SUBCHAPTER 3.2

BIOLOGICAL RESOURCES

3.2 Biological Resources

The descriptions and evaluation of biological resources impacts in this section are based on information compiled through field reconnaissance (34 site visits over the 4-year period between 2001 and 2006) and the Biological Technical Report prepared by Pacific Southwest Biological Services (June 2007). A complete copy of the report is included in Appendix G.

3.2.1 Discussion of Existing Conditions Relating to Biological Resources

Project Vicinity

The Merriam project site and the surrounding undeveloped portions of the Merriam Mountains forms a large block of largely undeveloped land (about 2,300 ± acres), adjacent to and east of another large undeveloped land form, the San Marcos Mountains. The northern and southern Merriam Mountains, along with the adjacent San Marcos Mountains, represent the largest substantial-sized, essentially native blocks of habitat located west of I-15 in central San Diego County. Southern Mixed Chaparral, the primary habitat located on the Merriam project site (approximately 95 percent coverage) is relatively common in the central foothills of San Diego County, although substantial amounts of this habitat have been converted to grove agriculture. The areas surrounding the Merriam site to the north and south are developed for agricultural and/or large-lot residential uses. The southern portion of the Merriam Mountains, south of Deer Springs Road and the project site, has been substantially planted in grove crops. The Merriam Mountains to the north of Lawrence Welk Drive are partially developed as large-lot residential uses and grove-agriculture, with isolated patches of chaparral and coastal sage scrub. The Merriam site is west of and adjacent to I-15, which includes eight lanes of freeway roadway with a wide median strip and often substantial cut or fill banks along the freeway.

Vegetation Communities

The majority of the chaparral on the Merriam site has been unburned for over one hundred years, which has reduced its wildlife carrying capacity. The wildlife carrying capacity has been reduced because chaparral is a naturally fire-adapted vegetation type; i.e., many of its component species require fire to regenerate new growth or allow seeds to germinate. Natural fires in chaparral often result in a mosaic of various-aged habitats, with different plant species dominating the landscape over time as the "climax vegetation" occurs. Thus, very recently burned areas of chaparral may be devoid of any surface vegetation, but these areas typically include resprouting shrubs, as well as species that principally reseed only after a fire, particularly if adequate rainfall occurs.

"Natural" fires are thought to generally occur every ten to forty years, although there is much debate about this interval. Between fires, seeds of some plants may lay dormant by the millions, and only germinate after a fire because of the heat and/or smoke released during a fire. Some plants germinate from seeds because of the fire and some plants resprout from basal burls, while other species are killed by the fire and reseed by other means, the kinds and structure of the vegetation changes over time after a fire. The differences in the age and frequency of various plants affect the wildlife using a given patch of chaparral. For instance Mule Deer may visit dense, old stands of chaparral, but they may have trouble moving though such stands and may not find young shoots to eat until after a fire, or in younger stands of shrubs and oak woodland.

In areas where fires do not occur over a long period of time, the structure of the chaparral typically becomes tall and dense, with relatively few species dominating compared to the period after a fire. Due to the number of ecological niches (i.e., microhabitats) is reduced in unburned areas), there is less diversity of habitat to support a less diverse range of wildlife species. Fires open up these habitats and create mosaics of habitats, and thus support a greater diversity of wildlife in a given area.

The site includes a number of vegetation communities that are relatively common in north-inland San Diego County. Southern Mixed Chaparral (on granitic-derived soils) covers most of the 2,327-acre site (approximately 2,156 acres or 92 percent of the entire site), while the remainder of the vegetation cover types individually amount to one percent or less of the total project area. They include, Disturbed Habitat, Urban/Developed, Orchard, Intensive Agriculture, Diegan Coastal Sage Scrub, Non-native Grassland, Freshwater Marsh, South Coast Live Oak Riparian Forest, Sycamore Alluvial Woodland, Eucalyptus Woodland Southern Willow Scrub/Mulefat Scrub, Mule-fat Scrub, Southern Willow Scrub, Southern Willow Scrub/Tamarisk Scrub, and Coast Live Oak Woodland. Each vegetation community is depicted on Figure 3.2-1 and described below. Table 3.2-1 includes the acreages and the percent coverage for each habitat type at the end of this section.

Eucalyptus Woodland: Scattered eucalyptus trees exist on the site, concentrated where Meadow Park Lane would join the site in the extreme southeastern part of the project. Scattered and isolated eucalyptus trees exist elsewhere on the site, but were not individually mapped.

Disturbed Habitat: This category consists of permanently disturbed land-cover currently existing on the site and includes small areas, including adjacent to the north end of Mesa Rock Road, the defunct quarry site adjacent to Twin Oaks Valley Road, and limited areas adjacent to the abandoned aircraft landing strip in the northwest quadrant of the site.

Urban/Developed: Developed areas support no native vegetation and may be additionally characterized by the presence of man-made structures such as buildings or roads. The level of

soil disturbance is such that only the most ruderal plant species occur. Urban/Developed lands occur in the southern portion of the site; near the proposed entrance area.

Orchard: Small areas in the southwest and northwest quadrant of the site contain apparently non-commercial orchard crops, primarily as a result of incursion from existing adjacent agricultural uses.

Intensive Agriculture: A small area of avocado groves occurs within the Merriam site, located in the lower southwest corner of the property; this may have been an incursion of agricultural by an adjacent agricultural operation.

Diegan Coastal Sage Scrub: A few relatively limited areas of the site are covered with the open Diegan Coastal Sage Scrub vegetation. The most extensive patch of this vegetation occurs on the south-facing slopes of the southern valley. At the northwestern corner of the site, those areas not cleared by the aqueduct or for the avocado groves have an association of California Sage Brush (*Artemisia californica*) and Flat-top Buckwheat (*Eriogonum fasciculatum*). The northern-most extension of the site also has a Sage Scrub cover, but this appears to be due to prior clearing of the chaparral vegetation and should be better considered as Successional Sage Scrub. Sage Scrub vegetation is considered sensitive because of its conversion to other uses in southern California and because it supports a number of sensitive species of wildlife.

Southern Mixed Chaparral: The site is largely covered by Southern Mixed Chaparral that varies from an almost pure "Chamisal" of Chamise (*Adenostoma fasciculatum*) to a Mountain-Mahogany-dominated type (*Cercocarpus minutiflorus*) in the deeper soil inner valleys. The indicators of the more widespread Southern Mixed Chaparral on the site are: Chamise, Mission Manzanita (*Xylococcus bicolor*), Black Sage (*Salvia mellifera*) and Ramona Wild-lilac (*Ceanothus tomentosus*). The extent of exposure, soil depth and slope affect the extent of the diversity of the chaparral on the site. One major characteristic of the onsite Chaparral vegetation is its level of maturity. This Mediterranean-climate associated vegetation is highly correlated with periodic fires that recycle the surface load of organic material and nutrients back into a nutrient-poor soil system. The fires also allow the cycling of a major suite of annual native wildflowers and stimulate the re-growth from subsurface specialized stems of the major shrubs on the region. The onsite chaparral is ripe for a wildfire because of the lack of recent fires. Separation of proposed new land uses from existing chaparral areas (involving fuel management zones) will be a key issue in the development review process. Isolated trees of Coast Live Oak (*Quercus agrifolia*) and small stands of Scrub Oak (*Quercus berberidifolia*) occur in several areas mapped as Southern Mixed Chaparral, but do not constitute oak woodlands. These locations do not constitute distinct oak woodlands.

Mafic Chaparral: Chaparral vegetation on Santiago Peak metavolcanic rock-derived soil is sometimes classified as Mafic Chaparral, particularly where Las Posas and other clay-soils may support certain rare plants. The primary area mapped as Las Posas soils is on the west side of Twin Oaks Valley Road, part of the San Marcos Mountains. Vegetation in this area was difficult to define because of the evidence of prior agriculture and partial recovery of the area with elements of Coastal Sage Scrub species. It is very likely that this area was originally Mafic Chaparral prior to agricultural uses. The listed areal extent of the potential Mafic Chaparral is the area west of Twin Oaks Valley Road; an additional area of about 0.3 acre in the extreme northwest portion of the site was not inspected in detail and may also be classifiable as Mafic Chaparral. The total area given for this vegetation type is not necessarily reflected in the plant species or vegetation type observed in the field because of the age and uniformity of the vegetation. An additional area of Las Posas soils (fine sandy loam vs. stony find sandy loam) occurs at the north end of Mesa Rock Road, but did not appear to support Mafic Chaparral plants and was not classified. These areas with Las Posas soils often support endemic plants that have either evolved to do well on these nutrient-poor soils, or can out-compete other plants and thrive on such soils. The mapped Las Posas soils areas were closely examined and did not support sensitive plants.

Non-native Grassland: This vegetation is primarily located in an area termed the linear "meadow" (north of Sarver Lane) is not biologically a meadow, but is an open field of non-native grasses and forbs, largely Ripgutgrass (*Bromus diandrus*). Within the site, the inner meadow, largely covered by weedy non-native grasses, and is surrounded by a perimeter dirt road and has another dirt road diagonally crossing it from southwest to northeast. Additionally, there are several areas used for informal dirt-bike tracks within the grassland area. The predominant plants vary on the season, sometime showing extensive Black Mustard (*Brassica nigra*) stands. Given its coverage in the only very flat area on the project site, it appears to have been used for pasture of crop lands, probably over the past 75+ years. Although Annual Grasslands are non-native, wildlife agencies consider them valuable as foraging habitat for a variety of raptorial birds such as hawks and eagles.

Freshwater Marsh: A small amount of Freshwater Marsh habitat exists in the Twin Oaks Valley Creek, west of and adjacent to Twin Oaks Valley Road, in the west-central portion of the site. This area is dominated by cattails, but shows evidence of occasional channel clearing (perhaps for mosquito control).

South Coast Live Oak Riparian Forest: Riparian Forest onsite, consist largely of Black Willow (*Salix gooddingii*) and Arroyo Willow (*S. lasiolepis*), with occasional Coast Live Oaks. The largest extent of this vegetation on site is in the bottom of the eastern central canyon, and also occurs just off-site along the creek, south of Deer Springs Road. Riparian Forest runs off the site from the southern valley and is dominated by Coast Live Oaks. Riparian habitats of any kind are

usually considered by wildlife agencies to have very high wildlife value for the cover, nesting habitat and food sources this habitat provides.

Sycamore Alluvial Woodland: This type of riparian woodland vegetation is mixture of California Sycamores (*Platanus racemosa*), with scattered Coast Live Oaks and several willow species (*Salix* sp.) that occurs in a narrow canyon opening up adjacent to the west I-15 in the extreme north-east part of the Merriam site. The extensive Sycamores in this area make it one of the two major riparian woodland areas on the site, with potentially high wildlife value. This area is within the Biological Open Space area of the proposed project.

Southern Willow Scrub/Mule-Fat Scrub: This generalized type of Riparian Scrub vegetation forms a scrubby streamside thicket including willows and Mule-fat (*Baccharis salicifolia*), located along Twin Oaks Valley Road in the stream in the south fork of Gopher Canyon.

Mule-fat Scrub: This vegetation is a tall, herbaceous riparian scrub strongly dominated by Baccharis (Holland, 1986). On the Merriam site, small drainage channels in various areas with occasional Mule-fat shrubs occur, including drainages associated with the southeastern central valley and the graded area of the defunct aircraft landing strip.

Southern Willow Scrub: This vegetation type is fairly typical of Holland's (1986) Southern Willow Scrub, described as "dense, broad-leafed, winter-deciduous riparian thickets dominated by several (willow species with scattered emergent cottonwoods [*Populus fremontii*] and sycamores). This vegetation occurs along the streamside in the South Fork of Gopher Canyon, adjacent to Twin Oaks Valley Road.

Southern Willow Scrub/Tamarisk Scrub: A small amount of this habitat exists in a previously graded area adjacent to the abandoned aircraft landing area in the northwest quadrant of the site. The topography of this area allows rainwater to pond and promotes this artificial wetland-like habitat, consisting of scattered willows and Tamarisk.

Coast Live Oak Woodland: The Deer Springs area at the southeastern corner of the site has a mature stand of Coast Live Oak and occasional Engelmann Oak. The area was the site of a prior residence, so the under story is largely disturbed and recruitment or new growth of young trees has been arrested by the presence of the weedy under story. Coast Live Oaks also occur scattered about the site, especially as part of the Chaparral vegetation on protected north-facing slopes, but the principal mapped unit of Oak Woodland lies only at this southeastern corner and the following site. The drainage that flows out of the southern valley has Riparian Oak Woodland that differs from the savannah-type Oak Woodland at the southern area. Oak woodland habitats are generally considered of high value because of their value to diverse and abundant wildlife.

Wetlands: Wetlands are areas where an excess of water is the dominant factor in determining the nature of soil development and the types of animals and plant communities living at the soil surface. There are several types of wetlands and classification is somewhat unique between local, state, and federal jurisdictional agencies. The project area was surveyed in July 2003 by Pacific Southwest to determine the presence of wetlands on the site. U.S. Army Corps of Engineers (ACOE), CDFG, and County guidelines were used and wetland features classified accordingly.

Army Corps of Engineers: The Corps has regulatory authority over the discharge of dredged or fill material into the waters of the United States under Section 404 of the Clear Water Act. Wetlands, a subset of jurisdictional waters, are defined as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions". The Corps has developed a methodology for determining the boundaries of jurisdictional wetlands based on the following three indicators that are normally present in wetlands: (1) hydrology providing permanent or periodic inundation by groundwater or surface water, (2) hydric soils, and (3) hydrophytic vegetation. In order to be considered a wetland, an area must exhibit at least minimal hydric characteristics within all three of these parameters.

California Department of Fish and Game: The state of California regulates activities in rivers, streams, and lakes pursuant to Section 1600 of the Fish and Game Code. This section discusses the process by which an individual, government agency, or public utility must notify the CDFG prior to any activity that would "substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake..." Jurisdictional limits of the CDFG are not as clearly defined by regulation as those of the Corps. Generally, CDFG takes jurisdiction to the bank of the stream or to the outer limit of the adjacent riparian vegetation, which ever is greater.

County of San Diego – RPO Wetlands: The property is under the guidelines of the county's Resource Protection Ordinance (RPO). RPO defines wetlands as "all lands which are transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or where the land is covered by water. All lands having one or more of the following attributes are wetlands: (1) At least periodically, the land supports predominantly hydrophytes, (2) The substratum is predominantly undrained hydric soil, or (3) an ephemeral or perennial stream is present, whose substratum is predominately non-soil, and which either (a) water from a tributary drainage area of 100 acres or larger flow; or (b) (for waters from a tributary drainage of les than 100 acres) substantial evidence demonstrates that such lands contribute substantially to the biological function or value of adjacent wetlands located up- or down-stream. RPO requires avoidance of wetlands and avoidance of the wetland buffer adjacent to the wetlands. The County RPO prohibits certain uses within RPO-defined wetlands and requires Wetland Buffers to protect

the environmental and functional habitat values of wetlands, with buffer widths from 50 to 200 feet in width.

In general, the property contains wet areas that support riparian vegetation, primarily within established drainages. These areas do not meet the three required criteria to be classified as ACOE jurisdictional wetlands (see above). However these areas meet one (vegetation) of the three required criteria for CDFG and County RPO, and therefore are classified as CDFG wetlands and County RPO wetlands.

Each of the wetlands occurring in the five watersheds is discussed below. The location of the five watersheds is shown on Figure 3.6-1 as part of the Hydrology/Water Quality analysis.

Watershed A – Southwest Fork Moosa Canyon Tributary: This area supports Southern Willow Scrub, Southern Willow Scrub/Mule-fat Scrub and Oak Riparian Forest. This watershed includes one of the largest and most diverse CDFG/RPO wetlands occurring on site.

Watershed B – San Marcos Creek Tributary: This area includes Southern Willow Scrub, Mule Fat Scrub, and Oak Riparian Forest. The Southern Willow Scrub and Mule Fat Scrub are small isolated areas occurring in the southern portion of the property. Two areas of Oak Riparian Forest occur in the same drainage system. These wetland areas occur within ACOE Non-wetland waters of the U. S. and CDFG Streambed. The two small areas of Southern Willow Scrub are isolated from the other wetland areas occurring downstream.

Watershed C – Basin C: This watershed does not include any jurisdictional wetland areas, but includes ACOE Non-wetland waters of the U. S. and CDFG Streambeds.

Watershed D – South Fork Gopher Canyon Tributary: This watershed includes the largest area (3.97 acres) of diverse riparian vegetation. This area includes areas of Fresh Water Marsh, Southern Willow Scrub, and Oak Riparian Forest.

Watershed E – Basin E: This area includes two small areas of Southern Willow Scrub located within ACOE and CDFG drainage.

RPO Wetlands and Other Jurisdictional Wetlands on the project site consist of Freshwater Marsh (0.1 acre), Mule Fat Scrub (0.2 acre), Oak Riparian Forest (2.3 acres), Southern Willow Scrub (2.6 acres), Southern Willow Scrub/Mule Fat Scrub (0.3 acre), Southern Willow Scrub/Tamarisk Scrub (0.6 acre), Sycamore Alluvial Woodland (1.6 acres) and Unvegetated Wetlands (0.2 acre). The total RPO Wetlands on site consist of 7.9 acres. Each of the wetlands occurring in the five watersheds is depicted on Figure 3.2-1. In addition Table 3.2-2 provides a summary of the wetlands within the project area.

County of San Diego – Sensitive Habitat Lands

The patch of Diegan Coastal Sage Scrub north of the Mesa Rock Road cul-de-sac that supports a single pair of Threatened Coastal California Gnatcatchers does qualify as a Sensitive Habitat Land under the RPO. These gnatcatchers may be part of a larger population of gnatcatchers along the I-15 Corridor from State Route (SR) 76 to SR 78. The presence of the gnatcatchers qualifies the area occupied as a Sensitive Habitat Land under the RPO because the area supports this population of a "rare or endangered species or sub-species of animals" as defined by Section 15380 of the State CEQA Guidelines. No other lands on the site meet the definition of Sensitive Habitat Lands under the RPO.

Wildlife Resources

Wildlife resources are invertebrates, amphibians, reptiles, birds, and other mammals expected to occur in the project area. A complete list of all the fauna observed is contained in Appendix G, and a summary of the major faunal groups on the site is provided in Table 3.2-3.

Invertebrates/ Butterflies: Ten species of butterflies were observed on the project site; all the species observed are typical for the area and habitats found on the site.

Amphibians and Reptiles: One amphibian was observed on the site, about half a dozen young of the year Western Toads (*Bufo boreas*), in a damp culvert under a dirt road in the proposed location of Neighborhood 2. Because the majority of the surveys were carried out in extremely low rainfall years, few other amphibians were surface active none were observed during the surveys. It is likely that other common amphibians exist on the site, including such species as the California Slender Salamander (*Batrachoseps attenuatus*) and Pacific Chorus Frog (*Pseudacris regilla*), particularly in the two riparian canyons planned for preservation on the east and west sides of the site.

Seven species of lizards were observed on the site; all of the observed are common and wide-spread in the coastal foothills of San Diego County. Two snake species were observed, although undoubtedly several more species occur on the site.

Birds: Forty-two bird species were observed during the numerous field visits to the site; all of these species, except for the Coastal California Gnatcatcher and Red-shoulder hawk, are common species in the north San Diego County inland habitats found on the site. The relatively low avian diversity of the site is probably the result of low habitat diversity on the site (almost 95 percent Southern Mixed Chaparral vegetation) and because the majority of the site has not burned in over 100 years.

Due to the dominance of chaparral vegetation on the site, most of the wildlife is associated with that rather dense plant association. The relative lack of open field habitat largely restricts foraging use of the site for foraging by large raptors, though there are potential nesting or roosting sites. No raptors nest sites were observed during the various surveys but the rocky eastern escarpments (eastern area of Lusardi Mountain) probably provide potential nesting habitat for raptors. Occasional Red-shouldered Hawks (*Buteo lineatus*) and Red-tailed Hawks (*Buteo jamaicensis*) were noted during the numerous field visits to the site. While the Red-shouldered Hawk was once thought to be declining in Southern California, it is now considered a common nesting species in urban canyons in San Diego County. This species is not in trouble in San Diego County and has substantially increased in the region with urbanization. Furthermore, the Red-shouldered Hawk is not on the California Department of Fish and Game list of Special Animals.

Mammals: During the field investigations for this site, ten mammal species were recorded; all ten species are considered common throughout the inland foothills of north San Diego County. Three observations of Merriam's Chipmunk (*Eutamias merriami*) were made in the northern and southern parts of the site. This species is more commonly associated with montane habitats with conifers but is also known from chaparral habitats in the foothills of northwest San Diego County. Mountain Lion was not observed or detected during recent field surveys but has been known to utilize some of the site in the past.

Although no trapping was performed, small and medium sized mammals are probably fairly common on the site because they would be able to move through the brush with ease. Typical habitats used by bats include open areas for foraging (almost all habitats) and rock and tree crevices, caves, mines and other man-made structures used for daytime and maternity roosts for bats. The many rock out-crops, including the abandoned quarry on the western side of the site, would provide habitat for several species of bats. The nearby presence of agricultural activities would also support bat populations to some degree. Deer use of the site is apparently very low (no tracks were observed, although old scat was observed once), due to the senescent nature of the vegetation and relative lack of trails about the site. Coyote scat was observed commonly about the site; Gray Fox scat was observed less frequently. Bobcat use of the site is presumed to occur but no tracks were observed to confirm the level of activity.

Sensitive Biological Resources

Sensitive Vegetation Communities: Certain vegetation communities are considered sensitive based on individual plant species (see below) that make up Unique Vegetation communities. The project site does not contain any Unique Vegetation communities as defined by the County of San Diego RPO. All of the vegetation types on the site are found elsewhere in San Diego County and are still considered relatively common and widespread, although some, including Diegan

Coastal Sage Scrub, Coast Live Woodland and Willow Riparian Woodland are declining in southern California and considered important wildlife habitats. Additional vegetation types found on the site are "sensitive" by virtue of their wetland association or potential high value as wildlife habitat. Areas considered to be sensitive include: Non-native Grasslands, Mafic Southern Mixed Chaparral, Freshwater Marsh, South Coast Live Oak Riparian Forest, Sycamore Alluvial Woodland, Southern Willow Scrub/Mule Fat Scrub, and Southern Willow Scrub. Non-native Grassland is considered of potentially value to wildlife because it can serve as important foraging habitat for raptors and other open-field birds; the other habitats listed are sensitive because of their dependence on water, higher habitat diversity, and higher wildlife habitat value.

