territory, Batiquitos; 1 individual, Buena Vista
Coastal California gnatcatcher, Permanent	1 territory, Genesee; 3-4 territories, San Dieguito; 4-6 territories, San Elijo; 4 territories, Batiquitos	1 territory, Genesee; 3-4 territories, San Dieguito; 4-6 territories, San Elijo; 4 territories, Batiquitos	1 territory, Genesee; 3-4 territories, San Dieguito; 4-6 territories, San Elijo; 4 territories, Batiquitos	1 territory, Genesee; 3-4 territories, San Dieguito; 4-6 territories, San Elijo; 4 territories, Batiquitos
Belding's savannah sparrow, Permanent	2 territories, Batiquitos	1 territory, Batiquitos	1 territory, Batiquitos	1 territory, Batiquitos
Belding's savannah sparrow, Temporary	1 territory, Batiquitos; 1 territory, San Elijo	1 territory, Batiquitos	1 territory, Batiquitos	1 territory, Batiquitos

10+4 Buffer

The 10+4 Buffer alternative would permanently impact six Del Mar manzanita plants *(Table 3.21.2)*. No temporary impacts to this plant would occur under this alternative.

The 10+4 Buffer alternative would permanently impact portions of the territories of 12 to 15 coastal California gnatcatcher territories (*Table 3.21.2*). The majority of the coastal California gnatcatchers that would be permanently impacted are on the slopes immediately

adjacent to San Dieguito, San Elijo, and Batiquitos Lagoons. Portions of the same territories would also be temporarily impacted by construction of this alternative.

The 10+4 Buffer alternative would permanently impact the territory of one individual Belding's savannah sparrow at Batiquitos Lagoon. A second territory of an individual Belding's savannah sparrow would be temporarily impacted at Batiquitos Lagoon. The 10+4 Buffer alternative would permanently impact the territory of one pair of light-footed clapper rail at Batiquitos Lagoon. In addition, portions of four light-footed clapper rail territories would be temporarily impacted by this alternative (*Table 3.21.2*).

There is no known occupied nesting habitat for the least Bell's vireo or southwestern willow flycatcher within the 10+4 Buffer impact areas. Some southern willow scrub habitat that may be used by these species as they migrate through to their nesting grounds would be impacted. Approximately 0.26 ac of southern willow scrub and 1.31 ac of disturbed southern willow scrub would be permanently impacted by the 10+4 Buffer alternative (*Table 3.17.1*). The majority of this habitat is disturbed and in small patches unlikely to be used by these two species.

8+4 Barrier

The 8+4 Barrier alternative would permanently impact six Del Mar manzanita plants. No temporary impacts to this plant would occur under this alternative.

The 8+4 Barrier alternative would permanently impact portions of the territories of 12 to 15 coastal California gnatcatcher territories (*Table 3.21.2*). The majority of the coastal California gnatcatchers that would be impacted are on the slopes immediately adjacent to San Dieguito, San Elijo, and Batiquitos Lagoons. Portions of the same territories would also be temporarily impacted by construction of this alternative.

This alternative would also permanently impact the territory of one individual Belding's savannah sparrow and temporarily impact the territory of a second individual. The 8+4 Barrier alternative would permanently impact the territory of one pair at Batiquitos Lagoon and one individual territory of light-footed clapper rail at San Elijo Lagoon. In addition, portions of three light-footed clapper rail territories would also be temporarily impacted by the 8+4 Barrier alternative (*Figures 3-20.1a* through *3-20.1e*).

Least Bell's vireo and southwestern willow flycatcher were identified within the BSA; however, no nesting areas would be impacted by this project. Some southern willow scrub habitat that may be used by these species as they migrate through to their nesting grounds would be impacted. A total of 0.26 ac of southern willow scrub and 1.36 ac of disturbed southern willow scrub would be permanently impacted by the 8+4 Barrier alternative (*Table 3.17.1*). The majority of this habitat is disturbed and in small patches unlikely to be used by these two species.

8+4 Buffer (Preferred Alternative)

The 8+4 Buffer alternative would permanently impact six Del Mar manzanita plants *(Table 3.21.2)*. No temporary impacts to this plant would occur under this alternative.

The 8+4 Buffer alternative would permanently impact portions of the territories of 12 to 15 coastal California gnatcatcher territories (*Table 3.21.2*). The majority of the coastal California gnatcatchers that would be impacted are on the slopes immediately adjacent to San

Dieguito, San Elijo, and Batiquitos Lagoons. Portions of the same territories would also be temporarily impacted by construction of this alternative.

The 8+4 Buffer alternative would also permanently impact the territory of one individual Belding's savannah sparrow, and would temporarily impact portions of a second territory. The 8+4 Buffer alternative would permanently impact the territory of one pair of light-footed clapper rail at Batiquitos Lagoon (*Table 3.21.2*). In addition, portions of three light-footed clapper rail territories would also be temporarily impacted by the 8+4 Buffer alternative (*Figures 3-20.1a* through *3-20.1e*).

Least Bell's vireo and southwestern willow flycatcher were identified within the BSA; however, no nesting areas would be impacted by this project. Some southern willow scrub habitat that may be used by these species as they migrate through to their nesting grounds would be impacted. Approximately 0.26 ac of southern willow scrub and 1.25 ac of disturbed southern willow scrub would be permanently impacted by the 8+4 Buffer alternative (*Table 3.17.1*). The majority of this habitat is disturbed and in small patches unlikely to be used by these two species.

No Build

The majority of the projects that would likely go forward under the No Build alternative would not have impacts to threatened and endangered species. However, the I-5 / Manchester Avenue Interchange Project, the I-5 / SR-78 Interchange Project, and I-5 / Genesee Avenue Interchange Improvements Project may impact some habitat for light-footed clapper rail and/or coastal California gnatcatcher. No impacts to endangered plants are anticipated under the No Build alternative.

Lagoon Communities Summary

The following information pertains to environmental consequences in each lagoon for listed species from implementation of the refined 8+4 Buffer alternative (Preferred Alternative). Indirect impacts for each lagoon would be similar. *Table 3.17.4* contains a summary of permanent impacts by construction phase and time period; *Tables 3.17.5* through *3.17.10* are matrices that detail benefits of the refined 8+4 Buffer alternative over the project proposed in the Draft EIR/EIS, with specifics noted for jurisdictional waters effects, etc.

Los Peñasquitos Lagoon

No federally or State-listed threatened or endangered species have been identified within the I-5 construction footprint at Los Peñasquitos Lagoon. Coastal California gnatcatcher were not observed within the vicinity during protocol surveys, and no western snowy plover nesting areas or foraging habitat are present in the project impact footprint or vicinity. No direct impacts to these species are anticipated. Belding's savannah sparrow and light-footed clapper rail occur in the lagoon west of the I-5 / SR-56 interchange; however, no wetlands would be permanently impacted and minimal construction would occur in the vicinity. All known clapper rail and Belding's savannah sparrow locations are over 1000 ft from the proposed Sorrento Valley Road bike bridge. Clapper rail have also been identified upstream of I-805 on Los Peñasquitos Creek; however, the proposed project would not impact the creek and known locations are approximately 480 ft from the anticipated work (as well as being on the east side of northbound I-5 and I-805 from the work to be done). No effects to light-footed clapper rail are anticipated.

San Dieguito Lagoon

Saltmarsh habitat that potentially supports the State-listed endangered Belding's savannah sparrow and CSS that supports federally listed threatened coastal California gnatcatcher would be impacted by widening of I-5 at San Dieguito Lagoon. Although Belding's savannah sparrow occurs in the adjacent SONGS salt marsh habitat, none has been observed in the project impact footprint. Similarly, least tern and western snowy plover nesting areas are nearby I-5 but not within the anticipated impact footprint. Light-footed clapper rail were not observed within the project impact footprint or vicinity during protocol surveys. Portions of territories associated with four pairs of coastal California gnatcatcher and one single male may be impacted due to construction of wider fill slopes.

With respect to potential project operational noise, under existing conditions, noise in excess of 70 dBA occurs over various amounts of wetland and upland habitats that either support, or have the potential to support, special status bird species at coastal lagoons in the North Coast Corridor. Although population numbers have undergone natural fluctuations over the years, these species continue to forage, nest, breed, and otherwise consistently occur within suitable habitat during the breeding season in areas subjected to a wide range of noise levels. Specifically at San Dieguito Lagoon, long-term noise studies identified the loudest existing noise level at 66 dBA L_{eq}, with a predicted future noise level at the same location of 68 dBA L_{eq}, indicating an anticipated increase of 2 dBA. This 2 dBA increase was predicted at three noise sampling locations, with similar increases of 2 to 3 dBA likely across the entire open lagoon area. Within the project vicinity, three species are specifically known: California least tern, Belding's savannah sparrow, and coastal California gnatcatcher. A majority of the documented locations of the Belding's savannah sparrows east of I-5 (6 of the total 10 locations) and coastal California gnatcatcher west of I-5 (8 of the total 11 locations), occurs within the existing 66 dBA L_{eq} noise contour. The Belding's savannah sparrow population west of I-5 occurs in between the existing 56 and 62 dBA L_{eq} contours, and is not subject to the relatively higher noise levels on the eastern side. This is due primarily to the distribution of suitable habitat and naturally sound-attenuating geographic features of the landscape. Regardless, the predicted relative noise increase for these individuals west of I-5 is also approximately 2 dBA.

San Elijo Lagoon

I-5 improvements would result in impacts to portions of four coastal California gnatcatcher territories. The permanent area of effect would not impact Belding's savannah sparrow or light-footed clapper rail habitat. Temporary impact areas and construction noise, however, may have an adverse effect on these two species. Construction noise impacts to wildlife (including both fish and bird species) in San Elijo Lagoon also may occur due to the need for pile driving during bridge falsework construction. Impacts to species and habitats would be mitigated as discussed in *Section 3.17.3* of this document.

Ambient noise levels measured in varying locations at San Elijo Lagoon were between 60 and 67 dBA. Future noise level increases during the noisiest hour at most receptor points are projected to be 1 to 3 dBA, with an increase in traffic-related noise over the entire lagoon of approximately 2 dBA. Noise at Receptor 5 in San Elijo Lagoon would decrease by 1 dBA due to the widening of I-5 closer to intervening topography, and would result in roadway noise being somewhat attenuated or deflected by an abutting steep slope. This increase in overall noise may have an adverse effect on some wildlife species. As described elsewhere in this chapter, however, it should be noted that although population numbers have undergone natural

fluctuations over the years, species have continued to consistently forage, nest, and breed, within suitable habitat in areas subjected to a wide range of noise levels (including noise in excess of 70 dBA). Indirect effects such as increased dust, lighting, invasive species, pollutant discharge, and noise would be minimized through the conservation measures identified in *Section 3.17.3*.

Batiquitos Lagoon

One pair of federal and State-listed light-footed clapper rail has been identified within the permanent impact footprint northeast of I-5. One additional pair has been identified in the temporary impact area. Portions of four territories of coastal California gnatcatcher using existing cut slopes of I-5 also would be impacted. Portions of the habitat of at least one pair and one individual of Belding's savannah sparrow would be permanently impacted by the project. Nesting areas used by California least tern and western snowy plover are approximately 250 feet east of the project impact area. There would be no direct permanent impacts to these species; however, there would be potential noise impacts during construction. Impacts to species and habitats would be mitigated as discussed in *Section 3.17.3*.

The documented special status species locations for Batiquitos Lagoon are all relatively close to the I-5 corridor and are located within or adjacent to the existing 66 dBA L_{eq} noise contour. The future traffic noise is projected to be 2 dBA higher, in general, across the entire lagoon. As a result, the majority of the least tern nesting area east of I-5 would experience an increase of 2 dBA over existing conditions, which range from 58 to 64 dBA. Least terns nesting on the western end of the nesting area may be more likely to be adversely affected than those located farther east. Regardless, as described for San Dieguito Lagoon, it should be noted that although population numbers have undergone natural fluctuations over the years, species have continued to consistently forage, nest, and breed, within suitable habitat in areas subjected to a wide range of noise levels (including noise in excess of 70 dBA).

Agua Hedionda Lagoon

There are no known federally or State-listed threatened or endangered species within the I-5 construction footprint or proximity at Agua Hedionda Lagoon; therefore, associated direct impacts are not anticipated.

Similar to the other lagoons, project noise modeling indicates a projected I-5-related noise increase of approximately 2 dBA over a majority of the lagoon, with some portions of the lagoon subject to an increase of up to 3 dBA. No known sightings of any of the special status bird species addressed in this study have occurred at Agua Hedionda Lagoon, however, and indirect impacts to these species are not expected. In addition, I-5 is currently eight lanes in width across the lagoon, and combined with surrounding urban development, results in an existing condition that includes night lighting, invasive species, bisection of habitats, and generation/discharge of urban pollutants. As such, a build alternative would result in only incremental increases to indirect effects already occurring to the minimal native habitat near the lagoon. Indirect effects such as increased dust, lighting, invasive species, and noise would be minimized through the conservation measures identified in *Section 3.17.3*. There is also a potential for construction-related noise impacts to both bird and fish species from pile driving during bridge footing construction at the abutments (the foundation upon which the bridge rests). The reader is referred to *Section 3.17.3*.

Buena Vista Lagoon

Based on surveys to date, a portion of the territory of one pair of clapper rail may be temporarily impacted during construction on the west side of the west- to southbound on-ramp from SR-78 to I-5. Direct impacts to each of these species would be mitigated as described in *Section 3.17.3*. The lack of Belding's savannah sparrow habitat within the I-5 construction footprint eliminates the potential for direct impact to this species. No tidewater goby were identified in 2012 protocol surveys at Buena Vista Lagoon.

The ambient noise levels measured within the lagoon ranged from 63 to 64 dBA. With respect to indirect noise impacts in particular, the anticipated future increase in traffic volumes on I-5 combined with the proposed wider footprint of the facility, would result in an increase of approximately 2 dBA across the lagoon. As described elsewhere in this section, however, it should be noted that although population numbers have undergone natural fluctuations over the years, species have continued to consistently forage, nest, and breed, within suitable habitat in areas subjected to a wide range of noise levels (including noise in excess of 70 dBA). Regardless, most of the sensitive species are located a relatively long distance from the freeway, with a correspondingly lessened sensitivity to a 2 dBA increase in noise. Documented special status bird species with known locations that could be affected include four locations of the light-footed clapper rail (two within the current 62 dBA L_{eq} noise contour, and two within the 56 dBA L_{eq} noise contour), and eight locations of Belding's savannah sparrow (all within, or in close proximity to, the 58 dBA L_{eq} noise contour). Although not expected to nest within the lagoon study area, other sensitive species whose habitat occurs within the lagoon habitat potentially affected by the increased traffic noise include the western snowy plover and California least tern. These species have been documented in the vicinity of the lagoon and may forage over the open water of the lagoon, with an associated potential to be affected by increased noise.

