4.3 Biological Resources

This section analyzes potentially significant impacts related to biological resources that could result from implementation of the project. This analysis relies on a biological resources technical report prepared by Alden Environmental, Inc. (Appendix C).

4.3.1 Existing Conditions

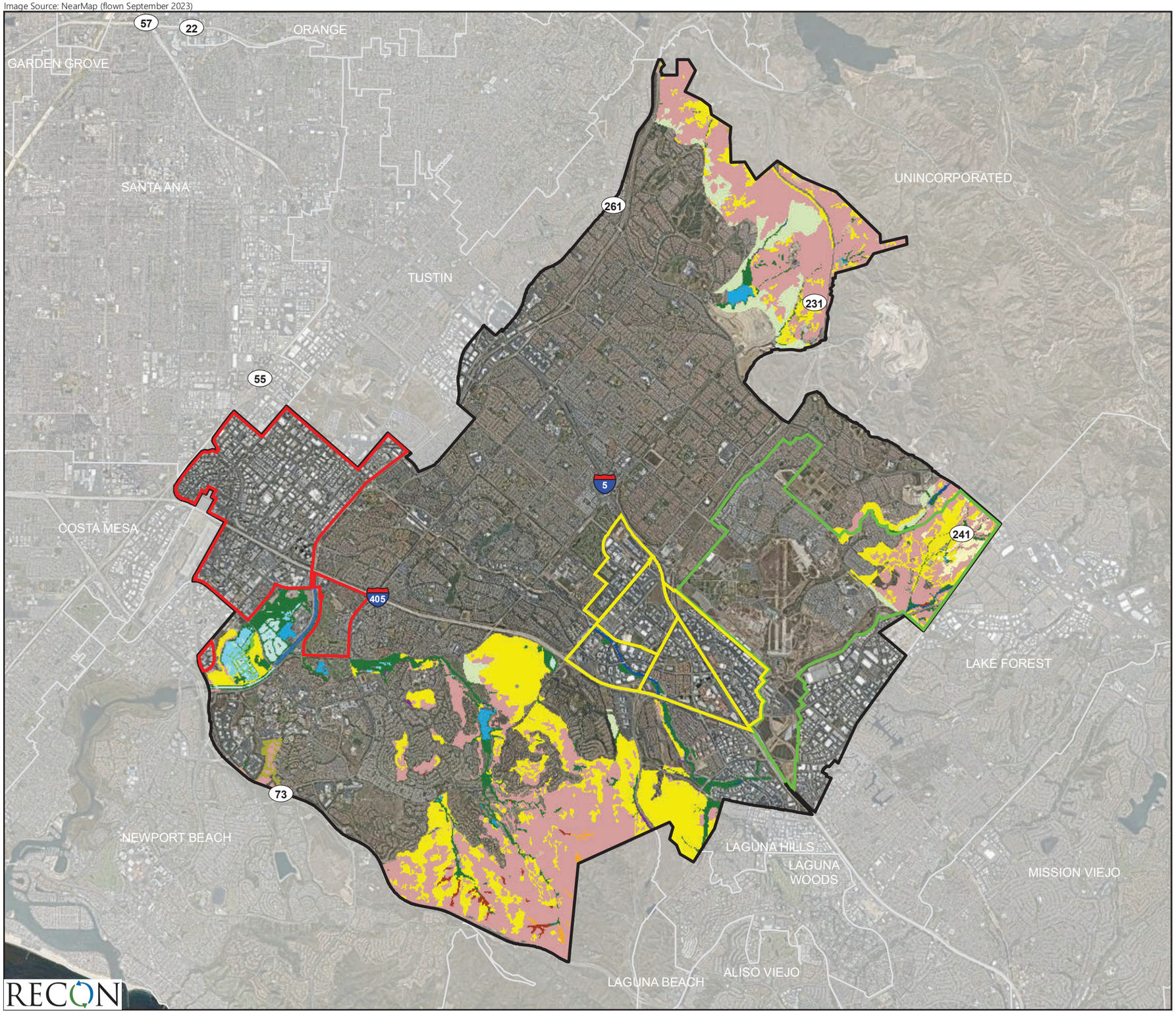
4.3.1.1 Vegetation Communities

Figure 4.3-1 presents the distribution of vegetation communities and land cover types within the city of Irvine (City). Table 4.3-1 presents the acreage of the vegetation communities and land cover types within the City. Seventeen vegetation communities and land cover types occur within the City. Additionally, some of these vegetation communities occur in transitional or ecotonal zones within the City (e.g., estuarine, lacustrine, riverine), where one or more of the definitions provided below may apply. To avoid repetition, each is described separately (e.g., riverine is described once instead of three times for riverine; riverine, barren; and estuarine, lacustrine, riverine). Descriptions of vegetation communities and land cover types present within the City are provided below.

Table 4.3-1
Vegetation Communities in the City

Vegetation Communities	Acres
Annual Grassland	98.83
Annual Grassland, Perennial Grassland	2,864.43
Barren	32.19
Coastal Oak Woodland	51.61
Coastal Scrub	4,587.65
Estuarine, Lacustrine, Riverine	98.54
Eucalyptus	13.86
Fresh Emergent Wetland	105.17
Lacustrine	107.61
Mixed Chaparral	26.81
Orchard-Vineyard, Evergreen Orchard, Irrigated Row and Field Crops	580.29
Perennial Grassland	56.31
Riverine	30.98
Riverine, Barren	50.06
Saline Emergent Wetland	26.47
Urban	45,659.43
Valley Foothill Riparian	788.04
TOTAL	**55,178.28**
SOURCE: California Department of Fish and Wildlife 2018	

Image Source: NearMap (flown September 2023)



Irvine City Boundary
Focus Area 1
Focus Area 2
Focus Area 3

Vegetation/Land Cover Types

- Annual Grassland
- Annual Grassland, Perennial Grassland
- Barren
- Coastal Oak Woodland
- Coastal Scrub
- Estuarine, Lacustrine, Riverine
- Eucalyptus
- Fresh Emergent Wetland
- Lacustrine
- Mixed Chaparral
- Orchard-Vineyard, Evergreen Orchard, Irrigated Row and Field Crops
- Perennial Grassland
- Riverine
- Riverine, Barren
- Saline Emergent Wetland
- Urban
- Valley Foothill Riparian

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FIGURE 4.3-1
Vegetation Communities and Land Cover Types

a. Annual Grassland

Annual grassland is open grassland composed primarily of annual plant species. The community's structure depends largely on weather patterns and livestock grazing. Dramatic differences in features, both between seasons and between years, are characteristic of this habitat. Introduced annual grasses are the dominant plant species. These species include wild oats, soft chess, ripgut brome, red brome, wild barley, and foxtail fescue. Common forbs include broadleaf filaree, redstem filaree, turkey mullein, true clovers, bur clover, popcorn flower, and others. California poppy, the State flower, may also be found in this habitat.

b. Perennial Grassland

Perennial grassland consists of climax stands of perennial bunchgrasses, such as purple needlegrass, on wetter sites.

c. Annual Grassland/Perennial Grassland

See Sections 4.3.1.1.a and 4.3.1.1.b above.

d. Coastal Oak Woodland

Coastal live oak woodland occurs in moderately moist areas of coastal California from Sonoma County south into Baja California, Mexico. These woodlands are found within a 50-mile radius of the coast. Fog is common in these areas, and the soils are typically well drained. Although not limited to these areas, coastal live oak woodland is common in ravines and moist drainages between grassy hillsides. The dominant plant species is coast live oak (*Quercus agrifolia*).

e. Mixed Chaparral

Mixed chaparral is a structurally homogeneous community dominated by shrubs with thick, evergreen leaves. Shrub height and crown cover vary considerably with age since last burn, precipitation regime, aspect, and soil type. At maturity, cismontane mixed chaparral typically is a dense, nearly impenetrable thicket with greater than 80 percent absolute shrub cover.