Sensitive Plant Species: Sensitive plants are those species that are considered rare, threatened, or endangered within California, whether or not they are state or federally listed. Plant species can also be considered sensitive for their wildlife value or as defined by the County's RPO for unique vegetation communities. Three sensitive plant species were found on the site: Summer-Holly (*Comarostaphylos diversifolia* ssp. *diversifolia*), Ramona Horkelia (*Horkelia truncata*), and Engelmann Oak (*Quercus engelmannii*). These species are discussed in Table 3.2-3 and the locations are illustrated on the biological resources map (Figure 3.2-1). The listing authorities and explanation of listing categories are presented in Appendix G. The proposed site does not include any Unique Vegetation communities as defined by the RPO.

Sensitive Wildlife Species: Sensitive animal species are those that are considered sensitive by the U.S. Fish and Wildlife Service (USFWS), CDFG, or County of San Diego. Seventy-one sensitive wildlife species recorded in the general project subregion, 37 species are unlikely to occur, and 9 species were detected during the field assessments. The locations for observations of sensitive species are illustrated on the biological resources map (Figure 3.2-1). Additional information on survey methodology and historical data can be found in the Biological Technical Report (Appendix G).

Observed Onsite: The species detected onsite include the following: Northern Red-diamond Rattlesnake, San Diego Horned Lizard, Belding's Orange-throated Whiptail, Coastal Whiptail, Coastal California Gnatcatcher, California Thrasher, San Diego Desert Woodrat, Mountain Lion (nearby residents indicated this species had occurred on the site) and Southern Mule Deer.

Northern Red-diamond Rattlesnake (*Crotalus ruber ruber*)
This species was occasionally encountered during zoological field work on the site, primarily in rocky or boulder areas in the northeastern portion of the site.

San Diego Horned Lizard (*Phrynosoma coronatum blainvillei*)
This species was occasionally observed in various parts of the site, but appears to be uncommon on the site because of the dense chaparral vegetation without extensive open areas with extensive sandy soil patches that support harvest ants.

Belding's Orange-throated Whiptail (*Aspidoscelis hyperythrus beldingi*)
This species, like the Horned Lizard, depends on sandy soils, often in openings or along trails in coastal sage scrub or chaparral, where it was occasionally observed on the site.

Coastal Whiptail (*Cnemidophorus tigris stejnegeri*)
This insectivorous lizard, found in a greater variety of habitats than the Belding's Orange-throated Whiptail, was also found on the site.

Coastal California Gnatcatcher (*Polioptila californica californica*)
This species is a federally-listed Threatened species, was observed on the project site during the spring survey. Much of the southeastern portion of the ownership is included in the final Critical Habitat designated for the species (U.S. Fish and Wildlife Service 2000), although a single pair of these species only utilizes a small segment of the 28.6 acres of Diegan Coastal Sage Scrub on the site. Southern Mixed Chaparral, which composes approximately 95 percent of the land cover in the Merriam site, is not suitable habitat for the Gnatcatcher, though it may disperse over or through this habitat. The Gnatcatchers were observed in the extreme southeastern portion of the property, northeast of the existing gas station, based on two series of habitat assessments and presence/absence surveys for the species. Gnatcatchers are thought to disperse along the I-15, which includes the project site through brushy areas including Coastal Sage and Chaparral habitats.

California Thrasher (*Toxostoma redivivum*)
This species, placed on the National Audubon "Yellow List," is still common in appropriate chaparral habitat in the coastal foothills and mountains of southern California; it has no governmental sensitive rating at this time. The species was commonly seen in chaparral on the Merriam site.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)
This species inhabits chaparral and woodland areas, particularly in rocky areas and its large conical nests have been observed in various places on the Merriam site.

Cooper's Hawk (*Accipiter cooperi*)
This species is widespread and locally common, even in suburban areas of San Diego; it has been observed on the Merriam site, typically around oak or other woodlands, where it typically preys on small birds.

Mountain Lion (*Felis [Puma] concolor*)
This wide-ranging species is uncommon in rural areas of southern California, but still present in open parts of the western mountain foothills. The species was noted as present in the Safa Ranch project biology report (Safa included portions of the south-central part of the present Merriam ownership. Given that the main prey item for this species is Mule Deer, which prefers more open vegetation, absence of the Mountain Lion is not surprising; however, it may still occasionally use the site.

Southern Mule Deer (*Odocoileus hemionus*)
This species is typically found in the undeveloped coastal foothills (as well as the mountains and parts of the desert) of San Diego County but apparently does not occur regularly on the Merriam site. Mule Deer, although a commonly hunted game species, is of importance because its presence can be indicative of a healthy upland ecosystem; it has been identified as a Covered Species in local subregional habitat conservation plans.

The species forages in shrubland openings and uses forested areas or dense brushy areas for cover. The extremely dense nature of the chaparral on the site probably limits the availability of suitable habitat on the Merriam site. This species was never directly observed on the site during field visits, although sign (droppings) of this species was observed. Thus, Mule Deer may occasionally utilize the site, but so irregularly or seldom that they should not be considered regular residents on the site. The dense chaparral habitat, steep slopes and lack of access from the east due to the freeway also probably limit Mule Deer utilization of the site.

Potential to Occur: The following species have a moderate potential to occur on site based on existing habitat,: Coastal Rosy Boa, Coast Patch-nosed Snake, Two-striped Gartersnake, Sharp-shinned Hawk, Western Bluebird, Yellow Warbler, Yellow-breasted Chat, Southern California Rufous-crowned Sparrow, Bell's Sage Sparrow, Western Red Bat, San Diego Black-tailed Jackrabbit, and Dulzura Pocket Mouse. In addition, Southwestern Willow Flycatcher, Loggerhead Shrike, and Least Bell's Vireo could occur in the project area, however, the potential would be considered very low. Table 3.2-4 provides additional detail on species of concern and describes the probability of occurrence within the project area.

Considered Absent: The following species, though they have some potential to occur, are presumed absent.

Hermes Copper (*Hermelcycaena hermes*)
The larval host plant for this species, Spiny Redberry (Rhamnus crocea), occurs on the site in small numbers in a variety of locations on the Merriam site, and potential adult roosting/foraging areas for the species have been examined during the flight period for this species (by experienced Hermes observers), but no Hermes Copper butterflies have been found on the site. This species

typically occurs in areas where the host plant and extensive nectaring plants occur in fairly close proximity, an uncommon circumstance within the Merriam site. Most of the species' collection areas are in the southwestern part of San Diego County and the species is probably not present on the site. Based on review of the species' distribution and onsite field surveys, it does not occur on the site.

Harbison's Dun Skipper (*Euphys vestris harbisoni*)
The larval form of this species is dependent on San Diego Sedge, which does occur on the Merriam site in the drainage along Twin Oaks Valley Road. Two visits to this area during the species' flight season of the butterfly failed to reveal its presence. Additional field visits during the active larval stage failed to detect larva of this species using the Carex plants on site. Based on review of the species' distribution and onsite field surveys, it does not occur on the site.

Golden Eagle (*Aquila chrysaetos*)
The potential for Golden Eagle *(Aquila chrysaetos)* is very low. While the site contains an historic nest site for this species on the prominent high rock outcrops in the east-central portion of the site, over-looking I-15, no Golden Eagles have been observed by Pacific Southwest biologists or others for many years. Unitt (1984) cites a study by Dixon (1937), who mapped territories of Golden Eagles in the northwestern part of San Diego County and estimated a territory size of 36 square miles per pair. Unitt (1984) further states: "The distribution of breeding Golden Eagles in the foothill, mountain, and desert zones has changed little through history, but the territories of about 12 pairs in the coastal lowland have been eliminated by urbanization, agricultural development, and human disturbance. This represents a decline of about 23% in the county population [in 1984]. Most of this loss has occurred since 1965, and further decreases can be expected in the future, particularly if development of new avocado orchards continues in the rugged hills of northwestern San Diego County, Golden Eagles now nest near the coast only in Camp Pendleton; further south, Lake Hodges, the Rancho Peñasquitos area, and San Miguel Mountain mark the limits of their breeding range in 1981. The abandoned historic Golden Eagle nest site on Merriam appears well below the nearest mountain peak, on the north-east facing slope, over-looking Interstate 15.

Eagles typically nest in protected cliffs, outcrops, or tall trees where they can be safe from terrestrial predators and have a broad view of potential foraging areas from the nest site area. The historic nest site on the northeast-facing slope of the Merriam Mountains appears to have a broad view of Interstate 15 and once open areas east of I-15, areas now occupied by the 8-lanes of freeways and residential developments like Lawrence Welk and the Circle-R Ranch. This nest may have been abandoned during the expansion of I-15 to its present configuration, or it may have occurred over a longer period of time, with the absence of wildfires leading to denser accumulations of chaparral vegetation and fewer open areas to forage for large-rodent to rabbit-sized prey. The lack of occupation of the historical eagle nest on the site Merriam is further

documented by Unitt (2004), in the San Diego County Bird Atlas that shows no Golden Eagle observations during the five-year period between March 1997 and February 2002 in the vicinity of I-15, north of SR 78 or south of Gopher Canyon Road. This study relied on focused field studies during the winter and breeding season County-wide, on individual cells 3 miles (5 km) on a side. Dr. Thomas Scott (pers. comm. 2005), who studied historical and recent Golden Eagle nest sites in San Diego County, has indicated that "old guys called this nest "Cozy Nook" and it was last active in the 1980's."

Burrowing Owl (*Athene cunicularia*)
The potential for Burrowing Owl *(Athene cunicularia)* is very low. This typically grassland species has not been observed on the Merriam site during the current round of field work, but was listed in the 1998 species list for the Safa Ranch project (Pacific Southwest 1998) as occurring on the site. The Safa Ranch project included lands from the northern portion of the inner meadow/ valley of the Merriam site (Neighborhood 2), and this is the most likely area where a Burrowing Owl may have been encountered. Unfortunately, no site-specific information was listed in the 1998 report. Based upon the limited habitat onsite and its absence of for many years, the species does not occur onsite.

Wildlife Corridors

Extensive field qualitative assessments were carried out on the site in July 2003 to determine the patterns and locations of wildlife use on the site. These field assessments indicated except for the portions of the site that include Gopher and Moosa Creek tributaries no major wildlife corridors or movement areas occur on the site. Localized wildlife movement trails and canyons identified in field studies on the site are depicted on Figure 3.2-1 and a detailed description of the wildlife corridor study is provided in the Biological Technical Report (Appendix G).

Due to the dense nature of chaparral vegetation found onsite, it is highly likely that the existing dirt access roads are the primary avenues for terrestrial wildlife movement, at least for medium-sized and larger mammals. Many of these roads join canyons, which could be used as secondary areas for movement, where they are open enough to allow access. An extensive matrix of canyons and roads exist in the northern portion of the site that can support movement and access to a number of locations within the project area and to suitable habitat offsite. Since most of the canyon bottoms on the site are clothed in dense chaparral, probably limiting substantial movement within these canyons at present, existing trails and roadways may be more heavily used. In the southern portions of the site, the proximity of adjacent residential and agricultural uses and roads with higher traffic volumes probably reduced both internal and external wildlife movement in the south.

The South Fork of Gopher Canyon and undeveloped portions of the San Marcos Mountains are located west of Twin Oaks Road and the project site. These areas show favorable attributes as both primary habitat and movement area habitat for larger forms of wildlife. Riparian vegetation found within the South Fork of Gopher Canyon has a more open understory to facilitate movement and is habitat for prey items for Bobcat, Gray Fox, Coyotes and potentially, Mountain Lion. Additionally, this area is a tributary to the San Luis Rey River, which is a regionally-important riparian habitat and corridor. Riparian habitats provide water, food, cover, and both linear and lateral wildlife movement potential. The San Marcos Mountains also have suitable habitat characteristics for mammal species found on-site, and are largely undeveloped at present. These mountains could provide wildlife with important life history resources and potential access through the South Fork of Gopher Canyon, back and forth from the San Luis Rey River.

Initial qualitative observations of terrestrial wildlife movement signs on the Merriam site indicate that the site is used primarily by small to medium sized species such as rodents, squirrels, Gray Foxes, Bobcats and Coyotes.

Existing terrestrial wildlife use of the majority of dense Southern Mixed Chaparral may be limited because of the lack of habitat diversity and very dense foliage and lack of surface water. Terrestrial wildlife movement appears largely limited to the extensive series of dirt roads on the site formed for water line maintenance or individual lot access. Permanent surface water appears limited to two areas on site, including the south fork of Gopher Canyon, and a major drainage with riparian woodland adjacent to I-15. There is some evidence that pools are formed during winter storms, but these are temporary sources of surface water for wildlife.

The northern portion of the Merriam site appears to have greater conservation value compared to the southern portion of the site, with the following characteristics: (1) it is broader in the east-west direction [reduced surface to area ratio]; (2) it is immediately adjacent to areas not generally used for agriculture; (3) it extends west to connect to the San Marcos Mountains, across Twin Oaks Valley Road; and (4) it contains more rugged topography, including the highest point on the site. In contrast, the southern portion of the site: (1) is narrower in width (higher surface to area ratio); (2) is adjacent to commercial or agricultural lands on the eastern, southern and southwestern sides; (3) is not adjacent to the San Marcos Mountains or other open areas; and (4) the topography varies, although not to the extent of the northern portion of the site.

As the northern portion of the Merriam site has the greatest potential of supporting wildlife movement internally and externally of the site, the project has been clustered in an all-south design that concentrates development in the southern portion of the ownership. This design leaves the northern portion of the site consolidated as a single block of habitat, except for two project access road, Camino Mayor (leading to Twin Oaks Valley Road) and Lawrence Welk Court (leading to I-15). This design maintains a large, contiguous reservoir of undisturbed

Southern Mixed Chaparral with a variety of elevations, slope variations and slope exposures. Additionally, this redesign insures that the site maintains a broad habitat connection to the largely undeveloped San Marcos Mountains, adjacent to the west.

A detailed description of the wildlife corridor study is provided in Biological Technical Report (Appendix G).

Off-site Improvements

The project would require improvements at twelve off site intersections, including some located at the project boundaries; Figure 1.1-14 shows the location of the intersection improvements and impacted areas. All of the intersection improvements would take place within existing right-of-way along roadways. All impacted areas for intersection improvements are located within the existing rights of ways and no equipment staging areas are anticipated to occur outside of existing rights of ways. A detailed description of the biological conditions at each intersection is provided in the Biological Technical Report (Appendix G).

Camino Mayor Improvements (off site): Camino Mayor will be improved to provide a paved secondary emergency gated access roadway within the existing disturbed 40-foot easement. The roadway will be improved from the western project limits to Twin Oaks Valley Road (see Figure 1.1-16C). Minimal disturbed chaparral is located within the 40-foot easement as it is mostly disturbed due to vehicles utilizing the roadway. A detailed description of the biological conditions associated with Camino Mayor is provided in the Biological Technical Report (Appendix G).

Deer Springs Road Improvements (off site): Widening of Deer Springs Road from the I-15 interchange to Twin Oaks Valley Road would result in relatively small impacts to a variety of native and non-native habitats. Impacted vegetation would consist of Intensive Agriculture (1.3 acres), Non-vegetated channel (0.8 acres), Coast Live Oak Woodland (0.1 acres), Coastal Sage-Chaparral Scrub (3.0 acres), Disturbed Habitat (1.1 acres), Eucalyptus Woodland (1.4 acres), Non-native Grassland (1.2 acres), Orchard (0.6 acres), and Urban Developed (20.5 acres). The impacted acres are shown in Table 3.2-8. In addition Figure 3.2-2a through Figure 3.2-2c shows the location for vegetation within and adjacent to improvements along Deer Springs Road.

Regional Conservation Planning Context

Federal Regulations: Federal regulations apply to a number of resources typically found in Southern California, including the Migratory Bird Treaty Act which protects most native species of birds, while specific regulations, such as the Bald Eagle and Golden Eagle Protection Act (United States Code, Title 16, et seq.) prohibits the taking of these species without appropriate

permits. The federal Endangered Species Act of 1973 (16 U.S.C. §§ 1531-1544, December 28, 1973, as amended 1976-1982, 1984 and 1988.), as amended, protects taking of species of plants and animals listed as Threatened or Endangered.

The Army Corps of Engineers regulates activities affecting wetlands and non-wetland waters pursuant to Section 404 of the Federal Clean Water Act and Section 10 of the Rivers and Harbors

State Regulations: The California Fish and Game Code regulates protection of natural resources under state protection, including the California Endangered Species Act (Sections 2050-2085). The code also applies to protection of streambeds (Sections 1600-1616). The California Regional Water Quality Control Board (RWQCB) regulates activities under Section 401 of the Federal Clean Water Act and the California Porter Cologne Water Quality Control Act. The California Environmental Quality Act (CEQA, California Public Resources Code, Sections 21000 - 21178, and Title 14 CCR, Section 753, and Chapter 3, Sections 15000 - 15387) requires state agencies and local jurisdictions to address environmental consequences of discretionary decisions.

Natural Community Conservation Plans (NCCPs) are authorized under State of California Fish and Game Code (Sec. 2800-2840, as amended).

Local Policies and Ordinances: The project is located within the Natural Communities Conservation Planning Act (NCCP) planning area. The County became a participant in the NCCP in 1993 with the stated intent to "…provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth." The NCCP Process Guidelines were established as interim guidelines until formal subregional plans were approved. The draft NCMSCP is the proposed subregional plan for this portion of the County of San Diego.

The project must demonstrate conformance with overall goals and policies of the NCCP, and may also be required to make the specific findings applicable to issuance of Incidental Habitat Loss Permits (HLPs). Through hardline negotiations with the Wildlife Agencies, and in signing a hardline agreement for the NCMSCP, the project has demonstrated conformance with the general principles. If NCMSCP has not been adopted at the time of project approval, the specific findings applicable to NCCP will be made. The hardline agreement has established that the project footprint is consistent with preserve design principles under the NCCP. The NCMSCP Vegetation Map, NCMSCP Habitat Evaluation Model and County SITES Model Results characterize the property's vegetation as predominately Southern Mixed Chaparral and its habitat value as moderate with limited areas of high, very high and low. However, this area has greater preservation value to because it is such a large natural area with connectivity to the San Marcos Mountains and ultimately to the San Luis Rey River to the north and northwest. Focused

Planning Areas (FPAs) for the SANDAG North County Multiple Habitat Conservation Program (MHCP), and the planning maps for the NCMSCP indicate that most existing connectivity is in the north and northwestern portions of the site, with connectivity to the south and east being limited by I-15 and existing urban development. The NCMSCP Subarea Working Draft Map identifies the project site with an asterisk indicating, "Properties currently being negotiated for hardline preserve".

Consistent with generally accepted preserve design principles, the project preserves a large block of open space (Biological Open Space), including the northern and northwestern portions of the site and provides offsite regional linkages between offsite lands in the San Marcos Mountains to the west, and north along Gopher Canyon and to the San Luis Rey River. Figure 1.1-20 depicts the areas that will be preserved as Biological Open Space, development areas, natural parks and other open space areas that were agreed upon by all parties mentioned above. The project's hardline boundary, when the NCMSCP is approved, would eliminate the need for a separate NCCP (HLP) approval from the County, CDFG and FWS.

Prior to the initiation of the MSCP planning effort, the Merriam Mountains were recognized by the County's North County Metropolitan Subregional Plan by its designation as the Merriam Mountain Resource Conservation Area (RCA). This RCA is characterized as having "Resources in this area similar to the San Marcos Mountains including the same species of rare plants plus *Comarostaphylos diversifolia*." Concerning the San Marcos RCA, the definition states as follows: "These mountains are especially significant because they have rare and endangered plant species such as, Parry's tetracoccus (*Tetracoccus dioicus*) and southern mountain misery (*Chamaebatia australis*)."

Resource Management Plan: The Resource Management Plan (RMP) is being prepared and reviewed as part of the overall entitlement process for the Merriam Mountains project (see *Appendix T*). The RMP is the result of a series of discussions and negotiations between the applicant, the County and the Wildlife Agencies that resulted in agreement on an MSCP hardline preserve boundary to assemble the Merriam Mountains core area as part of the draft North County MSCP. The agreement was executed by the applicant and the Wildlife Agencies in October 2005 (see *Appendix T*). The hardline preserve depicted in the agreement consolidates development in the southern portion of the site and retains 1,192 acres of Biological Open Space in the northern portion of the site as a large core area. The agreed-upon "hardline" has been determined to be an ecologically superior plan when compared with a more piecemeal preserve design potentially resulting from a plan strictly adhering to the parcel by parcel requirements of the Resource Protection Ordinance.

The RMP addresses landform resources, biological resources (sensitive habitats and wetlands) and cultural resources also being addressed in the Merriam Mountains EIR. In some cases,

measures incorporated in the RMP provide the basis for mitigation measures identified in this section. The RMP is proposed to be adopted by the County of San Diego in conjunction with entitlement approvals for the Merriam Mountains project along with certification of the Merriam Mountains EIR. Together, these approvals will assure that the policies, programs and measures included in the RMP are carried out.

3.2.2 Guidelines for the Determination of Significance

Project-related improvements or activities would result in direct, indirect, and/or cumulative impacts that would be detrimental to biological resources if:

Vegetation Community/Habitat Impacts

1. A block of substantially native habitat considered essential to the naturally-functioning local or subregional or regional biological environment will be eliminated or substantially degraded such that it no longer provides comparable biological function(s) or value(s).

2. The natural biological diversity and habitat associations are not being preserved in a contiguous, functional habitat area, thereby compromising the long-term health and viability of the ecosystem.

3. Any functionally-viable component of native or naturalized habitat will be removal or substantially impacted through grading, clearing, and/or other construction activities.

4. The functional value of habitat will be "moderately to significantly" degraded either immediately or in the long-term as indicated by one of the following:
   a. A substantial decrease in species composition, diversity, or abundance;
   b. A substantial decline in the biological value or function of the habitat.

5. Any of the following will occur to or within County-defined wetlands: removal of associated vegetation; grading; obstruction or diversion of water flow; change in velocity or siltation rate; placement of fill; placement of structures; construction of a road crossing; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause a change in species composition, diversity, and abundance.

Wildlife Movement Impacts

6. Project-related improvements or activities within or adjacent to local wildlife corridors, subregional or regional linkages, or other areas utilized for wildlife movement will:
   a. Prevent a substantial proportion of existing wildlife using or relying on the project

site from accessing areas considered necessary to their survival (i.e., foraging resources, breeding areas, necessary water sources, etc.); or

b. Restrict substantial numbers of wildlife from utilizing their natural movement patterns (i.e., those path-ways used when given the choice absent human interference); or

c. Further constrain a narrow wildlife corridor by reducing width, removing available vegetative cover, creating substantially adverse edge effects, or placing barriers in the movement path; or

d. Create artificial corridors that do not functionally connect core habitat areas or linkages.