3.21.4 Avoidance, Minimization, and/or Mitigation Measures

Avoidance has been an ongoing design goal throughout project development, starting with the identification of four build alternatives of varying width. Since circulation of the Draft EIR/EIS, the smallest of the four build alternatives (the refined 8+4 Buffer alternative) was identified as the locally preferred alternative in the August 2012 Supplemental Draft EIR/EIS, and is now identified as the Preferred Alternative. As the smallest of the potential build alternatives, efforts at minimization and avoidance of threatened and endangered species, as possible, would continue through final design.

Locations of the endangered Del Mar manzanita have been identified and avoided to the maximum extent practicable. Some of the Del Mar manzanita individuals are growing immediately adjacent to brow ditches that would require reconstruction for proper slope drainage and in those areas the plants could not be avoided. These plants would likely be salvaged and placed in a compensatory mitigation site for the project.

Caltrans has coordinated with NMFS. A request for an informal consultation on steelhead trout was sent to the NMFS on October 24, 2012. An initial response provided on December 12, 2012 opened a dialogue, with Caltrans providing additional information on January 3, 2013. Conversations with NMFS staff on March 25 and 28, 2013 led to submittal of additional information on April 16, 2013. NMFS concurred that the project may affect, but is not likely to

adversely affect, steelhead or their habitat with the incorporation of appropriate design features and avoidance, minimization, and/or mitigation measures, which have been incorporated into the measures below. NMFS concluded informal Section 7 consultation in accordance with 50 CFR 402.13 on May 16, 2013. See also *Chapter 5* of this Final EIR/EIS.

The REMP discussed in *Section 3.17* would be implemented to mitigate for impacts to sensitive habitats, plants, and wildlife including listed species. The REMP has been developed to identify compensatory mitigation opportunities to address these unavoidable impacts, and to implement projects that benefit existing natural resources that exceed standard ratio-based compensatory mitigation programs.

The following are proposed measures to minimize impacts to threatened and endangered species during construction. Additional measures associated with habitats and overall construction are listed in *Section 3.17.3*, with a full listing and all details in the project ECR.

- Because the project is expected to be phased over approximately 21 years, Caltrans would conduct updated surveys for the gnatcatcher, rail, and manzanita within one year prior to the commencement of vegetation clearing and construction activities for each project phase to ensure that survey information remains up to date. FHWA and Caltrans acknowledge that Section 7 consultation would be reinitiated if survey results indicate that additional impacts to these species may occur beyond those addressed in the project Biological Opinion.

- Prior to construction equipment entering open water habitat in the San Luis Rey River, all gobies within the project impact footprint would be captured and relocated to a proximal and safe location, and gobies would be excluded from re-entering the project impact footprint. Caltrans would submit a goby capture, relocation, and exclusion plan to the USFWS for review and approval. The plan would include relocation of native species and removal of non-native species captured with gobies during the relocation effort. Capture methods would follow commonly accepted techniques for fish capture such as seining. The plan would be prepared and implementation would be overseen by a USFWS-approved biologist knowledgeable of goby biology and ecology.

- Prior to construction in areas with manzanita, all manzanita in the project impact footprint (including the approximately six individuals currently known and any other individuals found in updated surveys) would be salvaged and translocated to the Dean property, which is near the currently known salvage locations. Caltrans would submit a manzanita translocation plan to the USFWS for review and approval. The plan would be prepared and implementation would be overseen by a USFWS-approved biologist knowledgeable of manzanita biology and ecology and translocating sensitive plant species. There has been limited success with translocation of this species; therefore, seed would be collected prior to impacts and used to propagate additional plants at a facility that has experience working with manzanita and specializes in the propagation of native plants. The manzanita plants grown from seed also would be planted at the Dean property. A field review would be conducted with the USFWS to review and approve the locations for planting of manzanita plants on the Dean property. The translocated manzanita population would be monitored for a minimum of five years to document success or failure of the translocation efforts.

- The clearing and grubbing of native wetland and riparian habitats would occur between September 16 and March 14 and the clearing and grubbing of native upland habitats for the project would occur between September 1 and February 14, to avoid the rail and gnatcatcher breeding seasons, respectively (or sooner than September 16 or September 1, if a biologist knowledgeable of gnatcatcher and rail biology and ecology approved by the USFWS demonstrates to the satisfaction of the USFWS that all rail or gnatcatcher nesting is complete). Caltrans would submit the biologist's name, address, telephone number, and work schedule on the project to the USFWS at least five working days prior to initiating project impacts.

- Pile driving for bridge construction near the lagoons and San Luis Rey River would be completed between September 16 and February 14 to minimize construction noise impacts to rail and gnatcatcher breeding. Pile driving may commence earlier in the fall if a biologist knowledgeable of gnatcatcher and rail biology and ecology approved by the USFWS demonstrates to the satisfaction of the USFWS that all rail and gnatcatcher breeding is complete within the area where construction noise would exceed ambient levels as a result of pile driving. Caltrans would submit the biologist's name, address, telephone number, and work schedule on the project to the USFWS at least five working days prior to initiating project impacts.

- In-water construction activities at the San Luis Rey River would take place outside of the steelhead migration window when steelhead adults and juveniles are expected to be using the lower reach of the San Luis Rey River.

- Silt curtains, coffer dams, and/or other barriers would be used to prevent steelhead from entering the construction zone and prevent sedimentation and debris from entering the river.

- Best management practices would be implemented during construction to minimize impacts on steelhead and aquatic habitat in the San Luis Rey River. These include sediment control measures to minimize erosion and impacts to water quality, measures to prevent debris and fresh concrete from entering the river channel, and fueling and maintenance of heavy machinery in areas away from the river channel and sensitive habitats.

- Soundwalls would be installed at the edge of temporary impact areas near sensitive resources where feasible depending on inundation and effective heights required for walls. Soundwalls would not be effective where fill slopes are significantly higher than impact areas.

- All construction equipment used for the project would be equipped with properly operating and maintained mufflers.

- During in-water bridge construction activities at all lagoons and the San Luis Rey River, bubble curtains or other methods to minimize acoustical impacts to aquatic species would be implemented. These measures would be developed in coordination with the resource agencies to mitigate construction noise on fish species as design continues on each of the bridges in each of the phases of construction. Methodology may be different

at different bridges depending on resources present, bridge design, and existing conditions/species.

- If nighttime construction is necessary, all lighting used at night for project construction (e.g., staging areas, equipment storage sites, roadway) would be selectively placed and directed onto the roadway or construction site and away from sensitive habitats. Light glare shields would be used to reduce the extent of illumination into sensitive habitats.

- A USFWS-approved biologist (Biological Monitor) would be on site during: (a) initial clearing and grubbing; and (b) weekly during project construction within 500 ft of off-site gnatcatcher, rail, goby, and manzanita habitat to ensure compliance with all conservation measures. Caltrans would submit the biologist's name, address, telephone number, and work schedule on the project to the USFWS at least five working days prior to initiating project impacts. The contract of the Biological Monitor would allow direct communication with the USFWS at any time regarding the proposed project. The Biological Monitor would be provided with a copy of this consultation. The Biological Monitor and a Caltrans Project Biologist would be available during pre-construction and construction phases to review grading plans, address protection of sensitive biological resources, monitor ongoing work, and maintain communications with the Resident Engineer to ensure that issues relating to biological resources are appropriately and lawfully managed.

- At the bridge construction areas where there is the potential for rail movement under the bridges, fencing would be installed in a manner that would direct rails to the open channel under bridges to the extent feasible.

- A channel large enough for fish movement would be kept open throughout construction within the San Luis Rey River and all of the lagoons. Prior to initiation of construction in those locations, Caltrans would submit a plan to the USFWS for maintaining a channel for fish and/or rail movement in the San Luis Rey River and each of the lagoons.

- Permanent and temporary impacts to gnatcatchers, rails, gobies, manzanita, and critical habitat for the gnatcatcher and goby resulting from the *I-5 NCC Project* would be offset through habitat establishment, restoration, and preservation/enhancement as shown in the REMP. Implementation of these conservation measures would be phased ahead of project impacts. In addition, large-scale lagoon restoration and lagoon management endowments would be implemented to provide additional conservation to offset impacts from the current project, LOSSAN Los Angeles to San Diego rail corridor, and I-5 / SR-78 Interchange Project (with project elements as listed in the REMP).

Due to the length of the project, the sensitive habitats it transverses, and the sensitive species that live along the corridor, there are impacts that could not be avoided and still meet the purpose and need for the project. Compensatory mitigation measures would be used to mitigate for the unavoidable impacts. These measures are described in detail in *Section 3.17.3* and also are fully listed in the project ECR.

3.22 Invasive Species

The 8+4 Buffer alternative has been refined since the Draft EIR/EIS was publically circulated in 2010. This alternative was presented as the locally preferred alternative (LPA) in the August 2012 Supplemental Draft EIR/EIS, and has now been identified as the Preferred Alternative. The refined 8+4 Buffer alternative has the least amount of impact of any build alternative and also meets purpose and need.

3.22.1 Regulatory Setting

On February 3, 1999, President Clinton signed EO 13112 requiring federal agencies to combat the introduction or spread of invasive species in the U.S. 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." FHWA guidance issued August 10, 1999 directs the use of the State's invasive species list, currently maintained by the California Invasive Species Council to define the invasive plants that must be considered as part of the NEPA analysis for a proposed project.

3.22.2 Affected Environment

The slopes of I-5 have varying amounts of invasive species growing on them including pampas grass, ice plant, African fountain grass, and annual species. Recently African veldt grass and onion weed (*Asphodelus fistulosus*) have become increasing problems as they spread along the right-of-way. African veldt grass has become a dominant species on the cut slope of I-5 between Del Mar Heights Road and Birmingham Drive. They are spreading into the habitats around the lagoons as well.

Tamarisk, arundo, castor bean, and fennel are common invasive species within the wetland habitats within the corridor. There are groups working to control these species particularly in the lagoons; however, they are persistent invasive species.

3.22.3 Environmental Consequences

The area already has a number of aggressive invasive species both on the slopes of I-5 and in the wetland habitats. Construction of any of the build alternatives presents the opportunity for these exotic species to spread. The disturbance of ground during construction provides new ground for weeds to germinate. If minimization measures listed below and partnerships are formed, the growth of invasive species may be reduced. The No Build alternative would not disturb any new ground; however, existing invasive species problems would likely become worse through time and species spread.

3.22.4 Avoidance, Minimization, and/or Mitigation Measures

The construction of any of the build alternatives provides an opportunity to control some of the invasive species on the slopes of the project. Through careful handling of the soil and equipment that works the soil, the invasive plants currently within the impact area can be removed. Revegetation of the slopes would require maintenance to keep the weed species from re-invading the new slopes. Partnerships would be required with the lagoon foundations and landowners to simultaneously work to eradicate similar invasive species outside of the impact areas.

There are several invasive weed species already growing within the right-of-way along I-5. Special care would be taken when transporting, using, and disposing of soils with invasive weed seeds. All heavy equipment would be washed and cleaned of debris prior to entering a lagoon area, to minimize spread of invasive weeds.

The REMP and the following specific conservation measures address invasives control. Additional conservation measures for species and compensatory mitigation for the project that could also apply are discussed in *Sections 3.17* and *3.19*. The full suite of measures is also provided in the project ECR.

- Special care would be taken when transporting, using, and disposing of soils with invasive weed seeds. All heavy equipment would be washed and cleaned of debris prior to entering a lagoon area, to minimize spread of invasive weeds.

- Project landscaping would follow the provisions set forth in EO 13112, which mandates preventing the introduction of and controlling the spread of invasive plant species on highway rights-of-way. No invasive species listed in the National Invasive Species Management Plan, the State of California Noxious Weed List, or the California Invasive Plant Council's (Cal-IPC) Invasive Plant Inventory list would be included in the landscaping plans for the proposed project. Landscaping would not use plants that require intensive irrigation, fertilizers, or pesticides adjacent to preserve areas, and water runoff from landscaped areas would be directed away from adjacent native habitats and contained and/or treated within the development footprint.

- *Caulerpa* surveys would be completed before and after construction at each of the lagoons to ensure there is no infestation within the project limits. If *Caulerpa* is found, measures would be implemented to eradicate it from the area.

- Caltrans would submit final project design plans to the USFWS for review and approval, based on the draft plans dated August 22, 2012, with the following revisions: (1) measures, such as the use of fabric weed barriers and mulch, would be incorporated into the design plans to limit the establishment and spread of invasive species along the oleander median; and (2) invasive species would be removed from planting palettes.

3.23 Relationship Between Local Short-Term Uses of the Human Environment and the Maintenance and Enhancement of Long-Term Productivity

The 8+4 Buffer alternative has been refined since the Draft EIR/EIS was publically circulated in 2010. This alternative was presented as the locally preferred alternative (LPA) in the August 2012 Supplemental Draft EIR/EIS, and has now been identified as the Preferred Alternative. The refined 8+4 Buffer alternative has the least amount of impact of any build alternative and also meets purpose and need.

3.23.1 Build Alternatives

Implementation of build alternatives would result in similar effects related to attainment of short-term and long-term transportation and economic objectives at the expense of some long-term social, aesthetic, biological, noise, and other land use impacts. These transportation improvements are based on State and local comprehensive planning, which considers the need for present and future traffic requirements within the context of present and future land use development. Given the I-5 corridor's importance as a transportation corridor, the local short-term impacts and use of resources by the proposed project would be consistent with maintenance and enhancement of long-term productivity for the local area, San Diego region, and State.

Short-term losses associated with the proposed project could include economic losses experienced by businesses affected by relocation, construction impacts such as noise, and motorized and non-motorized traffic delays or detours, as well as short-term construction-related trail detours or closures. Short-term benefits of the project would include increased jobs and revenue generated during construction.

Long-term losses associated with the proposed build alternatives would include residential relocations; an loss of plant and wildlife resources; a permanent visual impact; energy and fuel use; and use of construction materials including concrete, steel, and asphalt. Long-term productivity would include benefits such as the improvement of the transportation network of the region and project vicinity; increased access facilitating economic growth, maintenance, or improvement in future congestion and delay; and preservation and restoration of some biological resources to a level anticipated to give ecological lift to the entire lagoon system within the North Coast Corridor. Additional benefits include regional and community enhancement opportunities for pedestrian and bike trail amenities, which would provide community cohesive features.

