3.4 BIOLOGICAL RESOURCES

3.4.1 Introduction

This section evaluates the potential for implementation of the Proposed Project to have impacts on biological resources, including sensitive plants, animals, and habitats. The Notice of Preparation (NOP) (Appendix A) identified the potential for impacts associated to candidate, sensitive, or special status species (as defined in Section 3.4.6 below), sensitive natural communities, jurisdictional waters of the United States, wildlife corridors or other significant migratory pathway, and a potential to conflict with local policies and ordinances protecting biological resources. Data used to prepare this section were taken from the Orange County General Plan, the City of Lake Forest General Plan, Lake Forest Municipal Code, field observations, and other sources, referenced within this section, for background information. Full bibliographic references are noted in Section 3.4.12 (References). No comments with respect to biological resources were received during the NOP comment period. The Proposed Project includes a General Plan Amendment (GPA) and zone change for development of Sites 1 to 6 and creation of public facilities overlay on Site 7.

3.4.2 Environmental Setting

Regional Characteristics

The City of Lake Forest, with a population of approximately 77,700 as of January 2004, is an area of 16.6 square miles located in the heart of South Orange County and Saddleback Valley, between the coastal floodplain and the Santa Ana Mountains (see Figure 2-1, Regional Location). The western portion of the City is near sea level, while the northeastern portion reaches elevations of up to 1,500 feet. The following descriptions of climate, geomorphology, and existing preserved open space have been provided to familiarize the reader with the regional setting of the resources within the Project Area.

Watersheds

Lake Forest is located within the Aliso Creek and San Diego Creek watersheds.[6] The Aliso Creek Watershed covers 30.4 square miles, or 19,663 acres, and includes portions of the cities of Aliso Viejo, Dana Point, Laguna Niguel, Laguna Woods, Laguna Beach, and Lake Forest. Its main tributary, Aliso Creek, originates in the Santa Ana Mountains inside the boundaries of Cleveland National Forest. Smaller tributaries include Wood Canyon, Sulphur Creek, the Aliso Hills Channel, and English Channel.

The San Diego Creek Watershed covers 112.2 square miles in central Orange County. It includes portions of the cities of Costa Mesa, Irvine, Laguna Woods, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin. Its main tributary, San Diego Creek, drains into Upper Newport Bay. Smaller tributaries include Serrano Creek, Borrego Canyon Wash, Agua Chinon Wash, Bee Canyon Wash, Peters Canyon Wash, Sand Canyon Wash, Bonita Canyon Creek, and the Santa Ana Delhi Channel.

[6] http://www.ocwatersheds.com/brochures/ocwatersheds.pdf, Accessed January 31, 2005

Climate

The climate of Southern California is described as Mediterranean, meaning a wet-winter, dry-summer climate. Extremely dry summers are caused by the sinking air of the subtropical highs and may last for up to five months. Average mountain temperature in Southern California ranges from 32 to 60 degrees Fahrenheit (°F), getting colder with an increase in elevation. Along the coast, temperatures average 53-65°F. Freezing weather may sometimes occur in the winter, but only for short durations. Most of the 12-40 inches per year of precipitation is in the form of rain, fall, winter, and spring receiving equal amounts (Blue Planet Biomes, 2005). Any snow that may fall in the winter melts very quickly. The precipitation also increases with elevation. During the summer, the coastline usually experiences more moderate weather and more moisture from fog than interior regions.

Within Mediterranean climates there can be dramatic differences in rainfall from year to year. Consequently, the plant communities growing in these regions often consist of drought-tolerant, woody shrubs and trees, and annual, fall-sprouting grasses (World Climate 2003).

Geomorphology

Geology

The Aliso Creek and San Diego Creek watersheds are located on the western slopes of the Santa Ana Mountains, which are part of the Peninsular Ranges that extend from the tip of Baja California, Mexico northward to the Palos Verdes Peninsula and Santa Catalina Island.

The geology of the region is complex and has been dominated by alternating periods of depression and uplift, mass wasting, and sediment deposition. Within the watersheds, the Santa Ana Mountains are composed of igneous, metavolcanic, and metasedimentary rocks of Jurassic age and younger. The exposed rocks in the mountainous areas are slightly metamorphosed volcanics, which have been intruded by granitic rocks of Cretaceous age, principally granites, gabbros, and tonalites. Overlying these rocks are several thousand stratigraphic feet of younger sandstones, siltstones, and conglomerates of upper Cretaceous age, composed largely of material eroded from the older igneous and metavolcanic rocks now underlying the Santa Ana Mountains (County of Orange 2004).

Topography

Physiographic features of the Project Area range from moderately steep to rugged terrain in the portions of the Santa Ana Mountains, to flat, graded portions of the City of Lake Forest.

Project Area Characteristics

The Proposed Project focuses on seven properties, approximately 838 acres of vacant land located in the City of Lake Forest, Orange County, north and south of SR-241 and adjacent to the former MCAS El Toro (please see Figure 2-2, Project Area Location). Six sites total 793 acres, and one additional parcel comprising 45 acres is analyzed as a potential public facilities overlay site. Most of the Project Area is characterized by various plant habitats, such as shrub (sage, chaparral), grasslands (native, nonnative, and

ruderal), riparian and wetland (willow scrub, mulefat), woodlands and forest (coast live oak, eucalyptus), agricultural (orchard, grove, pastureland, irrigated fields, container nursery), and disturbed/barren areas. Each of these types of habitat is described in detail below in Section 3.4.4 (Existing Biological Resources).

3.4.3 Methodology

Literature Survey

Information regarding the occurrences of special-status species in the vicinity of the Project Area was obtained from searching the California Department of Fish and Game's (CDFG) Natural Diversity Data Base (CNDDB, January 2005) and California Native Plant Society's Electronic Inventory (CNPSEI January 2004) for the U.S. Geological Survey's (USGS) 7.5-minute quadrangles for El Toro, Canada Gobernadora, Tustin, Laguna Beach, Santiago Peak, and San Juan Capistrano. These databases contain records of reported occurrences of federal- or state-listed endangered, threatened, rare, or proposed endangered or threatened species, federal species of concern, state species of special concern, or otherwise sensitive species or habitat that may occur within or in the immediate vicinity of the Project Area. Lists from the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) were also reviewed, and lists of sensitive wildlife and plant species potentially occurring within the Project Area were developed. The search range encompasses a sufficient distance to accommodate for regional habitat diversity and to overcome the limitations of the CNDDB. The CNDDB is based on reports of actual occurrences and does not constitute an exhaustive inventory of every resource.

Additional background information on biological resources was derived from:

- Biological technical reports for Site 1 (Glenn Lukos Associates 1999 and PCR Services Corporation 1999)
- The Central/Coastal Natural Community Conservation Plan/Habitat Conservation Plan for Orange County (Central/Coastal NCCP/HCP)
- Southern California Coastal Sage Scrub Natural Community Conservation Guidelines (California Department of Fish and Game and California Resource Agency. August 1993).
- Riverside County Multiple Species Habitat Conservation Plan (MSHCP)
- The Ranch Plan Draft Environmental Impact Report
- The Orange County Great Park Certified Final Environmental Impact Report, May 27 2003
- Focused California Gnatcatcher Survey, Portola Hills Project Site 2, County of Orange, December 2005
- Coastal California Gnatcatcher Survey, Site 3, Glenn Lukos Associates, October 2005
- Coastal Sage Scrub Habitat Surveys, Site 3, Harmsworth Associates, 2002 and September 2003

Additional botanical information came from the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), the *List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base* (CDFG 2004, January), the *Jepson Manual of Higher Plants of California* (Hickman 1993), and *A Manual of California Vegetation* (Sawyer and Keler-Wolf 1995). Based upon the results of the literature review, record searches, and site-specific surveys, a list of special-status plant and animal species and habitats with the potential to occur within the Project Area was developed for analysis (Appendix E).

Field Surveys

EIP Associates performed a general reconnaissance-level survey of each of the seven parcels on December 2 and 3, 2004 to assess general habitat types within each site and to assess the potential for the site to contain special species and habitats.

Site-Specific Habitats and Conditions

Site1: Shea/Baker

Site 1 (Shea/Baker Ranch) is made up of 387 acres of land within the western portion of the Project Area. The site contains a mixture of developed areas, agricultural uses, and fragmented native habitats. Land uses on site include a nursery, avocado grove, a composting area, and two single-family dwellings with gardens and what appears to be pastureland. The site contains thirteen major plant communities (PCR 1999), five drainage courses, and one wetland seep.

Vegetation types found within Site 1 include the following:

- Coastal Sage Scrub (sagebrush-buckwheat series)
- Chaparral (toyon-sumac series)
- Mulefat Scrub
- Southern Willow Scrub
- Annual Grassland
- Needlegrass Grassland
- Ruderal Grassland
- Wetland Seep
- Eucalyptus Woodlands
- Orchards and Avocado Groves
- Disturbed or Barren
- Nurseries
- Ornamental
- Developed

Two special-status species were observed on Site 1, the federally threatened coastal California gnatcatcher (*Polioptila californica californica*) and the Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), which is a species of special concern in the state of California (PCR 1999). Nesting red-tailed hawks were observed within the eucalyptus woodlands in the northern portion of the site (EIP Associates 2004).

Site 2: Portola Center

In the summer of 2005, three protocol-level surveys for the coastal California gnatcatcher (*Polioptila californica californica;* Clifornia gnatcatcher) were conducted for the Site 2 area by Dudek & Associates, Inc. (Dudek). The surveys were conducted in all areas of suitable habitat. Approximately 109 acres of coastal sage scrub, including disturbed form, re-vegetated areas and sub-associations, are present onsite. Eight pairs of California gnatcatcher were observed. Fifty-eight species of wildlife were observed. No brown-headed cowbirds were detected.

Site 2 (Portola Center) comprises 243 acres of land within the northeastern portion of the Project Area. Surrounding land uses include Whiting Ranch Wilderness Park to the northwest and northeast, residential development to the north, and open space in the remaining areas. The site contains a mixture of habitats that range from highly disturbed to natural and semi-natural areas. Specifically, the northeastern corner of the site adjacent to the Whiting Ranch Wilderness Park contains very high quality coastal sage scrub habitat. Other areas of the site, particularly within the center and southern portions of the site, contain large surface streets that bisect the site and contain large graded and terraced areas. These graded/terraced areas primarily contain ruderal and nonnative annual grasslands with some small areas of remnant scrub habitat. The eastern portion of the site contains degraded coastal sage scrub, as well as several ephemeral drainages that drain into the adjacent Aliso Creek. The creek channel supports a southern sycamore alder riparian woodland. Altogether, the site contains approximately nine ephemeral drainages and nine habitat types.

Vegetation types found within Site 2 include the following:

- Coastal Sage Scrub
- Mulefat Scrub
- Annual Grassland
- Oak Sycamore Riparian Woodland
- Needlegrass Grassland
- Ruderal Grassland
- Disturbed or Barren
- Ornamental
- Developed

Site 3: IRWD

Site 3 (IRWD) comprises approximately 82 acres of land within the southern portion of the Project Area. Surrounding land uses include residential areas to the west and south; industrial complexes to the north; and open space to the north, west, and south of the site. This site is used for a mixture of row crops but also contains support structures, facilities, and office buildings for the IRWD.

The site contains a mixture of habitats that range from highly disturbed to natural and semi-natural areas. The southern and north portions of the site contain moderate- to high-quality coastal sage scrub within hilly terrain. The southern portion contains an ephemeral channel with southern willow scrub that is a tributary to an adjacent southern sycamore alder riparian woodland and associated stream channel (Serrano Creek). The remainder of the site contains a mixture of developed, disturbed, agricultural, landscaped, and ornamental vegetation that has small areas of moderate- to low-quality coastal sage scrub habitat intermixed with these habitats.

Vegetation types found within Site 3 include the following:

- Coastal Sage Scrub
- Mulefat Scrub
- Oak Sycamore Riparian Woodland
- Annual Grassland
- Ruderal Grassland

- Eucalyptus Woodlands
- Irrigated Row Crops
- Disturbed and Barren
- Ornamental
- Developed

Site 4: Baker Ranch

Site 4 (Baker Ranch) comprises approximately 50 acres of land within the eastern portion of the Project Area. Surrounding land uses include Highway 241 to the north, Portola Parkway to the east, open space and a commercial shopping center to the south, and industrial complexes to the west. On-site land uses consist of gravel mining and associated facilities, parking facilities, a settlement pond to collect gravel washing water, support structures, and a container nursery. The site has been significantly altered by mining activities and contains only very small areas of native habitats.

Vegetation types found within Site 4 include the following:

- Disturbed and Barren
- Ornamental
- Developed
- Nursery
- Open Water
- Costal Sage Scrub (very low quality)
- Ruderal Grassland

Site 5: Whisler/Greystone

Site 5 (Whisler/Greystone) comprises approximately 13 acres of land within the central portion of the City. Surrounding land uses include residential development to the south and east, commercial development to the west and open space to the north. The site retains its hilly topography but has been developed to include a single residential dwelling that is surrounded by pastureland and a small citrus grove.

Vegetation types found within Site 5 include the following:

- Disturbed and Barren
- Developed
- Ruderal Grassland
- Annual Grassland
- Orchard
- Ornamental
- Coastal Sage Scrub

Two special-status species were observed on Site 5 (LSA Associates 2005), the federally threatened coastal California gnatcatcher and the Cactus wren (*Campylorhynchus brunnecapillus sandiegensis*), which is a species of special concern in the state of California. Both of these species are covered under the Central/Coastal Orange County NCCP.

Site 6: Pacific Heritage

Site 6 (Pacific Heritage) comprises approximately 18 acres of land within the southern portion of the Project Area. Surrounding land uses include residential development to the west and south, open space to the north, and Site 3 to the east. The site is undeveloped. The southwestern portion of the site contains a residential street (Peachwood Drive) and has been previously graded. The remainder of the site is relatively undisturbed with the exception of some small areas of disturbance from impromptu recreational activities. The site retains much of its foothill topography, and contains an ephemeral stream channel that bisects the site from south to north. This channel may have a seasonal wetland associated with it.

Vegetation types found within Site 6 include the following:

- Sagebrush and Sage Scrub
- Mulefat Scrub
- Sagebrush-Grassland Ecotone
- Southern Cactus Scrub
- Irrigated Agriculture
- Ruderal
- Developed
- Seasonal Wetland (potential)

Two special-status species were observed on Site 6 (LSA Associates 2005), the federally threatened coastal California gnatcatcher and the Cactus wren. Both of these species are covered under the Central/Coastal Orange County NCCP/HCP.

Site 7: Nakase

Site 7 (Nakase) comprises approximately 45 acres of 121 acres of land within the central portion of the Project Area. Under the Proposed Project, this 45-acre site is proposed for use as future public facilities. The site is entirely surrounded by industrial and commercial complexes. Serrano Creek runs along the eastern edge of the site. The site is relatively flat and is consists entirely of a nursery and support structures. No native habitat remains onsite.

Vegetation types found within Site 7 include the following:

- Disturbed and Barren
- Developed
- Nursery
- Ornamental

3.4.4 Existing Biological Resources

This section describes the vegetation types that occur within the Proposed Project area and the plant species commonly associated with those habitats. It also discusses the types of wildlife commonly associated with each habitat type from a programmatic perspective. The following lists are not intended to be complete lists of the species that would occur within each parcel; only generalized lists of species

commonly associated with a particular habitat type. In all, there are ten types of vegetation communities within the Project Area that are likely used by wildlife. This does not include vegetative land cover such as ornamental vegetation, agricultural lands, and developed areas. However, all types of land cover are discussed below.

Shrub Habitats

Although this vegetation category is used by the California Department of Forestry and Fire Protection, for the purposes of this EIR, classification will be per those listed in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986). Thus, the "shrub" category would actually be a "scrub" community per Holland (1995). Scrub is a term that refers to the fact that most of the plants in the community are typically less than six feet tall.