Sensitive Species Impacts

7. Direct, indirect, and/or cumulative impacts may occur that may be detrimental to the regional long-term survival of a County Sensitive animal (those recognized by a government agency or conservation or scientific group as being depleted, potentially depleted, declining, rare, locally endemic, endangered, or threatened (*based on scientifically valid criteria*), and/or any species nominated for or on a State or Federal rare, endangered or threatened species list *within the San Diego subregion*) or Direct, indirect, and/or cumulative impacts that may reduce the local population of a plant species listed as federally or state endangered or threatened, and/or listed as a County Group A or B plant species, or Group C or D plant species as listed by the County, or a County-defined sensitive habitat (any habitat recognized by a government agency or conservation or scientific group as being depleted, rare and/or endangered, or otherwise sensitive, based on scientifically valid criteria.

8. Grading, clearing, construction, or other activities (including passive and active recreation, permanent development or recreational activities) will occur within 4,000 feet of an active Golden eagle nest during the breeding season (February 15 to July 15), such that it would be likely to interfere with normal nesting activities of the eagle (considers impacts that would not be in the line-of-sight, or where natural noise buffering reduces potential impacts to a less-than-significant level.

9. Grading, clearing, and/or construction will occur within the following distances and within the following time periods for one or more of these species:

Species	Distance	Breeding Season
Coastal Cactus Wren	300 feet from occupied habitat	February 15 to August 15
Coastal California Gnatcatcher	300 feet from occupied habitat	February 15 to August 31
Least Bell's Vireo	300 feet from occupied habitat	March 15 to September 15
Southwestern Willow Flycatcher	300 feet from occupied habitat	May 1 to September 1
Tree-nesting raptors	300 feet from occupied habitat	February 15 to July 15
Ground-dwelling raptors	800 feet from occupied habitat	February 15 to July 15

10. Loss of functional raptor foraging habitat (from a subregional perspective).

Indirect Impacts

11. On- or off-site native habitat will be subjected to substantially-adverse urban-type edge effects, including:
    a. Project-generated noise levels in excess of 60 dB during daytime hours and 50 dB during nighttime hours measured at the edge of native habitats slated for preservation;
    b. Artificial light in exceeding a level of one-half as bright as a full moon;
    c. A drawdown of the groundwater table of 3 feet or more (for groundwater-dependent species or habitats);
    d. Project-generated, unauthorized human encroachment that is substantially detrimental to native flora and fauna, including but not limited to unauthorized clearing, trash dumping or off-road vehicle traffic within preserve areas;
    e. Substantial predation or substantial disruption of natural history activities of native species by unrestrained domestic pets;
    f. A substantially adverse change in pre-project typical range of moisture levels and/or increasing the spread of pollution and pesticides; or
    g. A substantial change in the composition of native vegetation caused by invasive plants from adjacent ornamental landscaping.
    h. Introduce or substantially increase populations of pest, disease-carrying, or nuisance species (plants or animals) that may adversely affect native species, future project residents or adjacent residents.

12. Reduced habitat viability in habitats not directly impacted by the proposed project.

Regulatory Compliance

13. The project does not conform to the requirements regarding wetlands, wetland buffers, or sensitive habitat lands as outlined in the County of San Diego RPO.

14. The project does not conform to the goals and requirements of the County of San Diego HLP Ordinance or NCCP.

15. The project does not conform to the goals and requirements as outlined in an adopted, applicable HCP, Habitat Management Plan (HMP), Special Area Management Plan (SAMP), or similar regional planning effort.

16. The project does not conform to the goals and requirements of applicable federal or state regulations, including but not limited to the federal Endangered Species Act, Migratory Bird Treaty Act, Bald Eagle Protection Act, Clean Water Act, Porter-Cologne Water Quality Act, and the California Fish and Game Code.

Guideline Sources. The aforementioned significance criteria are based on Appendix G of the State CEQA Guidelines, County regulations, state and federal regulations, and other County guidance, as described below.

Guideline 1 is associated with the protection of biologically important blocks of habitat in a configuration that preserves biological functions and values consistent with accepted conservation biology principles. This guideline is intended to protect the functions and values of such habitat blocks from direct and indirect project-related effects, and to maintain the contribution of such areas to the regional biological environment.

Similar to Guideline 1, Guideline 2 and Guideline 12 are associated with preservation of contiguous blocks of open space consistent with accepted conservation biology principles.

The removal of native or naturalized habitat through project-related activities, as described in Guideline 3, would directly affect habitat acreage and plant/animal species located therein, as well as potential impacts associated resources/uses such as species diversity, foraging, breeding and access.

Guideline 4 is intended to protect the functions and values of habitat areas from direct and indirect project-related effects as well as to maintain a high species diversity and/or abundance within the provided open space areas.

The federal, state and county requirements identified in Guideline 5 and Guideline 13 includes goals and objectives intended to protect wetlands. Compliance with the referenced laws and regulations is required. The agencies responsible for enforcing these laws and regulations are responsible agencies with respect to this EIR, including the CDFG and ACOE. These agencies and/or the laws and regulations they enforce are specifically referenced in the CEQA Guidelines, Appendix G.

The criteria related to wildlife movement identified in Guideline 6 are intended to protect such areas due to their role in meeting species life history requirements and incorporate the use of site-specific factors, consistent with conservation biology principles. CEQA Guidelines Appendix G indicates that a project could have a significant impact if it would "interfere substantially with

the movement of any native resident or wildlife species or with established native resident or migratory wildlife corridors."

Impacts to state- or federally-listed plant species or County Group A or B plant species can potentially be detrimental to regional long-term species survival as noted in Guideline 7. Group C and D species identified in Guideline 7 are thought to be in decline, although not to the extent that extirpation or extinction is imminent. Because these species are often present in substantial numbers within suitable habitat, habitat based conservation approaches are generally adequate to protect them.

The criterion related to golden eagles, their nests and offspring as identified in Guideline 8 are intended to protect this species pursuant to the Bald and Gold Eagle Protection Act.

The criteria identified in Guideline 9 are intended to address the potential loss of offspring for particularly sensitive avian species based on the described buffer distances and breeding season dates derived from various studies completed for birds in San Diego County (and generally accepted by the scientific community).

The criterion identified in Guideline 10 is intended to address the raptor species that regularly use both native and non-native grassland habitats for foraging.

The criteria identified in Guideline 11, are directed toward protecting open space from edge effects related to development. The criteria identified for potential project related edge effects in Guideline 11 were generated on the basis of both local conditions and commonly accepted practices in the biological community.

Guideline 14 addresses applicable goals and requirements under the County HLP Ordinance 8365 and related 4d rule for the California Gnatcatcher. The 4d rule authorized a total interim Diegan coastal sage scrub habitat loss of five percent (based on calculations of then existing habitat acreage by an established Scientific Review Panel). An HLP is required for parcels located outside of the MSCP, and must be issued prior to issuance of Brushing and Clearing Permits, Grading Permits or Improvement Permits in lieu of Grading Permits.

Guideline 15 addresses applicable goals and requirements under applicable HCP, SAMP, or similar planning efforts to protect sensitive resources in perpetuity.

The federal and state requirements identified in Guideline 16 include goals and objectives intended to protect (among other issues) sensitive species, habitats and related resource values such as water quality. Many of these goals and objectives are addressed either directly or indirectly in elements of Guideline 1 through 15. Compliance with the referenced laws and regulations is required. The agencies responsible for enforcing these laws and regulations are responsible agencies with respect to this EIR, including the USFWS, CDFG, RWQCB and ACOE. These agencies and/or the laws and regulations they enforce are specifically reference in the CEQA Guidelines, Appendix G.

3.2.3 Analysis of Project Effects and Determination of Significance

Implementation of the proposed project would result in impacts to 598 acres for the development sites and secondary access roads as presented in Table 3.2-5 and shown on Figure 3.2-1. Remaining areas would be preserved within Biological Open Space easements as depicted on Figure 3.2-3. Table 3.2-5 lists the existing vegetation types and acreage, with impacted areas resulting from development which includes impacts from grading activities and fuel treatment. The significance of biological impacts as a result of the project is presented below, and is numbered corresponding to the significance guidelines identified in Section 3.2.2. .

Vegetation Community/Habitat Impacts

Guideline 1: Degradation of Native Habitat

The proposed project would directly impact about 1,135 acres, including development pads and roadways, Other Open Space subject to fuel modification and secondary access roads or about 48 percent of the site's native habitat; an additional 53.7 acres of various habitats would be impacted by offsite improvements. The project design includes 1,192 acres of managed natural habitat Biological Open Space located in the northern portion of the project site.

Specific Direct (on-site) Vegetation/Habitat Impacts are as follows:

Disturbed and other Man-modified Habitats. The project would result in impacts to 2.1 acres (7%) of the existing 27.3 acres of Disturbed Habitat onsite, 12.6 acres (87%) of the existing 13.0 acres of Urban Developed Habitat onsite, 0.3 acres (29%) of the existing 2.4 acres of Orchard habitat onsite, 1.5 acres (100%) of the existing 1.5 acres of Eucalyptus Woodland onsite and 3.6 acres (73%) of the existing 4.9 acres of Intensive Agriculture onsite. All of these impacts are considered less than significant because they are not natural and they have low habitat quality. This impact would not be significant.

Diegan Coastal Sage Scrub. Of the existing 28.6 acres of Diegan Coastal Sage Scrub onsite, the development footprint would result in removal of 18.7 acres, fuel modification would occur to 4.0 acres and 0.4 acres would be impacted through development of secondary access roads and 1.2 acres would be impacted along Meadow Park Lane, while placing 5.5 acres in Biological Open Space. Additionally, approximately 3.0 acres of Coastal Sage Scrub-Chaparral Scrub would be impacted by off-site improvements to Deer Springs Road.

Impact Bio-1a – Project related impacts to 27.3 acres of Diegan Coastal Sage Scrub would be significant.

Southern Mixed Chaparral. Of the existing 2,156.6 acres of Southern Mixed Chaparral onsite, the development footprint would result in removal of 479 acres; fuel modification would occur on 526.7 acres, 59.3 acres would be impacted through development of secondary access roads and 14.2 acres impacted by the development of Meadow Park Lane while placing 1,091.6 acres in Biological Open Space.

Impact Bio-1b – Project related impacts to 1,079.2 acres of Southern Mixed Chaparral would be significant.

Mafic Chaparral. Of the existing 57.4 acres of Mafic Chaparral located on the project site, the proposed project would preserve all 57.4 acres in Biological Open Space. There would be no other offsite impacts to Mafic Chaparral. Therefore impacts would be less than significant.

Non-native Grassland. Of existing 23.2 acres of Non-native Grassland onsite, the development footprint would result in removal of 17.6 acres, fuel modification would occur on 1.9 acres, while placing 3.7 acres in Biological Open Space. Additionally, approximately 1.2 acres of this habitat would be impacted by off-site improvements to Deer Springs Road.

Impact Bio-1c – Project related impacts to 20.7 acres of Non-native Grassland would be significant.

Freshwater Marsh. The project would result in no impacts to Freshwater Marsh; all of the existing 0.1 acre of habitat would be preserved in the Biological Open Space. There would be no other offsite impacts to Freshwater Marsh. Therefore impacts would be less than significant.

Southern Coast Live Oak Woodland Riparian Forest. Of existing 2.3 acres of South Coast Live Oak Riparian Forest onsite, the development footprint would result in removal of 1.1 acres, fuel modification would occur on 0.1 acres and 0.1 acres would be impacted by development of Meadow Park Lane. None of this habitat will be placed in Biological Open Space.

Impact Bio- 1d – Project related impacts to 1.3 acres of South Coast Live Oak Riparian Forest would be significant.

Sycamore Alluvial Woodlands. Of the existing 1.6 acres of Sycamore Alluvial Woodlands onsite, the project would result in no impacts to Sycamore Alluvial Woodlands. The proposed project would preserve all 1.6 acres in the Biological Open Space. No impacts would occur off site. Therefore impacts would be less than significant.

Southern Willow Scrub/Mule Fat Scrub. Of the existing 0.3 acres Southern Willow Scrub/Mule Fat Scrub onsite, the project would result in impacts to 0.3 acres onsite with none of this habitat placed in Biological Open Space. There would be no offsite impacts.

Impact Bio-1e – Project related impacts to 0.3 acres of Southern Willow Scrub/Mule Fat Scrub would be significant.

Mule-Fat Scrub. Of the existing 0.2 acres of Mule-Fat Scrub onsite, the project would result in impacts to 0.2 acres within the fuel modification area. There would be no other offsite impacts to Mule-Fat Scrub.

Impact Bio-1f – Project related impacts to 0.2 acres of Mule Fat Scrub would be significant.

Southern Willow Scrub. Of the existing 2.6 acres of Southern Willow Scrub onsite, the development footprint would result in removal of 0.2 acres and fuel modification would occur on 0.1 acres. No other offsite impacts would occur.

Impact Bio-1g- Project related impacts to 0.3 acres of Southern Willow Scrub would be significant.

Southern Willow Scrub/Tamarisk Scrub. The project would result in no impacts to Southern Willow Scrub/Tamarisk Scrub, placing 0.6 acres in Biological Open Space. No offsite impacts would occur. Therefore impacts would be less than significant.

Coast Live Oak Woodland. Of the existing 4.2 acres of Coast Live Oak Woodland, the development would result in removal of 1.0 acres, fuel modification would occur on 1.1 acres and 0.2 acres would be impacted through development of secondary access roads while placing 1.9 acres in Biological Open Space. Additionally, no acres would be impacted by off-site improvements to Deer Springs Road. Impacts to 0.1 acres of Coast Live Oak Woodland associated with a stream would occur due to improvements along Deer Springs Road.

Impact Bio-1h - Project related impacts to 2.4 acres of Coast Live Oak Woodland would be significant.

Non-Vegetated Channel and Unvegetated Channel. Offsite roadway improvements associated with Deer Springs Road would result in the loss of 0.8 acres of Non-vegetated channel. In addition onsite development would impact 0.1 acres of unvegetated channel.

Impacts Bio-1i – Project related impacts to 0.8 acres of Non-vegetated channel and 0.1 acres of unvegetated channel would be significant.

The project design includes Biological Open Space, enveloping approximately 60 percent of the eastern border of the site along Interstate 15, the majority of the northern half of the ownership, as well as substantial connection with open habitats to the San Marcos Mountains to the west. This design preserves and maintains a large, intact section of the chaparral ecosystem, along with other habitats and maintains existing ecological connections to surrounding blocks of native habitats.

The large site (2,327 acres) is relatively homogeneous (92% of the site is Granitic Southern Mixed Chaparral). The following habitats would be substantially degraded as described in Guideline 1: Diegan Coastal Sage Scrub, Granitic Southern Mixed Chaparral, Non-native Grassland, Southern Coast Live Oak Riparian Forest, Southern Willow Scrub/Mule Fat Scrub, Mule Fat Scrub, Southern Willow Scrub, Coast Live Oak Woodland, unvegetated channel, and Non-vegetated channel (no impacts would occur to Mafic Chaparral, Freshwater Marsh, Sycamore Alluvial Woodland and Southern Willow Scrub/Tamarisk Scrub). Loss of functioning habitats is regarded as a significant impact (see Impact BI-1a through BI-1i).

Guideline 2: Preservation of Natural Biological Diversity

As discussed in Guideline 1 above, the project would impact approximately 48 percent of the naturally functioning habitats on site, while retaining approximately 52 percent in Biological Open Space, in a generally contiguous, functional habitat area. The biological open space would be configured as a large habitat block in the northern portion of the property, traversed only by a secondary access road (Lawrence Welk Court) and a gated, emergency access route (Camino Mayor). Recreational use of the Biological Open Space will be limited to trails along the existing dirt pathways and trail overlooks as noted in the Merriam Mountains Specific Plan (see Appendix C).

This Biological Open Space displays a relatively compact and intact shape, geometry encompassing the majority of the northern portion of the site. Additionally, with most of the fuel modification area that will retain elements of their native vegetation, more than 80 percent of the I-15 frontage, including the majority of the steep slopes and canyons adjacent to the I-15 would retain some wildlife function and diversity. The intactness of the northern portion is considered good with only one road to provide access to and from the southern areas proposed for development (generally following an existing dirt road), while some of the existing dirt roads would be retained for utility access and recreational trail uses.

Preservation of natural habitats within the Merriam Mountains and linking them with the San Marcos Mountains has been identified by Wildlife Agencies and County as desirable to conserving biological diversity in Northern San Diego County. Both the Merriam Mountains and the San Marcos Mountains have been identified as Resource Conservation Areas (RCAs) in the

County General Plan and these areas have also been identified as biological core areas in studies for the draft North County MSCP. The 1192 acres of Biological Open Space proposed in the northern portion of the project site would provide core habitat in the Merriam Mountains, contributing to preservation of biological diversity in the North County area.

Implementation of the proposed project would result in disturbance of about 48 percent of the natural habitats onsite, including 538 acres of development area, 537 acres of Other Open Space subject to fuel modification and 60 acres of secondary/emergency access roads within Biological Open Space. Impacts to biological diversity will occur as a result of removing localized pockets of Coast Live Oak Woodland, Diegan Coastal Sage Scrub and Non-native grassland, which represent approximately 1%, 2% and 0.2% of the total onsite habitats. These areas tend to support disproportionately higher wildlife habitat diversity. Although these habitats typically support a different suite of plants and wildlife compared to Granitic Southern Mixed Chaparral, the dominant habitat on the site, these former habitats together do not contribute significantly to the average biological diversity per acre of the site because of the strong dominance of Southern Mixed Chaparral (92% onsite).

Impact Bio-2 –Project related impacts to the natural biological diversity would be significant for loss of Coastal Sage Scrub, Coast Live Oak Woodland and Non-native grassland species.

Guideline 3: Removal of Native or Naturalized Habitat

Removal of native or naturalized habitat through grading and clearing has been adequately covered under Guidelines 1 and 2 (above). This section addresses impacts to native or naturalized habitat from construction activities.

During construction activities, edge effects may include dust which could disrupt plant vitality in the short-term from construction-related activities. In addition soil erosion and water runoff resulting from grading activities could impact vegetation onsite and adjacent properties. Adjacent land uses include large-lot single-family residences and avocado groves to the north, west, and south. Existing uses to the south of the site are separated from the site by Deer Springs Road. Existing uses to the east of the site are separated from the site by I-15. Sensitive vegetation communities or sensitive plants that are planned for preservation onsite could be potentially impacted during construction activities. Therefore, the potential for short-term or construction-related impacts resulting from the proposed project through grading, clearing and/or other construction activities would be significant.

Impact Bio-3 – Project related impacts for short-term or construction related impacts to native and naturalized habitats would be significant.

Guideline 4: Degradation of Habitat

Due to the high degree of habitat homogeneity of the site (92 percent of the site is unburned Granitic Southern Mixed Chaparral), the 48 percent reduction in native habitats proposed by the project would not result in a substantial degradation of habitat.

The project would result in a 48 percent decrease in biological function because that amount of habitat would be lost to other uses; however, the overall value of the remaining habitats would not be reduced substantially because the proposed project design includes 1,192 acres of managed Biological Open Space, in a configuration to preserve core habitat in the Merriam Mountains, enveloping much of the eastern border of the site along Interstate 15, the majority of the northern half of the ownership, as well as substantial connection with open habitats to the San Marcos Mountains to the west. This design would allow the primary off-site ecological connections to preserve existing ecological functions. The project includes a RMP that describes measures to monitor and maintain the preserve in perpetuity that would preserve 1,192 acres of habitat value onsite.

Impacts to the overall value of the natural habitats onsite and offsite, as identified in Guideline 4, are less than significant because the Biological Open Space would be preserved in perpetuity and managed according to the requirements of the Merriam Mountains RMP, the Biological Open Space would maintain a high biological value and function as a result of design measures incorporated into the proposed project, the Biological Open Space will be preserved and managed in perpetuity, restoration/creation of habitats will largely occur within the Biological Open Space to contribute to the naturally functioning ecosystem, and the project would preserve core habitat in the Merriam Mountains as a large habitat preserve.

Guideline 5: Impacts to Wetlands

The proposed project would avoid and minimize impacts to wetlands with the exception of 2.1 acres of wetland for which impacts are unavoidable. Unavoidable onsite impacts include mule-fat scrub (0.2 acres), oak riparian forest (1.3 acres), southern willow scrub (0.3 acres), southern willow scrub/mule-fat scrub (0.3 acres) and unvegetated wetlands (0.1 acres) (see Table 3.2-6). Onsite unavoidable wetland impacts would include impacts within the development footprint, offsite impacts and oak riparian forest impacts associated with crossings due to construction of Meadow Park Lane. Unavoidable offsite impacts include 0.9 acre associated with offsite improvements to Deer Springs Road, a circulation element roadway required to be improved as part of the project.

As discussed above and in Guideline 1, impacts to mule-fat scrub, oak riparian forest, southern willow scrub, southern willow scrub/mule fat scrub, non-vegetated channel and unvegetated wetlands would be significant. The project is designed to minimize impacts to County wetlands; however, impacts would occur due to consolidation of development in the southern portion of the site to provide for the configuration of the Biological Open Space as a large block of habitat in the northern portion of the site.

Impact Bio-4 – Project related impacts to 2.1 acres of RPO Wetlands onsite and 0.9 acres offsite along Deer Springs Road would be significant.

Wildlife Movement Impacts

Guideline 6: Impacts to Wildlife Corridors and Wildlife Movement

The biological assessment and preliminary wildlife movement study for the project site indicates that the site is fairly homogeneous in terms of vegetation (92 percent of the site is unburned Granitic Southern Mixed Chaparral); however, the site has varied topography, with substantial areas of steep slopes. There are no major sources of surface water besides a small section of an unnamed creek adjacent to Twin Oaks Valley Road and seasonal drainage flows in the Merriam Valley area of the northeast quadrant of the site. Medium to large sized mammal species probably rely on the extensive network of dirt roads and trails to forage and move within the site. The Inner Meadow area in the southern part of the site is the only large area (20 ± acres) open Non-native Grassland area likely used for raptor foraging. The only narrow wildlife corridor identified on the site is the approximately half-mile wide frontage along Twin Oaks Valley Road, where the site connects to the San Marcos Mountains to the west. Because the proposed project design leaves the majority of the northern part of the site in a Biological Open Space (except for the estate lot area), it is likely that the site could still be used by Mountain Lions and Mule Deer, if they still occur in the area. Preservation of the major linkage to the San Marcos Mountains would still allow such wildlife species to move in and out of the project area.

As discussed in Guideline 1, above, the proposed project would impact approximately 48 percent of the native and non-native habitats on site, while retaining the remaining vegetation in a natural Biological Open Space, in a generally contiguous, functional habitat area. The Biological Open Space would be configured as a large habitat block in the northern portion of the property, traversed only by a secondary access road (Lawrence Welk Court) and a gated, emergency access route (Camino Mayor). Recreational use of the Biological Open Space will be limited to trails along the existing dirt pathways and trail overlooks as noted in the Merriam Mountains Specific Plan (see Appendix C).