f. Coastal Scrub

Coastal scrub is dominated by semi-woody, low- to moderate-sized shrubs with shallow root systems. No single species is typical of all coastal scrub stands. Species composition changes with progressively drier conditions from north to south along the coast. Species dominance appears to shift from evergreen species in the north to drought-deciduous species in the south.

g. Lacustrine

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. Depth can vary from a few centimeters to hundreds of meters. Typically, lacustrine habitats include permanently flooded lakes and reservoirs, intermittent lakes, and ponds (including vernal pools).

h. Riverine

Riverine systems consist of intermittent or continually running water. A stream originates at an elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Velocity generally declines at progressively lower altitudes, and the volume of water increases until the enlarged stream finally becomes sluggish. Some streams, except for occasional pools, dry up seasonally every year.

i. Barren

Barren land lacks vegetation, typically because of recent and/or continuous clearing of vegetation. It often consists of rock, gravel, and/or soil. These areas differ from "urban," discussed below, because they do not support buildings, paved roads, parking lots, or ornamental plantings.

j. Riverine, Barren

See Sections 4.3.1.1.h and 4.3.1.1.i above.

k. Estuarine, Lacustrine, Riverine

Estuarine habitats either (1) have constant exchange and interaction with ocean water or marine embayment (estuary, tidal flat, tidal marsh, or eel-grass meadow) or (2) are often separated from ocean water exchange (coastal lagoon). The latter situation is present in the City where lacustrine and riverine habitats in the western part of the City are often separated from Upper Newport Bay waters that occur west of State Route 73 outside the City limits. This same area in the City also supports lacustrine and riverine habitats. See above for descriptions of those habitats.

l. Valley Foothill Riparian

Valley foothill riparian habitats are found in valleys generally associated with low velocity water flow, floodplains, and gentle topography. Some dominant species in the canopy layer are cottonwood (*Populus* spp.), California sycamore (*Platanus racemosa*), and oak (*Quercus* spp.). Typical understory shrub layer plants include species such as wild grape (*Vitis girdiana*), wild rose (*Rosa californica*), California blackberry (*Rubus ursinus*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), poison oak (*Toxicodendron diversilobum*), and willows (*Salix* spp.). The herbaceous layer consists of species such as sedges, rushes, grasses.

m. Eucalyptus

Eucalyptus is an introduced genus, whose tree species have been planted typically for wind blocking, ornamental, and hardwood production purposes. If sufficient moisture is available, this genus becomes naturalized and can reproduce and expand its areal coverage. Eucalyptus occurs in the City in naturalized patches, landscaping, and windrows.

n. Fresh Emergent Wetland

Fresh Emergent Wetlands are flooded frequently and are characterized by dominant vegetation generally consisting of perennial monocots up to 6.6 feet tall. Characteristic species on the upper margins of the habitat include those such as sedges and rushes, and on more alkali sites, saltgrass (*Distichlis* sp.). On wetter sites, potential dominant species include cattail (*Typha* spp.) and bulrushes (*Scirpus* spp.).

o. Saline Emergent Wetland

Saline emergent wetland occurs above intertidal sand and mud flats and below upland communities not subject to tidal action. It is characterized as salt or brackish marsh with characteristic species such as cordgrass (*Spartina* spp.), pickleweed and glasswort (*Salicornia* spp.), bulrushes, and carex (*Carex* spp.).

p. Orchard, Vineyard, Evergreen Orchard, Irrigated Row and Field Crops

Orchards, vineyards, and row crops are land uses primarily to produce food and fiber. On aerial imagery, the chief indications of agricultural activity are distinctive geometric field and road patterns on the landscape and the traces produced by mechanized equipment. The number of building complexes is smaller and the density of the road and highway network is much lower among these land uses than in Urban areas (see Urban below).

q. Urban

Urban lands typically support little to no native vegetation and are characterized by the presence of man-made structures such as buildings, paved roads, parking lots, parks, and residential areas that are either unvegetated or are dominated by exotic, ornamental plant species.

4.3.1.2 Sensitive Biological Resources

Sensitive biological resources include sensitive vegetation communities, special status plant species, special status wildlife species, wildlife movement corridors, and wetland/riparian resources. In general, the principal reason that a species, subspecies, or variety is considered sensitive is the documented or perceived decline or limitation of its population size or geographical extent and/or distribution resulting in most cases from habitat loss. Wildlife movement corridors or linkages also are considered sensitive by local, State, and federal resource and conservation agencies because these corridors allow wildlife to move between adjoining open space areas that are becoming increasingly isolated as open space becomes increasingly fragmented from urbanization, rugged terrain, or changes in vegetation. In addition, wetland and riparian resources are considered sensitive because of their limited distribution and high wildlife value.

Many sensitive biological resources are known to occur or have the potential to occur within the City based on historical data for the region identified through a query of the California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service (USFWS) database, the National Hydrography Dataset, and/or the presence of potentially suitable habitat within the City. Figure 4.3-2 presents the distribution of special status plant and wildlife species and critical habitat within the City. The following section describes these sensitive biological resources.

a. Plant Species

Despite the urbanization of most of the City, there are still areas within the City that provide open space and relatively untouched habitats that support native plant species. The City also supports many agricultural lands and developed areas. While these lands typically support planted crops and orchards as well as ornamental species, respectively, they likely support both native and non-native plant species. Native plant species that can tolerate disturbance, and even thrive in disturbed areas, can be found growing alongside planted crops or as the understory within the orchards. Some of the non-native plant species are likely invasive. Invasive species pose serious environmental threats because they can invade healthy, native ecosystems and degrade the quality of the habitat so that it no longer provides the functions and values of the native ecosystems that occurred there historically. For purposes of this report, special status plant species meet the following criteria:

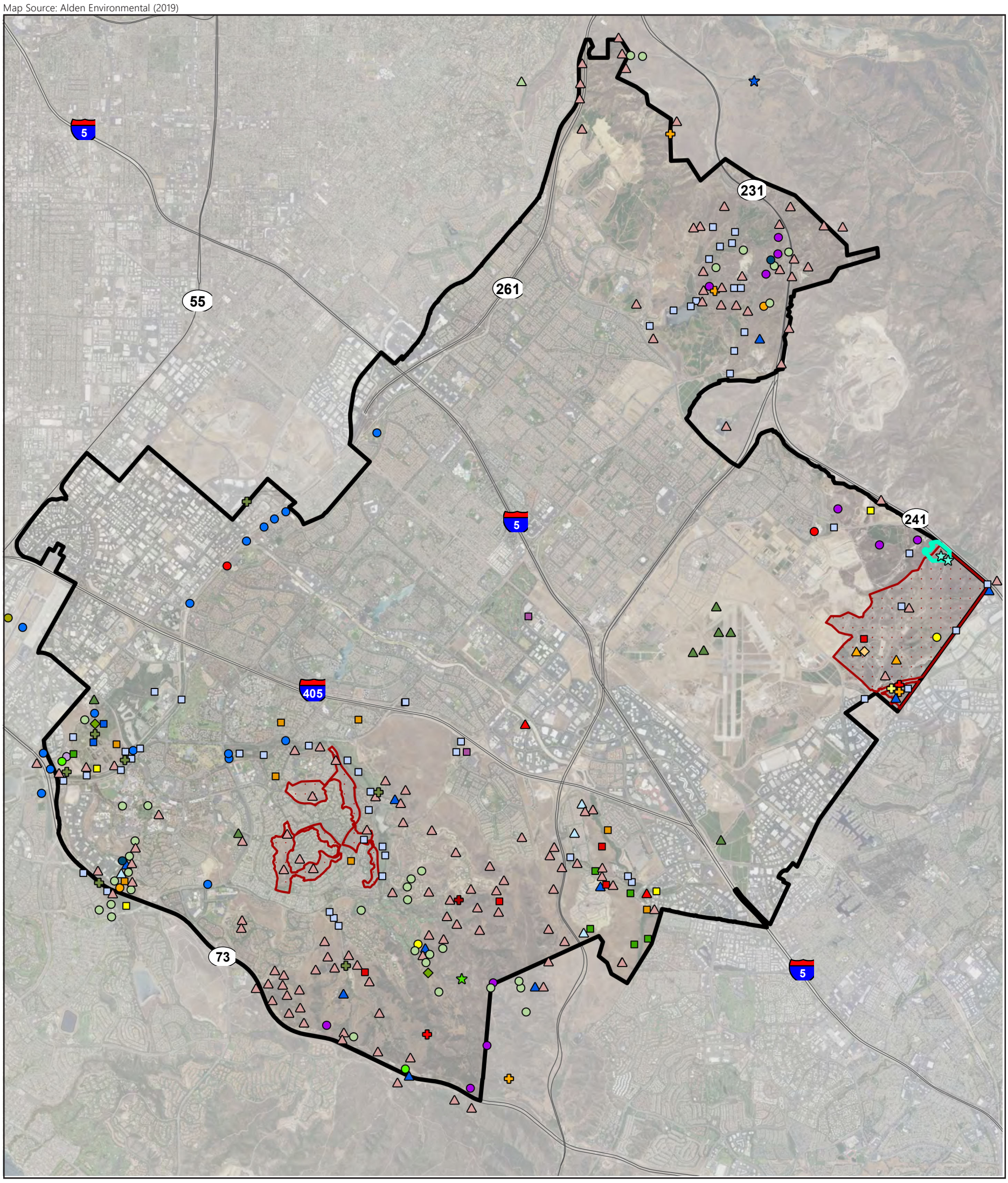
- Listed or proposed for listing by federal or state agencies as threatened or endangered;
- Included on List 1B (considered endangered throughout its range) or List 2 (considered endangered in California but more common elsewhere) of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Vascular Plants of California;
- Are considered rare, endangered, or threatened by the California Department of Fish and Wildlife (CDFW) or other local conservation organizations or specialists; and/or
- Covered under the Natural Community Conservation Plan (NCCP)/Habitat Conservation Plan (HCP)