Two general types of scrub vegetative cover occur within the Project Area: coastal sage scrub and chaparral. Like most other California shrub communities, coastal sage scrub and chaparral are a fire-maintained community (Westman 1981). Early successional scrub has a diverse annual wildflower flora, which takes advantage of open space and fire-released nutrients to flower and build seedbanks in the soil.

Coastal Sage Scrub

This community can be defined as low, drought-deciduous, and evergreen shrubs that occur generally below 3,000 feet in elevation on western slopes of mountains, on steep, south-facing, exposed slopes, and in areas where the marine layer penetrates inland to foothills and canyons. Shrubs are more widely spaced than those typical of chaparral and do not have the characteristic rigidness or thick drought-resistant leaves. Coastal scrub communities are characterized by low shrubs and an absence of trees. Types of shrubs include either pure stands or mixtures of low, thick-leaved evergreens and coarse, deciduous species that drop their leaves in response to periodic drought conditions. Representative scrub communities from the area include the northern coastal scrub, southern coastal sage scrub or soft-chaparral, and arid hard-chaparral. Low shrubby overstory and lush herbaceous undergrowth often characterize the northern coastal scrub community, which may grade into adjacent coastal prairie. Many northern scrub species retain their leaves throughout the year. Native coyote brush (*Baccharis pilularis*) is the most abundant plant in this community. California blackberry (*Rubus ursinus*), lemonade berry (*Rhus integrifolia*), Mexican elderberry (*Sambucus mexicana*), poison oak (*Toxicodendron diversilobum*), monkeyflower (*Mimulus* spp.), buckwheat species (*Eriogonum* spp.), California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), laurel sumac (*Malosma laurina*), and California bush sunflower (*Encelia californica*) are also commonly associated with this community. Herbaceous understory species consists of annual grasses (*Bromus* spp., *Avena fatua*, *Hordeum jubatum*), bunchgrasses (*Festuca* sp, and *Nassella pulchra*), and herbs, such as black mustard (*Brassica nigra*), wild cucumber vine (*Marah fabaceus*), California everlasting (*Gnaphalium californicum*), deerweed (*Lotus scoparius*), bedstraw (*Galium* sp), lambs quarters (*Chenopodium album*), giant wild-rye (*Leymus condensatus*), Russian thistle (*Salsola tragus*), California peony (*Paeonia californica*), and puncture vine (*Tribulus terrestris*). Infrequent occurrences of shore cactus (*Opuntia littoralis*), coastal cholla (*Opuntia prolifera*), tall prickly-pear (*Opuntia oricola*), and species of dudleya are found scattered throughout this habitat type.

Wildlife Use of Coastal Sage Scrub

Coastal sage scrub is considered a sensitive habitat due to potential to support numerous threatened, endangered, or rare species, and has been acknowledged as such by its inclusion in the Central/Coastal Orange County NCCP/HCP, a state/federal habitat management and conservation plan that was designed to conserve, protect, and enhance this particular habitat and the botanical and wildlife species that occupy it. It supports a diverse fauna, including many species that are in decline. Among these are the coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), San Diego horned lizard (*Phrynosoma coronatum blainvillei*), orange-throated whiptail (*Cnemidophorus hyperthyrus*), coastal western whiptail (*Cnemidophorus tigris multiscutatus*), Bell's sage sparrow (*Amphispiza belli*), coastal California gnatcatcher, and the Southern California rufous-crowned sparrow. Scrub habitats are also important to larger species such as mule deer (*Odocoileus hemionus*) and mountain lions (*Felis concolor*).

Chaparral

Chaparral vegetation is typically thick, 4- to 12-foot tall evergreen woody shrubs and/or dwarf trees (Holland 1986). The community is composed mainly of species that are adapted to seasonal and periodic drought by having hardened leaves that resist water loss at high temperatures and/or low moisture. The chaparral plant community within the Basin can be generally divided into two distinct types: the upper and lower chaparral.

The lower chaparral zone usually occurs on low dry hills between elevations of 1,400 and 3,500 feet in elevation. The plants form a ground cover from 6 to 12 feet high. Growth is initiated after fall rains, with flowering usually taking place during spring and early summer. Chamise (*Adenostoma fasciculatum*), laurel sumac (*Malosma laurina*), mountain-mahogany (*Cercocarpus betuloides*), and toyon (*Heteromelesar butifolia*) are the most common species found within this habitat (Holland 1986). Black sage, California buckwheat (*Eriogonum fasciculatum*), California sagebrush, deerweed, and thickleaf yerbasanta (*Eriodictyon crassifolium*), buck brush (*Ceanothus cuneatus*), our lord's candle (*Yucca whipplei*), and scrub oak (*Quercus dumosa*) are also common plants of the lower chaparral community (Holland 1986; Sawyer and Keeler-Wolf 1995).

The upper chaparral community is found at elevations above 3,200-3,500 feet, primarily in mountainous regions of the basin. Common plants within this are include manzanita (*Arctostaphylos* spp.), silk tassel (*Garrya* sp), mountain mahogany, California lilac (*Ceanothus* spp), hollyleaf cherry (*Prunus ilicifolia*), and dwarf interior live oak (*Quercus wislizenii*). Stands of big cone Douglas-fir (*Pseudotsuga macrocarpa*) and Coulter pine (*Pinus coulteri*) may also be present in the higher elevations.

Wildlife Use of Chaparral

High-quality chaparral supports a diverse fauna. Chaparral provides suitable shelter, basking sites, and foraging habitat for reptiles like the western rattlesnake, common kingsnake (*Lampropeltis getulus*), rosy boa (*Charina trivirgata*), coastal western whiptail, striped racer (*Masticophis lateralis*), northern red-diamond rattlesnake (*Crotalus ruber ruber*), and western fence lizard (*Sceloporus occidentalis*). Avian species that characteristically nest in chaparral include wrentit (*Chamaea fasciata*), California quail (*Callipepla californica*), blue-gray gnatcatcher (*Polioptila caerulea*), black-chinned sparrow (*Spizella atrogularis*), spotted towhee (*Pipilo*

maculatus), and California thrasher (*Toxostoma redivivum*). Small mammals are common in chaparral and include brush rabbit (*Sylvilagus bachmani*), California kangaroo rat (*Dipodomys californicus*), and woodrat (*Neotoma* sp). Several predators will use chaparral opportunistically, foraging on the reptiles, birds, and small mammals. These include Cooper's hawk (*Accipiter cooperii*) sharp-shinned hawk (*Accipiter striatus*), bobcat (*Felis rufus*), and coyote (*Canis latrans*).

Grassland Habitats

Grassland consists of low herbaceous vegetation dominated by grasses. It grows in deep, well-developed soils on gentle slopes and flats, mostly at low elevations. There are three types of grassland in the Project Area including native grassland, nonnative annual grassland, and ruderal grassland.

Native Grassland (Needlegrass Grassland)

Native grasslands are treeless areas dominated by perennial bunchgrasses and interspersed with native annual herbs and wildflowers (Holland and Keil 1995). Native grassland habitat is most often found at elevations below 1,500 feet, and is a mid-height (to two feet) grassland and in California, the dominant bunchgrass is the perennial, tussock-forming purple needlegrass (*Nassella pulchra*) (Holland 1986). Native grasslands usually occur on fine-textured (often clay) soils that are moist or even waterlogged during the winter, but very dry in the summer. Historically, native grasslands were much more widespread throughout California than today. The introduction of nonnative grasses and forbs (wildflowers), livestock grazing, and alteration of communities' natural fire regime are factors that resulted in the displacement of native bunchgrass, other native grasses, and forbs by introduced species (Heady 1988). Native grassland intergrades with nonnative annual grassland and coastal scrub habitats but are found primarily in rich-soiled valley bottoms and lower foothills, one often finds perennial grasses such as needlegrasses (*Nassella pulchra* and *N. cernua*, both bunchgrasses) dominating these communities. Native grasslands also provide a matrix for a host of native grasses and forbs including ryegrass (*Elymus glaucus*), junegrass (*Koeleria macrantha*), mariposa lily (*Calochortus* spp), brodiaea (*Brodiaea* sp), checker bloom (*Sidalcea malvaeflora*), one-sided bluegrass (*Poa secunda*), blue wild-rye (*Elymus glaucus*), and melic grasses (*Melica* spp). These native species are often interspersed with nonnative annual grasses and such as wild oats and bromes. Once covering one-fifth of the state, today native perennial grasslands cover approximately 0.1 percent of that area (CNPS 2005), and native grasslands that exists in California today are considered sensitive by resource agencies, with listings with both the CDFG and USFWS.

Nonnative Annual Grassland

Annual grasslands are virtually treeless areas dominated by nonnative annual grasses. Annual grasslands occur from sea level to about 3,600 feet (Kie 1988). Annual grasslands occur throughout California and have largely replaced the perennial, native grasslands. European grasses dominate the nonnative annual grassland habitat present within Southern California (Holland, 1986). Characteristic species within the Project Area include wild oats, ripgut brome, foxtail chess (*Bromus madritensis*), and cheat grass (*Bromus tectorum*), barley (*Hordeum* sp), and fescue *(Vulpia* sp). Other species commonly associated with nonnative grasslands include filaree (*Erodium botrys*), sweet fennel (*Foeniculum vulgare*), mustards, and thistles (*Carduus* spp, *Centaurea calcitrapa*, and others). Nonnative annual grasslands occur primarily in the deeper-soiled,

clay-loam bottomlands bordering riparian communities and on the lower hillsides where they meet coastal live oak woodlands, chaparral, and coastal scrub communities. They generally constitute lands that are highly modified by humans' repeated disturbance.

Ruderal Grassland

Though not a true habitat community as defined by Holland (1986), ruderal grasslands are common within urbanized landscapes. These areas contain herbaceous vegetation dominated by highly adaptive and invasive species with few to no native species. Ruderal habitat is found most frequently in areas disturbed by human activities such as roadways, maintained ditches, and areas frequently cleared of vegetation. Characteristic ruderal species identified in the Project Area include wild oats, ripgut brome, yellow star thistle (*Centaurea solstitialis*), bindweed (*Convolvulus arvensis*), California wild rose (*Rosa californica*), sow thistle, mustard, alyssum, lambs quarters, sunflower, telegraph weed, giant horseweed, common knotweed (*Polygonum arenastrum*), bermuda grass (*Cynodon dactylon*), wild radish (*Raphanus sativus*), and clover (*Melilotus* sp).

Wildlife Use of Grassland Vegetation

Grasslands provide food and refuge for numerous wildlife species. Those species that formerly relied on native grasslands for nesting now also use annual grasslands. Native and nonnative grasslands and herbaceous understories support a number of animals including the grasshopper sparrow (*Ammodramus savannarum*), western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), and western burrowing owl (*Athene cunicularia hypugea*). Grasslands produce large numbers of seeds that are a valuable food source for many animal species including American pipit (*Anthus rubescens*), lark sparrow(*Chondestes grammacus*), Savannah sparrow (*Passerculus sandwichensis*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae nigracans*), San Diego pocket mouse (*Perognathus fallax fallax*), and California ground squirrel (*Spermophilus beecheyi*). These and other rodents become the prey base for various resident raptors, such as golden eagle (*Aquila chrysaetos*), red-tailed hawk, white-tailed kite (*Elanus leucurus*), ferruginous hawk (*Buteo regalis*), and northern harrier (*Circus cyaneus*) that utilize wide, open grasslands as foraging habitat. Coyote, Pacific gopher snake (*Pituothis melanoleucus*), western yellow-bellied racer (*Coluber constrictor mormon*), and western rattlesnake (*Crotalus viridis*) also feed on small rodents in grasslands.

Riparian and Wetland Habitats

Riparian communities are those that require abundant moisture during all or most of the year and, as a result, occur along perennial and intermittent streams or rivers. Riparian habitats, including forest, woodland, and scrub subtypes, may or may not be classified as wetland habitat; however; this habitat type is distributed in waterways and drainages where a permanent supply of water (on the surface or below ground) typically exists. These communities generally consist of one or more deciduous tree species with an assorted understory of shrubs and herbs that are restricted to the banks and floodplains of these waterways (Holland and Keil 1995) and generally occur among mid- to large-order streams below 4,000 feet in elevation, primarily within the foothills and valleys.

Riparian vegetation subtypes and size vary along stream channels. Along small stream channels the extent of the riparian community may only be a thin band of vegetation within or directly adjacent to the channel, whereas along larger streams or rivers the riparian habitat can be in the form of dense woodlands that are quite extensive (Holland and Keil 1995). Height of these communities can vary in size from 3 to 10 feet in scrub habitats to greater than 100 feet in riparian forest habitats (Grenfell 1988).

Riparian forests generally have closed canopies dominated by broadleaved, winter-deciduous trees. In the Project Area, these forests are dominated by white alder (*Alnus rhombifolia*), and big leaf maple (*Acer macrophyllum*). Closer to the coast, white alder is replaced by red alder (*Alnus rubra*). Evergreen hardwoods such as California bay and coast live oak will commonly occur along the edges of riparian corridors.

Willow Riparian Scrub (Southern Willow Scrub)

Willow riparian scrub is dominated by willow trees (*Salix* spp) and also may contain gooseberry (*Ribes* spp), Mexican elderberry, and an understory of herbaceous hydrophytes. Arroyo willow (*Salix lasiolepis*) is the dominant species within perennial and intermittent stream channels at elevations up to about 2,450 feet. Goodding's black willow (*Salix gooddingii*) occurs along streambanks and in wet places within drier habitats at elevations below about 1,500 feet (Faber and Keller 1985).

Mulefat Scrub

Mulefat scrub is dominated by mulefat, but also may include willows, sedges (*Carex* spp), stinging nettle, Bermuda grass, western ragweed, California mugwort, Douglas' nightshade, castor bean, cocklebur, rabbit's-foot grass, knotgrass, and barnyard grass (*Echinochloa* sp) (Gray and Bramlet 1992; Holland 1986; Sawyer and Keeler-Wolf 1995). Mule fat scrub usually occurs in intermittent streambeds, seeps, and the toe of landslides where local seeps develop.

Wetland Seeps and Springs

Seeps and springs occur where the groundwater table is high or, in the case of springs, where underground water reaches the surface. Seeps and springs are common at many locations throughout the Project Area and may form permanently or temporarily wet conditions. While these features may occur within many different vegetation communities, seepage from underground springs produces an environment conducive to the growth of hydrophytic grasses, rushes, sedges, and herbaceous vegetation.

Wildlife Use of Wetlands and Riparian Habitats

The frequently abundant water that is available in riparian communities and seeps and springs provides breeding habitat for many amphibian species, including Pacific slender salamander (*Batrachoseps pacificus major*), coast range newt (*Taricha torosa torosa*), arroyo toad (*Bufo microscaphus californicus*), western toad (*Bufo boreas*), and numerous species of treefrogs (*Hyla* spp). Reptiles that depend on or are closely associated with water include the two-striped garter snake (*Thamnophis hammondii*), red racer (coachwhip) (*Masticophis flagellum piceus*), and southwestern pond turtle (*Clemmys marmorata pallida*) (Stebbins 2003).

Resident bird species that are commonly found in riparian areas include the mourning dove, woodpeckers (*Picoides* sp), black phoebe (*Sayornis nigricans*), orange-crowned warbler (*Vermivora celata*), and song sparrow. Several of these species nest or roost in riparian areas and feed in adjacent habitat types, such as annual grassland and agricultural fields. Mammals found within riparian woodland habitat may include the Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), broad-footed mole (*Scapanus latimanus*), woodrats, striped skunk (*Mephitis mephitis*), and gray fox (*Procyon cinereoargenteus*). The abundance of birds and small mammals provides prey for several raptor species that nest and/or forage in riparian communities, including Cooper's hawk, sharp-shinned hawk, western screech owl (*Otus kennicottii*), and red-shouldered hawk (*Buteo lineatus*). In addition to providing high value wildlife habitat, riparian corridors provide local movement corridors between patches of fragmented habitat. Riparian habitats are considered a sensitive habitat type and are monitored closely by the CDFG.