This Biological Open Space displays a relatively compact and intact shape, encompassing the northern portion of the site. Additionally, the Biological Open Space and other open space areas includes more than 80 percent of the I-15 frontage, including the majority of the steep slopes and canyons adjacent to I-15. It should be noted that the Biological Open Space area includes only one road that provides access to and from the southern areas proposed for development (generally following an existing dirt road) and some of the existing dirt roads would be retained for utility access and recreational trail uses.

Preservation of natural habitats within the Merriam Mountains linking them with the San Marcos Mountains has been identified as desirable to conserving biological diversity in Northern San Diego County. Both the Merriam Mountains and the San Marcos Mountains have been identified as Resource Conservation Areas (RCAs) in the County General Plan and these areas have also been identified as biological core areas in studies for the draft North County MSCP.

On a subregional level, the string of Coastal Sage Scrub habitats along Interstate 15, particularly between SR 76 and SR 78, probably is used by sage scrub-dependent species such as the California Gnatcatcher in these habitats and move longitudinally and laterally away from the corridor. The gnatcatcher pair identified on the project site at the north end of Mesa Rock Road is probably part of this corridor population, as it is a historic Gnatcatcher location in Caltrans right-of-way near the mouth of Merriam Valley. The project proposes to remove the Mesa Rock Road gnatcatcher habitat (during the non-nesting period) and purchase and preserve an occupied gnatcatcher along the east side of I-15, near the Circle-R ranch.

A. Prevent substantial numbers of wildlife from accessing areas considered necessary to their survival (i.e., foraging resources, breeding areas, necessary water sources, etc.)

The only sources of permanent natural water on the site appear to be the south fork of Gopher Canyon located west of Twin Oaks Valley Road, and a riparian canyon draining from the eastern one-half of the site to a culvert under I-15. However, wide-ranging wildlife may use leaking agricultural water sources in adjacent groves. The project design maintains the only onsite areas of permanent water (along Twin Oaks Valley Road and the western canyon, Merriam Valley) both of these areas are provided along the east, north and western portions of the site within the Biological Open Space. Thus the project does not prevent access to substantial numbers of wildlife from accessing areas necessary for their survival. Impacts would be less than significant. Notable foraging resources and breeding areas other than the above mentioned and water resources for amphibian breeding are not known from the site.

*B. Restrict substantial numbers of wildlife from utilizing their natural movement patterns (*i.e., *those path-ways used when given the choice absent human interference;*

The site contains areas that function both as subregional and local wildlife corridors and linkages. The project site is a large block of relatively undisturbed habitat bounded on the east by I-15 and connected on the west to the relatively undeveloped San Marcos Mountains. However, to the north and south, the site is generally bounded by agricultural lands with limited wildlife habitat and corridor function. The project design preserves the majority of the northern half of the site, including most of the frontage along I-15, interconnecting dirt roads, and a major connection to the San Marcos Mountains to allow continued wildlife use and movement to connect to existing trails around development areas to retain the wildlife use of these trails for local wildlife movement, therefore impacts would be less than significant.

C. Further constrain a narrow wildlife corridor by reducing width, removing available vegetative cover, creating substantially adverse edge effects, or placing barriers in the movement path;

The project design allows individual and genetic interchange from an east to west direction because it retains more than 60 percent of the nearly three mile frontage with I-15 as natural preserve, contiguous connections through the project site and by maintaining the existing undeveloped nature of most of the 0.3 mile frontage. Additionally, the design maintains substantial habitat connection with Merriam ownership along Twin Oaks Valley Road and the San Marcos Mountains (and thereby retaining the potential for wildlife movement between the Merriam and San Marcos Mountains. Therefore, the existing subregional connection from east to west (Merriam Mountains to San Marcos Mountains) is substantially maintained. Because of existing agricultural and large-lot residential uses, there is probably little wildlife movement north and south of the site; therefore, impacts would be less than significant.

D. Create artificial corridors that do not functionally connect already utilized core habitat areas or existing linkages.

Lawrence Welk Court is proposed as a two-lane access road from the southern development area, through the central and eastern portion of the northern part of the site, joining the existing Lawrence Welk Court. This road would have a relatively low traffic volume estimated at 320 average daily trips. This road will cause some wildlife mortality and thus act as barrier to wildlife moving east and west through the central portion of the site. This barrier is limited because of the relatively low trip count and because vehicle trips would be more frequent in the daytime hours when wildlife is typically less active.

While the project design maintains wildlife corridors and linkages from east to west and to the north, it limits such movement in the southern part of the site by developing large blocks of residential land uses that are relatively impermeable to wildlife movement. Although east-west wildlife movement is already limited by steep slopes and north-south oriented canyons, it will be further limited by residential development areas. The proposed project would limit wildlife movement within the site by directly removing 48 percent of the native and naturalized habitats and redirecting animal movement from existing trails to new connecting trails and to and from new wildlife underpasses. This impact is considered significant (BIO-5). .

Impact Bio-5 – The proposed project would limit wildlife movement within the development footprint by directly removing 48 percent of the native and naturalized habitats and redirecting animal movement from existing trails to new connecting trails.

Sensitive Species Impacts

Guideline 7: Direct, Indirect, and/or Cumulative Impacts that could Effect Long-term Survival of Sensitive Plant and Animal Species

Sensitive Plant Species: The site contains three plant species that are included on the County special lists; Summer Holly, Ramona Horkelia and Engelmann Oak.

Summery Holly [County List A] was observed at 17 locations, generally one or two at a time. Summer Holly is widespread in chaparral on the site and would be impacted proportionally with the loss of chaparral. This species is fairly common in low numbers in the chaparral to the north, east, and west of the project site, and impacts are not significant and not detrimental to the regional long-term survival of the species.

Ramona Horkelia [County List A] was observed in a single location with about six individuals. The observed Horkelia specimens lacked vigor due of the old growth chaparral cover, and this single observed location does not constitute a population as it is not likely to be viable in the long term. The project site may also contain other areas with low numbers of Horkelia that were not seen due to the rough terrain and dense chaparral cover. Impacts are not significant and not detrimental to the regional long-term survival of the species.

Several Engelmann oaks [County List D] were scattered in a small area of coast live oak woodland on the southeast corner of the site and would be impacted by the project. This species is fairly common in low numbers throughout the region and has a low sensitivity rating. Impacts are not significant and not detrimental to the regional long-term survival of the species.

Sensitive Animal Species: The project would remove 27.3 acres of Diegan Coastal Sage Scrub habitat including both the project site and offsite improvements, some of which is occupied by state and federal listed threatened California Gnatcatchers. Diegan Coastal Sage Scrub is a regionally declining habitat and the project would remove 65 percent of the habitat on the site plus an additional 3.0 acres for off site improvements along Deer Springs Road and Meadow Park Lane.

The site contains or is expected to contain several wildlife species considered regionally declining, including Northern Red-diamond Rattlesnake, San Diego Horned Lizard, Orange-throated Whiptail, Coastal Whiptail, San Diego Desert Woodrat, California Thrasher and Red-shouldered Hawk. Due to the dense nature of the site's chaparral, these species are considered potentially present over the entire site, although in relatively low densities. The project would result in direct loss of these species proportional to the loss of 48 percent of the existing habitats. The loss of habitat, some of which is used by threatened or otherwise sensitive plants and animals is regarded as a significant impact (Impact BIO-6).

Impact Bio-6 Direct impacts to sensitive plant and animal species are regarded as significant.

Indirect construction and impacts over time would affect these sensitive species on the site, because of the addition of 2,700 dwelling units (with additional acres for fuel breaks, roads and associated activities). There would be an expanded boundary between developed areas and preserve areas ("urban/wildland interface"), with the potential increase in effects of lighting, runoff, unsupervised pets and children into the natural habitats. Additionally, the presence of landscaping and irrigation in and around developed areas will substantially increase the diversity of habitats on the site, creating new and expanded habitats for native and non-native bird and insect species that thrive in suburban environments. In the absence of implementation of the RMP to prevent habitat degradation and to minimize indirect edge effects impacts would be significant (This impact is consistent with Impacts BIO-3, BIO-7 and BIO-9, no additional impacts would result).

Guideline 8: Construction Activities within 4,000 feet of an active Golden Eagle Nest

Although the site contains a historic Golden Eagle nesting site, this site has been abandoned and has not been used by eagles since the early 1980's. Recent land use changes in the local area would likely preclude use of this nesting spot in the future.

Impacts to Golden Eagle nests would be less than significant since the historic nest on the site has not been occupied and is not likely to be occupied in the future as a result of local land use changes. The project would not have any effect on an active Golden Eagle nest site.

Guideline 9: Impacts to Nesting Birds and Raptors

As discussed in Guidelines 1 and 2 above, the project would impact approximately 48 percent of the habitat on the project site, plus approximately 53.7 acres associated with road improvements and utilities in off site areas. During construction activities, edge effects may result in nest disturbance due to activities near nests due to noise during clearing, grading and construction. California Gnatcatchers are known to nest on the site and tree-nesting raptors such as Red-tailed Hawks and Cooper's Hawks may well nest on the site. Implementation of the project would result in disturbance of as much as 48% of the habitats on the project site through grading, clearing and/or other construction activities.

Impact Bio-7 – Project related impacts to nesting California Gnatcatcher and tree nesting raptors during construction activities would be significant.

Guideline 10: Loss of Raptor Foraging Habitat

As discussed in Guideline 1 and 2 above, the project would result in the loss of about 17.6 acres on Non-native grassland onsite, 1.9 acres placed in fuel modification area and 1.2 acres associated with roadway improvements along Deer Springs Road. Therefore of the existing 23.2 acres of Non-native Grassland, a habitat typically used by raptorial birds for foraging, 20.7 acres would be impacted. Additionally, the project would remove Granitic Southern Mixed Chaparral, substantially-reducing the potential of raptor foraging habitat due to its dense, tall growth resulting from being unburned for 100+ years consisting of the following; 479 acres within the development impact onsite, 526.7 acres within the fuel modification area, 59.3 acres associated with access roads, and 14.2 acres along Meadow Park Lane (total of 1079.2 acres). Raptors undoubtedly also use the site's existing dirt roads for occasional foraging as well. The project's provision for fuel treatment and addition of landscape plantings will probably result in an increased area for potential foraging because it would result in more open habitats. Additionally, the project would preserve a large block of Southern Mixed Chaparral, purchase offsite Non-native grassland and restoration of Non-native grassland on site. The loss of habitats of actual or potential raptor foraging habitat is regarded as a significant impact.

Impact Bio-8 – Project impacts resulting in the removal of Non-native grassland and Southern Mixed Chaparral would reduce raptor foraging habitat. This removal of foraging habitat is regarded as significant.

Indirect Impacts

Guideline 11: Result in Adverse Urban-type Edge Effects

As discussed in Guideline 1 and 2 above, the project would impact approximately 48 percent of the habitats on site, plus an additional 53.7 acres of various habitats from off site transportation and utilities improvements, while retaining approximately 52 percent of the onsite habitats in Biological Open Space. The Biological Open Space has been configured as a large habitat block in the northern portion of the property, traversed only by a secondary access road (Lawrence Welk Court) and a gated, emergency access route (Camino Mayor).

Implementing the proposed project will result in human activities, located adjacent to the Biological Open Space. Potential edge effects could include the following; non-permitted activities within the Biological Open Space, introduction of invasive animal or plant species, and debris from recreational users. Sensitive vegetation communities or sensitive plants that will be preserved onsite could be potentially impacted during construction activities. Therefore, the potential for short-term or construction-related impacts resulting from the proposed project through grading, clearing and/or other construction activities would be significant (This impact is consistent with Impacts BIO-3, BIO-7 and BIO-9, no additional impacts would result).

The proposed project includes a design, which concentrates development in the southern part of the project site and preserves habitats in the eastern and northern parts of the project, attempts to reduce and buffer impacts to the preserved areas that would be generated from the development areas. Furthermore, recreational use in the Biological Open Space will be limited to trails along existing dirt pathways and trail overlooks as noted in the Merriam Mountains Specific Plan (see Appendix C).

Implementation of the proposed project would impact 1183 acres (including offsite improvements) of habitat by clearing, grubbing, and grading, along with construction of roads, utilities and residential housing, some of which would be adjacent to sensitive resources identified above. Unintended impacts from construction-related activities and the subsequent occupation of new residential housing and other uses are regarded as a significant impact.

Impact Bio-9 - Occupation of residential housing uses and commercial area near sensitive resources would result in significant edge effects

Guideline 12: Habitat Viability Not Directly Impacted

Refer to discussion under Guideline 11

Regulatory Compliance

Guideline 13: Conformance to County Resource Protection Ordinance Requirements

RPO Wetlands (refer to discussion under Guideline 5). RPO requires avoidance of wetlands. RPO also requires avoidance of the wetland buffer adjacent to the wetlands. The County RPO prohibits certain uses within RPO-defined wetlands and requires wetland buffers to protect the environmental and functional habitat values of wetlands, with buffer widths from 50 to 200 feet in width, based on various factors. The wetlands being maintained onsite would be located within the Biological Open Space, which are located a minimum of 300 feet from pad sites and development. Therefore adequate buffers for wetlands would be provided because the wetlands being maintained onsite are located within the Biological Open Space. Wetlands being conserved outside of the project boundaries include wetlands to the south of the proposed alignment of Deer Springs Road. The project design minimizes impacts to wetlands south of the proposed Deer Springs Road alignment through the construction of a retaining wall to ensure adequate distance between the roadway and wetland areas are maintained.

The project would impact 27.3 acres both onsite and offsite of occupied coastal sage scrub in the southeastern corner of the project. The presence of coastal sage scrub habitat occupied by the threatened coastal California gnatcatcher at the Mesa Rock Road cul-de-sac constitutes RPO Sensitive Habitat Lands. Impacting this occupied habitat by the project would be considered "take" of habitat and would require a Habitat Loss Permit (HLP) from the County. Measures to offset impacts to California Gnatcatcher-occupied habitat include purchase of a 32-acre site known as Captain's Associates, located along the I-15 corridor 0.5 mile south of the intersection of Nelsen Way and Old Highway 395 (see discussion above under Guideline 7).

Because none of the areas supporting sensitive plants found on the Merriam site constitute Sensitive Habitat Lands under RPO (see discussion above under Guideline 7), the project is consistent with Sensitive Habitat Lands for sensitive plants populations.

As described previously under Guideline 6, the Merriam site does not contain wildlife movement corridors as defined by the RPO; however, the large blocks of intact native habitat onsite do constitute an important core area of undeveloped habitat west of I-15 in the north-central portion of San Diego County. Protection of habitat blocks in the Merriam Mountains and the San Marcos Mountains to the west of Merriam and protection of existing linkages between the two mountainous landform masses is called for in the draft North County Multiple Species Conservation Program (NCMSCP).

The Merriam project would contribute to the draft North County Multiple Species Conservation Program (NCMSCP) goals by conserving approximately 1,192 acres of native habitat in the

northern portion of the site in a configuration that provides for a large block of habitat and protects the onsite contribution to the Merriam/San Marcos Mountains linkage; this linkage contribution is located east and west of Twin Oaks Valley Road as it traverses the Merriam site and includes the Gopher Canyon tributary along Twin Oaks Valley Road. The habitat block to be conserved in the northern portion of the Merriam site incorporates onsite dirt roads and trails currently used by common mammals for wildlife movement, and would provide significant revegetation to degraded areas.

In the absence of conveyance and management of the Biological Open Space area impacts to conformance with the RPO requirements would be considered a significant impact (M-BIO-10).

Impact Bio-10 – Inconsistencies with RPO requirements would be a significant impact.

Guideline 14: Conformance with the County's HLP and NCCP

In addition to the County of San Diego's HLP process as noted in Section 1.0 Project Description, the project must demonstrate conformance with overall goals and policies of the NCCP, and may also be required to make the specific findings applicable to issuance of Incidental Habitat Loss Permits (HLPs). Through hardline negotiations with the Wildlife Agencies, and in signing a hardline agreement for the draft NCMSCP, the project has demonstrated conformance with the general principles. If NCMSCP has not been adopted at the time of project approval, the specific findings applicable to NCCP will be made. The hardline agreement has established that the project footprint is consistent with preserve design principles under the NCCP.

As part of the NCMSCP, findings have been prepared for the Preserve Design Principles for the proposed project (see Appendix G). As seen in these findings the project would be consistent with a majority of the Preserve Design Principles. Principles include an orderly conveyed management of Merriam Biological Open Space.

As seen in Appendix G, a NCCP Draft 4(d) Findings in Support of the Issuance of a Habitat Loss Permit has been prepared for the proposed project. The following Findings were assessed, Finding 1.a: The habitat loss does not exceed the five percent guideline, Finding 1.b: The habitat loss will not preclude connectivity between areas of high habitat values, Finding 1.c: The habitat loss will not preclude or prevent the preparation of the subregional NCCP (The project has a hardline agreement for consistency with the subregional NCCP), Finding 1.d: Habitat loss has been minimized and mitigated to the maximum extent practicable in accordance with Section 4.3 of the NCCP Process Guidelines (the all south clustered development), Finding 2: The habitat loss will not appreciably reduce the likelihood of survival and recovery of listed species in the wild.

The project would impact one pair of gnatcatcher and 27.3 acres of Diegan Coastal Sage Scrub both onsite and offsite. The project would retain approximately 5.5 acres of Diegan Coastal Sage Scrub in small patches within the Biological Open Space. Mitigation land within the future preserve area will adequately mitigate for the loss without reducing the likelihood of survival of the gnatcatcher and will provide for the preservation of gnatcatcher at the Captains Associate parcel. The findings prepared in the Biological Resources Technical Report indicate that issuance of a Habitat Loss Permit is appropriate for the proposed development (see Appendix G).

Connectivity is maintained because the major wildlife corridors are reduced to less than significant and the major linkage is maintained.. Therefore the project is in conformance with the Habitat Loss Permit ordinance because the 4(d) findings can be made for the project and impacts due to inconsistency with NCCP would be less than significant.

Guideline 15: Conformance with the County's HCP, HMP, and SAMP

There are no existing County HCPs, HMPs or SAMPS for the project site area and therefore there would be no impacts.

Guideline 16: Conformance to Goals and Requirements of Federal and/or State Regulations

As discussed in Guideline 1, the project would impact approximately 48 percent of the habitats occurring on site, plus an additional 53.7 acres of habitats occurring off site because of transportation and utility requirements, while retaining approximately 52 percent of the site in Biological Open Space. Some of the habitats that would be impacted by the project have been shown or could be used by resources protected under the Federal Endangered Species Act, Migratory Bird Treaty Act, Bald Eagle Protection Act, Clean Water Act, Porter-Cologne Water Quality Act, and the California Fish and Game Code.

The project is in conformance with the goals and requirements of applicable federal or state regulations, including but not limited to the Federal Endangered Species Act, Migratory Bird Treaty Act, Bald Eagle Protection Act, Clean Water Act, Porter-Cologne Water Quality Act, and the California Fish and Game Code because conditions of approval will require that the proposed project to obtain applicable permits and implement avoidance of migratory birds, raptors, eagles and conform to the projects SWMP plan.

3.2.4 Cumulative Impact Analysis

Potential impacts to biological resources were examined for 69 projects in north-central San Diego County (assessment area) including the entire cumulative project list because this specific cumulative impact area has similar biological resources (chaparral, coastal sage scrub, and oak woodlands). This analysis includes projects located in the City of San Marcos, City of Vista, City of Escondido and the County of San Diego, including proposed and recently approved projects. For those projects located within or adjacent to the I-15 corridor, California Gnatcatchers are of particular interest, because the associated habitats may serve as a conduit for longitudinal and occasional latitudinal movement about the freeway. Gnatcatchers are relatively uncommon east of the freeway compared to areas to the west. Data regarding biological resources was not available for 36 of the 69 projects (52 percent), either because of incomplete application information, or lack of biological resource data in jurisdiction files. There is also no indication of the total size of each project, so no cumulative total of project sizes can be calculated. Appendix G lists the Project application number, a consecutive project number (unique to this table), major vegetation types (where stated), with stated impacts, and a note relating to the project.

The summary of proposed impacts to biological resources derived from Appendix G is shown in Table 3.2-7. It is assumed that, during the project review and approval process, that all the impacts to important biological resources would be mitigated at appropriate ratios as shown on Table 3.2-9.

As can be seen from Table 3.2-7, the Merriam project would result in substantial percentages of the total impacts within the assessment area due to the large size of the Merriam project relative to the cumulative projects in the cumulative study area. Average project size of cumulative projects in the study area is 30 acres or less as compared to the Merriam project of 2327 acres. As shown in Table 3.2-7 the Merriam project would contribute about 91 percent of the total cumulative contribution to chaparral impacts along with 33 percent and 49 percent respectively to riparian and wetland impacts. The contribution expressed in percentage terms reflect the large size of the Merriam project compared to other cumulative projects. These contributions are not considered significant due to the Merriam project contribution to MSCP goals as noted below.

Analysis of cumulative effects on individual sensitive species is less clear because of the paucity of information from other projects. Impacts to the California Gnatcatcher is shown in Appendix G, which indicates that 15 Gnatcatcher loci (assumed to be either mated pairs or individuals) would be impacted; this project includes one pair, or approximately 6.7 percent of the reported impacted gnatcatchers. The project site and the cumulative projects are within the boundaries of the North County MSCP planning area. All these projects must contribute to achievement of planning goals for the North County MSCP including preservation of linkages and cores and sensitive resources. The North County MSCP is still in draft form and is being processed as an

amendment to the County's approved MSCP Subarea Plan. The MSCP addresses the conservation needs of identified covered species in the context of projected growth within the MSCP planning area. The MSCP and associated environmental documentation address projected cumulative and growth inducing impacts to covered species and their habitats. Since the proposed project would be consistent with and contribute to achievement of MSCP goals in the North County area, the proposed project would avoid cumulative biological impacts to covered species and their habitats would be less than significant.

The wildlife agencies have concurred that the proposed Biological Open Space areas as the hardline is the appropriate area for analysis of the proposed draft NCMSCP. Therefore even though the project would impact as much as 1079.2 acres of chaparral habitat, this impact would be less than considerable because it is mitigated by preservation and active management of chaparral in the Biological Open Space that would substantially contribute to maintaining the ecological functions of the larger North County Segment of the draft NCMSCP.

Cumulative Impacts are also discussed in the Cumulative Technical Report provided as Appendix R of this Draft EIR and Biological Technical Report included in Appendix G.

3.2.5 Growth Inducing Impact

As discussed in the Growth Inducement Technical Report (Appendix S), the growth induction analysis prepared for the proposed project determined that the project could generate an additional 720 dwelling units within the immediate vicinity of the proposed project boundary. The development of 720 dwelling units could result in impacts to biological resources; however. Each individual project would be required to identify these impacts and provide mitigation measures to reduce those potential impacts to less than significant levels. In addition, it should be noted that the Biological Open Space proposed by the project would prevent development from occurring within area block of habitat identified by the County, USFWS, and CDFG as having a significant biological value. Therefore, potential impacts generated from the additional growth potentially generated by the proposed project would be less than significant.