3.23.2 No Build Alternative

This alternative would offer none of the gains or have any of the losses listed above. It also would do nothing to resolve worsening congestion on I-5 or local streets whereas an improved I-5 would substantially benefit long-term function on I-5 and is expected to pull some future traffic off local streets (latent demand) as they become increasingly congested under projected conditions. Private funding to provide the regional and community enhancements, as well as the substantial mitigation package proposed as part of the PWP/TREP within the project timeframe, would be unlikely.

3.24 Irreversible and Irretrievable Commitments of Resources that Would be Involved in the Proposed Project

The 8+4 Buffer alternative has been refined since the Draft EIR/EIS was publically circulated in 2010. This alternative was presented as the locally preferred alternative (LPA) in the August 2012 Supplemental Draft EIR/EIS, and has now been identified as the Preferred Alternative. The refined 8+4 Buffer alternative has the least amount of impact of any build alternative and also meets purpose and need.

Some irreversible effects would curtail the range of potential future uses of the environment with either the No Build alternative, or any of the four build alternatives.

Implementation of any of the proposed build alternatives involves a commitment of a range of natural, physical, human, and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment and would preclude conversion to any other future use of this land except for the proposed transportation facility. However, if a greater need arises for the land use or if the highway facility is no longer needed, the land could be converted to another use. At present, there is no reason to believe such a conversion would ever be necessary or desirable.

Considerable amounts of fossil fuels, labor, and highway construction materials such as cement, aggregate, and bituminous material are expended during construction. Additionally, large amounts of labor and natural resources are used in the making of construction materials. These materials are generally not retrievable. However, they are not in short supply and their use would not have an adverse effect upon continued availability of these resources. Construction also would require a substantial one-time expenditure of both State and federal funds, which are not retrievable; savings in energy, time, and a reduction in accidents would offset this. In addition to the costs of construction and right-of-way, there would be costs for roadway maintenance, including pavement, roadside, litter/sweeping, signs, and markers, as well as electrical and storm maintenance.

The commitment of these resources is based on the concept that residents in the immediate area, region, and State would benefit from the improved quality of the transportation system. These benefits would consist of improved accessibility and safety, which are expected to outweigh the commitment of these resources.

3.25 Cumulative Impacts

The 8+4 Buffer alternative has been refined since the Draft EIR/EIS was publically circulated in 2010. This alternative was presented as the locally preferred alternative (LPA) in the August 2012 Supplemental Draft EIR/EIS, and has now been identified as the Preferred Alternative. The refined 8+4 Buffer alternative has the least amount of impact of any build alternative and also meets purpose and need.

3.25.1 Regulatory Setting

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts under CEQA can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

3.25.2 Affected Environment

Cumulative Analysis Methodology

This cumulative impact analysis evaluates resources directly or indirectly impacted by the proposed project, even if the project impacts would be relatively small. The environmental analyses in the preceding sections in *Chapter 3.0* document the source and degree of impact for each issue addressed in this section. Because each issue addressed could be affected to some degree by the proposed project, a resource study area (RSA) is defined for each issue and an evaluation is made regarding whether the health, condition, or status of each issue is improving, stable, or in decline. A determination is also made regarding whether the proposed project would make a considerable contribution to a cumulative impact on the identified resources.

Section 3.25.3, Environmental Consequences, presents analysis of those issues where the project's contribution could be cumulatively considerable, with a detailed analysis of impacts that could occur in combination with other current and reasonably foreseeable future actions or projects. CEQA Guidelines Section 15130(b) presents two possible approaches for considering

past, present, and future reasonably foreseeable projects. It indicates that either of the following could be used:

- A list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

- A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.

This Final EIR/EIS uses the first method, where specific reasonably foreseeable projects are identified. As discussed in more detail in *Section 3.25.3*, information on past, present, and reasonably foreseeable future projects and identified project impacts were gathered from CEQAnet (updated in January 2013).

Based on the results of the cumulative impact analysis of the proposed project and reasonably foreseeable projects, avoidance, minimization, and/or mitigation measures are then presented for issues where the project's contribution may remain cumulatively considerable.

Evaluation of Resource Health and Project Contributions to Cumulative Impacts

This section is the baseline evaluation of the cumulative analysis, with identification of RSAs, resource health or status, and project contribution to cumulative effects, based on the individual evaluations provided below and summarized on *Table 3.25.1*.

RSAs are generally based on the natural boundaries of the resource affected, rather than jurisdictional boundaries. The geographic scope (or area within which projects may contribute to a specific cumulative effect) of the cumulative impact analysis varies depending upon the specific environmental issue area being analyzed.

Table 3.25.1: Resource Study Areas and Resource Evaluations

Environmental Issue	Geographic Scope of Resource Study Area (RSA)	Resource Health/Status	Project Contribution to Cumulative Impacts
Human Environment			
Land Use	North Coast Corridor	Stable	Less than considerable
Growth	San Diego region	Stable	Less than considerable
Farmlands / Agriculture Lands	San Diego region	Stable	Less than considerable
Community Cohesion / Relocations / Environmental Justice	North Coast Corridor	Stable	Less than considerable
Utilities and Emergency Services	North Coast Corridor	Stable	Less than considerable
Traffic and Transportation	North Coast Corridor	Declining	Less than considerable

Table 3.25.1 (cont.): Resource Study Areas and Resource Evaluations

Environmental Issue	Geographic Scope of Resource Study Area (RSA)	Resource Health/Status	Project Contribution to Cumulative Impacts
Human Environment (cont.)			
Visual / Aesthetics Resources	Visual resources RSA	Declining	Considerable
Cultural Resources	San Diego region	Declining	Less than considerable
Physical Environment			
Hydrology / Drainage / Floodplains	Drainage basin, watershed, or waterbody and its tributary area	Impaired but stable	Less than considerable
Water Quality / Storm Water	Drainage basin, watershed, or waterbody and its tributary area	Declining	Less than considerable
Geology / Soils / Seismic / Topography	San Diego region	Stable	Less than considerable
Paleontology	San Diego region	Stable	Less than considerable
Hazardous Waste / Materials	I-5 Construction Zone	Stable	Less than considerable
Air Quality / Climate Change	San Diego Air Basin	Declining	Less than considerable
Noise	North County	Declining	Less than considerable
Energy	San Diego Region	Stable	Less than considerable
Biological Environment			
Natural Communities	Biological Resources RSA	Declining	Considerable
Wetlands and Other Waters	Hydrologic subareas associated with coastal lagoons	Declining	Considerable
Plant Species	Entire area that species or habitat is known to occur in, including San Diego region or all of southern California	Declining	Less than considerable
Animal Species	Entire area that species or habitat is known to occur in, including San Diego region or all of southern California	Declining	Less than considerable
Threatened and Endangered Species	Entire area that species or habitat is known to occur in, including San Diego region or all of southern California	Declining	Less than considerable
Invasive Species	Biological Resources RSA	Stable	Less than considerable

Land Use

The project corridor traverses six municipalities, including San Diego, Del Mar, Solana Beach, Encinitas, Carlsbad, and Oceanside. The majority of land adjacent to the freeway corridor is developed and urban in nature in most of these jurisdictions, and policies are in place within approved general plans and community plans to guide future development. Land use planning efforts are routinely addressed through these local agency plans and planning efforts and formal approval processes and are considered stable.

Section 3.1 of this Final EIR/EIS discusses whether the proposed project would have impacts to existing and planned land uses and policies within land use planning documents. The Final

EIR/EIS concludes that the proposed project would not shift existing land uses, nor would it affect any future land use trends within the jurisdictions in the North Coast Corridor. A detailed analysis of consistency with land use planning documents concludes that while the proposed project has the potential to be inconsistent with several community and general plan element policies, these inconsistencies are not considered to result in different planning outcomes. The proposed project involves the expansion of an existing designated major transportation corridor and has been designed to minimize impacts to existing community land use patterns.

The proposed project would have a less than cumulatively considerable contribution to cumulative land use modifications.

Growth

The majority of the RSA, which includes San Diego, Del Mar, Solana Beach, Encinitas, Carlsbad, and Oceanside, is largely developed with urban uses. Few vacant developable parcels of land are remaining in the immediate vicinity of I-5, and no known projects in the vicinity are dependent on implementation of the proposed project. Patterns of development in areas available for growth are regulated by land use plans and municipal codes of the responsible jurisdictions. Resource status is evaluated as stable.

Section 3.2 of this Final EIR/EIS discusses whether the proposed project would result in otherwise unforeseen direct, indirect, or secondary growth, or would otherwise influence growth. Further growth in the project area and surrounding region is projected and planned for by the land use agencies (regional planning agencies and local cities) and would be expected to occur with or without implementation of the proposed project. The *I-5 NCC Project* is growth-accommodating rather than growth-inducing.

The proposed project would have a less than cumulatively considerable contribution to regional growth.

Farmlands/Agriculture Lands

With regard to the County overall, although percentages of specific crops have varied, agricultural use continues to provide a vibrant economic resource. In 1986, farming acreage (nursery crops, flower crops, fruit and nut crops, vegetable crops, and field crops) totaled 172948 ac (San Diego County Department of Agriculture, Weights and Measures [County Department of Agriculture] 1997). In 2010, these same crops totaled 307291 ac (County Department of Agriculture 2010). Nursery, field, and flower crops are the types of crops grown most actively in the North Coast Corridor. Therefore, despite past conversions of agricultural lands, the types of farmland that would be impacted by the proposed project are not decreasing in quantities within the County, and resource status is evaluated as stable.

The largest build alternative would result in the conversion of less than 27 ac of prime farmland and unique farmland that are currently in agricultural production. This was not considered a substantial impact for the project because the loss was substantially below the Natural Resources Conservation Service (NRCS) threshold for detailed agricultural evaluation. Impacts would be even less under the refined 8+4 Buffer alternative footprint, where approximately 11 ac of active farmland would be impacted (see *Section 3.3* of this Final EIR/EIS).

Agricultural impacts associated with I-5 improvements would occur within the coastal zone. The above discussion relative to County impacts overall would also apply to coastal agriculture.

Specifically with regard to parcel viability, as discussed in *Section 3.3* of this EIR/EIS, there is one location in the North Coast Corridor where project impacts to agricultural lands (adjacent to Manchester Avenue in Encinitas) raise potential consistency issues with Sections 30241 and 30242 of the Coastal Act. In this location, approximately 28 percent of an agricultural parcel would be impacted by the Preferred Alternative. As described in *Section 3.3*, the answer of continued agricultural viability is positive.

The proposed project would have a less than cumulatively considerable contribution to the stable condition cumulative farmlands/agricultural lands impacts.

Community Cohesion/Relocations/Environmental Justice

Environmental justice and community cohesion are issues that are specific to an affected population or community. No other projects were identified with potential environmental justice impacts or community cohesion impacts within the community affected by the proposed project; therefore, resource status is evaluated as stable.

Urban development in the *I-5 NCC Project* area has primarily occurred on undeveloped land and impacts to local communities, such as displacements and disproportionate effects on populations, have been minimized. New construction and/or right-of-way acquisition associated with the implementation of the *I-5 NCC Project* in conjunction with other transportation projects in the region could result in displacement impacts to residences and/or businesses. Such impacts would be isolated to a very few locations, as discussed in *Section 3.4* of this Final EIR/EIS.

The proposed project would have a less than cumulatively considerable contribution to community cohesion, relocations, and environmental justice impacts.

Utilities and Emergency Services

Public utilities are located throughout the North Coast Corridor. These utilities include existing gas, electric, television/cable, and sewer and water lines, and are often placed within public right-of-way. Utilities are maintained by various jurisdictions responsible for their uninterrupted service to customers. Although facilities such as pipelines, overhead power lines, and treatment plants may experience intermittent problems or localized failure, such issues are expeditiously addressed and corrected. CHP and emergency vehicles regularly use the general purpose lanes, median, outside shoulders, and other areas within Caltrans' right-of-way without incident. Resource status is evaluated as stable.

Section 3.5 of this Final EIR/EIS notes that above-ground and below-ground utility relocations would be required due to the proposed project, and some utilities may require protection in place during construction. It is not anticipated that utility services would be interrupted during construction and utility relocation activities. Coordination between Caltrans and utility companies has been ongoing and would continue throughout the project design process. Regarding emergency services during construction, emergency access would be retained as one of the TMP required elements. In the long term, response time for emergency services and law enforcement would likely improve over No Build conditions with the implementation of the proposed project, due to an anticipated reduction in traffic congestion as well as improved street and freeway access.

The proposed project would have a less than cumulatively considerable contribution to regional utilities and emergency services impacts.

Traffic and Transportation

Traffic congestion exists along the freeway system and travelers experience extensive delays traveling through the area. With the regional population projected to increase in the future, the expectation is that congestion delays would continue to increase in duration. Resource status is evaluated as declining.

Section 3.6 of this Final EIR/EIS outlines the existing and future traffic conditions in the North Coast Corridor and the effects of the proposed project. The *I-5 NCC Project* would add capacity and improve circulation within the North Coast Corridor as traffic volumes continue to increase. Therefore, the project would have beneficial effects on the regional transportation system and would not generate new traffic in the San Diego region. Other transportation improvements planned in the North County area and addressed in the RTP would also improve operating conditions.

The proposed project would have an incrementally beneficial impact on regional traffic conditions and a less than cumulatively considerable adverse contribution to cumulative traffic and transportation impacts.

Visual/Aesthetics Resources

The landscape of northern coastal San Diego County is characterized by the Pacific Ocean and natural features formed by the action of water on earth. Sandy beaches, sandstone bluffs, coastal lagoons, broad river valleys, steep canyons, expansive mesas, and rolling foothills constitute the predominant landforms. Along the I-5 corridor there are various scenic areas including lagoons and harbors, coastal parks, and prominent land and water features. Much of the coastal plain has been developed with varying densities of urban and suburban development. The region is aesthetically appealing and a major tourist destination.

The I-5 freeway passes through San Diego's North County seaside communities, the visual components of which establish the character of the corridor. Although each community has a unique visual identity, a powerful unity is also present because of shared landform components. The San Diego coast continues to boast a beautiful landscape, and the scenic area continues to draw new visitors and residents each year. The intense urban development, however, of the past 30 years has changed the character of the corridor greatly; therefore, resource status is evaluated as declining.

As discussed in detail in *Section 3.7* of this Final EIR/EIS, adverse visual quality impacts would result from the creation of manufactured slopes and noise barriers and the loss of landscaping and decreased visual buffers proposed for the project within the viewshed of the freeway.