Woodlands and Forest

The term "woodland" is used in most cases instead of "forest" because woodlands tend to be more open and sunlit, with their canopies sometimes touching, but rarely overlapping. Woodlands and forests in the Project Area consist of coast live oak woodland and eucalyptus woodland.

Coast Live Oak Woodland

Oak woodlands consist of multilayered vegetation with a canopy that is 20 to 80 percent tree cover (Gray and Bramlet 1992). Oak woodlands occur throughout the lower elevations of western California, generally from sea level to 5,000 feet above sea level (Holland and Keil 1995). Woodlands are typically found below 5,000 feet in soils too dry to support a forest. Generally, oak woodlands are open where moisture is limited in drier, more exposed aspects, and densest in moist areas (Holland and Keil 1995). Common soils that support coast live oak include sandstone and shale-derived soils (Sawyer and Keeler-Wolf 1995). Coast live oaks typically occupy slopes with deep soils, alluvial terraces, and the recent alluvium deposits of canyon bottoms (Griffin 1977). Open woodlands form when soils are shallow (Holland and Keil 1995). Many understory shrubs in woodlands and forest are shade tolerant and include scrub oak, California blackberry, snowberry (*Symphoricarpos mollis*), California lilac, laurel sumac, toyon, California laurel, manzanita, poison oak, big-leaf maple (*Acer macrophyllum*), and white alder (*Alnus rhombifolia*). Herbaceous understory species include California goldenrod (*Solidago californica*), western wild rye (*Leymus glaucus*), chickweed (*Stellaria* spp.), miner's lettuce (*Claytonia* spp), ripgut brome, wild cucumber, nightshade (*Solanum* sp), and common eucrypta (*Eucrypta chrysanthemifolia*) (Gray and Bramlet 1992).

Wildlife Use of Oak Woodland

Woodlands and forests provide habitat for a variety of species, including nesting, cover, and food. Key wildlife species that are indicators of high-quality woodlands and forests and indicators of other woodland/forest species include Cooper's hawk, long-eared owl (*Asio otus*), western screech owl, acorn woodpecker (*Melanerpes formicivorus*), Nuttall's woodpecker (*Picoides nutallii*), ash-throated flycatcher (*Myiarchus cinerascens*), bobcat, brush mouse (*Peromyscus boylii*), Pacific slender salamander, dusky-footed woodrat (*Neotoma fuscipes*), mule deer, brush rabbit, and various bat species.

Eucalyptus Woodland

Eucalyptus woodland is a nonnative habitat community dominated by an invasive tree introduced to Southern California from Australia around the turn of the nineteenth century. This tree has spread widely throughout natural and landscaped communities, primarily because it is a fast-growing tree with a tenacious nature and affinity for Southern California's Mediterranean climate.

Wildlife Use of Eucalyptus Woodland

Many large stands of mature eucalyptus trees along the coastal areas comprise winter roosting sites for monarch butterflies (*Danaus plexippus*) (Nagano and Sakai, 1987; Meade, 1999). Other wildlife species that use eucalyptus groves are mostly generalists that utilize a wide variety of habitat types. Bird species that utilize eucalyptus as nesting or roosting habitat include red-tailed hawk, red-shouldered hawk, great horned owl (*Bubo virginianus*), American crow, house finch (*Carpodacus mexicanus*), European starling (*Sturnus vulgaris*), Anna's hummingbird (*Calypte anna*), turkey vulture, and western scrub-jay (*Aphelocoma californica*). Mammals that may occur in eucalyptus groves include opossum, raccoon, house mouse, Norway rat (*Rattus norvegicus*), and striped skunk. Western fence lizard, Pacific slender salamander, Pacific gopher snake, and alligator lizard (*Elgaria multicarinata multicarinata*) are reptile and amphibian species found in eucalyptus. In addition, many species of mammals, birds, and reptiles depend on hollow logs for shelter, or forage on dead fallen timber (Driscall et al. 2000).

Nonhabitat Land Covers

Nonhabitat land covers in the Project Area consist of developed areas, disturbed and barren sites, ornamental vegetation, and agriculture land cover. These are areas that contain little, if any, resources for wildlife.

Agriculture Habitats

Agriculture land uses within the site consist of groves, orchards, irrigated fields, and nursery operations. Because different agricultural practices may vary in their ability to support biological resources, agricultural lands are divided into different types, including groves and orchard, pasture or irrigated field, and nursery operations.

Orchard and Groves

Orchards and groves are found on valley floors with rich, alluvial soils and on rolling foothills or fairly steep slopes. As a result, they can be associated with a number of native communities as well as other agricultural fields. Orchards in California are typically dominated by a single tree species and pruned to be low and bushy with an open canopy. Spacing between trees is typically uniform, and depending on the nature and intensity of the disturbance associated with management of the orchard, variable assemblages of exotic or native low-growing grasses and other herbaceous plants may grow under and between trees (Holland and Keil 1995). Common ruderal and herbaceous species such as red brome, Russian thistle (*Salsola tragus*), rancher's fireweed (*Amsinckia menziesii* var. *intermedia*), giant horseweed (*Conyza canadensis*), common knotweed (*Polygonum arenastrum*), wild oat, ripgut brome, wild barley, black mustard, London

rocket (*Sisymbrium irio*), Bermuda grass, and sunflower (*Helianthus annuus*) could occur within open areas of orchards and groves. Common orchards within the Project Area are primarily avocado with some citrus.

Pasture and Irrigated Field

Pastures are usually cultivated on flat to gently sloping land and may be irrigated in some manner. Pastures are very similar to nonnative annual grasslands but are distinguished here as areas that are more intensively managed for grazing through seeding, irrigation, and/or disking. Pastures are regularly maintained and are usually composed of a mix of perennial grasses and legumes that provide 100 percent ground cover. Many of California's native species are poorly adapted to heavy grazing and old or poorly drained pastures may also have patches of weedy species (Holland and Keil 1995). Characteristic weedy species within pastures include ruderal and herbaceous species such as red brome, black mustard, lambs quarters (*Chenopodium album*), ripgut brome, milk thistle (*Silybum marianum*), field bindweed (*Convolvulus arvensis*), Russian thistle, sunflower, and puncture vine.

Wildlife Associated with Agriculture Habitats

For the most part, species that would be expected to occur within these areas would be those that would be able to adapt to some levels of disturbance. Although agricultural land generally provides low to moderate habitat value for wildlife, low-growing row crops and fallow fields may provide important foraging habitat for resident open-country hawk species such as American kestrel, red-tailed hawk, ferruginous hawk, and prairie falcon (*Falco mexicanus*). Migratory waterfowl species such as Canada goose (*Branta canadensis*) may seasonally depend on croplands for foraging habitat. Other avian species that have been known to utilize agricultural land include the turkey vulture, white-tailed kite, loggerhead shrike (*Lanius ludovicianus*), European starling, black phoebe, mourning dove, northern flicker (*Colaptes auratus*), western scrub-jay, American crow, dark-eyed junco (*Junco hyemalis*), house finch, and wintering burrowing owls.

Mammals such as the California desert cottontail (*Sylvilagus audubonii*), black rat, Virginia opossum, deer mouse, California vole, Botta's pocket gopher, western harvest mouse (*Reithrodontomys megalotis*), house mouse (*Mus musculus*), and raccoon could occur within agricultural areas.

Disturbed, Developed, or Barren

Developed, disturbed, or barren areas include urban commercial, industrial, institutional, transportation, parks, ornamental, cleared, graded, or mined areas. These areas may be barren, hardscaped (covered with pavement or asphalt), or support ruderal (weedy), landscape, or ornamental vegetation (Gray and Bramlet 1992). This land cover is the largest category within the Project Area.

Disturbed or Barren

Disturbed areas occur throughout the Proposed Project area. These areas are devoid of vegetation primarily as a result of disturbance occurring during or after activities that remove or greatly alter the vegetation within an area. A combination of activities produced areas that are devoid of vegetation.

These activities are primarily grading, erosion, disturbance from foot traffic, and overspill of urbanization. This also includes areas that consist of bare ground.

Developed Areas

The dominant land use within the City is urban development. Developed areas include infrastructure features such as roads, buildings, parking lots, and walkways, as well as residential and commercial buildings. The vegetation in these areas is sparse and highly disturbed, but is usually a mixture of native and nonnative plant species used for landscaping and within golf courses and community or City parks.

Ornamental

Ornamental landscaping is not a true habitat classification as defined by Holland (1986), but occurs in large enough stands to warrant specific analysis. Ornamental habitat within the Project Area is located in isolated patches, usually near structures or along trails and roads. Common ornamental species include olive (*Olea europeae*), acacia (*Acacia* sp), tamarisk (*Tamarix* sp), eucalyptus, pepper tree (*Schinus* spp), sweetgum (*Liquidambar stryaciflua*), hibiscus (*Hibiscus* spp), oleander (*Nerium oleander*), privet (*Ligustrum* sp), Mexican fan palm (*Washingtonia robusta*), date palm (*Phoenix* sp), periwinkle (*Vinca major*), lantana (*Lantana* spp), ivy (*Hedera* spp), plumbago (*Plumbago auriculata*), tree of heaven (*Ailanthus altissima*), myoporum (*Myoporum laetum*), and numerous varieties of roses (*Rosa* sp) and turf grasses.

Wildlife Associated with Developed, Disturbed, or Barren areas

Nonnative plant species may provide valuable habitat elements such as cover for nesting and roosting, as well as food sources such as nuts or berries. Native and especially introduced animal species that are tolerant of human activities often thrive in urban habitats. These species include western fence lizard, red-tailed hawk, northern mockingbird, barn swallow (*Hirundo rustica*), raccoon, striped skunk, red fox (*Vulpes vulpes*), domestic dog (*Canis familiaris*), domestic cat (*Felis catus*), coyote, European starling, house sparrow, house finch, house mouse, Norway rat, and Virginia opossum. Typical amphibian and reptile species located in developed/disturbed areas include common species such as the side-blotched lizard (*Uta stansburiana*), alligator lizard, and gopher snake (*Pituophis melanoleucus*). Special-status avian species that nest in less disturbed urban habitats that could occur within appropriate habitat of these areas include white-tailed kite, Cooper's hawk, and western burrowing owl.

3.4.5 Wildlife Movement

Terms such as habitat corridors, linkages, crossings, and travel routes are used to describe physical connections that allow wildlife to move between patches of suitable habitat in undisturbed landscapes as well as environments fragmented by urban development. To clarify the meaning of these terms and facilitate the discussion of wildlife movement in this analysis, these terms are defined as follows:

Wildlife corridors link areas of suitable habitat that are otherwise separated by areas of nonsuitable habitat such as rugged terrain, changes in vegetation, or human disturbance. Wildlife corridors are essential to the regional ecology of a species because they provide avenues of genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities. Fragmentation of

open space areas by urbanization creates "islands" of wildlife habitat that are more or less isolated from each other. In the absence of habitat linkages that allow movement between habitat islands, studies have concluded that some wildlife species, especially the larger and more mobile mammals, would not persist over time because fragmentation limits infusion of new individuals and erodes genetic diversity. Corridors mitigate the effects of this fragmentation by: 1) allowing animals to move between remaining habitats, thereby permitting depleted populations to be replenished and promoting genetic exchange; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk of catastrophic events (such as fire or disease) that could lead to local extinction; and 3) serving as travel routes for individual animals as they move within their home ranges in search of food, water, mates, and shelter. Wildlife corridors are typically relatively small, linear habitats that connect two or more habitat patches that would otherwise be fragmented or isolated from one another.

Wildlife corridors are usually bounded by urban land areas or other areas unsuitable for wildlife. The corridor generally contains suitable cover, food, and/or water to support species and facilitate movement while in the corridor. Larger, landscape-level corridors (often referred to as "habitat or landscape linkages") can provide both transitory and resident habitat for a variety of species. Although it is commonly used as a synonym for wildlife corridor, a habitat linkage refers to a more substantial, or wider, land connection between two habitat areas. Habitat linkages allow for the periodic exchange of animals between habitat areas, which is essential to maintain adequate gene pools. This linkage is most notable among populations of medium-sized and larger animals.

A travel route is usually a landscape feature (such as a ridgeline, drainage, canyon, or riparian corridor) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites). The travel route is generally preferred because it provides the least amount of topographic resistance in moving from one area to another. It provides adequate food, water, or cover for individuals moving between habitat areas and provides a relatively direct link between target habitat areas. Wildlife crossings are small, narrow areas that are relatively short in length. They allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent "choke points" along a movement corridor.

3.4.6 Sensitive Biological Resources

The following section addresses special-status biological resources observed, reported, or having the potential to occur in the Project Area. These resources include plant and wildlife species that have been afforded special status and/or recognition by federal and state resource agencies (USFWS and CDFG). In general, the principal reason an individual taxon (species, subspecies, or variety) is given such recognition is the documented or expected decline or geographic limitation of its population size that results in most cases, from habitat loss. Table 1 in Appendix E summarizes the special status plant and animal species reported to occur within the U. S. Geological Survey's (USGS) 7.5-minute quadrangles for El Toro, Canada Gobernadora, Tustin, Laguna Beach, Santiago Peak, and San Juan Capistrano. The following sources were used to determine the status of biological resources:

Plants and Wildlife

- Central and Coastal Orange County Natural Community Conservation Program/Habitat Conservation Program (NCCP/HCP).
- California Natural Diversity Data Base (CNDDB), January 2005
- Various Federal Register notices from the USFWS regarding listing status of plant and animal species

Habitats

- Central and Coastal Orange County Natural Community Conservation Program/Habitat Conservation Program (NCCP/HCP).
- CNDDB, January 2005
- Federal Register notices from the USFWS regarding critical habitat designations.

For plants or wildlife, the "potential for occurrence" ranking listed in Table 1 of Appendix E is based on the following criteria:

- **Absent:** Species was not observed during focused surveys conducted at an appropriate time of year and/or day for identification of the species or the species is restricted to habitats that do not occur within the Project Area.
- **Low Potential for Occurrence:** No present or historic records cite the species' occurrence in or near the site, and the on-site habitat(s) needed to support the species are of poor quality.
- **Moderate Potential for Occurrence:** A historic record exists within the immediate vicinity of the site (approximately five miles) and the habitat requirements associated with the species occur within the site and are of sufficient size and quality as to support the species
- **High Potential for Occurrence:** A historic records cites the species in a site or in its immediate vicinity (approximately one mile) and the habitats strongly associated with that species occur within the site.
- **Species Present:** The species was observed within the site.

The CNDDB search for these quadrangles results in four species of amphibian, three species of fish, four species of invertebrates, eight species of reptile, 25 species of birds, five mammal species, and 31 plant species. Some of these species are restricted to habitats not found within the Project Area such as estuaries, coniferous forests, saltwater marsh, or alkali and freshwater lakes. Many of the plant species are restricted to alkali soils, coastal dunes, or marshes and swamps that are not found within the Project Area. The potential for a species to be found at a particular site was based on the habitat observed during the site visits and the criteria above. Those species with a low or absent occurrence potential are not discussed further within this document. Those with a moderate or greater potential for occurrence are discussed in more detail below.