Summary of Project Impacts

The following biological impacts have been identified:

Guideline 1: Degradation of Native Habitat

Impact Bio-1a Project-related impacts to 27.3 acres of Diegan Coastal Sage Scrub would be significant.

Impact Bio-1b Project-related impacts to 1079.2 acres of Southern Mixed Chaparral would be significant.

Impact Bio-1c Project-related impacts to 20.7 acres of Non-native Grassland would be significant.

Impact Bio- 1d Project-related impacts to 1.3 acres of South Coast Live Oak Riparian Forest would be significant.

Impact Bio-1e Project-related impacts to 0.3 acres of Southern Willow Scrub/Mule Fat Scrub would be significant.

Impact Bio-1f Project-related impacts to 0.2 acres of Mule Fat Scrub would be significant.

Impact Bio-1g Project-related impacts to 0.3 acres of Southern Willow Scrub would be significant.

Impact Bio-1h Project-related impacts to 2.4 acres of Coast Live Oak Woodland would be significant.

Impacts Bio-1i Project-related impacts to 0.8 acres of Non-vegetated channel and 0.1 acres of unvegetated channel would be significant.

Guideline 2: *Impacts to Natural Biological Diversity*

Impact Bio-2 Project-related impacts to the natural biological diversity would be significant.

Guideline 3: *Short term and Construction Impacts on Native or Naturalized Habitat*

Impact Bio-3 Project related impacts for short-term or construction related impacts to native and naturalized habitats would be significant.

Guideline 5: *Impacts to Wetlands*

Impact Bio-4 Project-related impacts to 2.1 acres of RPO Wetlands onsite and 0.9 acres offsite along Deer Springs Road would be significant.

Guideline 6: *Impacts to Wildlife Corridors and Wildlife Movement*

Impact Bio-5 The proposed project would limit wildlife movement within the development footprint by directly removing native and naturalized habitats and redirecting animal movement from existing trails to new connecting trails.

Guideline 7: Impacts that could Effect Long-term Survival of Sensitive Plant and Animal Species

Impact Bio 6 Direct impacts to sensitive plant and animal species are regarded as significant.

Guideline 9: Short-term and Construction Related Impacts to Nesting Birds and Raptors

Impact Bio-7 Project-related impacts to nesting Gnatcatcher and tree nesting raptors during construction activities would be significant.

Guideline 10: Loss of Raptor Foraging Habitat

Impact Bio-8 Project impacts resulting in the removal of Non-native grassland and Southern Mixed Chaparral would reduce raptor foraging habitat. This removal of foraging habitat is regarded as significant.

Guideline 11: Result in Adverse Urban-type Edge Effects, including a reduced habitat viability

Impact Bio-9 Occupation of residential housing uses and commercial area near sensitive resources would result in significant edge effects.

Guideline 13: Conformance to County Resource Protection Ordinance Requirements

Impact Bio-10 Inconsistencies with RPO requirements would be a significant impact.

3.2.6 Mitigation Measures

Significant Impact BIO-1: Degradation of Native Habitat

M-BIO-1 The Merriam Mountains RMP shall be implemented in conjunction with project implementation. RMP features that are specifically related to the significant impact associated with the loss of natural habitat include:

Objective B-1: Include large blocks of key biological resource areas within the Merriam Biological Open Space.

- Include within the Merriam Biological Open Space 1,192 acres of natural habitat; representative populations of sensitive plant and animal species observed onsite; existing dirt trails and canyon bottoms currently used by wildlife for movement across the site; and the north/south trending tributary to Gopher Canyon along Twin Oaks Valley Road, which provides linkage opportunities to the San Marcos Mountains.

Objective B-3: Provide resource management for the offsite mitigation area.

- Provide mitigation for impacts to coastal sage scrub and the California Gnatcatcher consistent with the October 2005 Points of Agreement, consisting of acquiring the 32-acre Captains Associate property, which will be incorporated into the County's North County MSCP preserve system and will be protected and managed consistent with management regimes established by the County as part of the draft North County MSCP.

Objective B-5: Track changes in the physical and biological conditions in Biological Open Space to determine active management strategies.

- The habitat manager will provide regular site inspections, which include recording and mapping changes in the biological and physical environment that may affect the Biological Open Space integrity.

Objective B-6: Prevent Habitat Degradation.

- The following shall be prohibited in the Biological Open Space: grading, placement of structures, grazing, dumping, and vegetation removal. Provide for various potentially adverse effects of human use within the Biological Open Space through trash removal, preventing squatting, and use of firearms for hunting and poaching/collecting.

Objective B-12: Protect Critical Biological Resources during Construction.

- Install conspicuous temporary construction fencing where proposed grading or clearing exists within 100 feet of the Biological Open Space, Other Open Space, or offsite native vegetation.
- Employ a construction monitor to perform the following duties: be onsite weekly during vegetation clearing, grubbing, and grading, when these activities are within 300 feet of Biological Open Space or offsite native

vegetation to ensure that all habitat protection measures are in place; inspect fencing and erosion control measures adjacent to preserved areas at least once per week and daily during rain events, and report deficiencies immediately to the DPW Construction Inspector; periodically monitor the work area for excessive dust generation; train contractors, and construction personnel, including the purpose for resource protection, a description of the gnatcatcher and its habitat, and the conservation measures that should be implemented during project construction; halt work when deficiencies require mediation, and notify DPW Construction Inspector within 24 hours if it is necessary to halt work; produce weekly reports to keep at the project site; produce a final report at the completion of each phase or unit and submit to the Director of the DPLU; confer with the Wildlife Agencies within 24 hours any time protected habitat or endangered species are being affected by construction; determine if nesting migratory birds will be affected by clearing and grading and direct construction activities away from nesting areas; and be responsible for notification and oversee remediation if impacts to preserved habitat should occur.

- Restrict all brushing and clearing such that none will be allowed within 100 feet of native or naturalized habitats during the migratory bird breeding season, unless the Biological Monitor determines that no migratory bird nests will be affected. This is defined as occurring from February 1 through August 31.

M-BIO-1a Diegan Coastal Sage Scrub Mitigation

Impacts to 27.3 acres Diegan Coastal Sage Scrub shall be mitigated at a ratio of 2:1 by a combination of: onsite preservation of 5.5 acres of Diegan Coastal Sage Scrub in the Biological Open Space; acquisition of Captains Associate Parcel (32 acres); and a Coastal Sage Scrub/Grassland mosaic restoration onsite in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plan (Appendix X to this EIR). The Hardline Points of Agreement concluded that the Wildlife Agencies agree to consider the Captains Associate parcel as adequate MCSP mitigation for Diegan Coastal Sage Scrub impacts to contribute to the assembly of the draft NCMSCP preserve.

M-BIO-1b Southern Mixed Chaparral Vegetation Mitigation

Impacts to 1079.2 acres of Southern Mixed Chaparral vegetation shall be mitigated at a ratio of 0.5:1 The project design places 1091.6 acres of Southern

Mixed Chaparral vegetation in Biological Open Space, in accordance with the requirements of the Merriam Mountains' RMP.

M-BIO-1c Non-native Grassland Vegetation Mitigation

The loss of 20.7 acres of Non-native Grassland shall be mitigated at a ratio of 0.5:1 by the combination of onsite preservation in Biological Open Space (3.7 acres), and through creation/enhancement within the Biological Open Space (see Figures 3.2-3a through 3.2-3c) prior to issuance of grading permits, in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plan (Appendix X).

M-BIO-1d Southern Coast Live Oak Woodland Riparian Forest Mitigation

Impacts to 1.3 acres of Southern Coast Live Oak Woodland Riparian Forest shall be mitigated offsite by creation/enhancement at a 3:1 ratio at an offsite location prior to issuance of grading permits, in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plans (Appendix X).

M-BIO-1e Southern Willow Scrub/Mule Fat Scrub Mitigation

Impacts to 0.3 acres of Southern Willow Scrub/Mule Fat Scrub shall be mitigated onsite by restoration/enhancement at a 3:1 ratio at the abandoned airstrip location (see Figures 3.2-3a through 3.2-3c) prior to issuance of grading permits, in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plans (Appendix X).

M-BIO-1f Mule Fat Scrub Mitigation

Impacts to 0.2 acres of Mule Fat Scrub shall be mitigated onsite by restoration/enhancement at a 3:1 ratio at the abandoned airstrip location (see Figures 3.2-3a through 3.2-3c) prior to issuance of grading permits, in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plans (Appendix X).

M-BIO-1g Southern Willow Scrub Mitigation

Impacts to 0.3 acres of Southern Willow Scrub shall be mitigated onsite by restoration/enhancement at a 3:1 ratio at the abandoned airstrip location (see Figures 3.2-3a through 3.2-3c) prior to issuance of grading permits, in accordance

with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plans (Appendix X).

M-BIO-1h Coast Live Oak Woodland Mitigation

Impacts to 2.4 acres of Coast Live Oak Woodland shall be mitigated at a 3:1 ratio by the combination of onsite preservation and restoration in Biological Open Space (see Figures 3.2a through 3.2c) and by identifying an offsite location prior to issuance of grading permits, in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plans (Appendix X).

M-BIO-1i Non-vegetated Channel and Unvegetated Channel

Impacts to 0.8 acres of Non-vegetated channel shall be mitigated onsite at a 1:1 ratio and impacts to 0.1 acres of unvegetated channel shall be mitigated at a ratio of 3:1 at the abandoned airstrip location (see Figures 3.2-3a through 3.2-3c) prior to issuance of grading permits, in accordance with the Merriam Mountains' Uplands and Wetlands Conceptual Revegetation Plans (Appendix X).

Significant Impact BIO- 2: Impacts to Natural Biological Diversity

M-BIO-2 The Merriam Mountains' RMP shall be implemented in conjunction with project implementation. RMP features specifically related to the significant impacts associated with the preservation of natural biological diversity on the project site include the following:

Objective B-1: Include large blocks of key biological resource areas within the Biological Open Space (see M-BIO-1)

Objective B-2: Enhance and restore sensitive resources within the Biological Open Space.

- Maintain revegetation/creation areas within the Biological Open Space as shown in the Conceptual Uplands and Wetlands Revegetation Plans (Appendix X). Maintain County/ACOE/CDFG wetlands within the Biological Open Space.

Objective B-4: Effectively manage the Biological Open Space to protect, maintain, and enhance resources.

- Identify a Habitat Manager for the Biological Open Space and Captains Associate Parcel acceptable to the County. The manager shall maintain the integrity of the preserved habitats by monitoring for changes in the baseline conditions, annual reporting, and updating the RMP every five years based on data collected during the annual reporting efforts.

Objective B-6: Prevent Habitat Degradation (see M-BIO-1)

Objective B-9: Identify and provide for permitted uses within the Biological Open Space consistent with the overall goal of resource protection.

- Recreation users shall be limited to trails, overlooks, and trailheads within the Merriam Biological Open Space. The habitat manager will regularly monitor trail use to identify unauthorized trails. Two secondary access roads (Lawrence Welk Court and Camino Mayor) shall be permitted within the Biological Open Space. Two water tanks (North Tank and Coogan Tank) exist on separate parcels bounded by the Biological Open Space. Fuel management activities shall be permitted along the secondary access roads located within the Biological Open Space.

Significant Impact BIO- 3: Short term and Construction Impacts to Native or Naturalized Habitat

M-BIO-3 The Merriam Mountains' RMP shall be implemented in conjunction with project implementation. RMP features specifically related to construction impacts to native or naturalized habitat that would be preserved on the site include the following:

Objective B-12: Protect Critical Biological Resources from Impacts during Construction (see M-BIO-1).

Significant Impact BIO-4: Impacts to Wetlands

M-BIO-4 The RMP contains specific management guidelines to address preservation and enhancement of wetlands, including the following:

Objective B-2: Enhance and restore sensitive resources within the Merriam Biological Open Space. (see M-BIO-2)

Objective B-12: Protect Critical Biological Resources during Construction. (see M-BIO-1)

M-BIO-4a Wetlands and Jurisdictional Area Mitigation

The project tentative maps and grading permits shall be conditioned to obtain the following permits (as appropriate) prior to any clearing, grubbing, ground disturbance or grading of any tentative map area of the site: ACOE 404 permit, Regional Water Quality Control (RWQCB) 401 permit, and/or CDFG Code 1600 Streambed Alteration Permit (SAA).

M-BIO-1d Southern Coast Live Oak Woodland Riparian Forest Mitigation.

M-BIO-1e Southern Willow Scrub/Mule Fat Scrub Mitigation.

M-BIO-1f Mule Fat Scrub Mitigation.

M-BIO-1g Southern Willow Scrub Mitigation.

Significant Impact BIO-5: Impacts to Wildlife Corridors and Wildlife Movement

M-BIO-5: The RMP contains specific management guidelines to address potential wildlife movement impacts, including the following objectives:

Objective B-1: Include large blocks of key biological resources areas within the Merriam Biological Open Space (see M-BIO-1).

Objective B-2: Enhance and restore sensitive resources within the Merriam Biological Open Space (see M-BIO-2).

Objective B-3: Provide resource management for the offsite mitigation area (see M-BIO-1).

Significant Impact BIO-6: Direct, Indirect, and/or Cumulative Impacts that could Effect Long-term Survival of Sensitive Plant and Animal Species

M-BIO-6 The RMP includes mitigation for the regionally declining species that occur onsite.

Objective B-2: Enhance and restore sensitive resources within the Biological Open Space (see M-BIO-2).

Objective B-3: Provide resource management for the offsite mitigation area (see M-BIO-1).

Objective B-5: Track changes in the physical and biological conditions in Biological Open Space to determine active management strategies (see M-BIO-1).

Objective B-6: Prevent habitat degradation (see M-BIO-1).

Objective B-7: Control and Remove Invasive, Exotic Plant Species.

- Exotic plant species should be targeted for complete elimination from the Biological Open Space area prior to becoming established. Existing locations of eucalyptus or other exotic trees should be evaluated for their removal from the Biological Open Space.

Objective B-8: Control and Remove Invasive, Exotic Animal Species;

- All trash shall be removed from the Biological Open Space area; legal culling of exotic (non-native) species shall be conducted by the habitat manager with approval of the County, CDFG and USFWS. Control the effects of domestic pets on wildlife within the Biological Open Space through educating local residents through measures such as signage and newsletters. Chronic problems related to uncontrolled pets will be reported by the habitat manager to the Animal Control Officer.

Objective B-9: Identify and provide for permitted uses within the Merriam Biological Open Space consistent with the overall goal of resource protection (see M-BIO-2).

Significant Impact BIO-7 – Short term and Construction Impacts to Nesting Birds and Raptors

M-BIO-7 The RMP shall be implemented in conjunction with project implementation. Features specifically related to the significant impact associated with impacts to nesting birds or raptors include the following:

Objective B-12: Protect Critical Biological Resources during Construction (see M-BIO-1).

M-BIO-7a Seasonal Limitation on Clearing, Grubbing, and Grading

For each phase of grading, a one-time biological survey for nesting bird species must be conducted within the proposed impact area approximately 72 hours prior to construction. This survey is necessary to assure avoidance of impacts to

nesting sensitive bird species and/or birds protected by the federal Migratory Bird Treaty Act. If any active nests are detected, the area will be flagged and mapped on the construction plans along with a minimum of a 25-foot buffer and up to a maximum of 300 feet for raptors (i.e., California Gnatcatchers, Red-tailed Hawks, and Cooper's Hawks), as determined by the project biologist, and will be avoided until the nesting cycle is complete.

Significant Impact BIO-8: Loss of Raptor Foraging Habitat

M-BIO-8 The Merriam Mountains' RMP shall be implemented in conjunction with project implementation. RMP objectives specifically related to the significant impact associated with the loss of potential raptor foraging habitat identified include the following:

Objective B-1: Include large blocks of key biological resource areas within the Merriam Biological Open Space.(see M-BIO-1)

Objective B-2: Enhance and restore sensitive resources within the Merriam Biological Open Space (see M-BIO-2).

Objective B-6: Prevent Habitat Degradation (see M-BIO-1).

M-BIO-1c: Non-native Grassland Mitigation

Significant Impact BIO-9: Result in Adverse Urban-type Edge Effects including reduced habitat viability

M-BIO-9 The Merriam Mountains; RMP shall be implemented in conjunction with project implementation. The RMP includes the following specific objectives related to impacts associated with placing urban development adjacent to the proposed Biological Open Space resulting in adverse urban type edge effects.

Objective B-1: Include large blocks of key biological resource areas within the Merriam Biological Open Space (M-BIO-1).

Objective B-6: Prevent Habitat Degradation. (M-BIO-1)

Objective B-7: Control and Remove Invasive, Exotic Plant Species (see M-BIO-6).

Objective B-8: Control and Remove Invasive, Exotic Animal Species (see M-BIO-6);

Objective B-12: Protect Critical Biological Resources during Construction (see M-BIO-1).

Objective B-13: Establish and maintain public awareness and education programs to foster community support for the Resource Management Plan.

- The habitat manager will attend meetings of the local community to inform them of the status of the habitat management program and to enlist their cooperation and support. Interpretative signage will be installed that will help educate users/neighbors of the Merriam area about the ecology of the area and purpose of the Biological Open Space.

M-BIO-9a Secondary Effects of Grading Mitigation

Grading and/or applicable permits for any permitted activities on the site shall require County-required best management techniques to control fugitive dust, water, runoff, and noise to protect adjacent preserve areas. Additionally, any sensitive habitat area should be clearly identified with signage and construction fencing to protect such areas during construction activities.

M-BIO-7a Seasonal Limitation on Clearing, Grubbing and Grading.

Significant Impact BIO-10: Conformance to County Resource Protection Ordinance Requirements

M-BIO-10: The project includes a Resource Management Plan (RMP) that addresses all resources covered by the RPO and is included as the functional equivalent to RPO. Through consolidating open space and management of RPO resources, the RMP provides for a more comprehensive approach to resource protection and management than would occur under RPO.

3.2.7 Conclusion

Impacts to sensitive vegetation communities (Impact BIO-1a through BIO-1i) would be reduced to a level below significance with implementation of Mitigation Measures M-BIO-1 through M-BIO-1i because through preservation (1) the most rare habitats regionwide, are mitigated at a higher ratio while more common habitats are mitigated at a lower ratio, (2) conditions of

approvals will require that mitigation land will be of like kind and value (3) the mitigation land will be preserved and managed in perpetuity, and (4) restoration/creation of habitats will occur within proximity to the project to contribute to naturally functioning ecosystem.

Impacts to natural habitats onsite (Impact BIO-2) would be mitigated to a level below significance by implementation of M-BIO-2 that would preserve core habitat in the Merriam Mountains as a large habitat block, including contributing to a potential future linkage to the San Marcos Mountains. The identified impacts would be reduced to a level below significance because, taken together, the project design features (including preservation and enhancement of habitats as shown in the RMP), M-BIO-1a through M-BIO-1i and M-BIO-2 would preserve core habitat in the Merriam Mountains as a large habitat preserve. The Biological Open Space would be preserved in perpetuity and managed according to the requirements of the Merriam Mountains RMP. Project impacts to biological diversity and habitat diversity have been reduced by the provision of 52 % of the site as Biological Open Space and adherence to an RMP, as well as onsite revegetation of Oak Woodlands and Non-native Grasslands to compensate for the loss of diversity as discussed in the Uplands and Wetlands Revegetation Plans (see Appendix X) and purchase of the Captains Associate Property. Orderly conveyance and management of the Biological Open Space area, would reduce impacts associated with natural biological diversity to less than significant.

Short term construction impacts to natural and naturalized habitats during construction, as identified in (Impact BIO-3) would be mitigated to a level below significance through features incorporated in the RMP through implementation of the M-BIO-3, because inadvertent dust, noise, erosion, and human/vehicle-caused damage would be avoided.

Significant impacts to County-defined wetlands would occur to 2.1 acres onsite and 0.9 acres offsite of wetlands (Impact BIO 4). Elements of the project design (preservation of 5.9 acres of wetlands in the Biological Open Space and management provided by the RMP) and conditioning the project to require mitigation measures M-BIO-4, M-BIO-4a (which requires permits and creation/enhancement measures prior to impacts), M-BIO-1d, M-BIO-1e, M-BIO-1f and M-BIO-1g (which require creation/enhancement of impacted wetlands) would reduce the impacts to a less than significant level because impacts to wetlands are mitigated at 3:1 ratio, conditions of approvals will require that mitigation land will be preserved and managed in perpetuity, and restoration/creation of habitats will occur within proximity to the project to contribute to naturally functioning ecosystem. Through impacted vegetation communities' revegetation onsite or through an offsite purchase as discussed in Appendix X to the EIR, impacts would be reduced to a level below significance because the mitigation would be held to the "no net loss" standard of 3:1, because the mitigation would occur in proximity to the impacts, and because no long-term reduction in species composition, diversity, or abundance will occur.

Impacts to or adjacent to local wildlife corridors, subregional or regional linkages or other areas utilized for wildlife movement would be significant (Impact BIO-5). The identified impacts would be mitigated to a level below significance by features incorporated in the project design (preservation of 1,192 acres of Biological Open Space) and mitigation measures M-BIO-5, which requires maintenance of the Biological Open Space such that provides for long-term management and protection of wildlife, enhances wildlife trail connections where there is the opportunity to do so, and provides for genetic interchange through an existing corridor with the San Marcos Mountains to facilitate wildlife movement. The identified impacts would be reduced to a level below significance because, taken together, the project design features and M-BIO-5, would preserve core habitat in the Merriam Mountains as a large habitat block, including a linkage to the San Marcos Mountains and preserve a functioning element in the I-15 habitat corridor away from the Merriam site.

Impacts to the long term survival of a sensitive plants and animal were determined to be significant due to the removal of Diegan Coastal Sage Scrub occupied by California Gnatcatcher (Impact BIO-6). Impacts to sensitive species on the site from indirect effects would be reduced to less than significant by elements of the project design and conditioning the project to require mitigation measure M-BIO6, M-BIO-6a, and M-BIO-6b because the Biological Open Space would preserve a core habitat for these sensitive species and the RMP would provide management of the habitat for the benefit of these species in perpetuity.

Impacts to nesting California Gnatcatchers, and ground-and tree-nesting raptors, would be significant during construction activities (Impact BIO-7). The identified impacts would be mitigated to a level below significance by mitigation measures M-BIO-7, which provides measures to reduce impacts during construction including erosion control, exclusion fencing, dust control, etc. and M-BIO-7a, which includes seasonal limitation of clearing, grubbing and grading. Through policies included within the RMP pertaining to construction and M-BIO- 7a limiting construction activities during nesting season impacts would be reduced to a level below significance because, taken together, the proposed measures would minimize impacts to ground and tree-nesting raptors.