Noteworthy plant species are those listed on the following:

- List 3 (more information about the plant distribution and rarity needed) and
- List 4 (plants of limited distribution) of the CNPS Inventory.

There are 33 special status plant species known to occur historically in the region of the City. Ten of these species have been reported within the City or just outside the City limits (see Figure 4.3-2). All 33 special status plant species are summarized in Table 4.3-2. No critical habitat has been designated by the USFWS within the City for any plant species.

Map Source: Alden Environmental (2019)



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City Boundary

USFWS Critical Habitat

coastal California gnatcatcher

Riverside fairy shrimp

Sensitive Plant and Animal Species

Plants

- Allen's pentachaeta
- chaparral ragwort
- Coulter's goldfields
- Coulter's saltbush
- Davidson's saltscale
- intermediate mariposa-lily
- many-stemmed dudleya
- mud nama
- southern tarplant
- Robinson's pepper-grass

Crustaceans

- Riverside fairy shrimp

Amphibians

- Coast Range newt
- western spadefoot

Mammals

- San Diego desert woodrat
- western mastiff bat

Reptiles

- coast horned lizard
- coastal whiptail
- orange-throated whiptail
- red-diamond rattlesnake
- western pond turtle

Birds

- American peregrine falcon
- burrowing owl
- California horned lark
- coastal cactus wren
- coastal California gnatcatcher
- Cooper's hawk
- ferruginous hawk
- grasshopper sparrow
- least Bell's vireo
- light-footed Ridgway's rail
- southern California rufous-crowned sparrow
- tricolored blackbird
- white-tailed kite
- yellow-breasted chat

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FIGURE 4.3-2

Special Status Plant and Wildlife Species and Critical Habitat

Table 4.3-2 Special Status Plant Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Aphanisma blitoides Aphanisma	List 1B.2	Coastal bluffs	May occur within the City because potential habitat may be present.
Astragalus brauntonii Braunton's milk- vetch	FE List 1B.1	Chaparral, coastal scrub, grassland—recent burns or disturbed areas	May occur within the City because potential habitat may be present.
Atriplex coulteri Coulter's saltbush	List 1B.2	Grassland, sage scrub, eroded coastal terrace	Reported in the City (4.3-2).
Atriplex serenana var. *davidsonii* Davidson's saltscale	List 1B.2	Alkaline coastal bluff scrub, coastal scrub	Reported in the City (4.3-2).
Atriplex pacifica South Coast saltscale	List 1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas	May occur within the City because suitable habitat may be present.
Calochortus catalinae Catalina mariposa lily	List 4.2 Covered	Chaparral, cismontane woodland, coastal scrub, grassland	May occur within the City because suitable habitat may be present.
Calochortus weedii var. *intermedius* Intermediate mariposa-lily	List 1B.2 Covered	Rocky, calcareous chaparral, coastal scrub, grassland.	Reported in the City (4.3-2).
Camissoniopsis lewisii Lewis' evening- primrose	List 3.0	Sand bars with salt marsh	May occur within the City because suitable habitat may be present.
Chloropyron maritimum ssp. *maritimum* Salt marsh bird's- beak	FE SE List 1B.2	Salt marsh	May occur within the City because suitable habitat may be present.
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	List 1B.2	Chaparral, coastal scrub, meadows and seeps, grassland, vernal pools—often with clay soils	May occur within the City because suitable habitat may be present.
Cistanthe maritima Seaside calandrinia	List 4.2	Sandy coastal bluff scrub, coastal scrub, grassland	May occur within the City because suitable habitat may be present.
Convolvulus simulans Small-flowered morning glory	List 4.2	Grassland with clay soil	May occur within the City because suitable habitat may be present.
Deinandra paniculata Paniculate tarplant	List 4.2	Coastal scrub, grassland vernal pools	May occur within the City because suitable habitat may be present.
Dichondra occidentalis Western dichondra	List 4.2 Covered	Chaparral, cismontane woodland, coastal scrub, grassland	May occur within the City because suitable habitat may be present.
Dudleya multicaulis Many-stemmed dudleya	List 1B.2	Coastal scrub, chaparral, grassland—often with clay soil	Reported in the City (4.3-2).
Eleocharis parvula Small spike-rush	List 4.3	Marshes and swamps	May occur within the City because suitable habitat may be present.
Centromadia parryi ssp. *australis* Southern tarplant	List 1B.1	Margins of marshes and swamps, mesic grassland, vernal pools	Reported in the City (4.3-2).

Table 4.3-2 Special Status Plant Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Hordeum intercedens Vernal barley	List 3.2	Coastal dunes, coastal scrub, grassland, vernal pools	May occur within the City because suitable habitat may be present.
Juncus acutus ssp. *leopoldii* Southwestern spiny rush	List 4.2	Mesic coastal dunes, meadows and (alkaline) seeps, coastal salt marshes and swamps	May occur within the City because suitable habitat may be present.
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	List 1B.1	Coastal salt marshes and swamps, playas, vernal pools	May occur within the City because suitable habitat may be present, and it was reported just outside the City limits (4.3-2).
Lepidium virginicum var. *robinsonii* Robinson's pepper- grass	List 4.3	Chaparral, coastal scrub	Reported in the City (4.3-2).
Lycium californicum California box- thorn	List 4.2	Coastal bluff scrub, coastal scrub	May occur within the City because suitable habitat may be present.
Malacothrix saxatalis var. *saxatalis* Cliff malacothrix	List 4.2	Coastal bluff scrub, coastal scrub	May occur within the City because suitable habitat may be present.
Microseris douglasii ssp. *platycarpha* Small-flowered microseris	List 4.2	Clay soils in cismontane woodland, coastal scrub, grassland, vernal pools	May occur within the City because suitable habitat may be present.
Nama stenocarpa Mud nama	List 2B.2	Marshes and swamps (lake margins, riverbanks)	Reported in the City (4.3-2).
Navarretia prostrata Prostrate vernal pool navarretia	List 1B.1	Mesic coastal scrub, meadows and seeps, grassland, vernal pools	May occur within the City because suitable habitat may be present.
Nemacaulis denudata var. *denudate* Coast woolly-heads	List 1B.2	Coastal dunes	Not likely to occur in the City due to lack of potential habitat.
Pentachaeta aurea ssp. *allenii* Allen's pentachaeta	List 1B.1	Coastal scrub and grassland	Reported in the City (4.3-2).
Romneya coulterii Coulter's matilija poppy	List 4.2 Covered	Chaparral, coastal scrub—often in burned areas	May occur within the City because suitable habitat may be present.
Senecio aphanactis haparral ragwort	List 2B.2	Chaparral, cismontane woodland, coastal scrub	Reported in the City (4.3-2).
Sidalcea Neomexicana Salt spring checkerbloom	List 2B.2	Mesic chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas	May occur within the City because suitable habitat may be present.
Suaeda esteroa Estuary seablite	List 1B.2	Coastal salt marshes and swamps	May occur within the City because suitable habitat may be present.