Plants

Thread-leaved Brodiaea (*Brodiaea filifolia*). The thread-leaved brodiaea is a member of the lily family (*Liliaceae*). It is listed as endangered under the CESA, and threatened under the FESA. The plant usually occurs on gentle hillsides, valleys, and floodplains in mesic, southern needlegrass grassland and alkali grassland plant communities in association with clay, loamy sand, or alkaline silty-clay soils. It is most commonly found at elevations between 100 and 4,000 feet above sea level. Sites occupied by this species

are frequently intermixed with, or near, vernal pool complexes. Thread-leaved brodiaea occurs in a few scattered localities within Los Angeles, Orange, western Riverside, and northwestern San Diego counties. This species is covered in the San Diego Multiple Species Conservation Plan NCCP. It is also covered in the San Diego Gas & Electric Company Subregional NCCP, a linear NCCP from Orange County to the border with Mexico. Based on the site visit, there is a high probability that this species could be found on Site 2 and a moderate possibility to find it on Sites 1 and 3; however, based upon sensitive plant surveys conducted on Site 1, no plants have been identified on the site (LSA Associates 2005).

Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*). The intermediate Mariposa lily is listed on the CNPS 1B list (CNPS 2004). It is a perennial herb generally found in dry rocky open slopes and hills; chaparral, coastal sage scrub, valley and foothill grassland from 590 to 2,800 feet in elevation. This lily typically blooms between May and July. The CNDDB reports this species from three locations to the north and south of the City (CNDDB 2005). Sensitive plant surveys conducted on Site 1 did result in the identification of this species within the site. Further, suitable habitat on Sites 2, 3, and 6 make it highly likely that it is present at these sites.

Southern Tarplant (*Centromadia parryia* ssp. *australis*). The southern tarplant is listed on the CNPS 1B list (CNPS 2004). It is generally found in the margins of marshes and swamps, where seasonally wet conditions such as near vernal pools and other seasonal water sources create favorable growing conditions. It is typically found below a 1,300-foot elevation. It is known from Los Angeles, Orange, Santa Barbara, San Diego, and Ventura counties and Baja California. The blooming period can extend from June through November. The CNDDB contains no records of this species (CNDDB 2005). A population is reported from Newport's Back Bay in Orange County (Reiser 1994). There is a moderate chance that this species could be found at Sites 1 and 2.

Santa Monica Mountains Dudleya (*Dudleya cymosa* ssp. *ovatifolia*). The Santa Monica Mountains dudleya is listed as a rare species under the CESA and a threatened species under the FESA. The plant is a succulent perennial in the stonecrop family (*Crassulaceae*) with a basal rosette of leaves. Its flowers are bright yellow and often marked with red. This species grows on rocky volcanic cliffs and canyon walls in the Santa Monica Mountains from Hidden Valley to Malibu Creek State Park. It is known from seven occurrences, and the total number of known individuals is estimated to be less than 1,000 plants. This species has been reported from a location in Cleveland National Forest just over two miles north of Site 2. Site 2 is the only area within the Project Area that contains suitable habitat for this species.

Many-stemmed Dudleya (*Dudleya multicaulis*). The many-stemmed dudleya is listed on the CNPS 1B list and is considered rare within the state by CNPS (CNPS 2004). This succulent perennial is associated with clay soils in barren, rocky places, or thinly vegetated openings in chaparral, coastal sage scrub, and southern needlegrass. Most populations are associated with coastal sage or open coastal sage scrub typically between 50 and 1,500 feet above sea level. Although there are 83 records within the CNDDB for this species in Orange County, none of these records is within five miles of the Project Area. However, suitable habitat exists at Sites 1-3 and 6, where there is a moderate probability that this species could be found.

Felt-leaved Monardella (*Monardella hypoleuca* ssp. *lanata*). This species is a member of the mint family (*Lamiaceae*). In California, it is known only from San Diego and Orange counties. It is typically found in chaparral and cismontane woodlands where it grows in the understory of mixed chaparral, chamise chaparral, and southern oak woodlands. It tends to be restricted to sandy soils between about 975 and 5,000 feet in elevation. The CNDDB reports a population of this species in the Cleveland National Forest about two miles east of Site 2. It was not observed within the Project Area, but the coastal sage scrub and chaparral communities found at Sites 1-3 may be suitable.

Animals

Arroyo toad (*Bufo microscaphus californicus*). Arroyo toad is a federally listed endangered species, and a CDFG species of special concern. This species has been extirpated in the northern, central, and eastern parts of its range. It continues to be one of California's most vulnerable species. Arroyo toads preferred habitat is riparian area adjacent to low-gradient streams. The loss of habitat, coupled with habitat modifications resulting from the manipulation of water levels in many central and Southern California rivers as well as predation from introduced species, has caused the toad to disappear from most of the previously occupied habitat in California. A recovery plan for the arroyo southwestern toad was published by the USFWS in 1999 (USFWS 1999). This species has not been observed within the City of Lake Forest. The closest record contained in the CNDDB is from Santiago Creek approximately 1.9 miles northeast of the City (CNDDB 2005).

Western Spadefoot Toad (*Scaphiopus hammondii intermontanus*). The western spadefoot toad is designated as a federal and state species of special concern. Historically it ranged from Shasta County southward to Baja California (Stebbins 1985). Its known elevation range extends from near sea level to 4,500 feet. This species is almost entirely nocturnal, with most above-ground movement and breeding occurring during rainy nights. Spadefoot toads spend the bulk of their lives in underground burrows (Stebbins 1972). Following relatively warm winter rains, adults emerge to breed, typically from January through March. In Southern California, approximately 80 percent of the habitat once known to be occupied by the Western spadefoot has been developed or converted to uses incompatible with successful reproduction or recruitment (Jennings and Hayes 1994). By far the largest threat to the species is the continued conversion of habitat in Southern California. The current population size is unknown and evaluating population size can be problematic because the toads only spend brief periods above ground. Spadefoot toads have been observed in Aliso Creek near Site 4 in 1992 (CNDDB 2005).

Riverside Fairy Shrimp (*Streptocephalus wootton*i). The Riverside fairy shrimp is federally listed as an endangered species (62 FR 4939). It is known to occur in vernal pools from southwestern Riverside and western San Diego counties to northwestern Baja California, Mexico. Habitat loss and degradation resulting from urban and agricultural development, livestock grazing, off-road vehicle use, trampling, invasion from weedy nonnative plants, and other factors threaten the continued existence of the species. Critical habitat for the species was designated for this species in May 2001 (Citation). This designation was challenged in court, and on April 27, 2004 a new proposed critical rule was published (69 FR 23024). This proposed rule was made final in April 12, 2005 (69 FR 19154). This new rule excluded all areas within the Central and Coastal Orange County NCCP/HCP including the MCAS El Toro. However, it did designate about 49 acres within O'Neill Regional Park (just over one mile south of Site 2) as critical

habitat. Riverside fairy shrimp have been found adjacent to Site 2 by Southern California Edison in 1998 and just over one mile south of Site 2 in 2001 (CNDDB 2005).

Orange-throated Whiptail (*Aspidoscelis hyperythra*). The orange-throated whiptail is designated as a species of special concern by the CDFG. The lizard is uncommon to fairly common over much of its range, occurring coastally in extreme southern Los Angeles County and in southwestern San Bernardino County near Colton. They also occur in Orange, Riverside, and San Diego counties west of the crest of the Peninsular Ranges, especially in areas with summer morning fog between elevations from sea level to around 3,000 feet. They commonly inhabit low-elevation coastal scrub, chamise-redshank chaparral, mixed chaparral, and valley-foothill hardwood habitats. They actively forage on a variety of small arthropods, especially termites, which are taken in large numbers when available. Breeding activities begin in April and egg laying continues to mid-July. Hatchlings emerge in August and early September. This species has been observed on Site 2 and the habitat on Sites 1, 3, and 6 is also highly suitable for this species. The CNDDB (2005) also reports this species from just west of Site 1 and southeast of Site 4; there are several other nearby occurrences to the City.

Northern Red-diamond Rattlesnake (*Crotalus ruber ruber*). The northern red-diamond rattlesnake is designated as a CDFG species of special concern. They are distributed along coastal San Diego County to the eastern slopes of the mountains and north through western Riverside County into southernmost San Bernardino County. They typically occur from sea level to around 3,000 ft in elevation. They prefer chaparral, woodland, and arid desert habitats with rocky areas and dense vegetation. Young snakes are common on the desert side but rare on the coast side of the mountains. This snake feeds on rabbits, rodents, lizards, and birds, and is active from spring to fall with a peak in activity between March and June. Early in the year it is active during the day, but as daytime temperatures increase it becomes active later in the evening. The coastal sage scrub habitat on Sites 2 and 6 is suitable for this species and there is a moderate potential that this snake occurs there. This snake has been observed north and south of the City, but there are no reports from within the City limits (CNDDB 2005).

San Diego Horned Lizard (*Phrynosoma coronatum blainvellei*). The San Diego horned lizard is a federal and state species of special concern. They were historically distributed from the Transverse Ranges in Kern, Los Angeles, Santa Barbara, and Ventura counties southward throughout the Peninsular Ranges of Southern California to Baja California, Mexico. The known elevation range of this species is from near sea level to approximately 7,000 feet. The San Diego horned lizard is found in a wide variety of habitats including coastal sage, annual grassland, chaparral, oak woodland, riparian woodland, and coniferous forest. The key elements of such habitats are loose, fine soils with a component of sand; an abundance of native ants or other insects; open basking habitat with limited overstory vegetation; and low, but relatively dense shrubs for refuge. In the foothill and mountain habitats covered with dense brush or other vegetation, San Diego horned lizards are largely restricted to areas with pockets of open microhabitat, a habitat structure that can be created by natural events such as fire and floods or human-created disturbances such as livestock grazing, fire breaks, and roads. This species is unable to live in habitats altered through urbanization, agriculture, off-road vehicle use, or flood control structures. This species has been reported just west of Site 1 in 1991 (CNDDB 2005). There are no other records within the City, but this species has been reported north and south of Lake Forest in 1990 and 1999 (CNDDB

2005). The habitat on Site 6 is suitable for this species and there is a moderate potential that the San Diego Horned Lizard occurs there.

Coast Patch-nosed Snake (*Salvadora hexalepis virgultea*). The coast patch-nosed snake is a state species of special concern. The snake seems to prefer areas with low, shrub vegetation like chaparral (Jennings and Hayes 1994). The western patch-nosed snake is widely distributed throughout the lowlands up to 7,000 feet above sea level. It is found in coastal chaparral, desert scrub, washes, sandy flats and rocky areas. This species is diurnal. In the milder months of spring it can be found throughout the day. In summer, activity is restricted to mornings and late afternoons. Snakes may be active all year in the southern part of the state during mild to warm weather, but in some areas they spend the winter in woodrat nests or ground squirrel burrows. Normally snakes are active in spring and early summer with greatest activity occurring in May and June. Gravid females have been found from May to August indicating that mating probably takes place from April to June. The closest reported occurrence in the CNDDB is from the Cleveland National Forest about 3.8 miles northwest of Site 1. Habitat at most of the sites is considered suitable for this snake and it has a high or moderate probability of being found there. However, Site 4 has been substantially modified, thereby making it a low probability that the patch-nosed snake would be found on those sites.

Two-striped Garter Snake (*Thamnophis hammondii*). The two-striped garter snake is designated as a species of special concern by CDFG. The snake is found in the South Coast and Transverse ranges from Salina Valley and the southeastern slope of the Diablo Range, south to the Mexican border (Jennings and Hayes 1994). The known elevation range of this species extends from sea level to around 8,000 feet. Most observations of this species are from streams and creeks or the adjacent riparian areas. These are its preferred habitat and this species is highly aquatic, foraging on fish and frogs. Despite the fact that the two-striped garter snake was historically relatively common, its life history is poorly know because it has never been subject to intensive ecological studies. This species has not been documented within the City. The closest record is a 1998 observation about 2.75 miles north of Site 2 in the Cleveland National Forest. Because this species is generally restricted to aquatic habitats, only Sites 2 and 3 are ranked as having a moderate chance of supporting this snake. Suitable habitat is absent from sites 3-7 and only of low quality at Site 1.

The two-striped garter snake has disappeared from approximately 40 percent of its historic range on the California mainland during the past century and is now considered common only in eastern San Diego County. Much of this decline is attributed to habitat destruction from urbanization, large reservoirs, and the cement lining of stream channels in Southern California for flood control. A significant portion of the riparian habitat that still harbors the snake is degraded, and could rapidly become unsuitable if present trends towards drier climatic conditions for Southern California continue.

Cooper's Hawk (*Accipiter cooperii*). Cooper's hawk is designated as a species of special concern by CDFG. This crow-sized hawk is a breeding resident throughout most of the wooded portions of California. It prefers deciduous and mixed forests or open woodlands where trees occur in stands mixed with abundant open space between stands (Johnsgard 1990). Cooper's hawks feed mainly on smaller birds, but are also known to take small mammals, lizards, and snakes. This species ranges from sea level to above 8,800 feet, nesting in the crotches of trees ten to 80 feet above ground. Nests are constructed

stick platforms lined with bark. Cooper's hawks breed from March through August, with peak activity in May to July. This species has not been documented nesting within the City. However, the CNDBB contains a relatively recent record from San Diego Creek about 3.75 miles west of Site 3. A Cooper's hawk was observed on Sites 2, 3, and 6 during field work for this project and as part of the 2005 focused survey (Dudek 2005). It is also highly likely that this bird could be found on Site 1. Nesting was not documented, but site visits were conducted in early December 2004, outside of nesting season.

Sharp-shinned Hawk (*Accipiter striatus*). Sharp-shinned hawk is a California species of special concern and is a fairly common migrant and winter resident throughout California, except in areas with deep snow. The sharp-shinned hawk breeds in ponderosa pine (*Pinus ponderosa*), black oak (*Quercus velutina*), deciduous riparian, mixed conifer, and Jeffrey pine (*Pinus jeffrey*) habitats. The breeding range extend from southern Alaska south through the central Sierra Nevada in California (Johnsgard 1990). No nests have been documented in Southern California. In fact the furthest south nesting record in the CNDDB (2005) is from the Nipomo Mesa in San Luis Obispo County. The species prefers roosting in intermediate- to high-canopy forest and nesting in dense, even-aged, single-layered forest canopy. During winter migration, they can be found in all terrestrial habitats except deserts. Sharp-shinned hawks will forage in openings at the edges of woodlands, hedgerows, brushy pastures, and shorelines, especially where migrating birds are found. They will eat small birds and mammals, insects, reptiles, and amphibians. The Project Area contains suitable foraging habitat for this species. There is a moderate chance that this species could occur over Sites 1-3 and 5 during the winter. Nesting is unlikely and these would be expected to be wintering birds.

Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*). The Southern California rufous-crowned sparrow is a species of special concern in California. This bird is a resident of sparse, mixed chaparral and coastal scrub habitats from Mendocino and Tehama counties south to the Mexican boarder. It is a secretive bird, which forages in on the ground within and near dense cover of shrubs, rocks, and patches of forbs (Scott Lab 2001). This species breeds from mid-March to mid-June, peaking in May. Their nests are concealed on the ground at the base of a grass tussock or shrub or up to about 3 feet off the ground similar habitat. This species has been observed at Site 2 in 2002 (CNDDB 2005) and on Site 1 in 1999 (PCR 1999). There is also a 1999 record of which the mapped occurrence includes portions of Sites 4 and 5. Additionally there are two other 2002 records from property adjacent to the northeastern City Limits, but just outside the boundary. Based on the site visit, the high quality habitat at Sites 3, 5, and 6 creates a high probability that the rufous-crowned sparrow could also be found on those sites.