Although project-specific measures integrated into the proposed project, such as landscaping, contour grading, potential use of transparent soundwalls in specific locations, and use of a gap where necessary in a solid soundwall would minimize the visual contrast, the project would still result in visual and aesthetic impacts anticipated to result in a cumulatively considerable contribution to changes in the corridor, as discussed below under *Section 3.25.3*.

Cultural Resources

Development of towns along the coastal zone has resulted in the loss of a number of known (and anticipated but unknown) prehistoric and historic cultural resources associated with past populations. Cultural resources are non-renewable resources. As such, their loss results in the

loss of cultural information and scientific data that cannot be regained. Regardless of the efforts to avoid impacts, the more open land that is converted to developed uses, the greater the potential for impacts to cultural resources. In addition, redevelopment of developed land would increase the potential loss of historic resources through their physical demolition, destruction, or relocation, or alteration of their surroundings. Because these resources are now protected by federal, State, and local regulations, each project would be required to comply with the regulations in order to reduce their project-level impacts to appropriate levels. Because loss of historic and prehistoric resources in the developed coastal zone has largely already occurred due to existing development, resource status is evaluated as declining.

As discussed in *Section 3.8* of this Final EIR/EIS, the *I-5 NCC Project* would have no impacts to known and potentially eligible prehistoric sites along the I-5 corridor. A similar finding was made for historic built resources. For most known resources, no impacts to known and potentially eligible built structures, or their setting, along the I-5 corridor would occur. Sliver impacts to one built property would not affect any structures or setting elements that contribute to property eligibility. Any (currently unanticipated) impacts occurring to potentially eligible sites that are unknown but discovered during construction would be mitigated in accordance with measures identified in *Section 3.8*, which would allow for retention of site data and coordination with the Most Likely Descendant (MLD).

The proposed project would have a less than cumulatively considerable contribution to cumulative cultural resources impacts caused by development in the region.

Hydrology/Drainage/Floodplains

Within the drainage and floodplains RSA are lagoons, creeks, and rivers, the majority of which are designated as Federal Emergency Management Agency (FEMA) floodways or floodplain. These features are part of larger drainage basins, and include varied development patterns. The Los Peñasquitos Creek watershed, composed partly of the hydrologic subarea surrounding Los Peñasquitos Lagoon, encompasses a land area of approximately 100 square mi including portions of the Cities of San Diego, Poway, and Del Mar. The Rancho Santa Fe hydrologic subarea surrounding San Dieguito Lagoon is part of the San Dieguito River watershed, which extends through a diverse array of habitats from its eastern headwaters in the Volcan Mountains to the outlet at San Dieguito Lagoon and the Pacific Ocean. The Carlsbad hydrologic unit encompasses 210 square mi within northern San Diego County that extends well beyond the boundaries of the City of Carlsbad. It covers substantial portions of the Cities of Oceanside, Vista, San Marcos, Escondido, Encinitas, and Solana Beach in addition to most unincorporated portions of the County of San Diego. The hydrologic unit is separated into several hydrologic subareas, including San Elijo, Batiquitos, Los Monos, and El Salto. The San Elijo hydrologic subarea extends to the east of the San Elijo Lagoon. Coast Highway 101, the San Diego Northern Railway (SDNR), and I-5 divide San Elijo Lagoon into three basins connected by narrow channels. Batiquitos Lagoon, within the Batiquitos hydrologic subarea, is also divided into three basins by El Camino Real, Carlsbad Boulevard, Highway 101, I-5, and the SDNR. The El Salto hydrologic subarea encompasses Buena Vista Creek and Buena Vista Lagoon. Similar to Batiquitos and San Elijo Lagoons, Buena Vista Lagoon is crossed by I-5, Coast Highway 101, and the SDNR, dividing it into four basins. The San Luis Rey watershed originates in the Palomar and Hot Springs Mountains and includes an area of approximately 562 square mi in northern San Diego County. The San Luis Rey River is the principal drainage in this watershed and extends generally west from its headwaters for over 55 mi before ultimately discharging to the Pacific Ocean near the City of Oceanside. Local hydrologic

subareas include Mission near the coast (including the I-5 corridor) and adjacent upstream areas, as well as Bonsall extending further inland.

These features are currently affected by abutting development and prior berming/encroachment into the floodplain. North-south berming to support primary transportation routes (e.g., Coast Highway, railway, and I-5) crosses east-west draining features and affects current flow. Regulations are now in place to address drainage issues. Each project in the RSA would be required to implement drainage control measures and comply with applicable storm water regulations on a project level in order to prevent downstream impacts; including runoff volumes, velocities, and flood levels. Resource status is evaluated as stable.

Potential project impacts to drainages in the proposed project corridor are discussed in *Section 3.9* of this Final EIR/EIS. Several bridges over coastal lagoons in the study area would be replaced as part of the proposed project and would allow for wider and deeper channels. Site-specific improvements, such as detention features, also are integrated into the *I-5 NCC Project* design to prevent adverse impacts to downstream drainages.

The proposed project would have a less than cumulatively considerable contribution to cumulative hydrology, drainage, and floodplain impacts.

Water Quality/Storm Water

Existing development in the coastal zone has resulted in impaired water bodies resulting from development runoff. Historically, the primary watershed areas contain area lagoons, each of which has been subject to water quality impacts. A summary of elements leading to current resource status is provided in the paragraph below.

Los Peñasquitos Creek discharges to a 384-ac lagoon that is identified as an impaired water body on the California 303(d) list for sedimentation. Los Peñasquitos Lagoon originally supported Native American settlements. More recently, surrounding areas were used for grazing, and from 1962 to 1972, treated sewage was discharged into the lagoon. In San Dieguito Lagoon, sewage was discharged into oxidation ponds and into channels from 1940 to 1974. An area between the channel arms supported an airfield and light industry between 1942 and 1964 (a Coastal Commission study dates airfield construction to the 1920s). Farming has occurred intermittently at the site of the lagoon both east and west of I-5 since the 1920s, and the racetrack and fairground were built on fill in 1935. The Agua Hedionda, Buena Vista, and San Elijo Lagoons are experiencing impairments to beneficial uses due to excessive coliform bacteria and sediment loading from upstream sources, as well as being bisected by primary transportation routes. Other water bodies in the Carlsbad hydrologic subarea have been identified as impaired on the California 303(d) list for elevated coliform bacteria, including several locations in the Pacific Ocean near creek and lagoon outlets. Similar to Batiquitos and San Elijo lagoons, Buena Vista Lagoon is crossed by I-5, Coast Highway 101, and the SDNR, dividing it into four basins. The railroad was built in 1883, and salt evaporation ponds were constructed in 1900. Treated effluent was discharged into the lagoon from 1956 to 1965; since 1960, 160 ac of marsh have been filled for development purposes. Surrounding lands were dedicated to grazing and farming prior to the rapid urbanization that began in the 1970s. The San Luis Rey River west of Interstate 15 is listed as impaired on the State 303(d) list for a number of constituents (e.g., bacteria and total dissolved solids), with identified sources including mining, urban and agricultural uses. Overall, resource status is considered impaired, but stable due to Statewide regulations.

With regard to highway improvements, new construction proposed by the project within the North Coast Corridor has the potential to impact water quality during the construction phase, as well as during operation. Potential sources of constituents from construction activities could be generated from construction materials and activities, such as vehicle fluids, asphaltic emulsions from paving activities, joint and curing compounds, concrete curing compounds, solvents and thinners, paint, sandblasting material, landscaping materials, treated lumber, Portland cement concrete rubble, and general litter. Examples of construction activities that have the potential to contribute such constituents include clearing and grubbing, grading operations, soil import operations, sandblasting, landscaping, and utility excavation. During operation, potential sources of pollutants found in highway runoff, for example, include sediment from natural erosion; nutrients (nitrogen and phosphorus) from tree leaves or other vegetation debris, mineralized organic matter in soil, fertilizer runoff, nitrite from automobile exhausts, atmospheric deposition, emulsifiers, and surfactants; pesticides; and metals (dissolved and particulate) from combustion products of fossil fuels, wearing of brake pads, and corrosion.

State regulations and Caltrans design requirements, however, are in place to address measures to control these water-borne pollutants. Caltrans would address water quality through the installation of "treatment" best management practices (BMPs) as well as existing "treatment" BMPs (described in *Section 3.10* of this Final EIR/EIS). The proposed project would be required to implement BMPs and comply with applicable storm water and water quality regulations on a project level in order to prevent the downstream migration of sediments and pollutants. An equivalent of all new I-5 pavement proposed under the project would be subject to "treatment," and a percentage of existing I-5 pavement that is currently not subject to "treatment" also would receive "treatment" with project implementation. This would improve the existing condition.

The proposed project would have an incrementally beneficial effect on the current impaired status of water quality in the watersheds, and have a less than cumulatively considerable adverse contribution to cumulative water quality and storm water impacts.

Geology/Soils/Seismic/Topography

Similar to the rest of southern California, the San Diego County region is prone to seismic and geologic hazards due to the presence of regional faults and other geologic hazards. These geologic features increase the risk of structural damage and public harm caused by earthquakes and other seismic conditions. Soil conditions also vary, with some soils exhibiting more erosion potential than others. The implementation of proper building techniques and project designs that take these hazards into account reduce potential property damage, harm to humans, and siltation. Impacts caused by geologic hazards are generally confined to a specific project area where development is proposed, and are prevented by requirements to implement design standards prescribed in the site-specific geotechnical reports. With regard to soils, requirements to implement BMPs and comply with applicable storm Water and water quality regulations prevent the downstream migration of sediments. Resource status is evaluated as stable.

Similar to other projects throughout the region, the proposed project would implement the requirements necessary to prevent geology and soils impacts, as discussed in *Section 3.11* of this Final EIR/EIS.

The proposed project would have a less than cumulatively considerable contribution to geology and soils impacts.

Paleontology

The project area contains formations that are known to contain important land mammal and marine invertebrate fossil assemblages, and may produce important microfossil specimens. Development within the coastal zone has resulted in disturbance of geologic formations with moderate to high paleontological resource potential, with ongoing development resulting in some continuing excavation of fossils. Impacts to paleontological resources are generally confined to a specific project area where development is proposed. Construction monitoring required by local jurisdictions is a typical site-specific requirement, and the professional retrieval and preservation of fossils continues to yield new scientific information that benefits fossil research. Resource status is evaluated as stable.

Similar to other projects throughout the region, the proposed project would implement the monitoring and retrieval requirements necessary to mitigate impacts to paleontological resources, as discussed in *Section 3.12* of this Final EIR/EIS. As a result, non-renewable resources would not be lost, but would be retrieved and evaluated, thereby supporting fossil research.

The proposed project would have a less than cumulatively considerable contribution to paleontology impacts.

Hazardous Waste/Materials

The project is located in an area that has experienced changes in development patterns over its history; including agricultural uses, commercial uses now subject to redevelopment, support uses such as gas stations, etc. These past and current uses can leave residues in the soils related to oils, gases, pesticides, etc. that can be hazardous when disturbed. New construction has the potential to disturb soils and other materials containing hazardous materials, such as aerially deposited lead, petroleum hydrocarbons, pesticides, herbicides, and other contamination due to historic uses in and around the project areas. All projects are required to comply with the applicable regulations pertaining to the safe handling and removal of hazardous waste/materials. Resource status is evaluated as stable.

Wherever possible, the *I-5 NCC Project* would use the existing I-5 alignment to avoid and/or minimize impacts from hazards and hazardous materials. Where avoidance is not possible, the project incorporates measures to avoid potential disturbances of contamination areas, as described in *Section 3.13* of this Final EIR/EIS.

The proposed project would have a less than cumulatively considerable contribution to regional hazardous waste/materials impacts.

Air Quality/Climate Change

The San Diego Air Basin (SDAB) currently meets the federal air quality standards for all of the criteria air pollutants except ozone (O_3), as noted in *Section 3.14* of this Final EIR/EIS. Development and increasing traffic in the region continue to occur, resulting in the potential for emissions to exceed planned estimates, for emissions levels to contribute to a violation of standards, for a substantial increase in pollutant levels to occur, or for sensitive receptors to be exposed to substantial pollutant concentrations. Greenhouse gases refer to emissions that trap heat in the atmosphere. As described in *Chapter 4, Section 4.6, Climate Change*, of this document, this is a global condition that is generally considered to be worsening. Resource status is evaluated as declining.

The proposed project in the North Coast Corridor would increase transportation capacity, relieve congestion, improve operations, and provide better circulation. In addition, the proposed project would accommodate--and not increase--population growth (which produces new emission sources within the region). To the extent that it is feasible, the following measures are included in the project to reduce the GHG emissions and potential climate change impacts from the project: (1) Caltrans and the CHP are working with regional agencies to implement ITS to help manage the efficiency of the existing highway system; (2) Caltrans, SANDAG, participating corporations, and local governments are providing ridesharing services and park and ride facilities to help manage the growth in demand for highway capacity; and (3) the project would incorporate the use of energy efficient lighting, such as light-emitting diode (LED) traffic signals. These LED bulbs consume 10 percent of the electricity of traditional lights, which would also help reduce the projects CO_2 emissions. Based on detail provided in *Section 4.6,* the project would result in improved conditions over the No Build alternative.

The proposed project would have a less than cumulatively considerable contribution to cumulative regional air quality impacts and climate change within the SDAB.

Noise

The North Coast Corridor is located within a setting of urban development and interspersed open space in north San Diego County. Due to relative dense urban uses and the presence of major transportation corridors such as I-5, rail lines, and Coast Highway as well as surface street activity, noise levels are generally elevated. Specifically adjacent to the I-5 corridor, noise is currently elevated for a number of sensitive receptors, with noise primarily attributable to vehicle usage along the freeway. As traffic increases, noise will continue to increase. Resource status is evaluated as declining.

The predicted future peak hour $L_{eq}(h)$ at the representative noise-sensitive receptors with the proposed project would range from 57 to 82 dBA. This would exceed the noise abatement criteria (NAC) that are used to determine when a noise impact would occur at most locations, as discussed in *Section 3.15* of this Final EIR/EIS. Many of the same noise receptors would experience noise in excess of the NAC without the proposed project (i.e., under no build conditions), as a result of community-wide growth. The *I-5 NCC Project* would increase noise levels from without project conditions by 3 dBA or less for the great majority of noise sensitive receptors. This is an increase that is generally not heard by the normal healthy human ear. To address the project's noise impacts, soundwalls are recommended in various locations along the *I-5 NCC Project*, as described in *Section 3.15*. In some instances, sound walls were found to be not "feasible" or not "reasonable." Regardless, although the project would contribute to increases in noise immediately adjacent to the I-5 corridor, when the North County region as a whole is evaluated, the focused nature of I-5 results in I-5 noise being relatively restricted in nature. While audible to those receptors immediately abutting the facility, it generally fades with distance, so that noise generators closer to the hearer take precedence.