Table 4.3-2 Special Status Plant Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Symphyotrichum defoliatum San Bernardino aster	List 1B.2	Near ditches, streams, springs--cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, vernally mesic grassland	May occur within the City because potential habitat may be present.

b. Sensitive Wildlife

A variety of resident and migratory wildlife species occur within the City. The City provides habitat for both common and special status species including invertebrates, amphibians, reptiles, birds, and mammals. For purposes of this report, special status wildlife species meet the following criteria:

- Listed or proposed for listing as threatened or endangered by the USFWS or the CDFW;
- Designated as Birds of Conservation Concern by the USFWS;
- Designated as California Fully Protected or California Species of Special Concern by the CDFW; and/or
- Covered under the Orange County NCCP/HCP.

In addition, raptors (birds of prey) and active raptor nests are protected by the California Fish and Game Code 3503.5, which states that it is "unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird" unless authorized. The federal Migratory Bird Treaty Act (MBTA), which restricts the killing, taking, collecting, selling, or purchasing of native bird species or their parts, nests, or eggs, also provides legal protection for almost all breeding bird species occurring in the U.S. The MBTA is supplemented by the Bald and Golden Eagle Protection Act (BGEPA), which provides protection for both the bald eagle and the golden eagle by prohibiting the "take" of either of these species, including their parts, nests, or eggs. Noteworthy wildlife species are those given the informal designation of California Species of Concern by the CDFW. This designation applies to animals not listed under Federal and California Endangered Species Acts (FESA or CESA), but which nonetheless (1) are declining at a rate that could result in listing or (2) historically occurred in low numbers and known threats to their persistence currently exist. Species that are federal- or state-listed threatened or endangered are afforded a degree of protection that entails a permitting process, including specific mitigation measures to compensate for impacts to the species.

There are 59 special status wildlife species known to occur within the region historically. Twenty-four of these species have been reported within the City or just outside the City limits (4.3-2). All 59 special status wildlife species are summarized in Table 4.3-3. Critical habitat has been designated by the USFWS for two species within the City: Riverside fairy shrimp (*Streptocephalus woottoni*) and coastal California gnatcatcher (*Polioptila californica californica*) (see Figure 4.3-2).

Table 4.3-3 Special Status Wildlife Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Invertebrates			
Branchinecta sandiegonensis San Diego fairy shrimp	FE Covered	Vernal pools or other ephemeral basins in coastal southern California south to extreme northwestern Baja California, Mexico	May occur within the City because suitable habitat may be present.
Streptochephalus woottoni Riverside fairy shrimp	FE Covered	Restricted to a few vernal pools in southwestern Riverside, Orange, and San Diego counties	Reported in the City, and critical habitat has been designated in the City (Figure 4.3-2).
Fish			
Eucyclogobius newberryi Tidewater goby	FE CSC	Shallow brackish lagoons and lower stream reaches	May occur within the City because potential habitat may be present.
Amphibians			
Aneides lugubris Arboreal salamander	Covered	Moist places in a variety of habitats from coastal dunes to woodlands	May occur within the City because suitable habitat may be present.
Anaxyrus californicus Arroyo toad	FE CSC Covered	Breeds in shallow pools along stream edges with sand/gravel flats between March and June. Adults use sage scrub, mixed chaparral, oak woodland habitats up to within one mile of breeding sites.	May occur within the City because suitable habitat may be present.
Batrachoseps nigriventris Blackbelly slender salamander	Covered	Moist places, mainly in woodlands, but also found in grasslands and riparian habitats	May occur within the City because suitable habitat may be present.
Spea hammondii Western spadefoot	CSC Covered	Washes, river floodplains, alluvial fans, playas, alkali flats, temporary ponds, vernal pools in mixed woodlands, grasslands, coastal sage scrub, and chaparral. Surface activity October to April. Oviposition late February to May in temporal pools and slow-moving sections of streams	Reported in the City (Figure 4.3-2).
Taricha torosa Coast Range newt	CSC	In southern California, habitats include drier chaparral, oak woodland, and grasslands	Reported just outside the City limits (Figure 4.3-2).
Reptiles			
Phrynosoma blainvilii Coast horned lizard	CSC Covered	Scrubland, grassland, coniferous woods, and broadleaf woodlands, especially in areas with sandy soils, scattered shrubs, and ant colonies, such as along the edges of arroyo bottoms or dirt roads.	Reported in the City (Figure 4.3-2).
Aspidoscelis hyperythra Orange-throated whiptail	WL Covered	Open coastal sage scrub, chaparral, and streamside growth with loose sandy soils, revegetation sites.	Reported in the City (Figure 4.3-2).
Aspidoscelis tigris stejnegeri Coastal western whiptail	CSC Covered	Coastal sage scrub, chaparral, and wash habitats	Reported in the City (Figure 4.3-2).

Table 4.3-3 Special Status Wildlife Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Anniella stebbensi Southern California legless lizard	CSC	Found in leaf litter and loose soil on beaches and in coastal scrub, chaparral, and open riparian habitats. Sandy washes and beach dunes are used for burrowing, while logs and leaf litter are used for cover and feeding	May occur within the City because suitable habitat may be present.
Charina trivirgata rosy boa	Covered	Rocky areas in coastal sage scrub and chaparral	May occur within the City because potential habitat may be present.
Crotalus ruber red-diamond rattlesnake	CSC Covered	Arid scrub (including coastal sage scrub), chaparral, woodlands, and cultivated areas, often with large rocks or boulders	Reported in the City (figure 4.3-2).
Diadophis punctatus modestus San Bernardino ringneck snake	Covered	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains	May not occur in the City due to limited or lacking potential habitat.
Emys marmorata Western pond turtle	CSC	Slow-water aquatic habitats with available basking sites (e.g., submerged logs, open mud banks)	Reported in the City (Figure 4.3-2).
Plestiodon skiltonianus interparietalis Coronado skink	WL Covered	Occurs in variety of mesic habitats including coastal sage, chaparral, oak woodlands, pinon-juniper, and riparian woodlands to pine forests	May occur within the City because potential habitat may be present.
Salvadora hexalepis virgultea Coast patch-nosed snake	CSC	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains	May occur within the City because potential habitat may be present.
Thamnophis hammondii Two-striped garter snake	CSC	Permanent fresh water, inhabiting streams, ponds, vernal pools. Occupies adjacent coastal sage scrub and grasslands during the winter	May occur within the City because potential habitat may be present.
Birds			
Accipiter cooperii Cooper's hawk	WL	Occurs in various woodland habitats, including riparian	Reported in the City (Figure 4.3-2).
Accipiter striatus Sharp-shinned hawk	WL Covered	Woodland areas and open lowlands	May occur within the City because potential habitat may be present.
Agelaius tricolor Tricolored blackbird	BCC CSC, (SE Candidate)	Cattail or tule marshes; forages in fields, farms. Breeds in large freshwater marshes in dense stands of cattails or bulrushes. At all seasons (including when breeding), does most of its foraging in open habitats such as farm fields, pastures, cattle pens, and large. lawns	Reported in the City (Figure 4.3-2).
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	WL Covered	Coastal sage scrub, coastal bluff scrub, low-growing chaparral	Reported in the City (Figure 4.3-2).
Ammodramus savannarum Grasshopper sparrow	CSC	Grasslands, prairies, hayfields, and open pastures with little to no scrub	Reported in the City (Figure 4.3-2).