Long-eared Owl (*Asio otus*). The long-eared owl is a state species of concern. It generally occurs in deciduous and evergreen forests, wooded parks, orchards, and farm woodlands. This owl requires dense trees for nesting and roosting with adjacent to open foraging habitat (Johnsgard 1988). It is an uncommon resident or winter migrant throughout most of the northern part of California, excluding the Cascade Range and higher elevations of the Sierra Nevada. It is a winter visitor of tamarisk and other tree stands in the Mojave Desert, and a very rare winter migrant along the southern coastline (Scott Lab 2001). The owl eats mostly voles and other rodents, but will take the occasional bird (including smaller owls), and other vertebrates. They usually hunts in open areas and only occasionally in woodland and forested habitats. Nesting typically occurs between March and late May with a peak of nesting activity in

mid-March through mid-May (Johnsgard 1988). Nesting areas are re-used year to year and sometimes the same nest is re-used, especially if the previous years nesting attempt was successful (Johnsgard 1998). They apparently make only local movements in California, although some migration and dispersal of young owls may occur. They sometimes congregate in winter flocks, perhaps including family groups. Destruction of lowland riparian woodland has played a role in their decline, especially in the southwest, but the absence of this species from existing riparian areas and its disappearance from many areas before the habitat was destroyed indicates that other factors are involved. No breeding records for long-eared owls are known from within 5 miles of the City (CNDDB 2005). The habitat on Sites 1-3 is sufficient to create the moderate probability of long-eared owls using these sites.

Burrowing Owl (*Athene cunicularia hypugea*). The Project Area is within the range of the western burrowing owl, a federal and state Species of Special Concern, which is protected by the federal Migratory Bird Treaty Act. Burrowing owls are permanent residents in open grasslands and shrublands. They utilize burrows of ground squirrels and other small mammals as well as artificial structures for nesting and cover. Burrowing owls often nest in roadside embankments, on levees, and along irrigation canals. They prefer open, dry, grassland or prairie habitat. Occupancy of suitable burrowing owl habitat can be verified at a site by observation of a pair of burrowing owls during the spring and summer months or, alternatively, by the presence of molted feathers, cast pellets, prey remains, eggshell fragments, or excrement (guano or must) near or at a burrow. Suitable habitat for this species occurs on several of the Sites. No burrowing owls were observed during the site visits conducted for this EIR. Burrowing owls have not been reported from within the City. However, there is a record from near the point where Interstate 5 crosses Serrano Creek approximately 0.75 miles northwest of the City limits (CNDDB 2005).

Ferruginous Hawk (*Buteo regalis*). The ferruginous hawk is a California species of special concern. This raptor is a fairly common winter resident of grasslands and agricultural areas in southwestern California. It frequents open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. This relatively large hawk preys mostly on rabbits, ground squirrels, and mice, but will also take birds, reptiles, and amphibians. Ferruginous hawks roost in open areas, usually in a lone tree or utility pole. There are no breeding records of this species from California. The birds arrive in California in September and depart by mid-April. There is a high probability that this species forages over Sites 1-3 and 6 during the winter.

Cactus Wren (*Campylorhynchus brunneicapillus cousei*). The cactus wren is presently listed as a California species of special concern. Cactus wren can be found in coastal sage scrub habitats, generally below 3,000 feet in elevation. Within these habitats, cactus wren nest in coastal cholla (*Opuntia prolifera*) or prickly pear cactus (*Opuntia littoralis* and *Opuntia oricola*) (Solek 2004). They forage within this habitat on the ground and in low vegetation for insects, which make up the bulk of their diet. Like many birds that rely on coastal sage scrub, this species has declined as the habitat has been fragmented and reduced in quantity and quality through Southern California (Solek 2004). Because of this, this species was selected as one of three target species in the California Natural Communities Conservation Plan and Habitat Conservation Plan (NCCP/HCP). This species is widely distributed throughout Orange County. Within Orange County there are 57 records of cactus wren, 15 of which are within six miles of the City; within the City itself there are five records. One of these records from 2002 (Occurrence #8) is mapped as

including all of Site 2, most of Site 4, and parts of Site 5 (CNDDB 2005). Two other records cover different parts of Site 1 (CNDDB 2005). Additionally, the Cactus Wren was observed at Site 6 in fall 2004. (LSA Biological Resources Analysis 2005).

California Horned Lark (*Eremophila alpestris actia*). The California horned lark is designated as species of special concern by CDFG and is a common to abundant resident in a variety of open habitats in California. They are found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above the tree line. This species eats mostly insects, snails, and spiders that it picks off the ground. Nesting occurs between March through July, peaking in May when solitary pairs of larks build grass-lined, cup-shaped nests in depressions on the ground (Green no date). They breed from March through July. Incubation lasts 10 to 14 days and the young leave the nest at 9 to 12 days. This species has been reported from Site 2 (Dudek 2005). Additionally, habitat present at Sites 1, 3, and 5 indicates that there is a moderate potential for this species to be found there also.

Yellow-breasted Chat (*Icteria virens*). The yellow-breasted chat is considered a species of special concern by CDFG. It occurs in dense riparian habitat typically in areas with dense willows, tangled vines (especially blackberries), and other dense brush associated with a stream (Ricketts and Kus 2000). Some taller trees that provide song perches are also required. This neotropical migrant usually arrives in April and departs by late September for wintering grounds in Mexico and Guatemala. They were once a fairly common summer resident in riparian woodlands throughout California, but now are much reduced in numbers, especially in Southern California. Destruction of riparian woodland has certainly played a role, but this species' absence from some areas, which still have intact habitat indicates some other factor is involved. Some research indicates brood parasitism by brown-headed cowbirds (*Molothrus ater*) may also be a problem (Ricketts and Kus 2000). This species has not been reported from within the City, but there is a 2003 record on a tributary to Bee Canyon Wash above Lambert Reservoir about 1.6 miles to the northwest of Site 1 (CNDDB 2005). There is a moderate potential that yellow-breasted chat could be found in suitable habitat on Sites 1-3 and 5.

California Coastal Gnatcatcher (*Polioptila californica californica*). The California gnatcatcher is a threatened species throughout its historic ranch in Southern California pursuant to the FESA and is also a CDFG species of special concern. Critical habitat was proposed for this species in April 2003 (69 FR 20228) but does not appear to include any of the Project Area. The California gnatcatcher is one of the three target species of the Central and Coastal Orange County NCCP/HCP and areas subject to the NCCP?HCP were excluded from the critical habitat listing. The California coastal gnatcatcher is a small insectivorous bird. It is found almost exclusively in several distinctive sub-associations of the coastal sage scrub community and is threatened by habitat loss and fragmentation occurring in conjunction with urban and agricultural development. The CNDDB contains 146 occurrence records for California coastal gnatcatcher in Orange County (CNDDB 2005). There are several other records of this species scattered through the foothills north and south of the City, probably reflecting the distribution of suitable coastal sage scrub habitat. Within the Project Area, two pairs of gnatcatchers were observed on Site 1 within the sage brush-buckwheat scrub community (PCR 1999). Gnatcatchers were also observed within the coastal sage scrub habitat on Site 6 (LSA 2005), Site 2 (Natural Resource Consultants 2002; Dudek and Associates 2005) and on Site 3 (Glenn Lukos Associates, 2005). The CNDDB contains a record that

includes part of Site 5 in 1999; and the western corner of Site 1 in 2002 (CNDDB 2005). Gnatcatchers were observed within and adjacent to Site 5 (LSA 2005).

Allen's Hummingbird (*Selasphorus sassin*). Allen's hummingbird is a common summer resident and migrant along most of the California coast. This species is considered a species of special concern by the USFWS. Breeding birds are most commonly found in coastal scrub, valley foothill hardwood, and valley foothill riparian habitats, but also occur in closed-cone pine-cypress, urban, and redwood habitats. Migrants arrive in California in late January and early February and mostly are gone by late July. They breed from mid-February to early August with peak activity in April. Distribution is highly dependent on abundance of nectar sources. The CNDDB does not contain any records of this species. Based on the surveys of the Project Area, Sites 1-3 and 6 support suitable habitat for this species and there is a moderate potential that it could be found there.

Least Bell's Vireo (*Vireo bellii pusillus*). Least Bell's vireo is listed as endangered under both the CESA and FESA. They are summer residents of cottonwood-willow forest, oak woodland, shrubby thickets, and dry washes. Although they have been documented in a variety of habitats, they are found almost exclusively in riparian woodlands. The areas in which they choose to nest are characterized by a well-developed overstory of mature willows and cottonwood trees. The understory is also typically very dense with species such as mulefat (*Baccharis salicifolia*), willow saplings, and other herbaceous species. Widespread destruction and degradation of riparian habitat have substantially reduced this species distribution within California. Formerly, the vireo was known to breed from interior Northern California near Red Bluff in Tehama County south through the Sacramento and San Joaquin valleys and Sierra Nevada foothills, and in the coastal ranges from Santa Clara County south to the approximate vicinity of San Fernando in Baja California. Currently, its breeding range is limited to Southern California, with large populations in Riverside and San Diego counties and smaller populations in Santa Barbara, Ventura, and San Diego counties and in northern Baja California. The least Bell's vireo is also very sensitive to human-generated disturbance from sources such as noise from off-road vehicle use or continued human presence and nighttime lighting. The CNDDB contains 22 records of this species from Orange County (CNDDB 2005). The closest record is from a site in Agua Chinon Wash about 0.9 miles north of Site 1 in 2003. Other nearby records are from Bee Canyon Wash and San Diego Creek (CNDDB 2005). Recent protocol surveys for this species within the Borrego Wash within the Project Area have not identified the presence of this species (Glenn Lukos 2005). However, Sites 1, 2, and 3 support habitat that could support this species.

Pallid Bat (*Antrozous pallidus*). The pallid bat is considered a species of special concern by CDFG. This bat is often found in open, dry habitats that contain rocky outcrops, cliffs, caverns, and crevices for roosting. This species will also roost on buildings and bridges if natural habitat is unavailable. Roosts must protect bats from high daytime temperatures. Maternity colonies form in early April and may have a dozen to 100 individuals. Mating occurs from late October-February and young bats are born between April and July. Pallid bats capture their prey on the ground rather than in flight as is typical for most bats. They prey on crickets, beetles, grasshoppers, and scorpions. The pallid bat is most common in deserts, grasslands, and shrublands and low elevations in California. The CNDDB contains three records of this species in Orange County. The closest record is from 1997 at a site about four miles south of Site 2

(CNDDB 2005). There is a moderate chance that this species could be found foraging on Sites 1-3 and 6. The structures within the immediate vicinity of these Sites may provide suitable roosting habitat.

San Diego Desert Woodrat (*Neotoma lepida intermedia*). The San Diego desert woodrat is a considered a species of special concern by CDFG. They occur in moderate to dense canopies of coastal sage scrub, especially in rock outcrops, rocky cliffs, and slopes. They have been found in Southern California from San Diego to San Luis Obispo County. This species is highly nocturnal and very sensitive to light. They avoid moving during the day and even avoid the light of a full moon. Woodrats are generalist herbivores that feed mainly on woody plants, nuts, fruits, fungi, foliage and forbs, especially oak, maple, coffeeberry, alder, and elderberry when available (Linsdale and Tevis 1951). They are highly arboreal (Kelly 1990), and will forage on the ground, in bushes and the trees. Woodrats construct large complex dens that are built of sticks and twigs, often at the base of a tree or rock, or on fallen logs. They are most numerous where shrub cover is dense and least abundant in open areas. Woodrats rely on these dens for shelter, breeding, protection from predators, and food storage. Dens are often constructed over many years by several generations of woodrats. Competition for houses is constant and intense (Linsdale and Tevis 1951) and woodrats are known to move into abandoned nests that are located in more preferable habitat environments (Gerber et. al., 2003). Other small mammals and amphibians and reptiles are also known to use woodrat houses. Each den is occupied by a single adult. Adult females share the nest with their litters for a few months until the young disperse to nearby nests. Woodrats breed from December through September, with a peak in mid-spring. Litter size averages two to three young (range one to four) (Linsdale and Tevis 1951, Verner and Boss 1980) and a female may have as many as five litters per year. The dusky-footed woodrat is heavily preyed upon by owls, coyotes, bobcats, hawks, and perhaps snakes and is an important prey base for these species.

There are two records of this species from Orange County, the closest of which is about a half a mile northwest of Site 1 (CNDDB 2005). There are no records in the CNDDB from within the City. However, the habitat at Sites 1-3 and 6 is highly suitable for this species. Though it was not observed during the site visits conducted for this project, it is highly likely that the desert woodrat could be found on these sites.

3.4.7 Planning and Regulatory Framework

Federal

Section 404 of the Clean Water Act

Section 404 of the *Clean Water Act* (CWA) requires that a permit be obtained from the U.S. Army Corps of Engineers (USACE) prior to the discharge of dredged or fill materials into any "waters of the United States or wetlands." Waters of the United States are broadly defined in the USACE's regulations (33 CFR 328) to include navigable waterways, their tributaries, lakes, ponds, and wetlands. Wetlands are defined as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that normally do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (Federal Register 1982). Wetlands that are not specifically exempt from Section 404 regulations (such as

drainage channels excavated on dry land) are considered to be "jurisdictional wetlands." In a recent Supreme Court Case, the Court acted to limit the regulatory jurisdiction of the USACE under Section 404 of the CWA as it applies to adjacent waters (USSC 2001). Specifically, the Court ruled that waters that are nonnavigable, isolated, and intrastate are not subject to the USACE jurisdiction (Guzy and Anderson 2001). The USACE is required to consult with the U.S. Fish and Wildlife Service, Environmental Protection Agency, and State Regional Water Quality Control Board (among other agencies) in carrying out its discretionary authority under Section 404.

The USACE grants two types of permits, individual and nationwide. Project-specific individual permits are required for certain activities that may have a potential for more than a minimal impact and necessitate a detailed application. The most common type of permit is a nationwide permit. Nationwide permits authorize activities on a nationwide basis unless specifically limited, and are designed to regulate with little delay or paperwork certain activities having minimal impacts. Nationwide permits typically take two to three months to obtain whereas individual permits can take a year or more. To qualify for a nationwide permit, strict conditions must be met. If conditions are met, permittees may proceed with certain activities without notifying the USACE. Some nationwide permits require a 30-day pre-construction notification period before activities can begin. Fill of certain isolated waters or wetlands that affect less than 0.5 acre of impact per project may be permitted with a pre-construction notification.

Migratory Bird Treaty Act of 1918

The *Migratory Bird Treaty Act* (MBTA) makes it unlawful to "take" (kill, harm, harass, etc.) any migratory bird listed in 50 CFR 10, including their nests, eggs, or products. The MBTA provides protection to over 800 species of birds. This list includes some very common species such as the American robin (*Turdus migratorius*), house finch, burrowing owl, red-tailed hawk, American crow (*Corvus brachyrhynchos*), and western meadowlark (*Sturnella neglecta*).

Federal Endangered Species Act of 1973

Section 3 of the *Federal Endangered Species Act* (FESA) defines an endangered species as any species or subspecies of fish, wildlife, or plants "in danger of extinction throughout all or a significant portion of its range." A threatened species is defined as any species or subspecies "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." Designated endangered and threatened species, as listed through publication of a final rule in the Federal Register, are fully protected from a "take" without an incidental take permit administered by the U. S. Fish and Wildlife Service (USFWS) under Section 10 of the FESA. Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (50 CFR 17.3). The term "harm" in the definition of "take" in the Act means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering (50 CFR 17.3). The term "harass" in the definition of "take" means an intentional or negligent act or omission, which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns, which include, but are not limited to, breeding, feeding,

or sheltering (50 CFR 17.3). Proposed endangered or threatened species are those for which a proposed regulation, but not a final rule, has been published in the Federal Register.

Section 7 of the FESA requires that federal agencies ensure that their actions are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify its critical habitat. This obligation requires federal agencies to consult with the USFWS on any actions (issuing permits including Section 404 permits issuing licenses, providing federal funding) that may affect listed species to ensure that reasonable and prudent measures will be undertaken to mitigate impacts on listed species. Consultation with USFWS can be either formal or informal depending on the likelihood of the action to adversely affect listed species or critical habitat. Once a formal consultation is initiated, USFWS will issue a Biological Opinion (either a "jeopardy" or a "no jeopardy" opinion) indicating whether the proposed agency action will or will not jeopardize the continued existence of a listed species or result in the destruction or modification of its critical habitat. A permit cannot be issued for a project with a "jeopardy" opinion unless the project is redesigned to lessen impacts.