The proposed project would have a less than cumulatively considerable contribution to regionally cumulative noise impacts.

Energy

Direct and indirect energy consumption continues to increase as population and the economy grow. The majority of existing energy consumption is traffic related. Demand stimulates fossil

fuel production, but there is also a stimulus for energy production from renewable sources. Resource status is evaluated as stable.

As discussed in *Section 3.16* of this Final EIR/EIS, construction activities such as the use of heavy machinery, detours, lane closures, the import and export of materials and equipment, etc., could substantially increase energy consumption, but post-construction and operational requirements of the facility should be less with the proposed project. In addition, efforts would be made to minimize energy consumption during construction, including implementing recycling and using energy-efficient construction vehicles.

The proposed project would have a less than cumulatively considerable contribution to regional energy impacts.

Natural Communities

Development west of I-5 is essentially built to capacity, with redevelopment projects also occurring. East of I-5, development continues rapidly, with projects adjacent to I-5 nearing capacity and increasing farther inland. The areas around the lagoons, Los Peñasquitos Canyon in the south, and Camp Pendleton to the north are the main remaining areas of open space in the project corridor. The natural community RSA is therefore considered coastal San Diego County between El Camino Real and the Pacific Ocean.

Development over time throughout the coastal region has reduced the amount of native habitat and species in the region. This development has also limited the ability to expand habitat around the lagoons and large open space areas. There is, however, currently a large effort to restore salt marsh habitat around San Dieguito Lagoon, and there are plans to restore San Elijo, Agua Hedionda, and Buena Vista lagoons.

The regional decline in native habitats and the plant and wildlife species they support has resulted in County-wide conservation efforts. The San Diego Multiple Species Conservation Plan (MSCP) was developed as a regional plan to provide for the long-term preservation of sensitive plant and animal species and natural vegetation within the City of San Diego, while allowing for continued economic development within the region. Subsequently, the Multi-habitat Conservation Plan (MHCP) and the North County MSCP have been developed for portions of San Diego County that were not originally addressed in the San Diego MSCP.

Historical development along the I-5 corridor has impacted each of the watersheds and lagoons in the RSA. Construction of the railroad and Pacific Coast Highway resulted in causeways across the coastal lagoons, limiting tidal influences and forcing flows through one area, in the late 1800s and early 1900s. The original construction of I-5 in the 1960s further impacted the wetlands of the lagoons and constrained lagoon hydraulics with placement of fill and bridges over the lagoons east of the railroad bridges. Some of the restoration projects for San Elijo and Buena Vista lagoons plan to reduce tidal muting and enhance flows and wetland habitats in the lagoons. Resource status within the RSA overall is evaluated as declining.

As discussed in detail in *Section 3.17* of this Final EIR/EIS, the proposed project would generate substantial impacts to a variety of natural communities throughout the corridor. Due to surrounding uses (including abutting sensitive habitats) mitigation is not always feasible in the area of the direct impact.

The potential exists for the *I-5 NCC Project* to make a cumulatively considerable contribution to natural communities impacts in the RSA, as discussed below under *Section 3.25.3*.

Wetlands and Other Waters

The proposed project traverses several wetlands and waters that are fed by a number of streams and rivers. Los Peñasquitos, San Dieguito, San Elijo, Batiquitos, Agua Hedionda, and Buena Vista lagoons, and the San Luis Rey River are the major wetland and open water bodies along the project corridor. Therefore, for the purposes of this cumulative discussion, the RSA is defined as the hydrologic subareas associated with these coastal lagoons.

Los Peñasquitos Creek watershed, encompasses a land area of approximately 100 square mi; including portions of the Cities of San Diego, Poway, and Del Mar. The watershed is highly urbanized, with a population of approximately 400,000 residents. The creek discharges to a 384-ac lagoon that is identified as an impaired water body.

The San Dieguito River watershed extends through a diverse array of habitats from its eastern headwaters in the Volcan Mountains to the outlet at San Dieguito Lagoon and the Pacific Ocean. There are several important natural areas within the watershed that sustain a number of threatened and endangered species. Among these are the 55-mi long, 80,000-ac San Dieguito River Park; the 150-ac San Dieguito Lagoon; and five water storage reservoirs including Lake Hodges, Lake Sutherland, and Lake Poway. Southern California Edison (SCE) started a large restoration project in San Dieguito Lagoon in 2006. The project created approximately 150 ac of tidal wetlands to mitigate for offshore impacts resulting from the warm water outfall at SONGS.

As noted above, the Carlsbad hydrologic unit encompasses 210 square mi within northern San Diego County. It covers substantial portions of the Cities of Oceanside, Vista, San Marcos, Escondido, Encinitas, and Solana Beach in addition to most unincorporated portions of the County of San Diego. The hydrologic unit is separated into several hydrologic subareas, including San Elijo, Batiquitos, Los Monos, and El Salto. The Agua Hedionda, Buena Vista and San Elijo coastal lagoons represent critical regional resources that provide freshwater and estuarine habitats for numerous plant and animal species.

Coast Highway 101, the SDNR and I-5 divide San Elijo Lagoon into three basins connected by narrow channels. San Diego County, with the assistance of the California Department of Fish and Wildlife (CDFW; previously California Department of Fish and Game), manages all three basins as an Ecological Reserve. The Reserve has 10 mi of trails and accommodates approximately 50,000 visitor-days per year; passive recreational activities such as fishing and horseback riding are the predominant uses, which are permitted in selected areas. Several dikes and levees were constructed between 1880 and 1940 to create access roads, duck ponds, and sewage treatment ponds in San Elijo Lagoon. The dikes have eroded and hunting was discontinued in 1971. From 1940 until as late as 1973, the lagoon received wastewater from the City of Escondido.

Batiquitos Lagoon, within the Batiquitos hydrologic subarea, is also divided into three basins by El Camino Real, Carlsbad Boulevard, Highway 101, I-5, and the SDNR. In 1983, the lagoon was designated a CDFW State Ecological Reserve. Passive recreation is the predominant use, and there are two trails along the north shore of the lagoon. In the eastern basin, 25 ac were

used as evaporation ponds from 1901 to 1910, and secondary treated wastewater was discharged into the lagoon from 1967 to 1974.

In the Agua Hedionda Lagoon, SDG&E constructed the Encina Power Plant and a tidal basin to provide its cooling water in the 1950s. A mitigation project involving restoration of several wetland habitats was undertaken in 1985 and considered unsuccessful. SDG&E expects to implement a dredging project in the future, which may include revegetation of some areas with eelgrass.

Buena Vista Lagoon is within a State Ecological Reserve in which fishing and passive recreation are permitted uses, and a visitor center run by the local chapter of the National Audubon Society offers interpretive information. Similar to Batiquitos and San Elijo lagoons, Buena Vista Lagoon is crossed by I-5, Coast Highway 101, and the SDNR, dividing it into four basins. The railroad was built in 1883, and salt evaporation ponds were constructed in 1900. Treated effluent was discharged into the lagoon from 1956 to 1965; since 1960, 160 ac of marsh have been filled for development purposes. Surrounding lands were dedicated to grazing and farming prior to the rapid urbanization that began in the 1970s.

The wetlands RSA is home to six major lagoon systems which represent some of southern California's most important natural resource areas. These lagoon systems and upper watersheds provide large, contiguous habitat areas that support sensitive habitats for a variety of plant and wildlife species, and that provide water quality, flood control, groundwater recharge, and recreation benefits. The North Coast Corridor's lagoon systems and their habitats are biologically unique and cannot be replicated elsewhere. Resource status is evaluated as declining.

As discussed in detail in *Section 3.18* of this Final EIR/EIS, the proposed project would generate substantial impacts to wetland resources throughout the corridor. Although no net loss of wetlands would occur as a result of project design, planning, and mandatory regulatory requirements, due to abutting uses (including the presence of sensitive habitat) mitigation may not occur in the watershed where the impact occurs.

The potential exists for the *I-5 NCC Project* to make a cumulatively considerable contribution to cumulative wetlands and other waters impacts in the RSA, as discussed below under *Section 3.25.3*.

Plant Species

The North Coast Corridor features a number of sensitive plant species, including Del Mar sand aster, coastal scrub oak, Orcutt's pincushion, sea dahlia, wart-stemmed ceanothus, coast barrel cactus, southern tarplant, and Torrey pine. Several of these species only reside in the coastal area of San Diego County. Their range and number of individuals has been reduced due to past disturbances by urban development and related infrastructure, including I-5. These "special-status" species are rare and/or subject to population and habitat declines and are afforded varying levels of regulatory protection. Resource status is evaluated as declining.

As discussed in detail in *Section 3.19* of this Final EIR/EIS, the proposed project could generate impacts to certain sensitive plants, including each of the species noted above. Avoidance, minimization, and mitigation measures for the proposed project specify that seed would be collected or plants would be salvaged to the extent practicable in the impact areas. Salvaged

plants and seed would be planted in mitigation sites, on revegetated new slopes, or in revegetated areas that are temporarily impacted.

The proposed project would have a less than cumulatively considerable contribution to cumulative sensitive plant species impacts.

Animal Species

The North Coast Corridor features a number of special status wildlife species whose ranges and numbers have declined due to past disturbances by urban development and related infrastructure, including I-5. These "special-status" species, including San Diego horned lizard, Coronado Island skink, orange-throated whiptail, rufous-crowned sparrow, raptors, loggerhead shrike, desert woodrat, and San Diego pocket mouse, are rare and/or subject to population and habitat declines and are afforded varying levels of regulatory protection. Resource status is evaluated as declining.

As discussed in detail in *Section 3.20* of this Final EIR/EIS, the proposed project could generate impacts to certain sensitive animals, including the species noted above. Because of the status of such sensitive animal species, the *I-5 NCC Project* would take precautions to avoid construction-period impacts. Habitat removals would be minimized and mitigated, as discussed in *Sections 3.17* through *3.22* of this document.

The proposed project would have a less than cumulatively considerable contribution to cumulative sensitive animal species impacts in the RSA.

Threatened and Endangered Species

The North Coast Corridor features a number of threatened and endangered plant and wildlife species whose ranges and numbers have declined due to past disturbances by urban development and related infrastructure, including I-5. These species have been subjected to both direct and indirect effects as the North County Coastal area has developed over the years. Implementation of additional development and/or infrastructure improvements could result in additional permanent and temporary impacts to threatened and endangered species, even though compliance with applicable MSCP or MHCP policies is generally required to compensate for impacts to threatened and endangered species. Resource status is evaluated as declining.

As discussed in detail in *Section 3.21* of this Final EIR/EIS, the proposed project could generate impacts to certain species, including designated critical habitat for the least Bell's vireo, southwestern willow flycatcher, tidewater goby, and the California gnatcatcher. Sensitive bird species that forage and nest within the lagoons at certain times of the year could experience adverse effects on breeding behaviors. Potential temporary impacts could occur to steelhead trout habitat within the San Luis Rey River. Designated critical habitat for several threatened or endangered bird species (i.e., least Bell's vireo and coastal California gnatcatcher) would be removed. In all cases, the *I-5 NCC Project* would be required by regulations to minimize and/or mitigate for impacts to sensitive wildlife. Avoidance, minimization, and mitigation measures identified in *Sections 3.17* through *3.22* would reduce all project-level impacts to these species and would prevent adverse effects on the long-term conservation of these high-interest species.

The proposed project would have a less than cumulatively considerable contribution to cumulative threatened and endangered species impacts in the RSA.

Invasive Species

The adverse effects of invasive species are highly localized. The RSA already has a number of aggressive invasive species both on the slopes of I-5 and in the wetland habitats. As development proceeds in the RSA, projects would remove existing invasives, install non-invasive species and control invasive species through maintenance activities. Past and planned lagoon restoration work in the lagoons would further remove invasive species in those portions of the I-5 corridor. Resource status is evaluated as stable.

As discussed in detail in *Section 3.22* of this Final EIR/EIS, construction would provide an opportunity to control some of the invasive species, which represents a benefit to other desirable species. The *I-5 NCC Project* would control some of the invasive species on the slopes of the project by carefully removing soil containing invasive plants and revegetating slopes to prevent their expansion and re-population.

The proposed project would have a less than cumulatively considerable contribution to cumulative invasive species impacts.

Resource Evaluation Conclusions

As indicated on *Table 3.25.1*, based on the above analysis of resource health or status and the level of project contributions to cumulative impacts, the *I-5 NCC Project* would make a cumulatively considerable contribution to cumulative impacts to the following resources:

- Visual/aesthetics resources (*Section 3.7*)
- Natural communities (*Section 3.17*)
- Wetlands and other waters (*Section 3.18*)

The health or status of each of these resources has been evaluated as declining. The environmental consequences of cumulative impacts for these three issues are discussed in more detail in *Section 3.25.3* below.

For all other issues, the proposed project would not make a cumulatively considerable contribution to cumulative impacts, even though some resources may be evaluated as having declining health (see *Table 3.25.1*). These issues, which are not discussed further in this section, are the following:

- Land Use (*Section 3.1*)
- Growth (*Section 3.2*)
- Farmlands/Agricultural Lands (*Section 3.3*)
- Community Impacts *(Section 3.4)*
- Utilities and Emergency Services (*Section 3.5*)
- Traffic and Transportation/ Pedestrian and Bicycle Facilities (*Section 3.6*)
- Cultural Resources (*Section 3.8*)
- Hydrology/Drainage (and Floodplains) (*Section 3.9*)
- Water Quality and Storm Water Runoff (*Section 3.10*)
- Geology/Soils/Seismic/Topography (*Section 3.11*)
- Paleontology (*Section 3.12*)
- Hazardous Waste/Materials (*Section 3.13*)
- Air Quality (*Section 3.14*)
- Noise (*Section 3.15*)
- Energy (*Section 3.16*)
- Plant Species (*Section 3.19*)
- Animal Species (*Section 3.20*)
- Threatened and Endangered Species (*Section 3.21*)
- Invasive Species (*Section 3.22*)

3.25.3 Environmental Consequences

Resources Addressed

Based on the resource evaluations in *Section 3.25.2*, the issues where the proposed project could make a cumulatively considerable contribution to cumulative impacts are visual/aesthetic resources, natural communities, and wetlands and other waters. A detailed analysis of impacts that could occur for these three issues in combination with other current and reasonably foreseeable future actions or projects is presented below.