Table 4.3-3 Special Status Wildlife Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
		cover and often with some bare ground	
Aquila chrysaetos golden eagle	CFP, WL Covered	Requires vast foraging areas in grassland, broken chaparral, or sage scrub. Nests on cliffs and boulders	May not occur within the City because of limited potential habitat.
Athene cunicularia Burrowing owl	BCC CSC	Grassland, agricultural land, coastal dunes	Reported in the City (Figure 4.3-2).
Buteo lineatus Red-shouldered hawk	Covered	Riparian woodland	May occur within the City because suitable habitat may be present.
Buteo regalis Ferruginous hawk	BCC WL	Winter resident of grassland and agricultural areas in southwestern California	Reported in the City (Figure 4.3-2).
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange counties only) Coastal cactus wren	BCC CSC Covered	Coastal sage scrub and chaparral plant communities with substantial cacti (Opuntia spp.) stands	Reported in the City (Figure 4.3-2).
Charadrius alexandrinus nivosus Western snowy plover	FT, BCC CSC	Breeds primarily on coastal beaches from southern Washington to southern Baja California, Mexico. The Pacific coast population breeds above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries	May occur within the City because potential habitat may be present.
Circus hudsonius Northern harrier	CSC Covered	Open habitats, such as grasslands and fields, as well as marshes	May occur within the City because suitable habitat may be present.
Coccyzus americanus occidentalis western, yellow-billed cuckoo	FT, BCC SE	Extensive riparian woodlands	May not occur within the City because of limited or lacking potential habitat.
Elanus leucurus white-tailed kite	CFP	Nests in riparian woodland, oaks, sycamores and forages in open, grassy areas	Reported in the City (Figure 4.3-2).
Empidonax traillii extimus southwestern willow flycatcher	FE SE Covered	Nests in extensive willow- dominated riparian forests and woodlands, occasionally oak woodlands	May not occur within the City because of limited or lacking potential habitat.
Eremophila alpestris actia California horned lark		Short vegetation or bare ground and low-growing or fallow agricultural fields	Reported in the City (Figure 4.3-2).
Falco peregrinus anatum American peregrine falcon	BCC CFP Covered	Nests in open landscapes with cliffs or tall man-made structures. Found along coastlines, shorelines, etc. where shorebird or rock pigeon prey occurs	Reported just outside the City limits (Figure 4.3-2).
Icteria virens Yellow-breasted chat	CSC	Dense riparian woodland	Reported in the City (Figure 4.3-2).

Table 4.3-3 Special Status Wildlife Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Ixobrychus exilis Least bittern	BCC CSC	Dense marshes	May occur within the City because suitable habitat may be present.
Lanius ludovicianus loggerhead shrike	BCC CSC	Open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree woodland habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	May occur within the City because potential habitat may be present.
Laterallus jamaicensis coturniculus California black rail	BCC ST, CFP	Salt marshes, freshwater marshes, and wet meadows	May occur within the City because suitable habitat may be present.
Passerculus sandwichensis beldingi Belding's savannah sparrow	SE	Coastal salt marsh	May occur within the City because potential habitat may be present.
Polioptila californica californica coastal California gnatcatcher	FT CSC Covered	Coastal sage scrub, maritime succulent scrub	Reported in the City (Figure 4.3-2).
Pelecanus erythrorhynchos American white pelican	CSC	Breeds mainly on isolated islands in freshwater lakes or on ephemeral islands in shallow wetlands. Forages in marshes, along lake or river edges, and in wetlands	May occur within the City because potential habitat may be present.
Pelecanus occidentalis californicus California brown pelican	CFP	Nests from the Channel Islands along the Baja California coast and in the Gulf of California to coastal southern Mexico. Builds nests of sticks on the ground, typically on Islands or offshore rocks. Between breeding seasons, wanders along the west coast	May not occur within the City because of limited or lacking potential habitat.
Phalacrocorax auratus Double-crested cormorant	WL	Lakes and ponds	May occur within the City because potential habitat may be present.
Plegadis chihi White-faced ibis	WL	Freshwater wetlands and marshes but also may feed in flooded meadows, agricultural fields, and estuarine wetlands	May occur within the City because potential habitat may be present.
Rallus obsoletus levipes Light-footed Ridgway's rail	FE SE, CFP	Salt marshes and lagoons	Reported in the City (Figure 4.3-2).
Rynchops niger Black skimmer	CSC	Mostly ocean beaches, tidewater. Favors coastal waters protected from open surf such as lagoons, estuaries, inlets, and sheltered bays. Occurs locally on inland lakes	May occur within the City because potential habitat may be present.
Setophaga petechia yellow warbler	BCC CSC	Well-developed riparian habitats, often with mature willows, usually in close proximity to water along streams and meadows	May occur within the City because suitable habitat may be present.

Table 4.3-3 Special Status Wildlife Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Sternula antillarum browni California least tern	FE SE, CFP	Nests are situated on barren to sparsely vegetated places near water, normally on sandy or gravelly substrates, and may appear along marine or estuarine shores in areas free from humans or predators. Wintering locations are unknown	May not occur within the City because of limited or lacking potential habitat.
Vireo bellii pusillus Least Bell's vireo	FE SE Covered	Dense, stratified canopy within willow-dominated woodland or scrub, Baccharis scrub, mixed oak/willow woodland, mesquite woodland, and elderberry scrub in riparian habitat	Reported in the City (Figure 4.3-2).
Mammals			
Antrozous pallidus pallid bat	CSC	Open desert scrub, grasslands, shrub lands, woodlands, and forests. Roosts in rock crevices, caves, mines, tree hollows, and buildings	May occur within the City because potential habitat may be present.
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	CSC	Sparse, disturbed coastal sage scrub or grasslands with sandy soils.	May occur within the City because suitable habitat may be present.
Eumops perotis californicus western mastiff bat	CSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc., roosts in crevices in vertical cliff faces, high buildings, trees, and tunnels, and travels widely when foraging.	Reported in the City (Figure 4.3-2).
Lepus californicus bennettii San Diego black- tailed jackrabbit	CSC	Open areas of scrub, grasslands, agricultural fields with ample grasses and forbs.	May occur within the City because potential habitat may be present.
Neotoma lepida intermedia San Diego desert woodrat	CSC Covered	Coastal sage scrub and chaparral. Prefers rock outcrops.	Reported in the City (Figure 4.3-2).
Perognathus longimembris pacificus Pacific pocket mouse	FE CSC	Fine-grained, sandy or gravelly substrates in coastal strand, coastal dunes, river alluvium, and coastal sage scrub growing on marine terraces. Nearly all historic observations of are within 4 km (approximately 2.48 miles) of the Pacific coast, with a few as far as 6 km (approximately 3.72 miles). Currently known only from Dana Point Headlands in Orange County, California and three locations on Marine Corps Base Camp Pendleton in San Diego County.	May not occur within the City because it is largely too far inland.
Sorex ornatus salicornicus Southern California saltmarsh shrew	CSC	Salt marsh	May occur within the City because suitable habitat may be present.