In the absence of any federal involvement, as in a privately-funded project on private land with no federal permit, only Section 10(a) of the FESA can empower the USFWS to authorize incidental take of a listed species provided a habitat conservation plan (HCP) is developed. To qualify for a formal Section 10(a) permit, strict conditions must be met including a lengthy procedure involving discussions with USFWS and local agencies, preparation of a HCP, and a detailed Section 10(a) permit application.

State

California Endangered Species Act

The California *Endangered Species Act* (CESA) declares that deserving plant or animal species will be given protection by the state because they are of ecological, educational, historic, recreational, aesthetic, economic, and scientific value to the people of the state. CESA established that it is state policy to conserve, protect, restore, and enhance endangered species and their habitats. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. Listed species are generally given greater attention during the land use planning process by local governments, public agencies, and landowners than are species that have not been listed.

CESA authorizes that "Private entities may take plant or wildlife species listed as endangered or threatened under the federal ESA and CESA, pursuant to a federal incidental take permit issued in accordance with Section 10 of the federal ESA, if the California Department of Fish and Game (CDFG) certifies that the incidental take statement or incidental take permit is consistent with CESA (Fish & Game Code Section 2080.1(a)).

CEQA—Treatment of Listed Plant and Animal Species

Both the federal and state Endangered Species Acts protect only those species formally listed as threatened or endangered (or rare in the case of the state list). Section 15380 of CEQA Guidelines,

however, independently defines "endangered" species of plants, fish or wildlife as those whose survival and reproduction in the wild are in immediate jeopardy and "rare" species as those who are in such low numbers that they could become endangered if their environment worsens. Therefore, a project will normally have a significant affect on the environment if it will substantially affect a rare or endangered species or the habitat of the species. An impact which "substantially affects" a rare or endangered species under CEQA is one which causes a significant loss or harm of a magnitude which, based on current scientific data and knowledge, would cause the species to either (1) drop below self-perpetuating levels on a statewide or regional basis or (2) have its status increased from threatened to endangered.

State of California—Sections 1600 of the Fish and Game Code

CDFG has direct jurisdiction under Fish and Game Code Section 1600 in regard to any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any lake or stream. For activities that could affect a lake or stream bed, it is necessary to enter into a Streambed Alteration Agreement with CDFG.

State of California—Sections 3503, 3503.5, 3800 of the Fish and Game Code

These sections of the Fish and Game Code prohibit the "take, possession, or destruction of birds, their nests or eggs." Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take."

Porter-Cologne Water Quality Control Act

The *Porter-Cologne Water Quality Control Act* charges the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB) statewide with protecting water quality throughout California. Typically, the SWRCB and RWQCB act in concert with the USACE under Section 401 of the CWA in relation to permitting fill of federally jurisdictional waters. As discussed above, the Supreme Court Case recently acted to limit the regulatory jurisdiction of the USACE under Section 404 of the CWA (USSC 2001). This action did not limit the state's regulatory jurisdiction over Waters of the State (Guzy and Anderson 2001). Waters of the State are defined in Section 13050(e) of the *Porter-Cologne Water Quality Control Act* as "…any surface water or groundwater, including saline waters, within the boundaries of the state." Currently, an applicant would delineated the wetlands on their property utilizing methodology presented in the *1987 Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987) and the delineation would be verified by the USACE. In cases where an area meets the criteria to be considered a wetland, but the USACE does not have jurisdiction, the applicant is referred to the appropriate RWQCB. In these cases, the project must receive a permit for Waste Discharge Requirements or a Waiver of Waste Discharge Requirements from the RWQCB. Projects that affect Waters of State are required by the RWQCB to incorporate mitigation. Mitigation ratios are determined on a project specific basis during the permitting process and are based on the quality of the wetlands impacted by the project.

Regional

Natural Community Conservation Plan and Habitat Conservation Plan, County of Orange, Central and Coastal Subregion

The preparation of a comprehensive natural resources management conservation plan for Central and Coastal Orange County was completed in 1996. The Central and Coastal Orange County Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) and the associated Implementation Agreement covers thirteen cities, including Lake Forest. The purpose of the NCCP/HCP is to create a multi-species multi-habitat reserve system and implementation of a long-term management program that will protect primarily coastal sage scrub and the species that utilize this habitat. At the same time that it protects this habitat and species, the NCCP/HCP is also intended to allow for economical use of the lands that meet the people's needs.

The NCCP/HCP is intended to focus on multiple species and habitats and address conservation of these species on a regional context. The three main target species are the coastal California gnatcatcher, cactus wren, and orange-throated whiptail. There are twenty-six other species that are also identified and afforded management protection under the NCCP/HCP. An additional ten species of plants and animals that are either federally listed or treated as if they were listed according to FESA Section 10(a) are addressed within the NCCP/HCP.

None of the sites of the proposed Project Area are within the reserve system of the NCCP/HCP, and therefore, the development restrictions of the NCCP/HCP do not apply to the city owned land, nor that of the individual landowners. However, since the Project Area lies within the area of the NCCP/HCP, non participating landowners are provided with different mitigation options than those provided for participating landowners. Nonparticipating landowners may satisfy the requirements of the FESA and CESA in relation to the species covered under the NCCP/HCP one of three ways:

- On-site avoidance of take
- Satisfaction of the applicable FESA and CESA regulations through the regular permitting and consultation process (outside the NCCP/HCP)
- Payment of a mitigation fee to the nonprofit management organization established by the NCCP/HCP

The reserve system covers over 37,000 acres of coastal sage scrub, grasslands, riparian, chaparral, woodland, and forest habitats. This system extends into the City of Lake Forest and includes the Whiting Ranch Wilderness Park, the designated open space to the southwest of Site 2 and the open space along the western boundary of Site 2. Activities within the reserve system are bounded by the allowable practices within the NCCP/HCP. However, because none of the Sites under consideration for this project are within the reserve system, they fall outside the regulatory guidance of the NCCP/HCP. The Sites under consideration would be considered nonparticipating landowners and could utilize any of the three methods presented above to satisfy the requirements of the FESA and CESA.

Local

General Plan

The City of Lake Forest General Plan contains goals, policies, and plans that are intended to guide land use and development decisions. The General Plan consists of a Land Use Policy Map and the required six elements, or chapters, to fulfill the state requirements for a General Plan. The chapter of particular interest to biological resources is the Recreation and Resources Element. The specific goals and policies that relate to biological resources are listed below (from Lake Forest General Plan, Recreation and Resources Element, June 21, 1994 as amended):

Goal 2.0 Preservation and enhancement of important natural resources and features

Policy 2.1 Conserve and protect important natural plant and animal communities, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, revegetation and soil management practices, and other resource management techniques (Amendment 00-01, May 2, 2000).

Policy 2.4 Conserve and protect important topographical features, watershed areas, and soils through appropriate site planning and grading techniques, revegetation and soil management practices, and other resource management techniques.

Municipal Code

Regulations pertaining to allowable uses of buffer zones (Section 9.12.010) and open spaces (Section 9.16.010) are contained within the City's Municipal Code. Essentially, the City adopts portions of Orange County's Municipal Code that relates to these issues.

3.4.8 Thresholds of Significance

As the City's 2001 CEQA Significance Thresholds do not cover biological resource issues, the following thresholds of significance are based on Appendix G of the 2005 CEQA Guidelines. For purposes of this EIR, the Proposed Project would result in significant impacts related to biological resources if they would:

- Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the *Clean Water Act* (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Impacts are generally split into potentially significant or significant for those areas where the Proposed Project could have a substantial effect on a species or its habitat. Less-than-significant impacts are those in which an impact could occur, but it is not expected to be substantial. Mitigation is specified for potentially significant and significant impacts. Impacts in any of the above categories would be considered unavoidable significant effects of the project if they could not be (a) eliminated, (b) avoided or minimized by redesign or relocation of some components of the project, (c) reduced to a less-than-significant level, or (d) compensated for by replacement of equal habitat extent and value.

3.4.9 Impacts

CEQA requires that the Proposed Project's potential environmental impacts be compared to on-the-ground conditions in the Project Area at the time the Notice of Preparation is issued or at the time the analysis of such impacts is commenced. Such on-the-ground conditions are considered, and often referred to as, the environmental or CEQA "baseline." Thus, the following section analyzes the Proposed Project's potential environmental impacts on baseline conditions. However, it should be noted that the land under consideration for the Proposed Project, while currently undeveloped, would not necessarily remain undeveloped. Most sites within the Project Area are subject to existing development agreements or entitlements and, in the absence of the Proposed Project, would in the future likely be developed with approximately 9.8 million square feet of industrial and commercial space under the existing General Plan. Given this, the analysis of alternatives to the Proposed Project in Chapter 4 of this EIR, under the "No Project/Reasonably Foreseeable Development" alternative, analyzes the potential environmental impacts associated with buildout of the existing General Plan. That analysis includes a comparison of the impacts of buildout of the existing General Plan with the potential environmental impacts of the Proposed Project.

The following analysis presents the potential for implementation of the Proposed Project to impact existing biological resources. In most cases, site-specific design information relating to what may someday be built on a given site is not available.

Impact 3.4-1 **The Proposed Project could have a substantial adverse effect, either directly or through habitat modification, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.**

Significance Level: Less than significant with mitigation

Site 1

According to the Proposed Project, this site would be converted into residential development with an open space corridor along the northwest side of the site. Currently this site is used for agricultural, industrial, and some single-family residences. This 387-acre parcel supports several native scrub vegetation types that in turn provide habitat for coastal California gnatcatcher, Southern California rufous-crowned sparrow, and coastal cactus wren. Site surveys of this parcel in 2005 resulted in observations of three pairs of the federally threatened gnatcatcher. (Glenn Lukos 2005) Prior site surveys observed the presence of the rufous-crowned sparrow (PCR 1999). The CNDDB reports the presence of coastal cactus wren (CNDDB 2005). According to PCR in 1999, the site supports over 14 acres of high quality coastal sage scrub; however, a portion of the site has been graded based on existing entitlements for commercial development, removing approximately 5-6 acres of coastal sage scrub (CSS). A mitigation fee was paid to the County under the NCCP for the removal of the 5-6 acres of coastal sage scrub. Approximately 8-9 acres of coastal sage scrub habitat remain on Site 1. Coastal sage scrub provides habitat for the three previously mentioned species and other species that could occur here, but have not been observed. The conversion of the site into a residential development would substantially reduce the habitat available for these species and could cause the direct loss of nests through vegetation removal. Although site-specific plans are not available, the entire 387 acres is mapped as being suitable for conversion to residential type land uses of one sort or another. The loss of high quality coastal sage scrub, threatened coastal California gnatcatchers, rufous-crowned sparrows, and cactus wren would be considered a substantial adverse effect without mitigation.

As discussed a in Section 3.4.7 (Planning and Regulatory Framework), the Central and Coastal Orange County NCCP/HCP provides measures to reduce impacts to CSS and the plans "Covered Species" through implementation of avoidance measures and payment of mitigation fees on a per acre of vegetation removed basis. The mitigation fee for CSS occupied by coastal California gnatcatchers is $50,000 per acre. This money would be paid to the Nature Reserve of Orange County prior to the removal of any CSS. In addition, as the project is within the NCCP area, there is a list of construction minimization measures that must also be followed to be in compliance within the NCCP. The construction minimization measures have been designed to reduce potential construction impacts to sensitive species within the CSS habitat to less than significant levels. The construction measures are as follows:

1. To the maximum extent practicable, no grading of CSS habitat that is occupied by nesting gnatcatchers will occur during the breeding season (February 15 through July 15). It is expressly understood that this provision and the remaining provisions of these "construction-related minimization measures," are subject to public health and safety considerations. These considerations include unexpected slope stabilization, erosion control measures and emergency

facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide USFWS/CDFG with the maximum practicable notice (or such notice as is specified in the NCCP/HCP) to allow for capture of gnatcatchers, cactus wrens and any other CSS Identified Species that are not otherwise flushed and will carry out the following measures only to the extent as practicable in the context of the public health and safety considerations.

2. Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of CSS habitat to be avoided under the provisions of the NCCP/HCP, shall be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of CSS, a survey will be conducted to locate gnatcatchers and cactus wrens within 100 feet of the outer extent of projected soil disturbance activities and the locations of any such species shall be clearly marked and identified on the construction/grading plans.
3. A monitoring biologist, acceptable to USFWS/CDFG will be on site during any clearing of CSS. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably fourteen (14) calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist will flush identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they will be captured in mist nets, if feasible, and relocated to areas of the site to be protected or to the NCCP/HCP Reserve System. It will be the responsibility of the monitoring biologist to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.
4. Following the completion of initial grading/earth movement activities, all areas of CSS habitat to be avoided by construction equipment and personnel will be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within such marked areas.
5. In areas bordering the NCCP reserve system or Special Linkage/Special Management areas containing significant CSS identified in the NCCP/HCP for protection, vehicle transportation routes between cut-and-fill locations will be restricted to a minimum number during construction consistent with project construction requirements. Waste dirt or rubble will not be deposited on adjacent CSS identified in the NCCP/HCP for protection. Preconstruction meetings involving the monitoring biologist, construction supervisors and equipment operators will be conducted and documented to ensure maximum practicable adherence to these measures.
6. CSS identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.

Payment of the NCCP fee and implementation of the construction avoidance measures would reduce potential impacts to sensitive species to less than significant levels by ensuring compliance with approved conservation plans, preserving their habitat, and avoiding construction impacts for species that are known to occur on site. In addition implementation of MM 3.4-1 through 3.4-3 would require sensitive species surveys at appropriate times and locations to ensure an up to date and accurate assessment of the biological resources of the site. They would also ensure consistency with the Conservation Guidelines for

coastal sage scrub and compliance with the provisions of the NCCP/HCP of the NCCP/HCP for sensitive species. As a result, this impact would be considered less than significant

Site 2

Site 2 supports a variety of sensitive species. Those reported by the CNDDB include California horned lark, orange-throated whiptail, coastal California gnatcatcher, Southern California rufous-crowned sparrow, and coastal cactus wren. The 2005 focused California Gnatcatcher Survey (Dudek) identified the presence of 58 species of wildlife including the California gnatcatcher, Cooper's hawk, and California horned lark. These species can be found on this site because the site supports relatively extensive stands of coastal sage scrub that are contiguous with surrounding high quality habitat, especially in the Whiting Ranch Wilderness Park. Western spadefoot toads have been reported from nearby and could be found in the drainages of this site. The site has been reported in the CNDDB to also support thread-leaved brodiaea, a federally threatened and state endangered plant species. Other sensitive plants may be associated with the coastal sage scrub include thread-leaved brodiaea, intermediate mariposa lily, and Santa Monica Mountains dudleya. The conversation of this existing undeveloped parcel into a site that is mostly residential and commercial areas would substantially reduce the habitat available for these species. Additionally, vegetation removal could result in the direct removal of individual sensitive plant and animal species, including the federally threatened coastal California gnatcatcher. This loss of habitat required by sensitive species and the potential removal of the species themselves would be considered a substantial adverse effect and a potentially significant impact of the Proposed Project. Implementation of MM 3.4-1 through MM 3.4-3, which require sensitive species surveys as appropriate and consistency with the Conservation Guidelines for coastal sage scrub and compliance with the provisions of the NCCP/HCP for sensitive species, this impact would be reduced to a less-than-significant level.