The removal of vegetation containing raptor foraging habitats both onsite and off site would be significant (Impact BIO-8). The identified impacts would be mitigated to a level below significance by features incorporated in the project design (preservation of 1,192 acres of Biological Open Space and the RMP) and mitigation measure M-BIO-8 which require acquisition or enhancement of habitats to compensate for those raptor foraging habitats impacted on site. The identified impacts would be reduced to a level below significance because, taken together, the design features and M-BIO-8 would preserve core habitat in the Merriam Mountains a large habitat block and acquire, enhance and restore degraded areas that contain raptor foraging habitat.

Impacts to natural resources and habitat viability would be significant due to urban edge effects and construction activities adjacent to sensitive resources (Impact BIO9). The identified impacts would be mitigated to a level below significance by features incorporated in the project design (preservation of 1,192 acres of Biological Open Space and the RMP) and mitigation measures M-BIO-9, M-BIO-91 and M-BIO-7a which includes seasonally limit clearing, grubbing and grading, and best management practices to be conditioned to grading or other applicable permits.

In the absence of conveyance and management of the Biological Open Space impacts to conformance with the RPO would be significant (M-BIO-10). The project would be fully consistent with RPO with the exception of unavoidable impacts to 2.1 acres of RPO wetlands onsite and 0.9 acres offsite. These impacts are unavoidable given the project goals of concentrating development in the southern portion of the property to create a biological preserve in the northern portion of the property, providing a core habitat block in the Merriam Mountains. An amendment to RPO is proposed as part of the project to add an Exemption to Section 86.605 of the RPO. The exemption would exempt "any project located within the approximately 2,327 acres property known as "Merriam Mountains Specific Plan" if determined to be consistent with a comprehensive Resource Management Plan (RMP) which has been adopted by the Board of Supervisors as the functional equivalent of RPO". Implementation of the RMP (M-BIO-10), which addresses all RPO resources and describes features incorporated in the project to protect and manage those resources, would reduce impacts to a level below significance because the RMP completed for the proposed project identified benefits of implementing a RMP rather than adhering to the strict requirements of the RPO.

TABLE 3.2.1
Vegetation Communities

Vegetation Community		Holland Code	Acres (percent coverage)
DH	Disturbed Habitat	11300	27.3 (1%)
UD	Urban Developed	12000	13.0 (<1%)
ORC	Orchard	18100	2.4 (<0%)
IA	Intensive Agriculture	18200	4.9(<0%)
DCSS	Diegan Coastal Sage Scrub	32500	28.6 (1%)
SMC	Southern Mixed Chaparral (Granitic Type)	37121	2156.6(92%)
SMC	Mafic Chaparral	37122	57.4(2%)
NNG	Non-native Grassland	42200	23.2(1%)
FWM	Freshwater Marsh	52410	0.1(<0%)
South CLOWRF	South Coast Live Oak Riparian Forest	61310	2.3(<0%)
SAW	Sycamore Alluvial Woodlands	62100	1.6(<0%)
SWS/MFS	Southern Willow Scrub/ Mule-Fat Scrub	63300	0.3(<0%)
MFS	Mule-Fat Scrub	63310	0.2(<0%)
SWS	Southern Willow Scrub	63320	2.6<0%)
SWS/TS	Southern Willow Scrub/ Tamarisk Scrub	63320	0.6(<0%)
CLOW	Coast Live Oak Woodland	71160	4.2(<0%)
EW	Eucalyptus Woodland	11100	1.5(<0%)

TABLE 3.2-2
RPO Wetlands and Other Jurisdictional Wetlands

Wetlands Habitats	Existing (Acres)
Freshwater Marsh	0.1
Mule-Fat Scrub	0.2
Oak Riparian Forest	2.3
Southern Willow Scrub	2.6
Southern Willow Scrub/Mule Fat Scrub	0.3
Southern Willow Scrub/Tamarisk Scrub	0.6
Sycamore Alluvial Woodland	1.6
Unvegetated Wetlands	0.2
Total RPO Wetlands	***7.9***
Other Jurisdictional Unvegetated Waters	
Total ACOE**	**7.1**
Total CDFG**	**7.3**

Source: Pacific Southwest Biological Services, Inc., June 2006
** included for disclosure but not considered to be RPO wetlands.

TABLE 3.2-3
Potentially Occurring Sensitive Plant Species

Species Name	Status Federal/State/ CNPS	Habitat Requirements	Probability Of Occurrence	San Diego County Status
Astragalus brauntonii Braunton's Milk-vetch	FE/None/1B(3-3-3)	Closed-cone coniferous forest, chaparral, coastal scrub, valley & foothill grassland, esp. recent burns or disturbed areas, in stiff gravelly clay soils overlying granite or limestone, 4-640 m.	No appropriate habitat onsite: Low	NA
Acanthomintha ilicifolia San Diego Thorn-mint	FT/CE/1B (2-3-2)	Chaparral, coastal scrub, valley & foothill grassland, vernal pools, endemic to active verticol clay soils of mesas & valleys, on clay lenses 2/in grassland or chaparral communities, 10-935 m.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road; not observed during numerous visits	List A
Adophia californica California Adolphia	None/None/2 (1-3-1)	Chaparral, CSS, valley & foothill grassland, from sandy/gravelly to clay soils within grassland, CSS, or chaparral; various exposures, 15-300 m.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road; not observed during numerous visits	List B
Ambrosia pumila San Diego Ambrosia	FE/None/1B (3-3-2)	Chaparral, coastal scrub, valley & foothill grassland, vernal pools, especially in sandy loam or clay soil, in valleys; persists where disturbance has been superficial, 20-415 m.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road; not observed during numerous visits	List A
Arctostaphylos glandulosa ssp *crassifolia* Del Mar Manzanita	FE/None/1B (3-3-2)	Chaparral, closed-cone coniferous forest, especially sandy coastal mesas & ocean bluffs, in chaparral or Torrey Pine forest.	The more common, inland species (*A. g. zacaensis*) is found on site	List A
Arctostaphylos rainbowensis Rainbow Manzanita	None/None/1B (3-3-3)	Chaparral; previously called *A. peninsularis* or considered a hybrid between *A. glandulosa* & *A. glauca*; found in gabbro chaparral in RIV & SD Cos., 270-790 m.	The more common, inland species (A. g. zacaensis) is found on site	List A
Baccharis vanessae Encinitas Baccharis	FT/SE/1B (2-3-3)	Chaparral, endemic to San Diego County, esp on sandstone soils in steep, open, rocky areas w/chaparral associates, 60-720 m.	Not known from granodiorite habitats on site	List A

TABLE 3.2-3 (CONT.)
Potentially Occurring Sensitive Plant Species

Species Name	Status Federal/State/ CNPS	Habitat Requirements	Probability Of Occurrence	San Diego County Status
Brodiaea filifolia Thread-leaved Brodiaea	FT/CE/1B (3-3-30	Cismontane woodland, coastal scrub, playas, valley & foothill grassland, vernal pools, usu associated w/annual grassland & vernal pools, often surrounded by shrubland habitats, clay soils, 35-855 m.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road, vernal pools, or seep-related habitats to support this species; not observed	List A
Brodiaea orcuttii Orcutt's Brodiaea	FSC/None/1B (1-3-2)	Vernal pools, valley & foothill grassland, closed-cone coniferous forest, cismontane woodland, chaparral, meadows, mesic, clay habitats, sometimes serpentine, in vernal pools & small drainages, 30-1615 m.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road, vernal pools, or seep-related habitats to support this species; not observed	List A
Ceanothus verrucosus Wart-stemmed Ceanothus	FSC/None/2 (2-2-1)	Chaparral, 1-380 m.	Known from mountains south of San Marcos, but not found on site; only *C. tomentosus* found on site	List B
Centromadia parryi ssp. *Australis* Southern Tarplant	FSC/None/1B (3-3-2)	Marshes & swamps (margins), valley & foothill grassland, vernal pools, oft in dist sites near coast; also in alkaline soils sometimes with saltgrass; also vernal pools, 0-425 m.	No appropriate habitat onsite: Low	List A
Chaenactis glabriuscula var. *orcuttiana* Orcutt's Pincushion	None/None/1B (2-3-2)	Coastal bluff scrub, coastal dunes. Sandy sites, 3-100 m.	No appropriate habitat onsite: Low	List A
***Comarostaphylos diversifolia* ssp *diversifolia* Summer Holly**	**FSC/None/1B (2-2-2)**	**Chaparral, often in mixed chaparral in California, sometimes post-burn, 30-550 m.**	**Present on the site**	**List A**
Eryngium aristulatum var *parishii* San Diego Button-celery	FE/CE/1B (2-3-2)	Vernal pools, coastal scrub, valley & foothill grassland, esp in San Diego mesa hardpan& claypan vernal pools & southern interior basalt flow vernal pools; usually surrounded by scrub, 15-620 m	No vernal pools present on site.	List A

TABLE 3.2-3 (CONT.)
Potentially Occurring Sensitive Plant Species

Species Name	Status Federal/State/ CNPS	Habitat Requirements	Probability Of Occurrence	San Diego County Status
Eryngium aristulatum var *parishii* San Diego Button-celery	FE/CE/1B (2-3-2)	Vernal pools, coastal scrub, valley & foothill grassland, esp in San Diego mesa hardpan& claypan vernal pools & southern interior basalt flow vernal pools; usually surrounded by scrub, 15-620 m	No vernal pools present on site.	List A
Harpagonella palmeri Palmer's Grapplinghook	FSC/--/2 (1-2-1)	Chaparral, coastal scrub, valley & foothill grassland, esp clay soils, open grassy areas, 15-830 m.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road; not observed	List D
Horkelia truncata **Ramona Horkelia**	**None/None/1B (3-1-2)**	**Chaparral, cismontane woodland, esp in habitats mixed chaparral, vernal streams, & disturbed areas near roads, clay soil, 400-1300 m.**	**A single population of 7 individuals of this plant was located in the southeastern portion of the site; not associated with mapped or site-specific mafic soil**	List A
Isocoma menziesii var decumbens Decumbent Goldenbush	None/None/1B (2-2-2)	Coastal sage, sandy soil, often in disturbed sites, 10-910 m.	Site is too far inland for this species; *I. m. vernonioides,* a common species, was found on the site	List A
Iva haysesiana San Diego Marsh-elder	FSC/None/2 (2-2-1)	Marshes & swamps, playas, esp in riverwashes, 10-500 m.	No appropriate habitat onsite: Low	List B
Lepechinia cardiophylla Heart-leaved Pitcher Sage	None/None/1B (3-2-2)	Closed-cone coniferous forest, chaparral, cismontane woodland, 550-1370 m.	Sought on peaks onsite but not encountered	List A
Lepidium virginicum var. *robinsonii* Robinson's Pepper-grass	None/None/1B (3-2-2)	Chaparral, coastal scrub. Dry soils, shrubland. 1-945 m.	No found on site	List A
Lessingia [*Corethrogyne*] *filaginifolia* var. *linifolia* Del Mar Sand Aster	FPT/None/1B (3-2-3)	North coastal areas in sandy soil	Site beyond normal range of this species	List A
Monardella hypoleuca ssp. *Lanata* Felt-leaved Monardella	None/None/1B (2-2-2)	Chaparral, cismontane woodland, esp. in understory in mixed chaparral, chamise chaparral & so. oak woodland; esp. sandy soil, 300-1190 m.	Searched for and not found on site	List A

TABLE 3.2-3 (CONT.)
Potentially Occurring Sensitive Plant Species

Species Name	Status Federal/State/ CNPS	Habitat Requirements	Probability Of Occurrence	San Diego County Status
Navarretia fossalis Spreading Navarretia	FT/None/1B (2-3-2)	Vernal pools, chenopod scrub, marshes & swamps, playas, esp in San Diego hardpan & San Diego claypan vernal pools, in swales & vernal pools, often surr . By other habitat types, 30-1300 m.	No vernal pools on site	List A
***Quercus engelmannii* Engelmann Oak**	**None/None/4(1-2-2)**	**Chaparral, cismontane woodlands, riparian woodland, valley & foothill grassland**	**A few of this species occur in the Southern Oak Woodland at the southern corner of the property**	**List D**
Satureja chandleri San Miguel Savory	None/None/4 (1-2-2)	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley & foothill grassland, esp Gabbroic or Metavolcanic substrate, 120-1,005 m	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road; not observed	List A
Tetracoccus dioicus Parry's Tetracoccus	FSC/None/1B (3-2-2)	Chaparral, coastal scrub, esp stony fine sandy decomposed gabbro soil, 600-1500 ft.	Clay soils (Las Posas) on site limited to preserve area west of Twin Oaks Valley Road; not observed	List A

Bold Indicates Present on the Project Site

Source: Pacific Southwest, June 2007

TABLE 3.2-4
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Riverside Fairy Shrimp *Streptocephalus woottoni*	FE/None/CSC	Group 1, Narrow Endemic	Endemic to western RIV and SD Cos, in area of tectonic swales, earth slump basins, in grassland & coastal sage scrub; esp. inhabits seasonally astatic pools, filled by winter/spring rains; hatch in warm water later in the season.	Low: No ponded water habitat on site
San Diego Fairy Shrimp *Branchinecta sandiegonensis*	FE/None/None	Group 1, Narrow Endemic	Vernal pools	Low: No ponded water habitat on site
Quino Checkerspot Butterfly *Euphydryas editha quino*	FE/None/None	Group 1	Sunny openings within chaparral & coastal sage shrublands in parts of Riverside and San Diego Counties; esp on hills & mesas near the coast, w/high densities of food plants *Plantago erecta, P. insularis, Orthocarpus purpurescens.*	Low: Unlikely to occur because of dense chaparral habitats on site
Thorne's Hairstreak Butterfly *Callophrys* [*Mitoura*] *thornei*	FSC/None/None	Group 1	Endemic to San Diego County, where host plant, Tecate Cypress occurs, including Otay Mountain (Little Cedar Canyon)	Low: No Tecate Cypress on site
Hermes Copper *Hermelcycaena hermes*	FSC/None/CSC	Group 1	Endemic to SD Co. Continuous stands of southern mixed chaparral/coastal sage scrub with both host plant *Rhamnus crocea* and primary nectaring plant *Eriogonum fasciculatum* in very close proximity. Species usually found along fairly open dirt roads/trails. Fallbrook is most northern record. Flight season: late May-early July	Low: *Rhamnus crocea* occurs on site, but directed search for Hermes Copper during optimal flight season (late May-early July) has not been made. Project site is north of most recent records for this species
Harbison's Dun Skipper *Euphys vestris harbisoni*	FSC/None/None	Group 1	Silverado Cyn, Orange Co., through San Diego Co foothills; associated w/drainages containing *Carex spissa*. Flight season: mid May - mid July	Low: Known from Daley Ranch and extreme E-part of Escondido, among other areas. Although another *Carex* has been found on the site, additional searches for the host plant and surveys for the butterfly should be conducted if appropriate

TABLE 3.2-4 (CONT.)
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Wandering Salt Marsh Skipper *Panoquina errans*	FSC/None/CSC	Group 1	Confined to coastal salt marshes from Santa Barbara through Baja California peninsula; host plant *Distichlis spicata*. Flight season: July-Sept.	Low: No salt marsh habitat onsite
Northern Red-diamond Rattlesnake *Crotalus exsul ruber*	**FSC/None/CSC**	**Group 2**	**Chaparral, woodland, grassland & desert areas, esp in rocky areas & dense vegetation**	**High: Detected on site**
Western Spadefoot *Spea* [*Scaphiopus*] *hammondi*	FSC/None/CSC	Group 2	Grassland habitats, valley-foothill woodlands, requires vernal pools for breeding	Low: No appropriate breeding habitat on site or in vicinity
Arroyo Toad *Bufo californicus*	FE/None/CSC	Group 1	Semi-arid regions near washes or intermittent streams, incl. Valley-foothill & desert riparian, desert wash, etc., esp rivers w/sandy banks, willows, cottonwoods, sycamores w/loose, gravelly areas	No appropriate breeding habitat on site or in vicinity and the site is not within 1 km of any known breeding habitat
California Red-legged Frog *Rana aurora draytonii*	FT/None/CSC	Group 1, Narrow Endemic	Marshes, streams, lakes, reservoirs, ponds and other permanent water sources.	Low: No perennial streams to provide habitat for this species
Southwestern Pond Turtle *Emys* [*Clemmys*] *marmorata*	FSC/None/CSC	Group 1	Permanent or nearly permanent water in many habitat types; below 6000 ft, esp w/basking sites	Low: No appropriate breeding habitat on site or in vicinity
San Diego Horned Lizard *Phrynosoma coronatum blainvillei*	**FSC/None/CSC**	**Group 2**	**Coastal Sage Scrub, Chaparral in arid and semi-arid climate, esp. friable, rocky, or shallow sandy soils**	**High: Detected on site**
Coronado Skink *Eumeces skiltonianus interparietalis*	FSC/None/CSC	Group 2	Grassland, chaparral, pinon-juniper sage woodland, pine-oak & pine forests in coastal ranges in so. Calif., esp prefers early successional stages or open areas, found in rocky areas close to streams & on dry hillsides	High: Probably occurs on site, but not observed

TABLE 3.2-4 (CONT.)
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Belding's Orange-throated Whiptail ***Aspidoscelis [Cnemidophorus] hyperythrus beldingi***	**FSC/None/CSC**	**Group 2**	**Coastal Scrub (low elev.), Chaparral, Valley-foothill Hardwood, esp washes & sandy areas w/patches of brush & rocks**	**High: Detected on site**
Coastal Whiptail ***Aspidoscelis [Cnemidophorus] tigris stejnegeri***	**FSC/None/None/None**	**Group 2**	**Deserts & semiarid areas w. sparse vegetation & open areas, also in woodland & riparian areas, esp. where ground may be firm soil, sandy, or rocky**	**High: Detected on site**
Silvery Legless Lizard *Anniella pulchra*	FSC/None/CSC	Group 2	Sparse vegetation of chaparral and riparian, loose soil for burrowing.	Low: Site lacks extensive sandy soil areas
Coastal Rosy Boa *Charina trivirgata*	FSC/None/Protected	Group 2	Desert & chaparral from coast to Mojave & Colorado Deserts, esp in moderate to dense vegetation & rocky cover; habitats w/mix of brushy cover & rocky soil like coastal canyons & hillsides, desert canyons, washes & mountains	Moderate: May occur on site, but not detected so far
Coast Patch-nosed Snake *Salvadora hexalepis virgultea*	FSC/None/CSC	Group 2	Brushy or shrubby vegetation in coastal so. CA, esp. use small mammal burrows for refuge	Moderate: May occur on site; not observed
San Diego Mountain Kingsnake *Lampropeltis zonata pulchra*	None/None/CSC	Group 2	Variety of habitats, incl. Valley-foothill hardwood, coniferous, chaparral, riparian and wet meadows.	Low: Site below species normal elevation; not observed
Two-striped Gartersnake *Thamnophis hammondii*	FSC/None/CSC	Group 1	Coastal CA., fr/ Salinas to NW Baja, fr/sea level to approx. 7000 ft ; esp. highly aquatic, found in or near permanent fresh water, often along streams w/rocky beds & riparian growths	Low: May occur on site; not observed
Northern Harrier *Circus cyaneus* (breeding)	None/None/CSC	Group 1	Coastal salt marsh & fresh-water marsh, nest and forage in grasslands and farmlands	Low: No extensive open grassland habitat on site
Sharp-shinned Hawk *Accipiter striatus*	None/None/CSC	Group 1	Riparian woodlands, forests at edges of open habitats	Moderate: May occasionally use oak or riparian habitat on site; not observed
Cooper's Hawk, *Accipiter cooperi*	None/None/CSC	Group 1	Woodland, usu. Open, interrupted or marginal type, nests mainly in riparian areas	High: Probably occurs on site, but not observed

TABLE 3.2-4 (CONT.)
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Swainson's Hawk *Buteo swainsoni*	FSC/CT/None	Group 1	(nesting) Breeds in stands w/few trees in juniper-sage flats, riparian areas, & in oak savannah. Req adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Low: No extensive open grassland habitat on site
Ferruginous Hawk *Buteo regalis*	None/None/CSC	Group 1	Winters in so. CA. Forages over agricultural lands, grasslands, scrub.	Low: No extensive open grassland habitat on site
Golden Eagle *Aquila chrysaetos*	None/None/CSC	Group 1	Foothills, mountains grasslands, deserts, and shrub habitats	Low: Historic nest on site, but not observed during numerous field visits
American Peregrine Falcon *Falco peregrinus anatum*	FP/SE/None	Group 1	Variety of habitats, concentrating in coastal area in San Diego County	Low: Absence of open water probably precludes this species
Canada Goose *Branta canadensis*	None/None/None	Group 2	Abundant but localized winter visitor in San Diego County	Low: No valley grasslands on site
Mountain Plover *Charadrius montanus* (wintering)	FPT/None/CSC	Group 2	(Wintering) Short grasslands, freshly plowed fields, newly sprouting rain fields, sometimes sod farms. Short vegetation, bare ground, flat topography. Pref grazed areas & areas w/burrowing rodents	Low: No extensive open grassland habitat on site
Burrowing Owl ***Athene* [*Speotyto*] *cunicularia*** **(burrow sites)**	**FSC/None/CSC**	**Group 1, Narrow Endemic**	**Open dry annual or perennial grasslands, desert & scrublands w/low growing vegetation, uses ground squirrel burrows for nesting**	**Moderate: This species was detected in the 1978 surveys for Safa Ranch, which covered the northern part of the central valley of the present Merriam site. The 1978 report had no discussion on this species; any detection of this species must have been in the grassy area of the central valley. No observations have been made of this species in the numerous field visits since 1978.**
Western Willow Flycatcher, *Empidonax traillii extimus*	FE/SE/None	Group 1	Extensive thickets of low, dense willows, often near streams; 2000-8000 ft elev.	Low: No appropriate breeding habitat on site or in immediate vicinity
Loggerhead Shrike *Lanius ludovicianus*	FSC/None/CSC	Group 1	Open habitats with scattered shrubs & other perches.	Low: Site lacks open grassy or low shrub habitats; not observed