Table 4.3-3 Special Status Wildlife Species Reported within the City or the Region			
Scientific Name / Common Name	Status	Habitat Description	Occurrence Info
Taxidea taxus American badger	CSC	Drier, open stages of shrub steppes, agricultural fields, open woodland forests, and large grass and sagebrush meadows and valleys with friable soils	May occur within the City because suitable habitat may be present.
Status: FE = Federal endangered; FT = Federal threatened; BCC = Birds of Conservation Concern; SE = State endangered; ST = State threatened; CFP = California Fully Protected; CSC = California Species of Special Concern; WL = CDFW Watch List; Covered = Covered under the NCCP/HCP			

c. Wildlife Movement Corridors

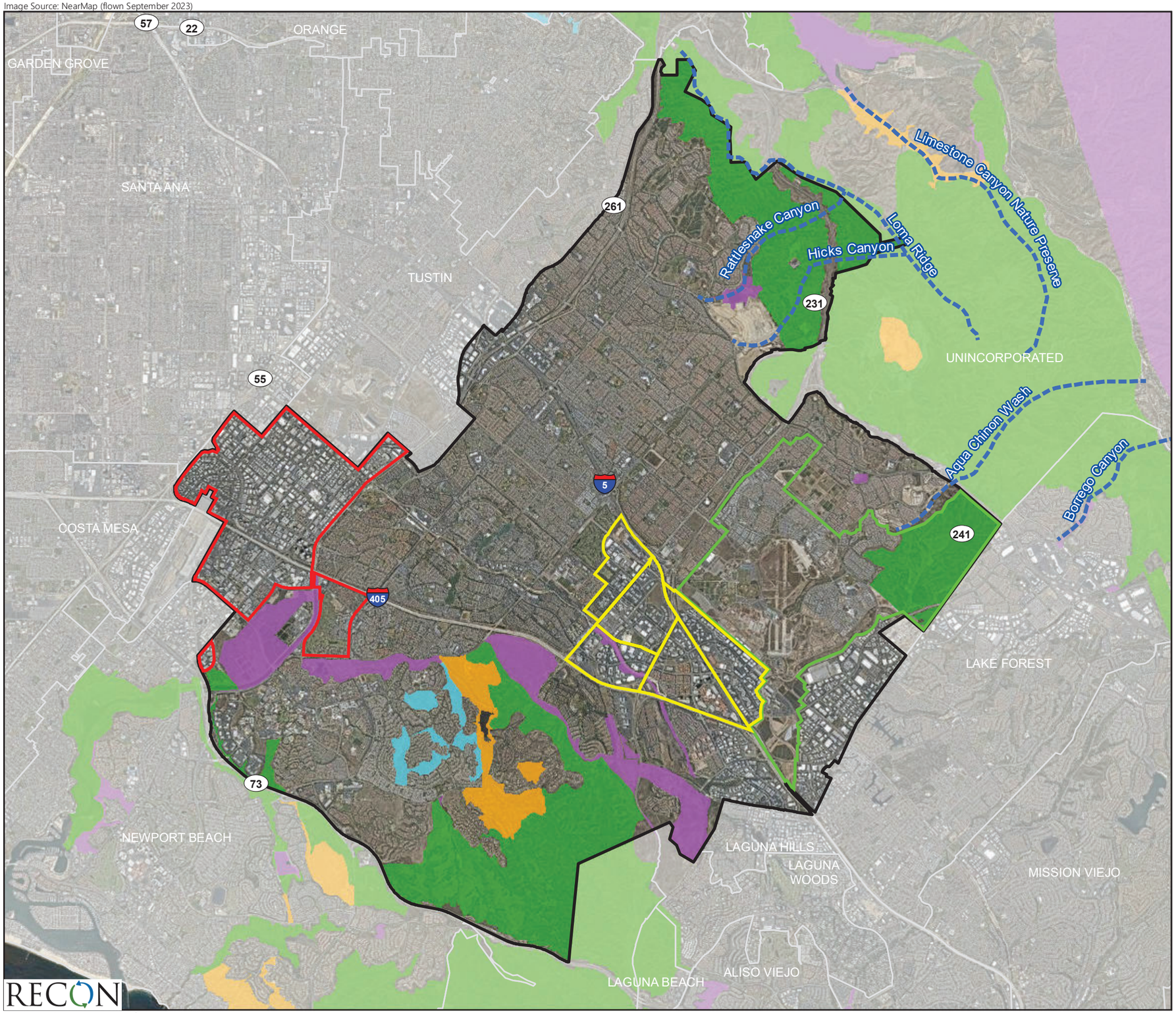
Wildlife corridors are essential to maintain populations of healthy and genetically diverse plant and wildlife species. Because the isolation of plant and wildlife populations can have many harmful effects on local and regional species' populations, and may contribute significantly to local species extinctions, wildlife corridors are important to sustain individual species distributions within these habitat fragments.

The Irvine Open Space Initiative created the framework to preserve large, contiguous open space areas for conservation and open space as phased master-planned growth occurred in other areas of the City. The City has committed to protect and manage the Irvine Open Space Preserve consistent with the NCCP. With respect to portions of the Orange County NCCP/HCP within the City, 10,587 acres are designated for the NCCP habitat reserve system, and 813 acres are non-reserve lands called special linkages. Figure 4.3-3 presents the portion of the NCCP/HCP habitat reserve system and the NCCP/HCP special linkages located in the City.

There are several wildlife corridors located within the City; Hicks Canyon, Rattlesnake Canyon, Loma Ridge, Limestone Canyon, and upper Borrego Canyon form wildlife corridors that stretch to the Cleveland National Forest. Wildlife corridors are also preserved along the Eastern Transportation Corridor at Agua Chinon and the State Route 241/State Route 133 interchange.

Historically, a wildlife corridor also connected lands in the City's northern sphere (e.g., Santiago Hills) to coastal lands along the Pacific Ocean. In 2013, the City Council adopted the Wildlife Corridor Plan, taking a step toward creating a wildlife corridor that would link protected lands in the Laguna Coast to wilderness areas that include the Cleveland National Forest, Whiting Ranch, and Limestone Canyon.

Image Source: NearMap (flown September 2023)



Irvine City Boundary
Focus Area 1
Focus Area 2
Focus Area 3
Wildlife Corridors

Orange County NCCP

Reserve
Non-Reserve Open Space
Special Linkage
Existing Use Areas

0 Miles 1.5

RECON

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FIGURE 4.3-3
Wildlife Corridors and NCCP Areas

d. Critical Habitats

Sensitive vegetation communities are vegetation assemblages, associations, or subassociations that have cumulative losses throughout the region, have relatively limited distribution, support or potentially support sensitive plant or wildlife species, or have value to other wildlife. Typically, sensitive vegetation communities are considered sensitive whether or not they have been disturbed. Determination of the level of sensitivity is based on the Nature Conservancy Heritage Program Status Ranks that rank both species and plant communities on a global and statewide basis according to the number and size of remaining occurrences as well as recognized threats such as proposed development, habitat degradation, and invasion by non-native species.

Based on a California Sensitive Natural Communities search, 10 sensitive vegetation communities were identified within the City and are listed below. According to the CDFW (2018), natural communities with ranks of 1 to 3, or Y (for alliances), are considered sensitive.

Vegetation communities that are wetland and/or riparian resources are also considered sensitive biological resources and are regulated by the U.S. Army Corps of Engineers (USACE), CDFW, and/or Regional Water Quality Control Board (RWQCB) pursuant to several federal and state regulations.

- Perennial Grassland (Y)
- Annual/Perennial Grassland (Y; annual grassland is not sensitive, but perennial is)
- Coastal Oak Woodland (Y)
- Coastal Scrub (Y)
- Lacustrine (Wetland/Riparian)
- Riverine (Wetland/Riparian)
- Riverine (Wetland/Riparian), Barren (the barren portion of this community is not sensitive)
- Estuarine, Lacustrine, Riverine (Wetland/Riparian)
- Freshwater Emergent Wetland (Y, Wetland)
- Saline Emergent Wetland (Y, Wetland)

e. Wetland and Riparian Resources

Wetland and riparian resources within the City are considered sensitive biological resources and are regulated by the USACE, CDFW, and/or RWQCB pursuant to several federal and state regulations. Wetland and riparian resource types are listed in Section 4.3.1.2.d above. A description of each agency's jurisdiction is provided in this section, and the potential wetland and riparian resources within the City are discussed as well.

Potential jurisdictional resources in the City include streams/rivers, lakes/ponds, reservoirs, inundation areas, canals/ditches, and associated habitats (coast live oak woodland; estuarine, lacustrine, riverine; fresh emergent wetland; lacustrine; riverine; riverine, barren; saline emergent wetland; and valley foothill riparian). The major wetlands/waterways in the City include San Diego Creek, Peters Canyon Wash, and San Joaquin Wildlife Sanctuary.