Site 3

Site 3 is a mix of habitats, most of which are agricultural lands, ruderal grasslands, developed areas, and ornamental plantings. There are some remnant coastal sage scrub habitats in the northern and southern areas that are of relatively high quality. Coastal gnatcatcher has been observed on the Site. The Proposed Project will convert Site 3 to medium-density residential with a new park/open space area in the southern end of the site. Specific information about what the designation of an open space/park would require in the way of management and improvements is not available. However, it is assumed that whatever site-specific changes are made, they will be done in a manner that preserves sensitive resources. Regardless, some available habitat will be removed as part of the Proposed Project. Implementation of MM 3.4-1 through 3.4-3, which require sensitive species surveys as appropriate and consistency with the Conservation Guidelines for coastal sage scrub and compliance with the provisions of the NCCP/HCP for sensitive species, would reduce this impact to a level that is less than significant.

Site 4

Site 4 is reported by the CNDDB as supporting coastal cactus wren and Southern California rufous-crowned sparrow. The site is almost entirely devoted to the production of gravel with a nursery occupying one corner of the site. There is one very small patch of very low quality coastal sage scrub. Based on the site visit conducted for this project, the chance of these species still occurring onsite is

extremely low. The Proposed Project proposes to convert this site from gravel mining operations to various mixed uses. It is expected that this will require the removal of the remnant coastal sage scrub habitat. Because this is low quality habitat and no sensitive species are known to currently occupy the site, this is not considered a substantial reduction in habitat needed by a sensitive species. Therefore the impact to sensitive species from the Proposed Project on Site 4 is considered less than significant.

Site 5

Site 5 is reported by the CNDDB as supporting coastal cactus wren and Southern California rufous-crowned sparrow and coastal California gnatcatchers (in fuel modification zones). Site 5 is composed mostly of pasture lands, including: annual and ruderal grassland, remnant orchard, and ornamental plantings. According to LSA (2005), the Site and adjacent hillside contains approximately 2.66 acres of CSS that would be impacted either directly or though fuel modification requirements. Gnatcatchers were observed within this habitat during surveys conducted by LSA in May 2005 (Appendix K). Loss of these species or alterations of their habitat would be considered a substantial adverse effect if not mitigated. As detailed in the impact discussion for Site 1, payment of the NCCP fee and implementation of the construction avoidance measures would reduce potential impacts to sensitive species to less than significant levels by ensuring compliance with approved conservation plans, preserving their habitat, and avoiding construction impacts for species that are known to occur on site. In addition implementation of MM 3.4-1 through MM 3.4-3 would require sensitive species surveys at appropriate times and locations to ensure an up to date and accurate assessment of the biological resources of the site. They would also ensure consistency with the Conservation Guidelines for coastal sage scrub and compliance with the provisions of the NCCP/HCP of the NCCP/HCP for sensitive species. As a result, this impact would be considered less than significant at this site

Site 6

Implementation of the Proposed Project would zone Site 6 as medium -density residential and allow for construction of houses on a site that contains moderate- to high-quality coastal sage scrub. This habitat is suitable for species such as western spadefoot toad, orange-throated whiptail, San Diego horned lizard, coast patch-nosed snake, Cooper's hawk, Southern California roufus-crowned sparrow, burrowing owl, ferruginous hawk, Allen's hummingbird, and San Diego desert woodrat; these are all considered sensitive species. In addition, sensitive species such as the cactus wren, Cooper's hawk, Nuttall's woodpecker, and coastal California gnatcatcher have been observed within the Project Area (LSA 2005). Loss of these species or alteration of their habitat would be considered a substantial adverse effect without mitigation. As detailed in the impact discussion for Site 1, payment of the NCCP fee and implementation of the construction avoidance measures would reduce potential impacts to sensitive species to less than significant levels by ensuring compliance with approved conservation plans, preserving their habitat, and avoiding construction impacts for species that are known to occur on site. In addition implementation of MM 3.4-1 through MM 3.4-3 would require sensitive species surveys at appropriate times and locations to ensure an up to date and accurate assessment of the biological resources of the site. They would also ensure consistency with the Conservation Guidelines for coastal sage scrub and compliance with the provisions of the NCCP/HCP of the NCCP/HCP for sensitive species. As a result, this impact would be considered less than significant at this site.

Site 7

Creation of Public Facilities on 45 acres of Site 7 would have no impact on sensitive species. This site is entirely a commercial nursery and supports no sensitive species or habitat for sensitive species.

MM 3.4-1 through MM 3.4-3 shall be implemented to mitigate for the impacts to sensitive species (Section 3.4.10). Successful implementation of these mitigation measures is expected to reduce the level of project-related impacts to sensitive species on Sites 1, 2, 3, 5, and 6 to a less-than-significant level.

Impact 3.4-2 **The Proposed Project could have a substantial adverse effect on a riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.**

Significance Level: **Less than significant with mitigation**

Site 1

This 387-acre parcel supports several native habitats including coastal sage scrub, chaparral, needlegrass grassland, and southern willow riparian scrub. These are all considered sensitive habitats by CDFG and USFWS. Site-specific designs for the proposed residential uses are not available. However, the land use policy map indicates that a small strip of land along the northwestern boundary and the extreme northern corner will be preserved as open space. It is in this area about 4 acres of coastal sage scrub and a small patch of southern willow scrub habitat is found. According to the vegetation map (PCR 1999), the remaining 10 acres of scrub and the needlegrass grassland would likely be removed as part of development allowed under the Proposed Project. The removal of these areas of sensitive habitat would be considered a potentially significant impact without adequate mitigation. In particular, the removal of coastal sage scrub habitat would be considered a potentially significant impact as this habitat is of moderate to high quality and is known to support a federally threatened avian species.

Payment of the NCCP/HCP fee for loss of coastal sage scrub habitat and implementation of MM 3.4-2 and the NCCP/HCP construction avoidance measures would reduce potential impacts to this sensitive habitat to less than significant levels. Implementation of MM 3.4-1, 3.4-3, and 3.4-4 would address potential impacts to sensitive habitats not covered by the NCCP/HCP. These mitigation measures would require surveys to document sensitive habitat and would require replacement habitat for areas of permanent loss. Thus, implementation of these mitigation measures and compliance with the terms of the NCCP/HCP would reduce potential impacts to sensitive habitat less than-significant level.

With implementation of MM 3.4-1 through 3.4-3, which require sensitive species surveys as appropriate and consistency with the Conservation Guidelines for coastal sage scrub and compliance with the provisions of the NCCP/HCP for sensitive species, this impact would be reduced to a less-than-significant level.

Site 2

Site 2 is almost 250 acres in size and supports some very high quality coastal sage scrub habitat, especially adjacent to the Whiting Ranch Wilderness Park. Also found on this site are areas of needlegrass grassland and oak sycamore riparian woodland. All three of these habitats would be considered sensitive natural communities. The bulk of the site has been graded and terraced. The Proposed Project will preserve most of the highest quality sage scrub and the oak sycamore riparian woodland as open space. However, residential and commercial development would also require the removal of some of the high quality coastal sage scrub and needlegrass grassland habitats. The removal of these habitats would be considered a potentially significant impact without adequate mitigation.

Payment of the NCCP/HCP fee for loss of coastal sage scrub habitat and implementation MM 3.4-2 and the NCCP/HCP construction avoidance measures would reduce potential impacts to this sensitive habitat to less than significant levels. Implementation of MM 3.4-1, 3.4-3, and 3.4-4 would address potential impacts to sensitive habitats not covered by the NCCP/HCP. These mitigation measures would require surveys to document sensitive habitat and would require replacement habitat for areas of permanent loss. Thus, implementation of these mitigation measures and compliance with the terms of the NCCP/HCP would reduce potential impacts to sensitive habitat less than-significant level.

Site 3

Site 3 supports areas of moderate quality coastal sage scrub in the hilly terrain that has not been modified for other uses. Most of the site will be converted to residential uses under the Proposed Project. The Proposed Project does call for the creation of park/open space in the southern portion of the parcel. This will help preserve some of the coastal sage scrub habitat that exists on site. However, the remainder of the site would likely be graded or leveled to allow for residential development. This could include the removal and coastal sage scrub habitat and would be considered a potentially significant impact without adequate mitigation.

Payment of the NCCP/HCP fee for loss of coastal sage scrub habitat and implementation MM 3.4-2 and the NCCP/HCP construction avoidance measures would reduce potential impacts to this sensitive habitat to less than significant levels. Implementation of MM 3.4-1, 3.4-3, and 3.4-4 would address potential impacts to sensitive habitats not covered by the NCCP/HCP. These mitigation measures would require surveys to document sensitive habitat and would require replacement habitat for areas of permanent loss. Thus, implementation of these mitigation measures and compliance with the terms of the NCCP/HCP would reduce potential impacts to sensitive habitat less than-significant level.

Site 4 and 5

Site 4 has been heavily altered by mining activities and supports a small area of very low-quality coastal sage scrub habitat. According to LSA (2005), Site 5 supports approximately 3 acres of coastal sage scrub habitat. The removal of the poor-quality coastal sage scrub habitat from Site 4 for the creation of commercial facilities would be considered a less-than-significant impact because of the poor habitat quality. The removal of coastal sage scrub habitat located from Site 5 for the creation of low-density

residential uses would be considered a potentially significant impact as this habitat is of moderate to high quality and is known to support federally threatened species.

Payment of the NCCP/HCP fee for loss of coastal sage scrub habitat and implementation MM 3.4-2 and the NCCP/HCP construction avoidance measures would reduce potential impacts to this sensitive habitat to less than significant levels. Implementation of MM 3.4-1, MM 3.4-3, and MM 3.4-4 would address potential impacts to sensitive habitats not covered by the NCCP/HCP. These mitigation measures would require surveys to document sensitive habitat and would require replacement habitat for areas of permanent loss. Thus, implementation of these mitigation measures and compliance with the terms of the NCCP/HCP would reduce potential impacts to sensitive habitat to less than-significant level.

Site 6

Site supports moderate- to high-quality coastal sage scrub habitat. Under the Proposed Project this site would be zoned for residential development. The construction of residences and related infrastructure would require the removal of the coastal sage scrub habitat. The removal of coastal sage scrub habitat from Site 6 for the creation of low-density residential uses would be considered a potentially significant impact as this habitat is of moderate to high quality and is known to support federally threatened species.

Payment of the NCCP/HCP fee for loss of coastal sage scrub habitat and implementation MM 3.4-2 and the NCCP/HCP construction avoidance measures would reduce potential impacts to this sensitive habitat to less than significant levels. Implementation of MM 3.4-1, MM 3.4-3, and MM 3.4-4 would address potential impacts to sensitive habitats not covered by the NCCP/HCP. These mitigation measures would require surveys to document sensitive habitat and would require replacement habitat for areas of permanent loss. Thus, implementation of these mitigation measures and compliance with the terms of the NCCP/HCP would reduce potential impacts to sensitive habitat less than-significant level.

Site 7

Creation of Public Facilities on 45 acres of Site 7 would have no impact on sensitive habitats. This site is entirely a commercial nursery and supports no sensitive habitats.

Mitigation measures MM 3.4-1 through MM 3.4-4 shall be implemented as applicable to mitigate for the impacts to sensitive habitats (Section 3.4.10). Successful implementation of these mitigation measures is expected to reduce the level of project-related impacts to sensitive habitats to a less-than-significant level.

Impact 3.4-3 **The Proposed Project could have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.**

Significance Level: **Less than significant with mitigation**

Site 1

Based on the site survey, Site 1 contains five drainage courses and one wetland seep. According to the Proposed Project, this site would be converted to residential, commercial and public facility uses. A formal jurisdictional determination was not obtained from the USACE for this site, but some of these drainages may be considered waters of the U.S. and subject to the USACE regulatory process. Development of Site 1 could result in fill of wetland areas and/or disruption of wetland water supply when houses and other facilities are constructed. This would be considered a potentially significant impact. MM 3.4-4 shall be implemented as applicable to mitigate for the impacts to wetlands and other aquatic habitats (Section 3.4.10). Successful implementation of this mitigation measures is expected to reduce the level of project-related impacts to wetlands to a less-than-significant level.

Site 2

Site 2 contains at least nine ephemeral drainages that all seem to be tributaries to and adjacent unnamed creek or to Aliso Creek. Because they are hydrologically connected, these drainages would likely be considered waters of the U.S. Implementation of the Proposed Project would result in alteration of some of these waters or disruption of the local hydrology. Fill of wetlands would be considered a potentially significant impact. Mitigation measure MM 3.4-4 shall be implemented as applicable to mitigate for the impacts to wetlands and other aquatic habitats (Section 3.4.10). Successful implementation of this mitigation measure is expected to reduce the level of project-related impacts to wetlands to a less-than-significant level.

Site 3

Serrano Creek flows through the eastern side of this parcel and the parcel also contains one ephemeral channel that is a tributary to this creek. The Proposed Project would create a park/open space along the Serrano Creek channel and around one of the tributaries to Serrano Creek in the southern corner of the parcel. This would avoid direct impacts to this water of the U.S. However, the conversion of the rest of the site to residences could result in the fill of other ephemeral drainages within the site. Also, urbanization could disrupt the hydrologic connection between the ephemeral drainage and the creek. This would reduce the water supply to both the drainage and the creek. Both the filling of the drainage and the hydrologic disruption would be considered a potentially significant impact. MM 3.4-4 shall be implemented as applicable to mitigate for the impacts to wetlands and other aquatic habitats (Section 3.4.10). Successful implementation of this mitigation measure is expected to reduce the level of project-related impacts to wetlands to a less-than-significant level.

Sites 4 and 5

These sites do not contain or support any wetland resources. Therefore, the Proposed Project will not impact wetland resources when it is applied to these parcels.

Site 6

This site is bisected by an unnamed drainage. There are a couple of other ephemeral drainages that appear to be tributaries to this drainage. Associated with the main drainage is a seasonal wetland feature that may also be considered a wetland under Section 404 of the CWA. Under the Proposed Project, Site 6 will be converted to residences. Site specific information about the potential development at this location are unknown, however, it is expected that grading and construction of houses on this site would require some fill, channel modification, or landscape changes that alter the hydrologic connections and water supply. Because of this, implementation of the Proposed Project could have a substantial adverse effect on wetlands. This would be considered a potentially significant impact. MM 3.4-4 shall be implemented as applicable to mitigate for the impacts to wetlands and other aquatic habitats (Section 3.4.10). Successful implementation of this mitigation measure is expected to reduce the level of project-related impacts to wetlands to a less-than-significant level.

Site 7

Creation of Public Facilities on 45 acres of Site 7 would have no impact on wetland habitats as defined in the CWA. This site is entirely a commercial nursery and does not support any wetland features.

Impact 3.4-4 **The Proposed Project could interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.**

Significance Level: **Less than significant with mitigation**

Sites 1 and 3

These sites both have one or more water courses associated with them and are adjacent to other greenbelt or open space areas. At Site 1, the Borrego Wash runs along the western side of the property. Under the Proposed Project the Borrego Wash will not be modified and will retain its function as a wildlife movement corridor. Similarly, where Serrano Creek flows along the eastern side of Sites 3, the Proposed Project proposes to designate these areas as park/open space thereby preserving the connections between habitats. Because the specific designs of these parks/open spaces are not available, the magnitude of modifications caused in their conversion is unclear. However, the preservation of a green belt that connects habitat will remain following implementation of the Proposed Project. Because of this, these new parks and open spaces are presumed to retain their function as movement corridors. It should further be considered that nighttime illumination is known to adversely impact animals in natural areas. It can disturb or disrupt resting foraging, nesting, and breeding behavior and cycles. Development of the Project Area would increase the number of nighttime-site light sources throughout the Project Area. If unchecked, this light, where proximal to natural areas, could adversely impact the wildlife

through out the Project Area would be a potentially significant impact. Implementation of MM 3.4-5 would reduce the potential effects of nighttime illumination by focusing sources of light away from greenbelts and riparian corridors to preserve the nighttime integrity of these movement corridors. Therefore, the Proposed Project will not substantially interfere with wildlife movement at Sites 1 and 3. This is considered a less-than-significant impact.