TABLE 3.2-4 (CONT.)
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Least Bell's Vireo *Vireo bellii pusillus*	FE/CE/None	Group 1	Summer resident in So. Calif., inhabits low riparian growth in vic. Of water or in dry river bottoms, below 2000 ft, usu. Willow, baccharis mesquite	Low: No appropriate breeding habitat on site or in vicinity
Coastal Cactus Wren *Campylorhynchus brunneicapillus couesi*	None/None/CSC	Group 1	Southern California coastal sage scrub, esp w/tall opuntia cactus for nesting	Low: No appropriate breeding habitat on site or in vicinity
Coastal California Gnatcatcher ***Polioptila californica***	**FT/None/CSC**	**Group 1**	**Coastal sage scrub, below 2,500 ft in So. California, esp low coastal scrub in arid washes, mesas & slopes**	**High: Detected on site**
Western Bluebird *Sialia mexicana*	None/None/None	Group 2	Small groups in fields or open woodlands, often perched on wires or fences.	Moderate: Not detected but probably occurs during winter months
California Thrasher ***Toxostoma redivivum***	**None/None/None**	**NA**	**Fairly common to common resident and closely associated with chaparral in San Diego County**	**High: Detected on site**
Yellow Warbler *Dendroica petechia brewsteri*	None/None/SC	Group 2	Riparian plant associations, prefers willows, cottonwoods, aspens, sycamores & alders for nesting & foraging, esp nests in montane shrubbery in open conifer forests.	Moderate: May occur in preserved eastern or western riparian habitats during spring summer periods; not detected
Yellow-breasted Chat *Icteria virens*	None/None/CSC	Group 1	Summer resident in riparian thickets of willow & other brushy tangles near watercourses, nests in low, dense riparian habitat.	Moderate: May occur in eastern or western riparian habitats during spring summer periods; not detected
Southern California Rufous-crowned Sparrow *Aimophila ruficeps canescens*	FSC/None/CSC	Group 1	Coastal sage scrub, sparse chaparral, esp rel. steep, often rocky hillsides w/grass & forb patches	Moderate: Probably occurs on site, but not observed
Bell's Sage Sparrow *Amphispiza belli*	FSC/None/CSC	Group 1	Coastal chaparral, coastal sage scrub, and sagebrush desert habitat.	Moderate: May occur on site but not detected
Grasshopper Sparrow *Ammodramus savannarum*	None/None/CSC	Group 1	Dense grassland w/tall forbs & scattered shrubs for singing perches.	Low: No extensive grassy habitats required by this species
Tricolored Blackbird *Agelaius tricolor* (colony)	FSC/None/CSC	Group 1	Breeds near fresh water in emergent wetlands w/dense cattails or tules. Feeds in grassland & cropland.	Low: No appropriate foraging or nesting habitat

TABLE 3.2-4 (CONT.)
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Yellow-headed Blackbird *Xanthocephalus canthocephalus*	None/None/CSC	NA	Uncommon to rare migrant and winter visitor and very rare summer visitor in freshwater marshes in coastal lowland of San Diego County (Unitt 1984)	Low: No extensive freshwater marsh, croplands, or grasslands on site -
California Leaf-nose Bat *Macrotus californicus*	None/None/CSC	Group 2	Distribution poorly known; strongly associated w/desert riparian & wash habitats; roost in mine shafts & caves.	Low: Primarily confined to desert mountain ranges in the Colorado River basin. -
Yuma Myotis *Myotis yumanensis*	FSC/None/CSC	Group 2	Open forest & woodlands. Closely tied to bodies of water.	Moderate: Very little roosting habitat on site. May forage in riparian areas with water.
Long-eared Myotis *Myotis evotis*	FSC/None/CSC	Group 2	Trees, buildings, caves, and mines. Brush, woodland, forest, > 4,000 ft.	Low: Very limited roosting habitat on site.
Western Red Bat *Lasiurus blossevillii*	None/None/None	Group 2	Trees along or near waterways with open foraging areas. Feeds over grasslands, shrublands, woodlands & forests.	Moderate: may occur along riparian areas during migration
Townsend's Big-eared Bat *Corynorhinus townsendii*	FSC/None/CSC	Group 2	Day roosts include caves & mines, but may be found in buildings. Distribution not well known. Prefers mesic habitats.	Low: No appropriate day roosting (cave or cave-like) habitat on site.
Big Free-tailed Bat *Nyctinomops macrotis*	None/None/CSC	Group 2	Small colonies in rocky cliffs or crevices. Found in desert scrub, desert riparian, scrublands, pinyon-juniper woodlands. Rocky areas with high cliffs.	Low: Very little day roosting (cliff faces) habitat on site. May forage over the site.
Western Mastiff Bat *Eumops perotis californicus*	FSC/None/CSC	Group 2	Small colonies in rocky cliffs or crevices. Variety of open habitats including woodlands, coastal sage scrub, grasslands, chaparral, desert scrub, and urban.	Low: Very little day roosting (cliff faces) habitat on site. May forage over the site.
San Diego Black-tailed Jackrabbit *Lepus californicus bennettii*	FSC/None/CSC	Group 2	Variety of habitats including coastal sage scrub, chaparral, & desert scrub.	Moderate: May occur on site but not detected
Dulzura (California) Pocket Mouse *Chaetodipus californicus femoralis*	FSC/None/CSC	Group 2	Variety of habitats incl coastal scrub, chaparral, sagebrush, & grassland. Attracted to grassland-chaparral edges	Moderate: May occur on site but not detected

TABLE 3.2-4 (CONT.)
Potentially Occurring Sensitive Animal Species

Species Name	Status Federal/ State/ CDFG	San Diego County Status	Habitat Requirements	Probability of Occurrence
Stephens' Kangaroo Rat, *Dipodomys stephensi*	E/T/None	Group 1	Annual & perennial grasslands, also coastal scrub, sagebrush, esp w/buckwheat, chamise, brome grass & filaree; will burrow into firm soil.	Low: No appropriate habitat on site
San Diego Desert Woodrat *Neotoma lepida intermedia*	**FSC/None/CSC**	**Group 2**	**Mixed & chamise-redshank chaparral, sagebrush & other habitats. Prefers rocky areas to build stick nest**	**High: Detected on site**
American Badger, *Taxidea taxus*	None/None/None	Group 2	Uncommon resident throughout the state. Abundant in drier open shrub, forest and herbaceous habitats with friable soils.	Low: Site lacks extensive open areas of grassland open shrublands
Mountain Lion, *Felis* (*Puma*) *concolor*	None/None/Protected	Group 2	Widespread, uncommon resident ranging from sea level to alpine meadows. Variety of habitats except xeric regions of the deserts..	Low: Nearby residents indicate this species occurred on extreme NE part of site but not seen in several years
Southern Mule Deer *Odocoileus hemionus*	None/None/Game Species	Group 2	Common to abundant with a wide distribution throughout the state. Prefers mosaic of various-aged vegetation habitats, brushy areas and tree thickets are important for escape cover.	Moderate: Detected on site during early surveys of property.

Bold Indicates Present on the Project Site

Source: Pacific Southwest, June 2007

CODES FOR TABLES 3.2-3 AND 3.2-4

CNPS Lists

List 1A	Plants Presumed Extinct in California
List 1B	Plants Rare, Threatened, or Endangered in California and Elsewhere
List 2	Plants Rare, Threatened, or Endangered in California But More Common Elsewhere
List 3	Plants About Which We Need More Information--A Review List
List 4	Plants of Limited Distribution--A Watch List

CNPS R-E-D Code

R (Rarity)

1	Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time
2	Distributed in a limited number of occurrences, occasionally more if each occurrence is small
3	Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported.

E (Endangerment)

1	Not endangered
2	Endangered in a portion of its range
3	endangered throughout its range

D (Distribution)

1	More or less widespread outside California
2	Rare outside California
3	Endemic to California

State-Listed/Designated Species

CE	State-listed, endangered
CT	State-listed, threatened
CR	State-listed, rare
CC	Candidate for State listing
CSC	California Special Concern species (Department of Fish and Game

Federally-Listed/Designated Species

FE	Federally-listed, endangered
FT	Federally-listed, threatened
FPT	Federally-proposed, endangered
FSC	Federal Special Concern Species

TABLE 3.2-5
Merriam Existing Vegetation, Development Areas,
Fuel Management Areas/Other Open Space, Secondary Access Roads, and Biological Open Space (Areas in Acres)

	Existing		Impacts						Conserved	
Vegetation Type	**Existing Acres**	**% of Total Project**	**Development[1] Acres**	**% of Total Vegetation**	**Other Open Space[3] Acres**	**% of Total Vegetation**	**Secondary Access Roads[2]**	**% of Total Vegetation**	**Biological Open Space[2] Acres**	**% of Total Vegetation**
Disturbed Habitat	27.3	1	2.1	7	0.0	0			25.2	92
Urban Developed	13.0	<1	12.5	95	0.6	4			0.0	0
Orchard	2.4	<0	0.3	12	1.0	41	0.1	4	1.0	41
Intensive Agriculture	4.9	<0	3.6	73	1.3	27			0.0	0
Eucalyptus Woodland	1.5	<0	1.5	100	0.0	0			0.0	0
Total Disturbed, Urban Developed, Orchard and Intensive Agriculture Habitats:	49.1		20		2.9		0.1		26.2	
Diegan Coastal Sage Scrub	28.6	1	18.7	65	4.0	13	0.4	1	5.5	19
Southern Mixed Chaparral	2156.6	92	479	22	526.7	24	59.3	2	1091.6	50
Mafic S-Mixed Chaparral	57.4	2	0.0	0.0	0.0	0			57.4	100
Non-native Grassland	23.2	1	17.6	75	1.9	8			3.7	16
Freshwater Marsh	0.1	<0	0.0	0	0.0	0			0.1	100
Southern Coast Live Oak Riparian Forest	2.3	<0	1.1	48	0.1	4			1.1	48
Willow/Oaks/Sycamore Woodland	1.6	<0	0.0	0	0.0	0			1.6	100
Southern Willow Scrub/Mule Fat Scrub	0.3	<0	0.3	100	0.0	0			0.0	0
Mule-Fat Scrub	0.2	<0	0.0	0	0.2	100			0.0	0
Southern Willow Scrub	2.6	<0	0.2	8	0.1	3			2.3	88
Southern Willow Scrub/Tamarisk Scrub	0.6	<0	0.0	0	0.0	0			0.6	100
Coast Live Oak Woodland	4.2	<0	1.0	19	1.1	39	0.2	4	1.9	37
Unvegetated Weltands	0.2	<0	0.1	<0	0.0	0			0.0	0
Total: Native/Naturalized Habitats	2,277.9		518		534.1		59.9		1165.8	
TOTAL	**2,327.0**	**100%**	**538.0/23%**		**537/23%**		**60.0/3%**		**1192/51%**	

[1] The impact area does not include off-site impacts for Meadow Park Lane which includes: 0.9 acres of disturbed Habitat; 1.2 acres of Diegan Coastal Sage Scrub;14.2 acres of Southern Mixed Chaparral; 1.3 acres of Urban Development; 0.1 acres of Scrub Oak Woodland, 0.1 acres of Southern Coast Live Oak Riparian Forest and 0.2 acres of Eucalyptus Woodland.

[2] Onsite Secondary Access Roads consist of Lawrence Welk Court and Camino Mayor.

[3] Other Open Space totals include impacts to proposed sewer easement which include: 1.2 acres of southern mixed chaparral

TABLE 3.2-6
Onsite Encroachment into RPO Wetlands and Other Jurisdictional Waters

Vegetation/ land cover	Existing (acres)	Impacts (acres)*	Mitigation Ratio	Required Mitigation (acres)	Area Preserved Onsite (acres)	Area Created/ Enhanced Onsite (acres)	Mitigation Required Offsite (acres)
RPO Wetlands							
Freshwater Marsh	0.1	0.0	3:1	0.0	0.1	0.0	0.0
Mule-Fat Scrub	0.2	0.2	3:1	0.6	0.0	0.6	0.0
Oak Riparian Forest	2.3	1.2	3:1	3.6	1.1	3.6	0.0
Southern Willow Scrub	2.6	0.3	3:1	0.9	2.3	0.9	0.0
Southern Willow Scrub/Mule Fat Scrub	0.3	0.3	3:1	0.9	0.0	0.9	0.0
Southern Willow Scrub/Tamarisk Scrub	0.6	0.0	3:1	0.0	0.6	0.0	0.0
Sycamore Alluvial woodland	1.6	0.0	3:1	0.0	1.6	0.0	0.0
Unvegetated Wetlands	0.2	0.1	3:1	0.3	0.1	0.3	0.0
Total RPO Wetlands	***7.9***	***2.1***		***6.3***	***5.8***	***6.3***	***0.0***
Other Jurisdictional Waters of the U.S. and State							
ACOE/CDFG*	7.3	2.0	N/A	NA	N/A	N/A	N/A

* Impacts for disclosure but not considered encroachment into RPO Sensitive Habitat or Wetlands; mitigation would be determined in conjunction with future resource agency permitting.
Impact area includes Development Acres, Other Open Space Acres and Secondary Access Roads
The impact area does not include off-site impacts for Meadow Park Lane which includes 0.1 acres of Southern Coast Live Oak Riparian Forest.
Onsite Secondary Access Roads consist of Lawrence Welk Court and Camino Mayor.

NA = not applicable

TABLE 3.2-7
Comparison of Cumulative Vegetation Impacts from Assessment Area with Impacts from the Merriam Project

Vegetation Type	Cumulative Impact\ Total	Merriam SP Cumulative Contribution (ac)	Merriam SP Cumulative Contribution (%)
Eucalyptus Woodland	6.6	3.1	46.6
Disturbed Habitat	35.3	4.1	11.6
Urban Developed	68	35	51.4
Agriculture	81.1	8.2	10.1
Diegan Coastal Sage Scrub	366.2	27.3	7.5
Chaparral	1185.4	1079.3	91.0
Non-native Grassland	111.7	20.7	18.5
Grassland	0.0	0.0	0.0
Riparian	3.8	1.3	33.6
Wetland	4.2	2.1	49.5
Coyote Bush Scrub	0.6	0.0	0.0
Southern Willow Scrub	5.5	0.6	10.9
Scrub Oak Woodland	2.9	0.0	0.0
Oak	22.9	2.4	10.4
Total	**1894.6**	**1184.1**	**N. A.**

TABLE 3.2-8
Deer Springs Road

Vegetation Type	Impact (Acres)
Disturbed Habitat	1.1
Urban Developed	20.5
Orchard	0.6
Eucalyptus Woodland	1.4
Intensive Agriculture	1.3
Disturbed Coastal Sage-Chaparral Scrub	3.0
Non-native Grassland	1.2
Coast Live Oak Woodland*	0.1
Non-Vegetated Channel	0.8
Total	**30**

* CDFG/RPO (associated with stream)

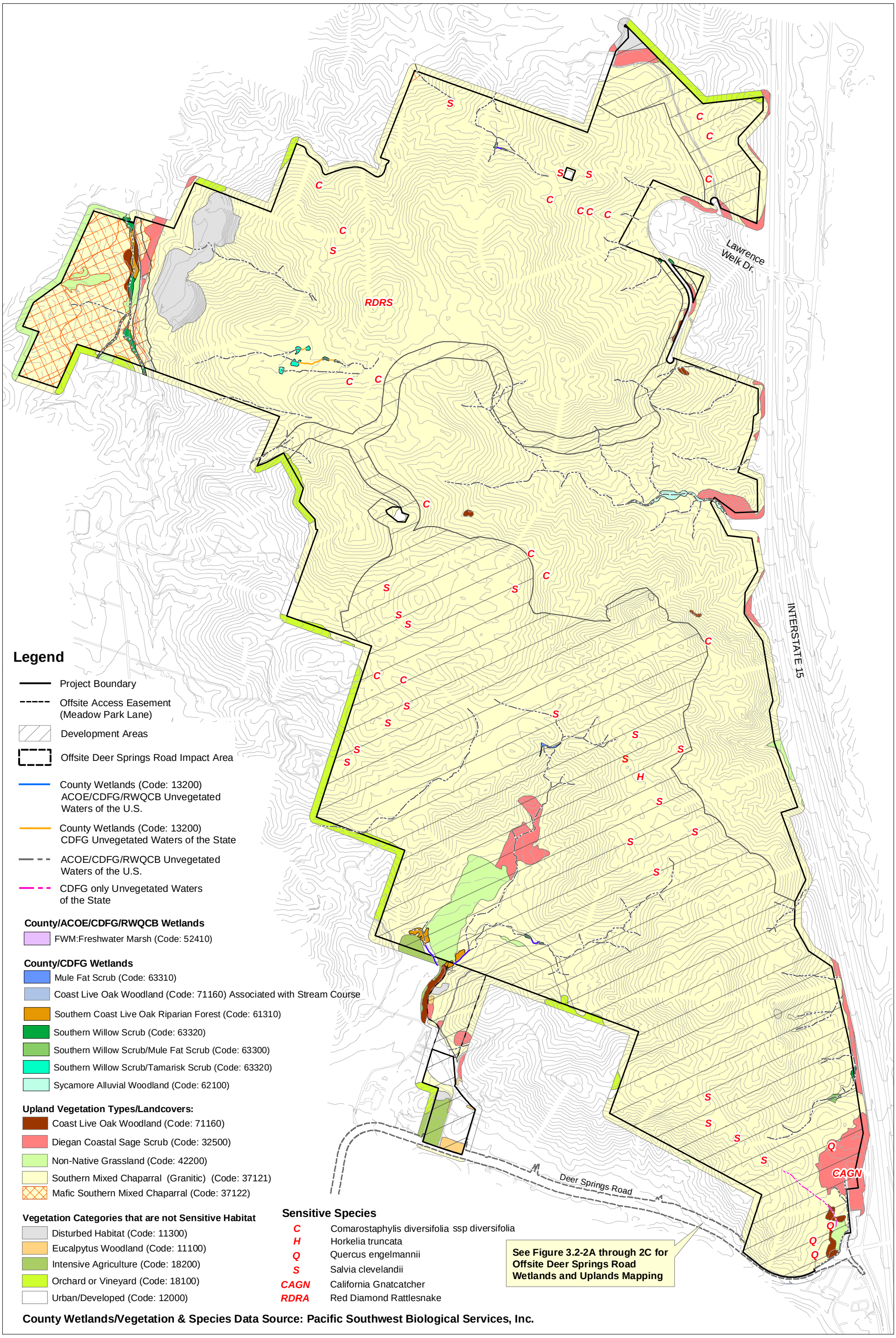
TABLE 3.2-9
Impacted Vegetation and Mitigation Required

Vegetation Type	Existing (on site)	Development Impact (on site)	Other Open Space (on site)	Access Road Impact (on site)[B]	*Meadow Prk Ln Impact (off site)*[C]	*Deer Springs Rd Impact (off site)*	Total Impact (on site + off site)	Mitigation Ratio	Required Mitigation Prior to Preservation On Site[D]	Preserved On Site	Remaining Mitigation Requirement[E]
Disturbed Habitat	27.3	2.1	0.0	0.0	*0.9*	*1.1*	**4.1**	0	0.0	25.2	0.0
Urban Developed	13.0	12.5	0.6	0.0	*1.3*	*20.5*	**34.9**	0	0.0	0.0	0.0
Orchard	2.4	0.3	1.0	0.1	*0.0*	*0.6*	**2.0**	0	0.0	1.0	0.0
Intensive Agriculture	4.9	3.6	1.3	0.0	*0.0*	*1.3*	**6.2**	0	0.0	0.0	0.0
Eucalyptus Woodland	1.5	1.5	0.0	0.0	*0.2*	*1.4*	**3.1**	0	0.0	0.0	0.0
Diegan Coastal Sage Scrub[A]	28.6	18.7	4	0.4	*1.2*	*3.0*	**27.3**	2	54.6	5.5	49.1
Granitic Southern Mixed Chaparral	2156.6	479	526.7	59.3	*14.2*	*0.0*	**1079.2**	0.5	539.6	1091.6	-552.0
Mafic S-Mixed Chaparral	57.4	0.0	0.0	0.0	*0.0*	*0.0*	**0.0**	3	0.0	57.4	0.0
Non-native Grassland	23.2	17.6	1.9	0.0	*0.0*	*1.2*	**20.7**	0.5	10.3	3.7	6.6
Freshwater Marsh	0.1	0.0	0.0	0.0	*0.0*	*0.0*	**0**	3	0.0	N/A	0.0
Southern Coast Live Oak Riparian Forest	2.3	1.1	0.1	0.0	*0.1*	*0.0*	**1.3**	3	3.9	N/A	3.9
Sycamore Alluvial Woodland	1.6	0.0	0.0	0.0	*0.0*	*0.0*	**0**	3	0.0	N/A	0.0
Southern Willow Scrub/Mule Fat Scrub	0.3	0.3	0.0	0.0	*0.0*	*0.0*	**0.3**	3	0.9	N/A	0.9
Mule-Fat Scrub	0.2	0.0	0.2	0.0	*0.0*	*0.0*	**0.2**	3	0.6	N/A	0.6
Southern Willow Scrub	2.6	0.2	0.1	0.0	*0.0*	*0.0*	**0.3**	3	0.9	N/A	0.9
Southern Willow Scrub/Tamarisk Scrub	0.6	0.0	0.0	0.0	*0.0*	*0.0*	**0**	3	0.0	N/A	0.0
Coast Live Oak Woodland	4.2	1.0	1.1	0.2	*0.0*	*0.1*	**2.4**	3	7.2	1.9	5.3
Non-vegetated Channel	0.0	0.0	0.0	0.0	*0.0*	*0.8*	**0.8**	1	0.8	0.0	0.8
Unvegetated Wetlands	0.2	0.1	0.0	0.0	*0.0*	*0.0*	**0.1**	3	0.3	N/A	0.3
TOTALS	**2,327**	**538**	**537**	**60**	***17.9***	***30***	**1183**			**1192**	
					[53.7ac total off site]						

[A] Includes Coast Sage Scrub-Chaparral Scrub & Disturbed CSS-CS
[B] Includes Lawrence Welk Court & Camino Mayor
[C] Includes Off-site Sewer Easement
[D] See Jurisdictional Impact Table for Additional Details
[E] Negative numbers mean no off site mitigation necessary

TABLE 3.2-10
Merriam Biological Open Space Preserve Conveyance Plan (acres)

Open Space No.	Neighborhood	Development Area	Non-Bio Open Space	Impact Acre	Bio Preserve
OS-2 & OS-3	1	121.0	197.2	318.2	333.5
OS-16	2	65.7	175.4	241.1	252.8
OS-5	3	58.3	56.1	114.4	120.4
OS-7	4	92.6	0	92.6	97.7
OS-6,8,15	5	147.0	163.0	310.0	325.6
OS-4	Estate Lots	53.4	5.3	58.7	62.0
Total		**538.0**	**597.0**	**1,135.0**	**1,192.0**



Legend

- Project Boundary
- Offsite Access Easement (Meadow Park Lane)
- Development Areas
- Offsite Deer Springs Road Impact Area
- County Wetlands (Code: 13200) ACOE/CDFG/RWQCB Unvegetated Waters of the U.S.
- County Wetlands (Code: 13200) CDFG Unvegetated Waters of the State
- ACOE/CDFG/RWQCB Unvegetated Waters of the U.S.
- CDFG only Unvegetated Waters of the State

County/ACOE/CDFG/RWQCB Wetlands

- FWM:Freshwater Marsh (Code: 52410)

County/CDFG Wetlands

- Mule Fat Scrub (Code: 63310)
- Coast Live Oak Woodland (Code: 71160) Associated with Stream Course
- Southern Coast Live Oak Riparian Forest (Code: 61310)
- Southern Willow Scrub (Code: 63320)
- Southern Willow Scrub/Mule Fat Scrub (Code: 63300)
- Southern Willow Scrub/Tamarisk Scrub (Code: 63320)
- Sycamore Alluvial Woodland (Code: 62100)

Upland Vegetation Types/Landcovers:

- Coast Live Oak Woodland (Code: 71160)
- Diegan Coastal Sage Scrub (Code: 32500)
- Non-Native Grassland (Code: 42200)
- Southern Mixed Chaparral (Granitic) (Code: 37121)
- Mafic Southern Mixed Chaparral (Code: 37122)

Vegetation Categories that are not Sensitive Habitat

- Disturbed Habitat (Code: 11300)
- Eucalpytus Woodland (Code: 11100)
- Intensive Agriculture (Code: 18200)
- Orchard or Vineyard (Code: 18100)
- Urban/Developed (Code: 12000)

Sensitive Species

C	Comarostaphylis diversifolia ssp diversifolia
H	Horkelia truncata
Q	Quercus engelmannii
S	Salvia clevelandii
CAGN	California Gnatcatcher
RDRA	Red Diamond Rattlesnake

See Figure 3.2-2A through 2C for Offsite Deer Springs Road Wetlands and Uplands Mapping

County Wetlands/Vegetation & Species Data Source: Pacific Southwest Biological Services, Inc.