Future Actions or Projects

As mentioned above, information on past, present, and reasonably foreseeable future projects and identified project impacts was gathered from CEQAnet (updated in January 2013). *Figure 3.25-1, Approximate Locations of Cumulative Projects*, presents the projects within the *I-5 NCC Project* cumulative study area. *Table 3.25.2* summarizes those projects within the cumulative study area (comprised of specific RSAs) that would result in adverse impacts to those resource areas to which the *I-5 NCC Project* would contribute cumulative impacts (i.e., visual resources, natural communities, and wetlands and other waters).

If projects within the RSAs would not affect these same resources or are outside the RSA, there is no potential for cumulative impacts and they are not listed in *Table 3.25.2*. The locations of other projects within the visual resources RSA are presented in *Figure 3-25.2*. The locations of other projects within the natural communities RSA are presented in *Figure 3-25.3*. The locations of other projects within the wetlands and other waters RSA are presented in *Figure 3-25.4*.

The following detailed assessment of potential cumulative impacts for each of the three issues summarizes impacts of the *I-5 NCC Project*, discusses related impacts of other cumulative projects (listed in *Table 3.25.2*), and presents conclusions of the cumulative analysis.

Visual/Aesthetics Resources

Impacts of the I-5 NCC Project to Visual/Aesthetics Resources

The Visual Impact Assessment identifies 18 different Landscape Units and 17 “Key views” in order to assess the visual impacts of the project. These Landscape Units encompass the area along the proposed project corridor that could be visually affected by the project. For the purposes of this analysis, the visual RSA is therefore defined as these identified landscape units and everything west to the Pacific Ocean, as shown in *Figure 3-25.2*.

Of the 17 “Key views” identified in the Visual Impact Assessment (two assessments were made for Holiday Park), 8 have been assessed to have High visual impact, 7 have been assessed to have Moderately High visual impact, 1 has been assessed to have Moderate visual impact, 1 has been assessed to have a Moderately Low visual impact, and 1 has been determined to have No Adverse Visual Impact, as identified in *Section 3.7*. As shown in *Figure 3-7.112,* there would be visual resource impacts to 7 of the 18 Landscape Units, including loss of view of resource and impact to resource. There are also corridor impacts to 15 Landscape Units, including loss of desirable view or “tunnel effects,” large walls or structures and loss of mature trees. There are 14 Landscape Units that have been identified to have community visual impacts because of their proximity to the freeway and incompatible community entry.

Impacts of Other Cumulative Projects to Visual/Aesthetics Resources

There are several planned projects in or near the project limits that could have visual impacts as outlined in *Table 3.25.2* and described below.

The I-5 / Genesee Avenue Bridge Widening and Interchange Improvement, I-5 / SR-56 Direct Connectors, I-5 / SR-78 Interchange, and the recently completed I-5 / Lomas Santa Fe Drive Interchange projects would all potentially contribute to visual impacts along the I-5 corridor. The LOSSAN projects in the North Coast Corridor would also contribute to the degradation of visual quality along the corridor because of new structures around the lagoons. In addition, increased visibility to the Carlsbad Energy Center in Carlsbad would also contribute to the degradation of visual quality along the corridor due to removal of screening vegetation. The Hall Community Park project in Encinitas is located directly adjacent to the freeway corridor and would potentially contribute to the visual impacts along the corridor due to lighting impacts. Other projects that are located within the RSA and may contribute to overall visual impacts through contributions to urbanization and/or light and glare include the Scripps Hospital La Jolla Master Plan and One Paseo Project in San Diego; 22nd District Agricultural Association Fairgrounds facilities in Del Mar; U.S. Army Corps of Engineers Shoreline Protection Project in Encinitas and Solana Beach; and Agua Hedionda Sewer Lift Station and Force Main Replacement, Caruso Affiliated Project, and Northern Inlet Jetty Restoration project in Carlsbad. Some cumulative projects are located within the RSA but would not contribute to overall visual impacts because they are not located within the corridor viewshed or would not contribute to urbanization along the corridor, and would not contribute to cumulative visual effects associated with the proposed project. These projects include the Flower Hill Promenade, Via de la Valle Road Widening, and San Dieguito River Park Nature Center projects in San Diego; Riverview Offices Project in Del Mar, Coral Cove Residential Project, Scripps Hospital Encinitas Modifications, and North 101 Corridor Streetscape Improvements in Encinitas; Northern Inlet Jetty Restoration and Westfield Carlsbad Project in Carlsbad; and Oceanside Pier Resort, Mesa Ridge, and Inns at Buena Vista Creek projects in Oceanside. The Solana Beach Gateway Resort project, a 30-unit hotel development with various associated amenities that would have had visual impacts, was terminated and the site was purchased by the San Elijo Lagoon Conservancy for dedication to an open space park in December 2011. The Mixed-Use Solana Beach Train Station ("Cedros Crossing") project was terminated in 2008. Elimination of these previously planned projects reduces urbanization and associated cumulative visual effects along the corridor.

Cumulative Impact Analysis Conclusion for Visual/Aesthetics Resources

The projects that are located within the I-5 viewshed would incrementally contribute to a cumulative change in visual character within the RSA from semi-urban to more urban. The changes to the visual resource of the area brought about by these planned projects, including the *I-5 NCC Project,* would constitute cumulatively considerable contributions to cumulative visual/aesthetics impacts.

Natural Communities

Impacts of the I-5 NCC Project to Natural Communities

I-5 improvements would permanently impact up to 25.55 ac of wetland habitats and several sensitive species associated with that habitat. This project would also impact up to 69.43 ac of sensitive upland habitats and associated species, as detailed in *Table 3.17.4* and described in *Section 3.17*. Caltrans and SANDAG, with input from the resource agencies, have prepared a

programmatic plan (the PWP/TREP [Appendix R] and REMP [Appendix P], respectively) for addressing the cumulative biology impacts to the North Coast area attributable to their related transportation projects. That plan, discussed in detail in *Section 3.17* of this Final EIR/EIS, and available for review at www.keepsandiegomoving.com, takes a holistic and comprehensive approach to mitigating impacts to biological resources within the North Coast Corridor. The PWP/TREP would employ a combination of measures to mitigate for coastal resource impacts resulting from implementation of the North Coast Corridor transportation improvements and community enhancement projects.

Impacts of Other Cumulative Projects to Natural Communities

Many cumulative projects would not contribute to the loss of habitat in the RSA due to their locations on already disturbed sites. Large foreseeable future projects within the corridor that have the potential to incrementally impact additional habitats and sensitive species include the LOSSAN projects in the North Coast Corridor, and the connector ramps at I-5 and SR-78 near Buena Vista Lagoon. The I-5 / SR-78 Interchange project would involve structures over the wetland habitat at Buena Vista Lagoon; however, wetlands would still be impacted by bridge columns. Mitigation for the I-5 / SR-78 Interchange project would occur in advance of the project with the *I-5 NCC Project* mitigation. There have been discussions concerning using the LOSSAN projects to build longer railroad bridges and remove some of the fill within these coastal lagoons. A programmatic environmental document for the LOSSAN project has been prepared and it is anticipated that the project would impact wetlands and other sensitive natural communities along the corridor. The I-5 / Genesee Bridge Widening and I-5 / SR-56 Direct Connectors projects would have potential impacts to upland natural communities that would be mitigated. Other projects that may contribute to the loss of habitat even though their impacts would be mitigated include the Via de la Valle Road Widening and San Dieguito River Park Nature Center projects in San Diego; Riverview Offices and 22nd District Agricultural Association Fairgrounds and Horsepark Master Plan in Del Mar; U.S. Army Corps of Engineers Shoreline Protection Project in Encinitas and Solana Beach; Northern Inlet Jetty Restoration, Agua Hedionda Sewer Lift Station and Force Main Replacement, and Caruso Affiliated Project in Carlsbad; and Mesa Ridge Project and Inns at Buena Vista Creek in Oceanside.

Cumulative Impact Analysis Conclusion for Natural Communities

The *I-5 NCC Project* would have an incremental contribution of up to 25.55 ac of wetland loss and 69.43 ac of sensitive upland loss. The project would also impact territories of the coastal California gnatcatcher, light-footed clapper rail, and Belding's savannah sparrow within the already constrained habitats in the corridor. The incremental impacts within the biological RSA of the *I-5 NCC Project* and other cumulative projects would be small; however, and would be adequately mitigated by implementation of the PWP/TREP, which would provide ecological lift throughout the region. Accounting for implementation of the regional program over the entire project, the impacts to natural communities would not result in a cumulatively considerable contribution to the corridor's cumulative impacts to natural communities and territories of sensitive species.

Wetlands and Other Waters

Impacts of the I-5 NCC Project to Wetlands and Other Waters

As discussed in *Section 3.18*, wetland habitat impacts associated with each of the alternatives include impacts at the six lagoons, as well as the San Luis Rey River, Loma Alta Creek, Encinas

Creek, Cottonwood Creek, and numerous small lined and unlined drainage ditches that run parallel to I-5. All drainage ditches, arundo scrub, and salt marsh transition habitats are included in the wetland habitats of the State. The majority of project impacts to wetland habitats are associated with widening of the freeway corridor at the lagoons. Impacts to southern coastal salt marsh, coastal brackish marsh, coastal brackish marsh (disturbed), mud flat, and open water are primarily related to impacts at the lagoons. Overall, depending on alternative selected and following mitigation, the proposed project would permanently impact between 11.61 and 17.17 ac of USACE, and 15.92 to 23.03 ac of State, jurisdictional wetland habitats.

The proposed REMP regarding the *I-5 NCC Project* contains a combination of measures to mitigate for coastal resource impacts resulting from implementation of the North Coast Corridor transportation improvements and community enhancement projects. The plan recognizes that opportunities to protect these lagoon systems from potential future degradation and to enhance and expand habitat within these systems require comprehensive solutions with mitigation efforts focused less on ratio-based mitigation and more on ecosystem-wide enhancements.

Impacts of Other Cumulative Projects to Wetlands and Other Waters

Many cumulative projects would not contribute to the loss of wetland habitat in the RSA due to their locations on already disturbed sites. There are several projects located near the lagoons that may contribute to cumulative impacts to wetlands. The 22nd District Agricultural Association Fairgrounds facilities could impact jurisdictional wetlands near San Dieguito Lagoon. Near San Elijo Lagoon in Encinitas, the Coral Cove Residential Project, a 69-unit development, would have substantial water quality impacts during construction. At Agua Hedionda Lagoon, there is potential for cumulative impacts with the Northern Inlet Jetty Restoration Project, Agua Hedionda Sewer Lift Station and Force Main Replacement Project, and Caruso Affiliated Project. The I-5 / Genesee Bridge Widening and Interchange Improvements Project would contribute to wetland impacts upstream of Los Peñasquitos Lagoon. The I-5 / SR-78 Interchange Project would involve structures over the wetland habitat at Buena Vista Lagoon, and wetlands would be impacted by bridge columns. The LOSSAN projects could impact up to 20-27 ac of wetlands, and up to 12 ac of lagoons, a number of which are within the Wetlands and Other Waters RSA, contributing to a cumulatively considerable impact. Other projects within the Wetlands and Other Waters RSA that have the potential to contribute to cumulative wetland impacts, but for which project-specific wetland impact information is currently unknown, include the Via De La Valle Road Widening Project in San Diego; U.S. Army Corps of Engineers Shoreline Protection Project in Encinitas and Solana Beach; and Inns at Buena Vista Creek in Oceanside.

There are also restoration plans and projects being planned or implemented within the lagoons along the project corridor. Restoration is currently ongoing at San Dieguito Lagoon, while work is proposed at Buena Vista Lagoon. In addition, restoration programs are planned for San Elijo Lagoon, as well as preparation of a comprehensive lagoon study of all lagoons and identification of specific restoration opportunities within each. The Solana Beach Gateway Resort, a 30-unit hotel development with various associated amenities that would have had cumulative impacts to San Elijo lagoon, was terminated and the site was purchased by the San Elijo Lagoon Conservancy for dedication to an open space park in December 2011. These restoration efforts would benefit wetland habitats within the lagoon.

Cumulative Impact Analysis Conclusion for Wetlands and Other Waters

Planned restoration work would reduce some of the cumulative impacts to lagoons and wetlands along the project corridor resulting from the proposed project and other cumulative projects. The specific impacts of the *I-5 NCC Project* would be adequately mitigated by implementation of the REMP regarding the *I-5 NCC Project*, which would ensure no net loss of wetlands and provide ecological lift throughout the region. Other projects would also be obligated to ensure no net loss of wetlands to obtain permits from Wildlife Agencies. Accounting for implementation of the regional program over the entire project area, the impacts to wetlands and other waters would not result in a cumulatively considerable contribution to the corridor's cumulative impacts to wetlands and other waters resources.

3.25.4 Avoidance, Minimization, and/or Mitigation Measures

Visual/Aesthetics Resources

Mitigation measures for adverse and cumulatively considerable impacts to visual/aesthetics resources are located in *Section 3.7* and also addressed in the project Design Guidelines (Appendix L). Implementation of the measures in this section would partially mitigate adverse effects of the project and its contribution to cumulative impacts. Despite the implementation of the measures, cumulative visual/aesthetics impacts would not be fully mitigated.

Natural Communities

Mitigation measures for adverse and cumulatively considerable impacts to natural communities are located in *Section 3.17.* Impacts to natural communities would not be fully mitigated using standard mitigation ratios. Caltrans has engaged in detailed negotiations with resource agencies to develop the REMP regarding the *I-5 NCC Project*. This is a regional plan that would address the mitigation for a series of planned transportation projects in the corridor, and is being developed for identified transportation project impacts within the jurisdiction of the Coastal Commission, with specific reference to I-5. The North Coast Corridor mitigation program for the *I-5 NCC Project* described in *Section 3.17* has been developed to identify compensatory mitigation measures to address these unavoidable impacts, and to implement resource enhancement opportunities that exceed the benefits of standard compensatory mitigation programs. Mitigation for impacts to native upland communities would reduce these cumulative impacts to less than considerable levels.

Wetlands and Other Waters

Mitigation measures for adverse and cumulatively considerable impacts to wetlands and other waters of the U.S. are located in *Section 3.18*.

As discussed above, there are a number of restoration plans and projects currently under development for the various lagoons located along the corridor. These plans focus on restoring the ecological functions and values of each of the coastal lagoon ecosystems, taking into account historic habitat regimes, hydraulic functioning, tidal flows, and species distribution, among other factors. Rather than focusing on a ratio-based mitigation program, Caltrans proposes to mitigate potential project impacts along the I-5 North Coast Corridor by implementing components of lagoon restoration, as determined appropriate by lagoon stakeholders. This more comprehensive mitigation approach outlined in the REMP regarding the *I-5 NCC Project* would provide a more holistic restoration of coastal wetlands and other

waters than could be achieved by a ratio-based approach, and would reduce cumulative impacts to wetlands within San Diego County more effectively than alternative mitigation. Because this approach would more effectively reduce cumulative impacts to wetlands along the coast and is expected to provide ecological lift to the coastal region beyond no net loss, the project would not result in a cumulatively considerable contribution to impacts to wetlands and other waters.