Site 2

Site 2 is situated between a housing development to the north, and open space and the Whiting Ranch Wilderness Park to the southwest. Aliso Creek flows along the southwestern side of the site and an unnamed tributary to Aliso Creek flows through the middle of the site. Site 2 is currently undeveloped but the Proposed Project would allow for about 161 of the 243 acre site to be converted into residential and commercial facilities, with 81.9 acres preserved as open space. Because Site 2 is currently undeveloped, it provides a large amount of open space that connects other areas, especially the open space to the southwest of Site 2 and outside the City boundary to the Whiting Ranch Wilderness Park. The northwestern portion of the site adjacent to the wilderness area is to be preserved under the Proposed Project in park/open space. The Aliso Creek corridor will also be preserved in the same land use designation. The Proposed Project calls for the creation of a park/open space that parallels Glenn Ranch Road. This greenbelt will connect the existing open space and the Whiting Ranch Wilderness Park to the regional park/open space area on the east side of the proposed residential areas. While not an optimum habitat connection, this greenbelt will allow for movement of animals between areas. Because of this, the implementation of the Proposed Project at Site 2 will not substantially interfere with the movement of wildlife or impede the use of native wildlife nursery sites. Therefore, the impact of the Proposed Project on wildlife movement is considered less than significant.

Site 4

Site 4 does not support substantial amounts of habitat and has been heavily altered. This site does not provide movement corridors for resident or migratory wildlife species and is not used as a wildlife nursery site. Because of this implementation of the Proposed Project will have no impact on wildlife movement at this site.

Site 5

Site 5 is located between vacant parcels to the north and west, which are zoned as open space and an open space buffer respectively. Under the Proposed Project, Site 5 will be converted to low-density residential uses, from its current state as undeveloped land. Development of the Proposed Project would be considered a barrier to movement between these two areas. This is considered a substantial interference and would be considered a potentially significant impact. MM 3.4-5 shall be implemented as applicable to mitigate for the impacts related to habitat fragmentation, wildlife movement (Section 3.4.10) Successful implementation of this mitigation measure is expected to reduce the level of project-related impacts to wildlife movement to a less-than-significant level.

Site 6

This site is bordered on the south by residential development. The east side of Site 6 is a common border with Site 3, which is currently vacant, but scheduled for residential development under the Proposed Project. There is designated open space to the north of Site 3. The Proposed Project calls for the development of low density residential on this parcel. A greenbelt will bisect the residential areas and connect an existing development to the south with open space to the north. Site 6 is located immediately adjacent to existing development and will not completely obstruct existing open space connections, even at full development. Because of this, Site 6 would restrict, but not completely block, the movement of local or migratory wildlife. While development of this site will interfere with wildlife movement, it will not substantially reduce local movement options, especially once Site 3 is built out, which would completely eliminate an open space that could be the origin or destination of wildlife movement. Therefore, the Proposed Project is considered to have a less-than-significant impact on wildlife movement at this site.

Site 7

Serrano Creek flows through existing Open Space along the eastern side of Site 7. Creation of Public Facilities on 45 acres of Site 7 would not alter this greenbelt nor effect the way animals may be currently using this habitat. All of Site 7 itself is a commercial nursery and does not support habitat suitable for wildlife movement. Development of public facilities on this site would not further fragment habitat or impact use of the existing stream corridor. For this reason, the creation of public facilities on Site 7 is considered to have no impact on wildlife movement.

Impact 3.4-5 **The Proposed Project could conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.**

Significance Level: Less than significant with mitigation

The Lake Forest General Plan establishes guidelines intended to reduce impacts and protect sensitive biological resources. The most pertinent policy is Policy 2.1, which requires that the City conserve and protect natural plant and animal communities including those supporting rare and endangered species, riparian and wetlands habitat, and movement corridors. The city of Lake Forest participates in the Central/Coastal NCCP, which is the main measure of compliance with Policy 2.1; therefore, if the resource impacted is regulated by the NCCP, there would be no impact as the NCCP is a region wide mitigation plan for those resources. However, if the resource identified is not part of the NCCP, yet would still be impacted the following mitigation measures would apply.

Most of these resource specific impacts are discussed in previous impact analysis. For example, Impact 3.4-1 deals with threatened and endangered species, Impact 3.4-2 deals with habitats, Impact 3.4-3 with wetlands, and Impact 3.4-4 with movement corridors. For all of these resource specific impacts, the Proposed Project was found to have a potentially significant impact (at one or more sites). Therefore, implementation of the Proposed Project would conflict with the General Plan Policy 2.1 as it relates to

non NCCP covered species and resources, requiring the conservation and protection of sensitive biological resources. This is considered a potentially significant impact.

Mitigation measure MM 3.4-1 through MM 3.4-5 shall be implemented as applicable, thereby allowing the City to conserve and protect natural plant and animal communities as required in General Plan Policy 2.1 (Section 3.4.10). Successful implementation of these mitigation measures is expected to allow compliance with the General Plan policies and the Central/Coastal NCCP and reduce the level of project-related impacts to a less-than-significant level.

Impact 3.4-6 **The Proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.**

Significance Level: Less than significant

Although the City is contained within the planning area for the Central and Coastal Orange County NCCP/HCP, the sites are outside the Reserve System implemented by the NCCP/HCP in 1996. Because they are not contained within the Reserve System, planned uses for these sites do not have to conform to the NCCP/HCP. Technically, Site 2 is outside of the Reserve System as well; however, the site is surrounded on three sides by designated reserve. This includes the Whiting Ranch Wilderness Park, the designated open space to the west, and the regional park/open space to the east. The conversion of Site 2 to urban uses from its existing open nature would reduce habitat linkages between elements of the Reserve System; however the proposed plan for Site 2 in the Proposed Project does include elements to maintain habitat connections between these different reserves. Once again, though, because Site 2 is outside the reserve system, this conversion is only considered a less-than-significant impact in relation to the provisions of the NCCP/HCP and no mitigation is required.

3.4.10 Mitigation Measures

The following mitigation measures are designed to eliminate or reduce to a level of less-than-significant those significant impacts to biological resources caused by the Proposed Project and which are capable of being feasibly eliminated or reduced to a level of less-than-significant.

MM 3.4-1 ***Sensitive Species Surveys****. Where future development projects have the potential to reduce or eliminate habitat for native plant and wildlife species or sensitive habitats, including but not limited to those listed in Appendix E (Sensitive Species Potentially Occurring within the Project Area), the project applicant shall conduct biological field surveys of the Project Area to characterize the extent and quality of habitat that would be impacted by project development. Surveys shall be conducted in accordance with current CDFG or USFWS survey protocols for the target species by qualified biologists or botanists. If no sensitive species are observed and the regulatory agencies agree with those findings then no further mitigation will be required for the species. Similarly, if no sensitive habitats are observed and the regulatory agencies agree with those findings then no further mitigation will be required.*

If sensitive species or habitats are documented on a specific site, and the species or habitat is covered by the NCCP/HCP the applicant shall conform and comply with the applicable

requirements of the NCCP/HCP and proceed with MM 3.4-2. If the species or habitat is not covered in the NCCP/HCP, then refer to MM 3.4-3. For impacts to wetlands and other aquatic habitats, refer to MM 3.4-4.

MM 3.4-2 ***Loss of Coastal Sage Scrub Habitat and Plant and Animal Species Protected by the NCCP/HCP****. Prior to recordation of a subdivision map or issuance of a grading permit, whichever comes first, the Applicant shall retain a qualified, permitted biologist to confirm the presence and quantity of coastal sage scrub habitat located on the project site. If coastal sage scrub habitat is found to be located on the project site, the Applicant shall submit proof to the Director of Development Services that in-lieu fees have been paid to the County of Orange Central/Coastal Natural Communities Conservation Plan (NCCP) Reserve. Currently, these fees are assessed at $50,000 per acre of coastal sage scrub habitat lost.*

The Applicant shall also demonstrate to the satisfaction of the Director of Development Service compliance with the following NCCP construction impact avoidance measures or such measure in effect at the time of construction:

1. *To the maximum extent practicable, no grading of CSS habitat that is occupied by nesting gnatcatchers will occur during the breeding season (February 15 through July 15). It is expressly understood that this provision and the remaining provisions of these "construction-related minimization measures," are subject to public health and safety considerations. These considerations include unexpected slope stabilization, erosion control measures and emergency facility repairs. In the event of such public health and safety circumstances, landowners or public agencies/utilities will provide USFWS/CDFG with the maximum practicable notice (or such notice as is specified in the NCCP/HCP) to allow for capture of gnatcatchers, cactus wrens and any other CSS Identified Species that are not otherwise flushed and will carry out the following measures only to the extent as practicable in the context of the public health and safety considerations.*
2. *Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of CSS habitat to be avoided under the provisions of the NCCP/HCP, shall be identified with temporary fencing or other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of CSS, a survey will be conducted to locate gnatcatchers and cactus wrens within 100 feet of the outer extent of projected soil disturbance activities and the locations of any such species shall be clearly marked and identified on the construction/grading plans.*
3. *A monitoring biologist, acceptable to USFWS/CDFG will be on site during any clearing of CSS. The landowner or relevant public agency/utility will advise USFWS/CDFG at least seven (7) calendar days (and preferably fourteen (14) calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFG to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist will flush identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they will be captured in mist nets, if feasible, and relocated to areas of the site to be protected or to the NCCP/HCP Reserve System. It will be the responsibility of the monitoring biologist to assure that Identified bird species will not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.*

4. *Following the completion of initial grading/earth movement activities, all areas of CSS habitat to be avoided by construction equipment and personnel will be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking or storage of equipment or materials will be permitted within such marked areas.*
5. *In areas bordering the NCCP reserve system or Special Linkage/Special Management areas containing significant CSS identified in the NCCP/HCP for protection, vehicle transportation routes between cut-and-fill locations will be restricted to a minimum number during construction consistent with project construction requirements. Waste dirt or rubble will not be deposited on adjacent CSS identified in the NCCP/HCP for protection. Preconstruction meetings involving the monitoring biologist, construction supervisors and equipment operators will be conducted and documented to ensure maximum practicable adherence to these measures.*
6. *CSS identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.*

MM 3.4-3 ***Loss of Species or Habitats Not Covered by the NCCP/HCP.*** ~~*To mitigate for potential impacts to species or habitats not covered by the NCCP/HCP the following process shall be followed. The applicant has two options: (1) the applicant can obtain suitable replacement habitat and dedicate that property to the conservation and protection of sensitive species in perpetuity, or (2) the applicant can satisfy the requirements of the FESA and CESA under the consultation and permitting provisions of these regulations. In both of these options, the applicant shall first consult with the appropriate resource agency (CDFG and/or USFWS) and establish a mitigation plan for the specific species or habitat. Appropriate mitigation shall be identified in a mitigation plan prepared by the applicant. In this mitigation plan the applicant shall demonstrate capacity for funding appropriate mitigation and the mitigation must be legally assured. Habitat acquisition and set asides shall occur in areas with long-term conservation potential. Any mitigation proposed shall be approved by the City and appropriate resource agency prior to implementation.*~~ *To mitigate for potential impacts to species or habitat not covered by the NCCP/HCP, the following process shall be followed. Prior to approval of a tentative tract map in an area in which species or habitat not covered by the NCCP/HCP has been identified, the applicant shall prepare a biological assessment identifying the species and/or habitat that will be impacted by the proposed project. If the species is protected under either the Federal Endangered Species Act or the California Endangered Species Act, the applicant shall comply with the requirements of those statutes and obtain the necessary permits and authorizations under those Acts. Evidence that all necessary permits and approvals have been obtained shall be provided to the City prior to issuance of a grading permit for any impacted habitat area. If the species or habitat is not protected under either FESA or CESA, but is otherwise protected by either or both agencies through regulation under the Migratory Bird Treaty Act or other similar regulatory requirement, the applicant shall provide suitable replacement habitat at a minimum of 1:1, and shall prepare and submit a mitigation plan for City approval that demonstrates that the replacement habitat is protected in perpetuity and that appropriate long-term habitat management is provided. The mitigation plan must be prepared in consultation with and receive the approval of the agency regulating the species or habitat. The mitigation plan shall provide for among other things, biological monitoring during grading activities, and fencing of any habitat area that will not be disturbed by construction.*

MM 3.4-4 ***Mitigation for Impacts to Wetlands and Aquatic Habitats.***

MM 3.4-4-A Wetland Delineation. Prior to approval of Tentative Tract or Parcel Maps, a qualified wetland specialist shall conduct a wetland delineation in accordance with USACE methodology of all jurisdictional waters, seeps and stream channels within a site. If appropriate, this specialist shall also submit a request for a streambed alteration agreement from CDFG because CDFG also has jurisdiction over lakes and streams under Section 1600 of the Fish and Game Code. The wetland specialist shall prepare and submit a request for a jurisdictional determination to the USACE or CDFG as appropriate. Those waters not subject to the USACE jurisdiction could fall under the regulatory control of the local RWQCB. The wetland specialist shall submit the delineation documents along with the USACE jurisdictional determination to the RWQCB and request an assessment of jurisdiction. If the areas in question are subject to the USACE or RWQCB jurisdiction then the following two measures shall be implemented as required. If the areas in question are not jurisdictional, then there is no impact to wetlands and no further action is required.

MM 3.4-4-B Permitting. The wetland specialist shall prepare an application for fill of waters subject to the USACE jurisdiction as determined in MM 3.4-4-A. If appropriate, this specialist shall also submit a request for a streambed alteration agreement from CDFG because CDFG also has jurisdiction over lakes and streams under Section 1600 of the Fish and Game Code. For wetlands that are not subject to the USACE jurisdiction within the Project Area, but RWQCB has indicated that they will assert jurisdiction, an application for a Waste Discharge Requirement or Waiver of Waste Discharge Requirement shall be submitted to the local RWQCB. The regulatory requirements of contained within the Clean Water Act, the Waste Discharge Requirement, and the Streambed Alteration Agreement would mandate minimal intrusion into jurisdictional areas and compensatory mitigation for permanent impacts to these areas.

MM 3.4-4-C Restoration Plan. Once an approved wetland delineation is in place, the wetland specialist shall develop a comprehensive wetland restoration plan to offset impacts to these resources. Restoration could include on- or off-site construction of wetlands, contribution of funds to a local mitigation bank, or restoration of existing yet relatively poor quality wetlands. The USACE goal is to permit no net loss of functions and values of wetland habitat. The replacement ratio of wetland acreage required to achieve this goal is a minimum of 1(new):1(old).

MM 3.4-5 ***Mitigation for Fragmentation of Habitat and Wildlife Movement Corridors.*** *In order to minimize the fragmentation of habitat and wildlife movement corridors the City shall require the applicant to include, to the extent feasible, specific design features to maintain connectivity between remaining open spaces. These features include greenbelts and other wildlife movement corridors through the proposed developments, creek setbacks and wildlife friendly stream crossings (bridges instead of culverts), and installation of wildlife-friendly landscaping (native vegetation). Any nighttime lighting shall be focused away from greenbelts and riparian corridors to preserve the nighttime integrity of these movement corridors.*

3.4.11 Summary of Impacts

Table 3.4-1 summarizes the potential long-term adverse impacts of the Proposed Project related to biological resources in the Project Area, and identifies the significance of those impacts after any applicable mitigation measures.

Table 3.4-1 Summary of Impacts

Impact	Threshold	Significance
3.4-1	Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.	Less than significant with mitigation
3.4-2	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service	Less than significant with mitigation
3.4-3	Have a substantial adverse effect on federally protected wetlands, as defined by Section 404 of the *Clean Water Act* (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means	Less than significant with mitigation

Table 3.4-1 Summary of Impacts		
Impact	*Threshold*	*Significance*
3.4-4	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites	Less than significant with mitigation
3.4-5	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance	Less than significant with mitigation
3.4-6	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan	Less than significant

3.4.12 References

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