The increased demand for housing and employment in Orange County has resulted in substantial land use changes from agriculture to urban development within the San Diego Creek's watershed. Most of the creek has been converted to a concrete flood control channel, but it does provide aquatic

and riparian habitats along its course and its tidal estuary near the San Joaquin Wildlife Sanctuary and Upper Newport Bay. Peters Canyon Wash, a tributary of San Diego Creek, is mostly channelized and flows southwest from the Peters Canyon Reservoir near the Orange/Tustin border to its confluence with San Diego Creek near the Irvine Civic Center Plaza.

The San Joaquin Wildlife Sanctuary is a 300-acre constructed wetland in the floodplain of San Diego Creek just above its outlet to Upper Newport Bay. The original restoration of the wetlands began in 1988 and was completed in 2000. The site serves a dual purpose of removing nitrates from the creek's water and providing bird habitat. The Southern California Wetlands Recovery Project has a plan to restore and enhance 120 acres of perennial marsh habitat in San Joaquin Marsh.

4.3.2 Applicable Regulatory Requirements

4.3.2.1 Federal Regulations

a. National Environmental Policy Act

The National Environmental Policy Act (NEPA), passed in 1969, created a nationwide framework aimed at protecting the environment. The policy ensures that all branches of the government must consider environmental effects prior to any major federal action that may significantly affect the environment. NEPA is applied when projects are undertaken, funded, or require the insurance of a permit by a federal agency. The federal agency proposing to implement the federal action holds responsibility in complying with NEPA; however, multiple federal agencies may be involved with the NEPA process for any given project, as Lead Agency or Cooperating Agency.

The Lead Agency has supervisory duties and is responsible for preparing the appropriate environmental document: a Categorical Exclusion, Finding of No Significant Impact, Environmental Assessment, or Environmental Impact Statement. The Cooperating Agency has an assisting role in the entire NEPA process. The U.S. Environmental Protection Agency (U.S. EPA) is required to review and publicly comment on the environmental impacts of major proposed federal actions, particularly when an Environmental Impact Statement is required. If the U.S. EPA determines that the environmental analysis is unsatisfactory or that the proposed action would have adverse environmental effects, it is required to involve the Council of Environmental Quality in the NEPA process.

b. Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to provide a means for conserving endangered and threatened species to prevent species extinction and, extirpation. The FESA has three major components: the Section 7 requirement for federal agencies to consult with the USFWS to ensure that their actions are not likely to jeopardize the continued existence of species or result in the modification or destruction of critical habitat; the Section 9 prohibition against "taking" listed species; and the Section 10 provisions for permitting the incidental take of listed species. The term "take" is defined by the FESA to include the concept of "harm," which agency regulations define to include death or injury that results from modification or destruction of a species habitat (50 Code of Federal Regulations [CFR] 17.3). Each of these major components is described in more detail below.

Section 7 of the FESA

Section 7 of the FESA provides that each federal agency undertaking a federal action that could significantly affect FESA species shall consult with the Secretary of Interior or Commerce, that any actions authorized, funded, or carried out by the agency are "not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of lands determined to be critical habitat" (16 United States Code [USC] Section 1536(a)(2)). The term "agency action" is broadly defined in a manner that includes nearly all actions taken by federal agencies such as permitting or carrying out a project, as well as actions by private parties that require federal agency permits or approval (50 CFR Section 402.02). The consultation requirement of Section 7 is triggered upon a determination that a proposed action "may affect" a listed species or designated Critical Habitat (50 CFR Section 402.14(a)). If the proposed action is a "major construction" activity, the federal agency proposing the action must prepare a biological assessment to include with its request for the initiation of Section 7 consultation.

Included in the USFWS Biological Opinion is an Incidental Take Statement (ITS) that authorizes a specified level of take anticipated to result from the proposed action. The ITS contains "reasonable and prudent measures" that are designed to minimize the level of incidental take, adverse modification, or destruction to critical habitat, and that must be implemented as a condition of the take authorization (50 CFR Section 402.14(i)(5)).

The issuance of a Biological Opinion concludes formal consultation, but consultation can be reinitiated if the amount or extent of incidental take authorized is exceeded, the action changes, new information reveals effects of the action not previously considered, or a new species is listed, or Critical Habitat is designated (50 CFR Section 402.16). Once the Biological Opinion is issued, the project applicant must implement the terms and conditions, and conservation measures, mandated by the USFWS. Monitoring and reporting is required to be coordinated with the USFWS during the implementation of conservation measures.

Section 9 of the FESA

Section 9 of the FESA prohibits any person from "taking" an endangered animal species. Regulations promulgated by USFWS and the National Oceanic and Atmospheric Administration make the "take" prohibition generally applicable to threatened animal species as well (50 CFR 17.71). Section 9 thus prohibits the clearing of habitat that results in death or injury to members of a protected species.

An authorization or permit to incidentally take listed species can be obtained either through the Section 7 consultation process or through the Section 10 incidental take permit process. In the context of Section 7, incidental take is authorized through an ITS that is issued consistent with a Biological Opinion. Measures required to conform to the ITS are contained in "reasonable and prudent measures," as are the terms and conditions necessary to implement those measures. In the context of Section 10, incidental take is authorized through an incidental take permit issued pursuant to Section 10(a)(1)(B). Measures contained in the incidental take permit reflect the measures set out in a habitat conservation plan developed by the applicant in conjunction with the USFWS.

Section 10 of the FESA

Under Section 10(a)(1)(B) of the FESA, the USFWS may permit the incidental take of listed species that may occur because of an otherwise lawful activity. To obtain a Section 10(a)(1)(B) permit, an applicant must prepare a habitat conservation plan that meets the following five criteria: (1) the taking will be incidental to an otherwise lawful activity; (2) the applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; (3) the applicant will ensure that adequate funding for the plan will be provided; (4) the taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and (5) other measures, if any, that the USFWS requires as being necessary or appropriate for purposes of the plan will be met (16 USC Section 1539(a)(2)(A)).

c. Clean Water Act of 1972 (33 USC 1251 et seq.)

Sections 404 and 401 of the Clean Water Act (CWA) of 1972 apply to potential impacts to wetlands, Waters of the U.S., and Waters of the State. The U.S. EPA administers the CWA; however, some sections of the CWA are administered by other agencies. Section 404 of the CWA regulates the discharge of dredged or fill material into navigable waters, including both wetlands and other Waters of the U.S. The discharge of dredged or fill material is typically associated with a variety of development projects, agricultural activities, and water resource projects. The USACE administers Section 404 of the CWA and is responsible for issuing general and individual permits and for making jurisdictional determinations. Section 401 of the CWA requires a State Water Quality Certification or waiver for any activity requiring a Section 404 permit. The State Water Quality Certification ensures the activity will not violate any established state water quality standards. The State Water Resources Control Board, in conjunction with the nine California RWQCBs, administers Section 401 of the CWA and is responsible for issuing permits pursuant to the Section 401 Water Quality Certification Program. The City is within the jurisdiction of the Santa Ana RWQCB (Region 8).

Prior to any installation of any new storm drain connections to and/or discharges into the San Diego Creek or San Joaquin Marsh, the City or other project applicants shall (1) obtain a permit or other authorization from the USACE pursuant to Section 404 of the federal CWA; (2) obtain a Section 401 Water Quality Certification from the California RWQCB, Santa Ana region, pursuant to Section 401 of the CWA, which requires any applicant for a federal permit, such as a CWA Section 404 permit, to provide the licensing agency a certification from RWQCB that the project will comply with adopted water quality standards; and 3) provide notification to the CDFW of the project pursuant to Section 16-2 of the Fish and Game Code and comply with any further actions required by CDFW.

d. Migratory Bird Treaty Act (16 USC 703 through 711)

The MBTA of 1918 implements various conventions and treaties between the United States and Canada, Mexico, Japan, and Russia for the protection of over 800 migratory bird species. Under the MBTA, it is unlawful to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird…or any part, nest, or egg of any such bird" (16 USC 703).