Mitigation for impacts to wetlands and other waters would reduce these cumulative impacts to less than considerable levels.

Table 3.25.2: Summary of Cumulative Projects

Map Number/ Project Name	Location	Proposed Development	Identified Cumulative Impacts	Project Status
San Diego				
1. Scripps Hospital La Jolla Master Plan	Genesee Avenue and I-5	Demolition of existing hospital and construction of three hospital towers, two medical office buildings, outpatient care pavilion and additional parking	Visual Resources – Cumulative impacts related to aesthetics/neighborhood character and lighting/glare identified as less than significant	DEIR Public Review ends January 4, 2013; Initial construction projected for 2015
2. Flower Hill Promenade Project	San Andreas Drive and I-5	Demolition of movie theater, improvements to existing retail center and construction of new grocery store, 400-space parking structure, 28,000-square-foot medical space and 8,000 square feet of retail space	Visual Resources – No cumulative impacts identified for neighborhood character/visual effects	Final Recirculated EIR complete February 2011; Construction completion projected for early 2013
3. One Paseo Project	Del Mar Heights Road and El Camino Real	Construction of mixed-use, office, and retail uses	Visual Resources – Cumulative impacts related to viewsheds and neighborhood character identified as less than significant	DEIR Public Review ended May 14, 2012; FEIR under preparation as of December 2012 with no projected EIR completion or project construction dates
4. Via De La Valle Road Widening	Via De La Valle from El Camino Real west to San Andreas Drive	Widening of existing two-lane road segment to four-lanes	Not available: No environmental documentation as of December 2012.	Project is in review phase
5. San Dieguito River Park Nature Center	Via De La Valle and San Andreas Drive	Construction of nature center, parking and educational facilities	Visual Resources – Less than significant impacts Natural Communities – Less than significant impacts due to graded condition of site	Project is in review phase
Del Mar				
6. Riverview Offices Project	Jimmy Durante Boulevard and San Dieguito Drive	Construction of two multi-level commercial office buildings at the southeast corner of the intersection	Visual Resources – Potential impacts not identified Natural Communities – Potential impacts mitigated to less than significant	DEIR completed in December 2007; site remains undeveloped
7. 22nd District Agricultural Association Fairgrounds and Horsepark Master Plan	Via De La Valle and Jimmy Durante Boulevard and Via De La Valle and El Camino Real	Renovation of existing exhibit halls and barns; construction of office/ticket box space, (potential) hotel, health club, and fire station; restoration of salt marsh habitat; enhanced parking and support for seasonal train platform	Visual Resources – Less than significant impacts to I-5 corridor associated with new construction near freeway. Significant impacts related to new light and glare sources. Natural Communities – Direct removal of 0.16 ac of native vegetation communities, including Diegan coastal sage scrub, southern coastal salt marsh, and riparian habitat. Indirect impacts to riparian habitat in Stevens Creek (0.04 ac). Wetlands and Other Waters – Temporary and permanent impacts to jurisdictional areas, including up to 0.49 ac of federal and State waters	Project approved in April 2011; CEQA litigation settled in December 2012
8. Solana Beach Gateway Resort Project	Highway 101 and E. Circle Drive	Construction of 30-unit hotel development with associated clubhouse, outdoor pool, and spa	Wetlands and Other Waters – Substantial loss of wetlands from San Elijo Lagoon	Project terminated. Site purchased by San Elijo Lagoon Conservancy for dedication to an open space park in December 2011

Table 3.25.2 (cont.) Summary of Cumulative Projects

Map Number/ Project Name	Location	Proposed Development	Identified Cumulative Impacts	Project Status
Solana Beach				
9. Mixed-Use Solana Beach Train Station ("Cedros Crossing")	Lomas Santa Fe Drive and North Cedros Avenue	Parking facility and mixed-use, transit-oriented development	Visual Resources –Substantial visual impact cumulative impacts to visual/aesthetics associated with introduced building heights, which are incongruent with surrounding land uses	The Cedros Crossing project was terminated in 2008 due to concerns that it was not compatible with the City's General Plan. The $72 million mixed-use development included retail shops, restaurants, boutique office space, 141 housing units and a $19 million underground parking garage that would have added about 120 parking spaces.
10. U.S. Army Corps of Engineers, Encinitas and Solana Beach Shoreline Protection Project	Up to 8 miles of shoreline in the Cities of Encinitas and Solana Beach	Restoration of shoreline to reduce storm-related wave attack and shoreline erosion along the base of the associated bluffs and beaches. Both structural and non-structural approaches to be considered, including off-shore sand dredging local beach replenishment over a 50 year period, and notch infills.	Not available: No environmental documentation as of December 2012.	Environmental review phase pending
Encinitas				
11. Hall Property Community Park	Santa Fe Drive and I-5	44 ac of public park, including skate park; dog park; and fields for soccer, softball, baseball, and unrestricted play	Visual Resources –Substantial visual impact cumulative impacts to visual/aesthetics associated with light and glare extending to adjacent properties	Final EIR approved 2008, Coastal Commission approval finalized in 2009, construction began August 2012 and is scheduled for completion by the end of 2013
12. Coral Cove Residential Project	Ashbury Street and Vulcan Avenue	69 units on a 10-ac project site	Wetlands and Other Waters – Substantial water quality impacts during construction	Project approved 2006; site graded but remains undeveloped
13. Scripps Hospital Encinitas Master Plan	Santa Fe Drive and I-5	Modification and expansion of existing hospital; including two-story facility for emergency department and medical-surgical beds, new central energy plant, and various infrastructure improvements	No significant cumulative impacts identified for visual resources, natural communities, or wetlands and other waters	Second phase of construction to be completed by 2014
14. North 101 Corridor Streetscape Improvements	Highway 101 from A Street to La Costa Avenue	Landscaping and circulation improvements	Visual Resources – Beneficial effects to aesthetics of road	Project approved; construction began June 2012
Carlsbad				
15. Northern Inlet Jetty Restoration	Agua Hedionda Lagoon	Reconstruction/seaward extension of existing northern tidal inlet jetty	Visual Resources – Potential impact due to decreased beach width south of northern inlet Natural Communities – Loss of surfgrass habitat offshore of North Beach Wetlands and Other Waters – Potential for decreased beach width at Middle Beach and South Beach from deflection	Project in review phase
16. Agua Hedionda Sewer Lift Station and Force Main Replacement	Between Agua Hedionda Lagoon and the Encina Water Pollution Control Facility	Approximately 2.35 linear mi of sewer trunk line, a 50-million gallon per day (mgd) sewer lift station, a 140-foot sewer support bridge, and associated improvements	No known information available on the status of the CEQA document or related cumulative issues/impacts	Project MND approved by City December 2011

Table 3.25.2 (cont.) Summary of Cumulative Projects

Map Number/ Project Name	Location	Proposed Development	Identified Cumulative Impacts	Project Status
Carlsbad (cont.)				
17. Westfield Carlsbad Project	El Camino Real and Marron Road	Renovation of existing shopping center, including construction of 35,417-square-ft expansion	Visual Resources – No impacts to scenic vistas, corridors, or resources Natural Communities – No impacts to natural communities Wetlands or Other Waters – No impacts to jurisdictional areas	Project in review phase; construction projected for spring 2013
18. Caruso Affiliated Project	Cannon Road and I-5	Retail and possible housing project on site occupied by agricultural fields	Not available: No environmental documentation as of December 2012.	Application not yet submitted for review
19. Carlsbad Energy Center Project (CECP)	Cannon Road and I-5	Construction of 558 Megawatt (MW) generating facility on site of existing Encina Power Station, including retirement of boiler units at existing facility	Visual Resources – Significant impacts from construction of new generating facility identified in the California Energy Commission (CEC) final decision document dated June 2012 (CEC-800-2011-004-CMF)	The CEC adopted the final decision for the CECP on May 31, 2012 The CEC will serve as CEQA lead agency during the CECP licensing
20. Poseidon Desalination Plant	Located at the Encina Power Station, near Cannon Road and Highway 101	50-mgd seawater desalination plant and associated water delivery pipelines	No significant cumulative impacts identified for visual resources, natural communities, or wetlands and other waters in Final EIR certified in June 2006, or the related Addendum dated August 2009	All approvals received; water purchase agreement with SDCWA was approved November 2012, clearing the way for financing and construction to proceed; project could be completed by 2016
Oceanside				
21. Oceanside Pier Resort	Pacific Street and Pier View Way	Development of 136 timeshare units, 32 hotel units, 4780 square ft of restaurant space, and 7730 square ft of retail space	Visual Resources – Substantial visual impact due to mid-rise towers. Incongruent with current visual character	Project completed
22. Mesa Ridge Project	Mesa Drive and Foussatt Road	Development of 70 townhomes on a 23.8-ac site	Natural Communities – Project results in permanent loss of 12.20 ac of non-native grassland. Mitigation to occur at a 0.5:1 ratio	EIR approved 2008; site at northeast corner of Mesa Drive and Foussatt Road remains undeveloped
23. Inns at Buena Vista Creek	Jefferson Avenue and SR-78	Construction of a business hotel, an extended stay hotel and a family-oriented vacation-type hotel for a total of 426 rooms	Not available: No environmental documentation as of December 2012.	Application under review
Caltrans Highway Projects				
24. I-5 / Genesee Avenue Bridge Widening and Interchange Improvements	City of San Diego at I-5 / Genesee Avenue Interchange	Reconstruction of existing I-5 / Genesee Avenue Interchange; add southeast and northwest loops; signalize interchange	Visual Resources – Potential impacts due to retaining walls and structures mitigated to less than significant. Cumulative impacts concluded to not be substantial. Natural Communities – Potential impacts to coastal sage scrub, coyote brush scrub, and non-native grassland mitigated to less than significant. Cumulative impacts concluded to not be substantial. Wetlands and Other Waters – Potential impacts to southern willow scrub and non-wetland streambed mitigated to less than significant. Cumulative impacts concluded to not be substantial.	MND/EA approved June 2011; construction is scheduled for fall 2013
25. I-5 / SR-56 Direct Connectors	City of San Diego I-5 / SR-56 Interchange	Construct HOV/Managed Lanes freeway-to-freeway connectors via direct ramps or local street connections	Visual Resources – Potential impacts due to reduction in screen plantings, retaining walls, and soundwalls not mitigated to less than substantial; cumulative impacts would occur Natural Communities – Potential impacts to coastal sage scrub, southern mixed chaparral, and southern maritime chaparral mitigated to less than substantial. The proposed project was concluded to not result in significant adverse cumulative impacts to natural communities.	Draft EIR/EIS completed public review; environmental estimated completion in late 2013

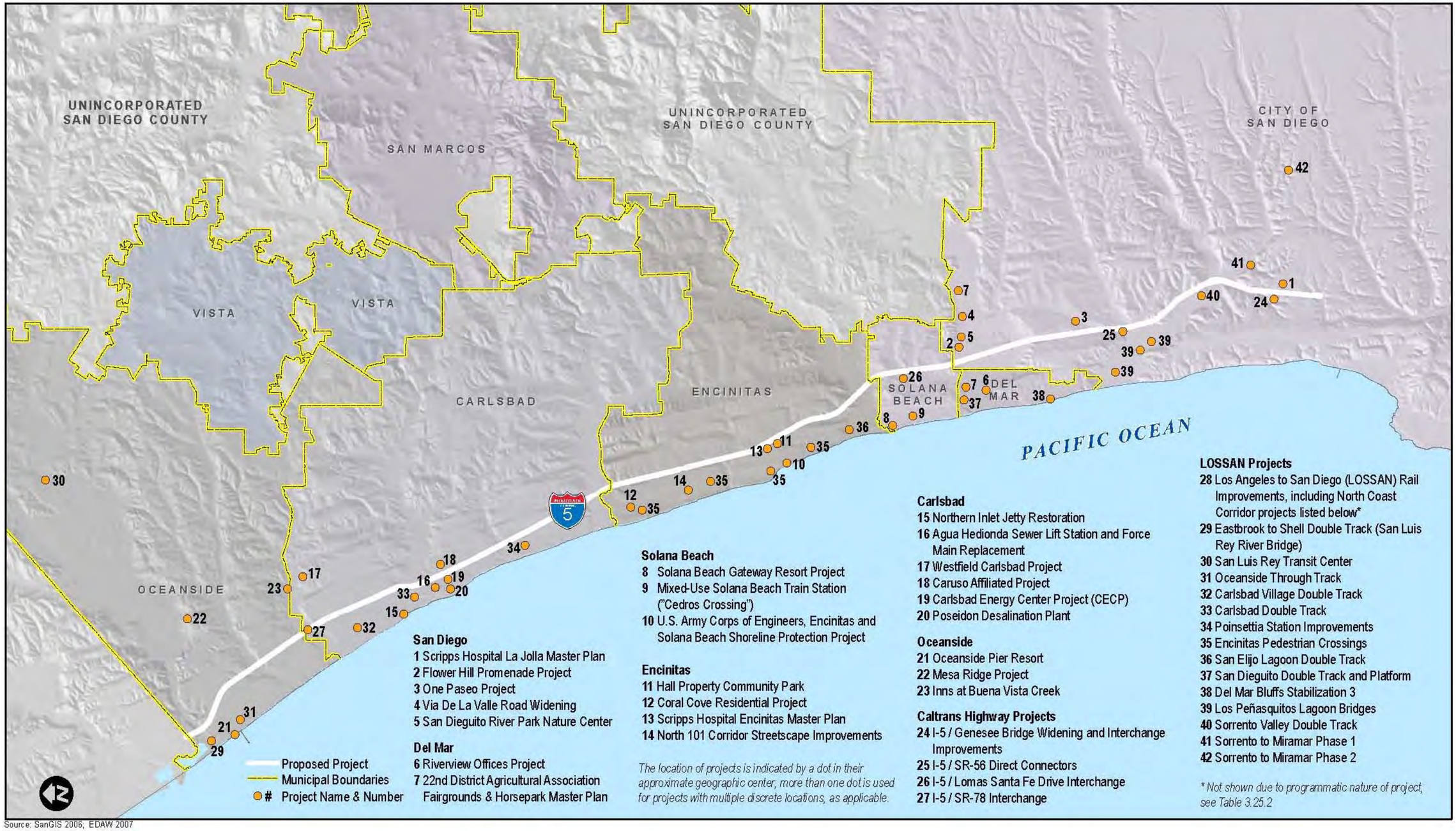
Table 3.25.2 (cont.) Summary of Cumulative Projects