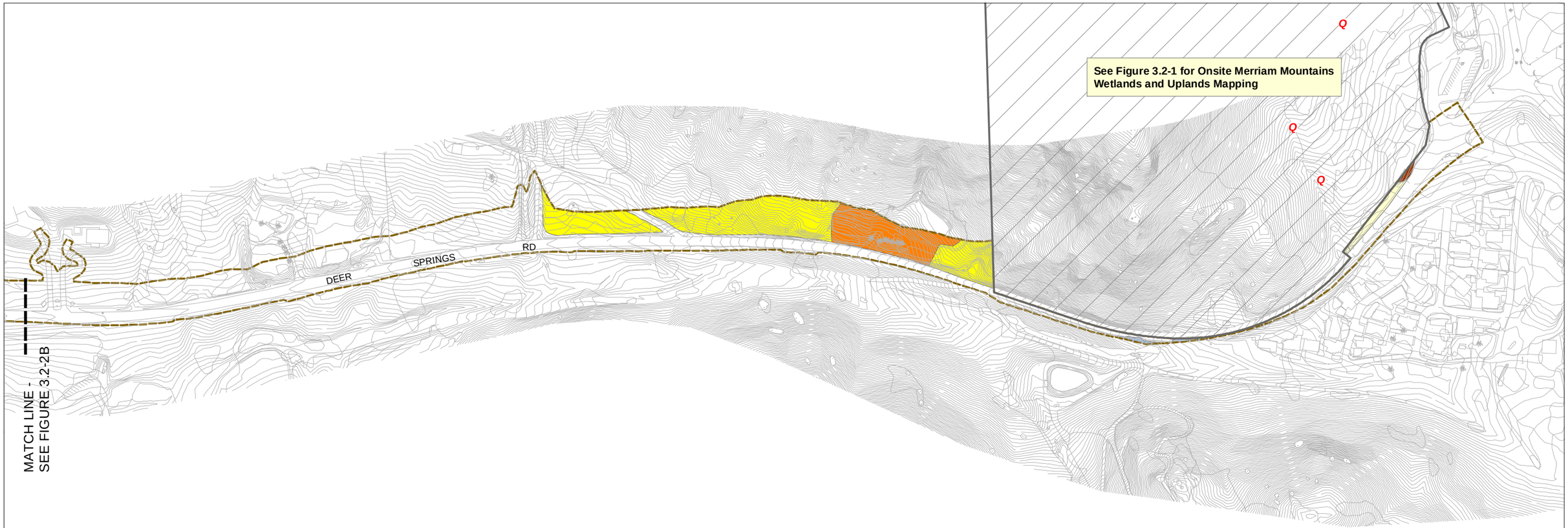
Biological Resources Map - Onsite

FIGURE 3.2-1

MERRIAM MOUNTAINS SPECIFIC PLAN EIR

0 0.125 0.25 0.5
Miles

N



Legend

- Offsite Deer Springs Road Impact Area
- Onsite Development Areas
- Project Boundary

Sensitive Species

Q — Quercus engelmannii

County/CDFG Wetlands

- Coast Live Oak Woodland Associated with Stream Course (Code: 71160)

County Wetlands

- ACOE/CDFG/RWQCB Unvegetated Waters of the U.S.

Upland Vegetation Types/Landcovers:

- Coast Live Oak Woodland (Code: 71160)
- Non-Native Grassland (Code: 42200)
- Southern Mixed Chaparral (Granitic) (Code: 37121)
- Coastal Sage-Chaparral Scrub (Code: 37920)
- Coastal Sage-Chaparral Scrub (disturbed) (Code: 37920)

Vegetation Categories that are not Sensitive Habitat:

- Disturbed Habitat (Code: 11300)
- Eucalpytus Woodland (Code: 11100)
- Orchard or Vineyard (Code: 18100)
- General Agriculture (Code: 18000)
- Urban/Developed (Code: 12000)

County Wetlands/Vegetation & Species Data Source: Pacific Southwest Biological Services, Inc.

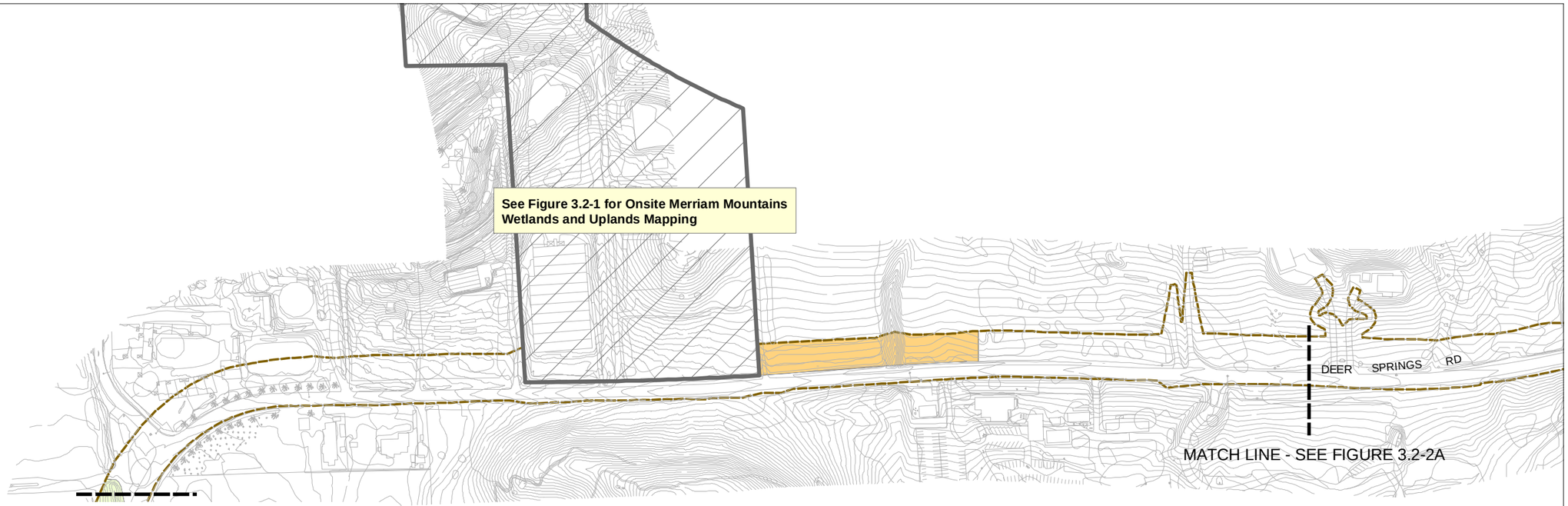
Biological Resources Map - Offsite Deer Springs Road Impact Area

FIGURE 3.2-2A

MERRIAM MOUNTAINS SPECIFIC PLAN EIR

0 75 150 300
Feet

N



Legend

- Offsite Deer Springs Road Impact Area
- Onsite Development Areas
- Project Boundary

County/CDFG Wetlands

- Coast Live Oak Woodland Associated with Stream Course (Code: 71160)

County Wetlands

- ACOE/CDFG/RWQCB Unvegetated Waters of the U.S.

Upland Vegetation Types/Landcovers:

- Coast Live Oak Woodland (Code: 71160)
- Non-Native Grassland (Code: 42200)
- Southern Mixed Chaparral (Granitic) (Code: 37121)
- Coastal Sage-Chaparral Scrub (Code: 37920)
- Coastal Sage-Chaparral Scrub (disturbed) (Code: 37920)

Vegetation Categories that are not Sensitive Habitat:

- Disturbed Habitat (Code: 11300)
- Eucalpytus Woodland (Code: 11100)
- Orchard or Vineyard (Code: 18100)
- General Agriculture (Code: 18000)
- Urban/Developed (Code: 12000)

County Wetlands/Vegetation & Species Data Source: Pacific Southwest Biological Services, Inc.

Biological Resources Map - Offsite Deer Springs Road Impact Area

FIGURE 3.2-2B

MERRIAM MOUNTAINS SPECIFIC PLAN EIR

0 150 300 600
Feet

N

Legend

- Offsite Deer Springs Road Impact Area
- Onsite Development Areas
- Project Boundary

County/CDFG Wetlands

- Coast Live Oak Woodland Associated with Stream Course (Code: 71160)

County Wetlands

- ACOE/CDFG/RWQCB Unvegetated Waters of the U.S.

Upland Vegetation Types/Landcovers:

- Coast Live Oak Woodland (Code: 71160)
- Non-Native Grassland (Code: 42200)
- Southern Mixed Chaparral (Granitic) (Code: 37121)
- Coastal Sage-Chaparral Scrub (Code: 37920)
- Coastal Sage-Chaparral Scrub (disturbed) (Code: 37920)

Vegetation Categories that are not Sensitive Habitat:

- Disturbed Habitat (Code: 11300)
- Eucalpytus Woodland (Code: 11100)
- Orchard or Vineyard (Code: 18100)
- General Agriculture (Code: 18000)
- Urban/Developed (Code: 12000)

County Wetlands/Vegetation & Species Data Source: Pacific Southwest Biological Services, Inc.

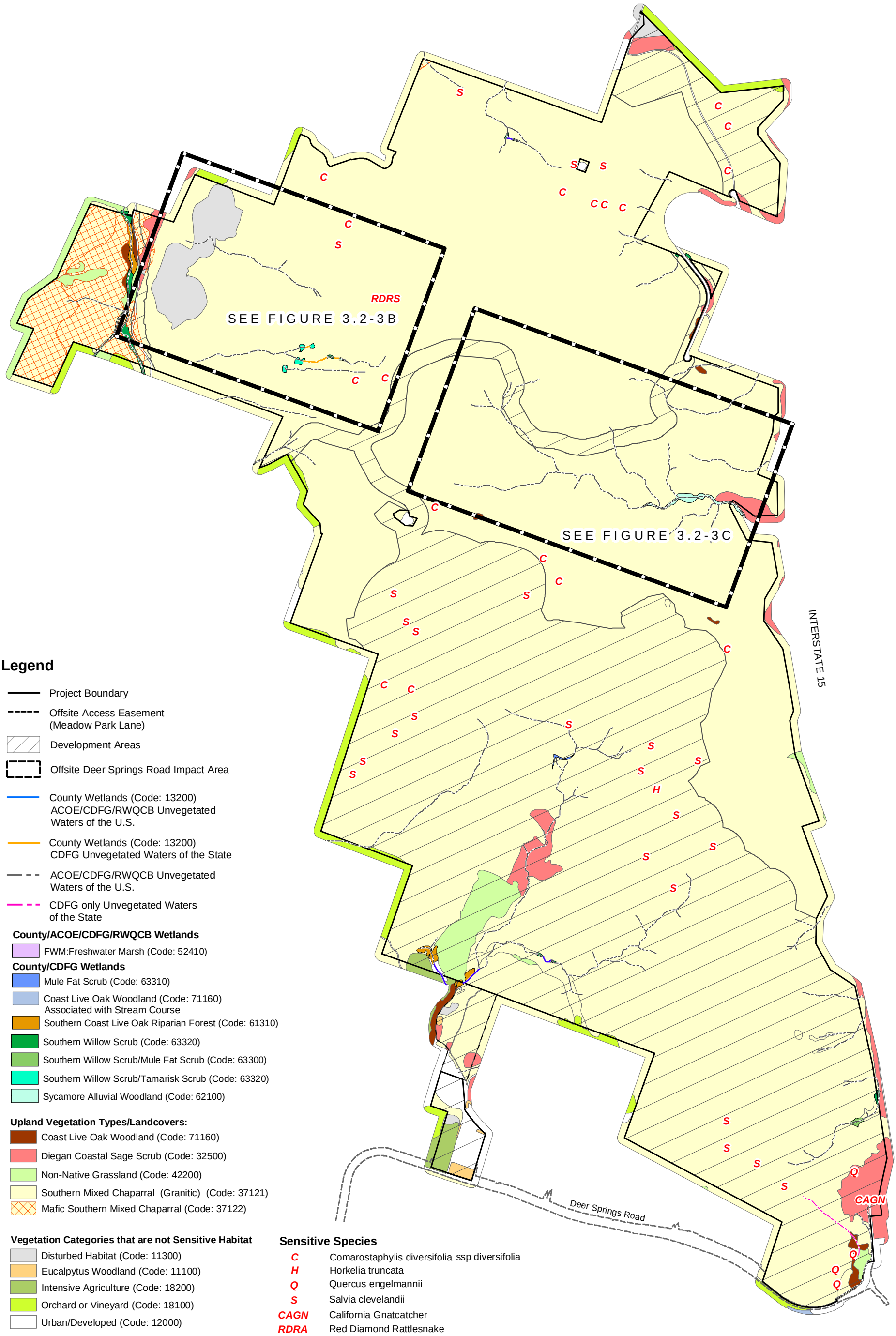
Biological Resources Map - Offsite Deer Springs Road Impact Area

FIGURE 3.2-2C

MERRIAM MOUNTAINS SPECIFIC PLAN EIR

0 150 300 600
Feet

N



County Wetlands/Vegetation & Species Data Source: Pacific Southwest Biological Services, Inc.

Wetlands and Uplands Onsite Mitigation Conceptual Revegetation Plan Index

FIGURE 3.2-3A

MERRIAM MOUNTAINS SPECIFIC PLAN EIR

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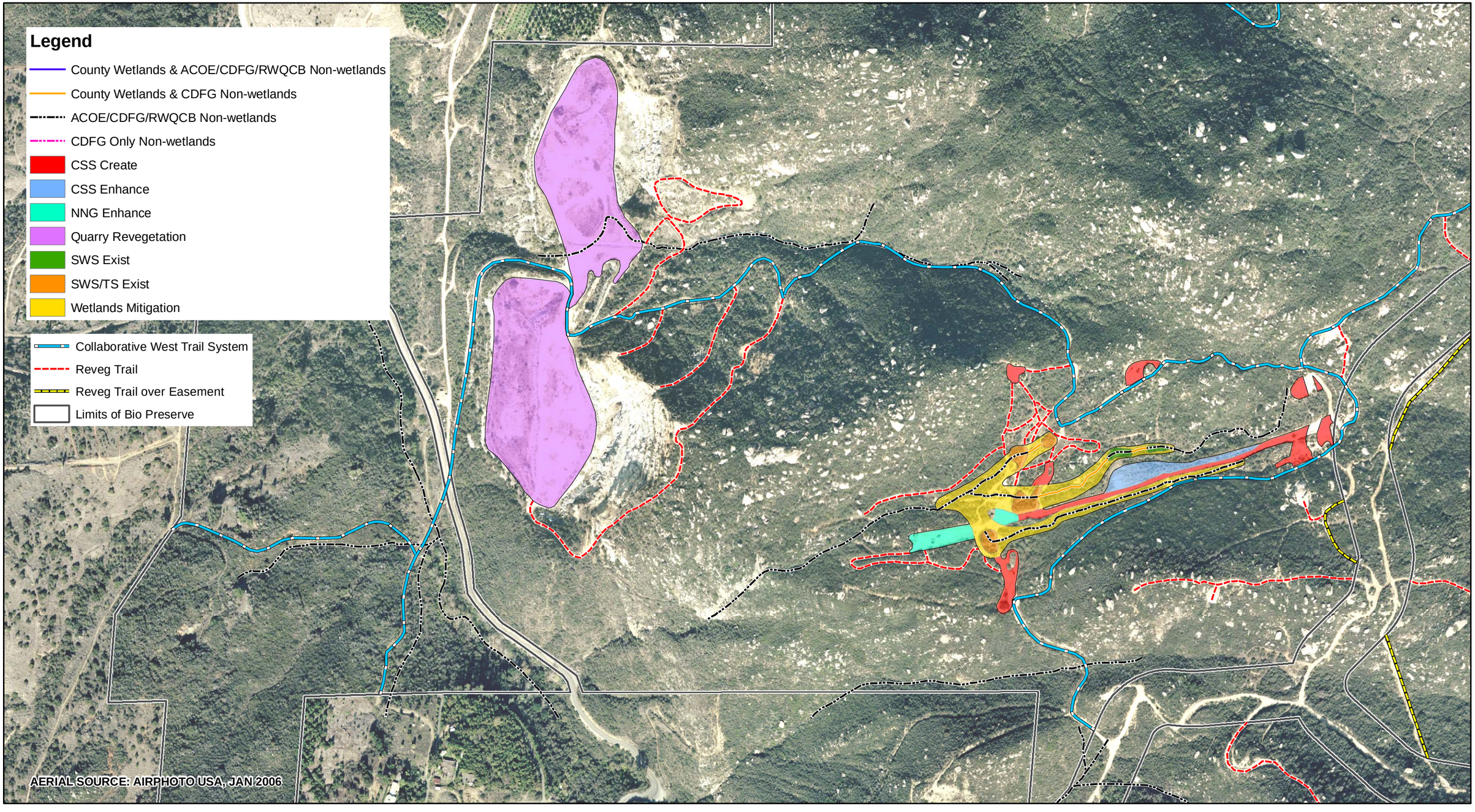
Miles

N



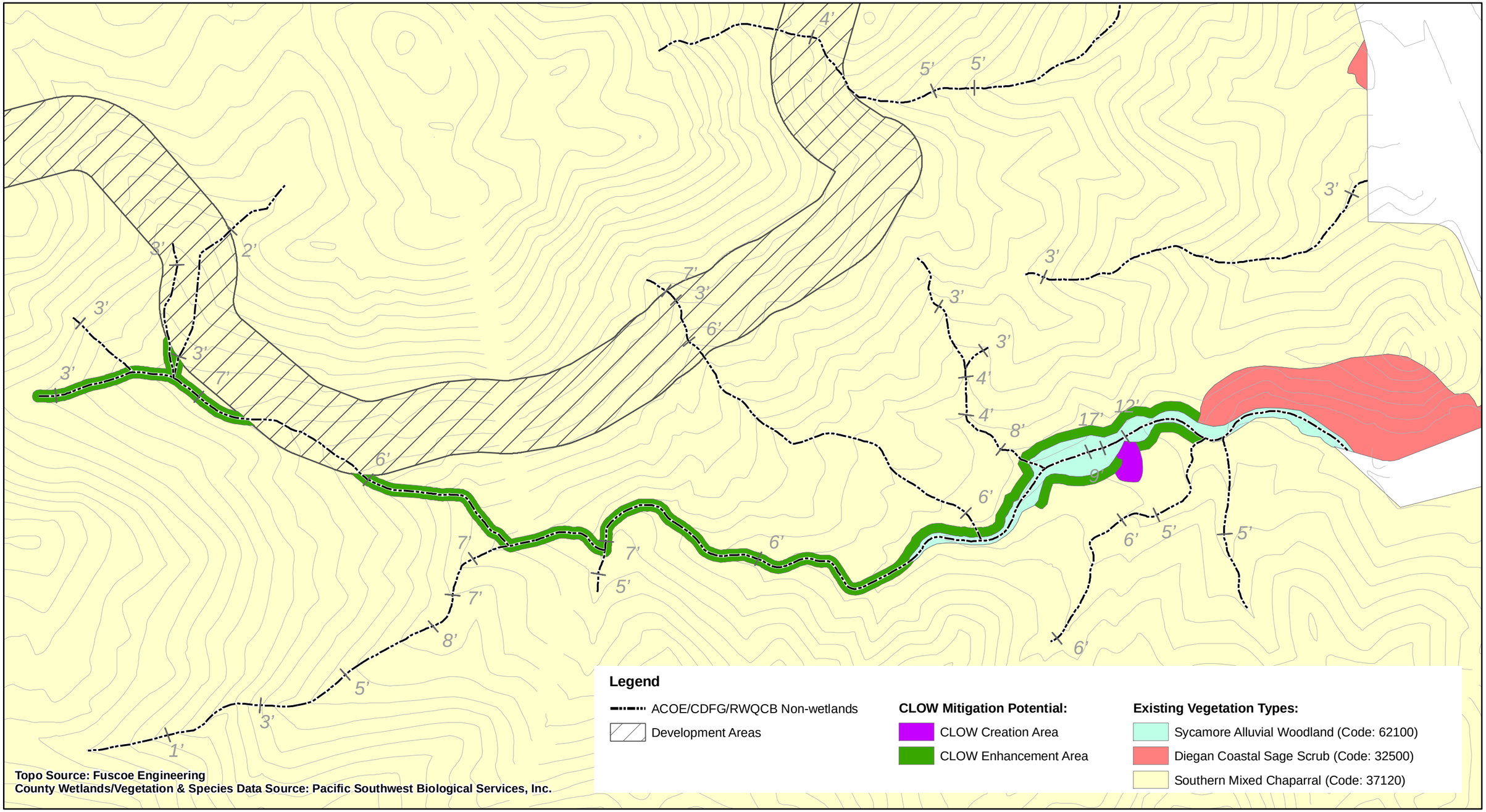
Willow Scrub Wetlands and Coastal Sage Scrub Uplands Revegetation at Abandoned Airstrip and Quarry

FIGURE
3.2-3B

MERRIAM MOUNTAINS
SPECIFIC PLAN EIR

0 200 400 800 Feet

N



Coast Live Oak Woodland Mitigation Potentials at Main Onsite Open Space Drainage

FIGURE
3.2-3C

MERRIAM MOUNTAINS
SPECIFIC PLAN EIR

0 150 300 600 Feet

N