Map Number/ Project Name	Location	Proposed Development	Identified Cumulative Impacts	Project Status
Caltrans Highway Projects (cont.)				
26. I-5 / Lomas Santa Fe Drive Interchange	City of Solana Beach at interchange of I-5 and Lomas Santa Fe Drive	Construct Auxiliary lanes and modify existing interchange	Visual Resources – Overall moderate adverse effect of visual quality of moderate extended duration due to the introduction of new structures and improvement of existing structures	Project completed
27. I-5 / SR-78 Interchange	I-5 at SR-78	Direct connectors, potentially by construction of a Managed Lane/HOV Connector, between I-5 and SR-78	Visual Resources – Potential impacts due to Managed Lane/HOV Connector ramps Natural Communities – Potential impacts to sensitive habitat (wetlands at Buena Vista Lagoon) Wetlands and Other Waters – Potential impacts to wetlands	Preliminary design phase; environmental review set to begin in spring 2013
LOSSAN Projects				
28. Los Angeles to San Diego (LOSSAN) Rail Improvements, including North Coast Corridor projects listed below*	From Los Angeles to San Diego	Program-level evaluation of double-tracking of railroad tracks and other improvements including bridge and track replacements, new platforms, pedestrian undercrossings, and other safety and operational enhancements	Community Cohesion – Possible impacts include displacement of commercial and residential properties; community and neighborhood disruption Visual Resources – Potentially significant cumulative impacts to visual/aesthetics Natural Communities – Potential impacts to several sensitive biological species and habitats Wetlands and Other Waters – Potential impacts to several water resources and wetlands	Environmental completed 2009
29. Eastbrook to Shell Double Track (San Luis Rey River Bridge)	North Oceanside Double Track (Control point [CP] Eastbrook to CP Shell)	Add approximately 0.5 mi of second track just south of SR-76 to south of Harbor Drive and replace San Luis Rey River Bridge	Cumulative effects identified in programmatic document; see Project 28 above	Design completion fall 2014
30. San Luis Rey Transit Center	Vandegrift Boulevard and North River Road	New bus transit facility including four covered shelters with seating and restrooms	Cumulative effects identified in programmatic document; see Project 28 above	Construction began April 2012, estimated completion spring 2013
31. Oceanside Through Track	Oceanside Transit Center	Add platform and third track to accommodate COASTER and/or Metrolink trains	Cumulative effects identified in programmatic document; see Project 28 above	Construction to begin early 2013
32. Carlsbad Village Double Track	From Carlsbad Village Drive to the north	1.1 mi of double track, including a new rail bridge across Buena Vista Lagoon	Cumulative effects identified in programmatic document; see Project 28 above	Design completion late 2014
33. Carlsbad Double Track	From Carlsbad Village Drive southward past Cannon Road	1.9-mi second main track and a new rail bridge over Agua Hedionda Lagoon	Cumulative effects identified in programmatic document; see Project 28 above	Construction completed spring 2012
34. Poinsettia Station Improvements	Poinsettia Station in Carlsbad	Improve station to include new grade-separated pedestrian crossing and signals	Cumulative effects identified in programmatic document; see Project 28 above	Construction to begin late 2013
35. Encinitas Pedestrian Crossings	Santa Fe Drive, El Portal Street, Montgomery Avenue, and Hillcrest Drive	Four grade-separated pedestrian crossings including utility relocation, underpasses, landscape improvements, environmental mitigation, and street crossing improvements on adjacent roadways	Cumulative effects identified in programmatic document; see Project 28 above	Completion of Santa Fe Drive undercrossing construction in early 2013
36. San Elijo Lagoon Double Track	CP Cardiff to CP Craven	Add 1.5 mi of second track, enhance existing pedestrian crossing at Chesterfield Drive, and replace San Elijo Lagoon Bridge	Cumulative effects identified in programmatic document; see Project 28 above	Construction to begin late 2014

Table 3.25.2 (cont.) Summary of Cumulative Projects

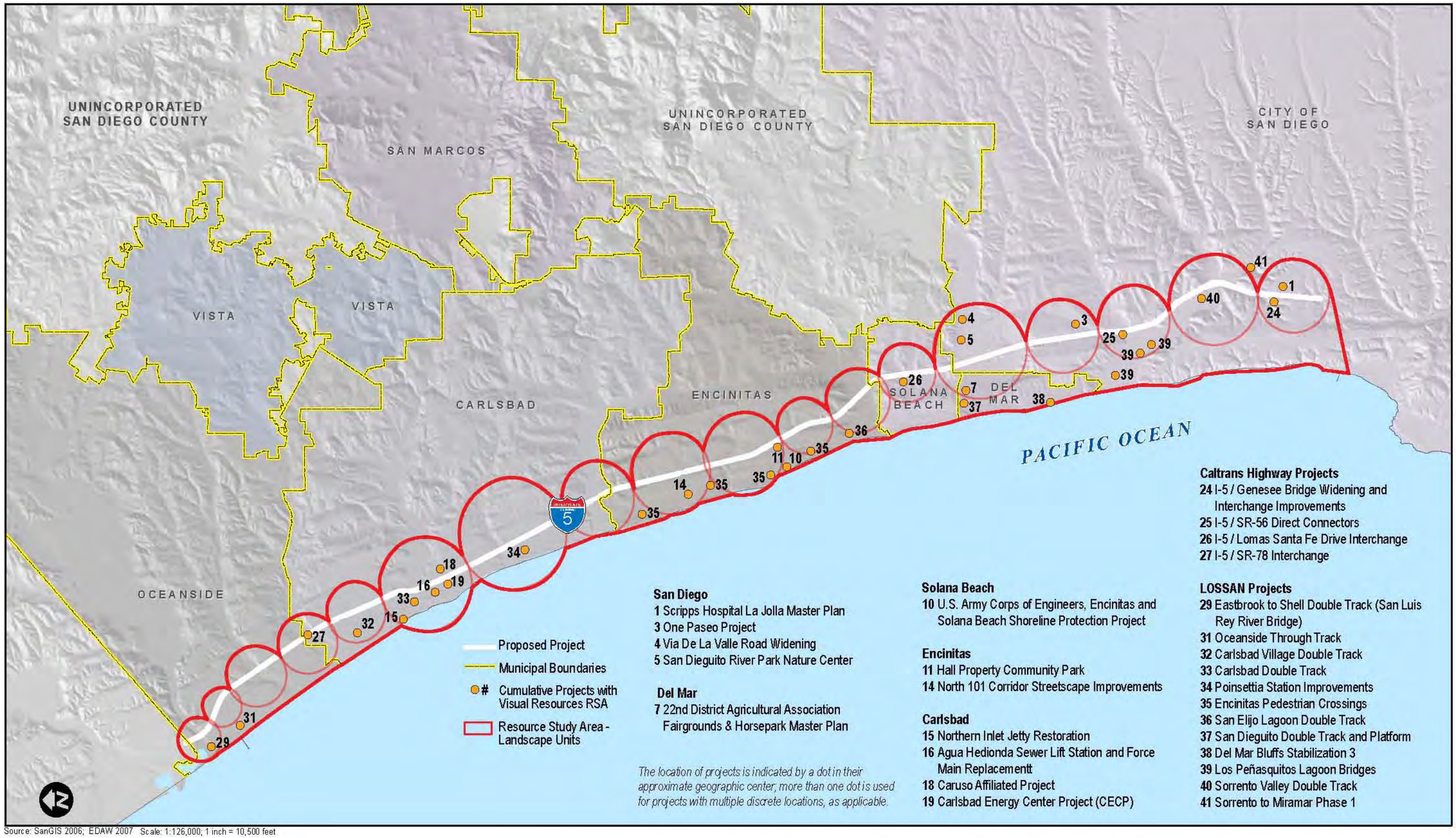
Map Number/ Project Name	Location	Proposed Development	Identified Cumulative Impacts	Project Status
LOSSAN Projects (cont.)				
37. San Dieguito Double Track and Platform	From just south of Dahlia Drive in Solana Beach and continuing 1.1 miles south across the San Dieguito Lagoon	Replace 96-year-old San Dieguito Railway River Bridge wooden trestle, add 1.1 mi of second mainline rail track south of Solana Beach, and add a special events platform at the Del Mar Fairgrounds for NCTD COASTER and Amtrak Pacific Surfliner trains	Cumulative effects identified in programmatic document; see Project 28 above	Environmental completion early 2014
38. Del Mar Bluffs Stabilization 3	Between Seagrove Park and Torrey Pines State Beach in the City of Del Mar	Stabilized portions of the 1.6 mi of coastal bluffs with soldier piles and an architecturally enhanced pile cap	Cumulative effects identified in programmatic document; see Project 28 above	Construction completed spring 2012
39. Los Peñasquitos Lagoon Bridges	Los Peñasquitos Lagoon	Replacement of three aging railroad bridges	Cumulative effects identified in programmatic document; see Project 28 above	Design in process
40. Sorrento Valley Double Track	From the Sorrento Valley Station to approximately 1.1 miles to the north	Add a second mainline rail track, raise portions of track bed, replace three wooden trestle bridges, install embankment protection system along the westerly side of the track adjacent to Los Peñasquitos Creek, and build retaining walls adjacent to the tracks near the parking lots	Cumulative effects identified in programmatic document; see Project 28 above	Construction to begin fall 2013 and completed by mid-2015
41. Sorrento to Miramar Phase 1	Between the Sorrento Valley Station and Miramar Road in the City of San Diego (in two phases)	Add 1.1 mi of second track and replace a wooden trestle bridge south of the Sorrento Valley COASTER station	Cumulative effects identified in programmatic document; see Project 28 above	Construction completion late 2013
42. Sorrento to Miramar Phase 2	Between the Sorrento Valley Station and Miramar Road in the City of San Diego (in two phases)	Add 2.0 mi of passing track to the coastal rail corridor between I-805 and Miramar Road and straighten the sharp curves in this segment	Cumulative effects identified in programmatic document; see Project 28 above	Design completion early 2015

* Not shown in *Figure 3-25.1* due to programmatic nature of project.



Source: SanGIS 2006; EDAW 2007
Scale: 1:126,000; 1 inch = 10,500 feet

Figure 3-25.1: Approximate Locations of Cumulative Projects

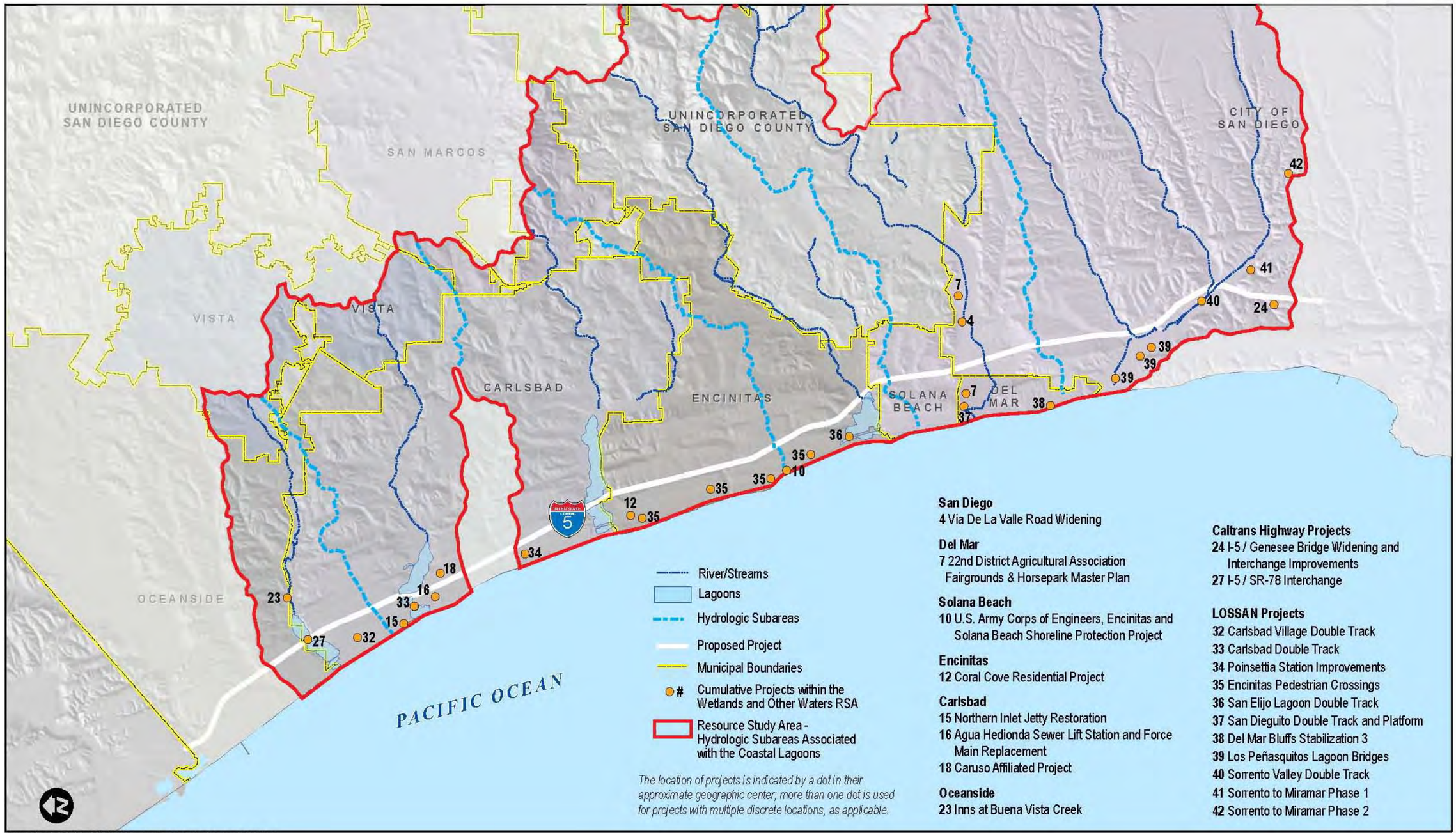


Source: SanGIS 2006; EDAW 2007 Scale: 1:126,000; 1 inch = 10,500 feet

Figure 3-25.2: Cumulative Projects within Visual Resources RSA

Source: SanGIS 2006; EDAW 2007 Scale: 1:126,000; 1 inch = 10,500 feet

Figure 3-25.3: Cumulative Projects within Natural Communities RSA



Source: SanGIS 2006; EDAW 2007 Scale: 1:126,000; 1 inch = 10,500 feet

Figure 3-25.4: Cumulative Projects within Wetlands and Other Waters RSA