The MBTA is administered by USFWS. Take permits for MBTA species are rarely issued, except for specific actions to aid recovery of a species; however, USFWS establishes hunting seasons for species for which there is a long tradition of hunting, if hunting will not adversely impact their population status or long-term conservation. While the MBTA includes approximately 170 species of game birds, hunting is typically authorized for fewer than 60 of these species each year.

e. United States Army Corps of Engineers

The USACE has primary federal responsibility for administering regulations that concern waters and wetlands in the City. In this regard, the USACE acts under two statutory authorities, the Rivers and Harbors Act (33 USC, Sections 9 and 10), which governs specified activities in navigable waters, and the CWA (Section 404), which governs specified activities in waters of the U.S., including wetlands and special aquatic sites. Wetlands and non-wetland waters (e.g., rivers, streams, and natural ponds) are a subset of waters of the U.S. and receive protection under Section 404 of the CWA. The USACE has primary federal responsibility for administering regulations that concern waters and wetlands in the project area under statutory authority of the CWA (Section 404). In addition, the regulations and policies of various federal agencies mandate that the filling of wetlands be avoided to the maximum extent feasible. The USACE requires obtaining a permit if a project proposes placing structures within navigable waters and/or alteration of waters of the U.S.

f. Bald and Golden Eagle Protection Act (16 USC 668)

The BGEPA provides protection for both the bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) by prohibiting the "take" of either of these species, including their parts, nests, or eggs. The MBTA defines "take" as to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb" any bald or golden eagle. The BGEPA is administered by the USFWS, and limited take authorizations are granted for qualifying activities. Persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle [or any golden eagle], alive or dead, or any part, nest, or egg thereof" without prior approval are subject to criminal penalties.

g. Fish and Wildlife Coordination Act (16 USC 661 et seq.)

The Fish and Wildlife Coordination Act (FWCA) of 1934, as amended, requires coordination with USFWS and CDFW so that these agencies may evaluate impacts to fish and wildlife species that have the potential to result from proposed water resource development projects. Specifically, the FWCA requires that fish and wildlife species as well as habitats that may support them be given equal consideration to other project features. The FWCA also requires federal agencies that construct, license, or permit water resource development projects to first coordinate with USFWS and CDFW to determine impacts that may occur to fish and wildlife resources and establish appropriate avoidance, minimization, and/or mitigation measures to reduce these potential impacts.

h. Floodplain Management and Protection of Wetlands (42 FR 26961, 52 FR 34617)

Executive Order 11990, Protection of Wetlands, as amended, requires federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance functions and values

of these wetlands while carrying out their responsibilities pertaining to water supply, erosion and flood prevention, maintenance of natural systems, among others.

i. Invasive Species (64 FR 6138)

Executive Order 13112, Invasive Species, as amended, requires federal agencies to coordinate efforts that prevent the introduction of invasive species (both plant and wildlife species not native to the U.S.), manage existing invasive species, and minimize the economic, ecological, and human health impacts that are caused by invasive species. This order defines invasive species, requires federal agencies to address invasive species concerns, and prohibits new actions that would cause or promote the introduction of invasive species. To comply with this order, all enhancement, restoration, and creation activities should use native plants and should include measures to prevent the introduction of invasive species.

4.3.2.2 State Regulations

a. California Endangered Species Act (Fish and Game Code 2050 et seq.)

The CESA parallels FESA and protects and/or preserves native plant and wildlife species and their habitats, especially those that are threatened with extinction and those that are experiencing significant decline that may lead to a threatened or endangered designation, within the state of California. CESA designates special status species that are protected from unauthorized "take", which is defined as to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

CESA is administered by the CDFW. A state lead agency is required to consult with the CDFW to ensure that a project is not likely to jeopardize the continued existence of a special status species or result in the destruction or adverse modification of essential habitat for a species. CESA allows for the issuance of incidental take permits for lawful development projects and emphasizes the benefits of early consultation between the lead agency and CDFW to avoid potential impacts to special status species and to develop appropriate mitigation measures to reduce impacts to and avoid loss of a special status species.

b. California Environmental Quality Act: Treatment of Listed Plant and Animal Species

FESA and CESA protect only those species formally listed as threatened or endangered (or rare in the case of the state list). Section 15380 of the California Environmental Quality Act (CEQA) Guidelines independently defines "endangered" species of plants or animals 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 normally would have a significant effect on the environment if it would substantially affect a rare or endangered species of animal or plant or the habitat of the species. The significance of impacts to a species under CEQA must be based on analyzing actual rarity and threat of extinction despite legal status or lack thereof.

c. California Fish and Game Code

Several sections of the California Fish and Game Code, which is administered by the CDFW, also may apply to future projects proposed in the City. These include Section 2081; Sections 1600 through 1616; Sections 1900, et seq.; Sections 2511, 4700, 5050, and 5515; Sections 3503, 3503.5, and 3513; and Title 14, California Code of Regulations, Section 670.2 and 670.6. Each of these sections is discussed in detail below.

Section 2081

Section 2081 of the California Fish and Game Code allows for the issuance of an incidental take permit from CDFW for projects that have the potential to take a special status species, including a State-listed species, if the impacts are minimized and fully mitigated and will not jeopardize the continued existence of a State-listed species. The measures required to minimize and fully mitigate impacts must be roughly proportional to the extent of the proposed impact to the species and must be capable of successful implementation while maintaining the applicant's objectives to the greatest extent feasible. The applicant must show that adequate funding is available to implement the required avoidance and mitigation measures and monitor the effectiveness of the mitigation measures.

Sections 1600 to 1616

Sections 1600 through 1616 of the California Fish and Game Code apply to all projects that would (1) substantially divert or obstruct the natural flow of, (2) substantially change or use any material from, or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement into the bed, channel, or bank of any river, stream, or lake. Sections 1600 through 1616 require any person, business, public utility, or state or local government agency that proposes any activity within or adjacent to a lake, river, or stream that flows at least intermittently through a bank or channel, including watercourses with a subsurface flow (e.g., ephemeral streams, desert washes) and some flood plains, to notify the regional CDFW office of the proposed activity. CDFW will determine if the proposed activity may substantially adversely affect fish and wildlife resources and if a Streambed Alteration Agreement (SAA) is necessary.

Other Sections

Additional sections of the California Fish and Game Code may apply to future projects proposed in the City, including, but not limited to, Sections 1900 through 1913; Sections 2511, 4700, 5050, and 5515; Sections 3503, 3503.5, and 3513; and Title 14, California Code of Regulations, Section 670.2 and 670.6. Sections 1900 through 1913 provide guidelines to preserve, protect, and enhance endangered or rare native plants within California. Sections 2511, 4700, 5050, and 5515 provide guidelines to protect wildlife species that are designated as "fully protected" by the CDFW, and therefore cannot be harmed, taken, or possessed. Sections 3503, 3503.5, and 3513 state that it is unlawful to take, possess, or destroy the nest or eggs of any bird species, except otherwise allowed by California Fish and Game Code. Section 3503.5 provides protection specifically in the orders Falconiformes (hawks, eagles, and flacons) and Strigiformes (owls), and Section 3513 provides protection specifically for migratory, non-game birds designated by the MBTA. Title 14, California Code of Regulations, Section

670.2 and 670.6 list wildlife species that are designated as California Species of Concern or are state listed as threatened or endangered species.

d. California Porter-Cologne Water Quality Control Act

The California Porter-Cologne Water Quality Control Act was enacted in 1969 and is administered by either the State Water Resources Control Board and/or the RWQCB. This act provides protection for Waters of the State, which are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." If a proposed project involves alteration to any Waters of the State, the project proponent must file a Report of Waste Discharge with the appropriate RWQCB to obtain "Waste Discharge Requirements" (WDRs), which serve as the project discharge permit.

e. California Natural Community Conservation Plan Program

The California NCCP program was initiated in 1991 and is administered by CDFW. It is a cooperative effort by the CDFW and numerous public and private partners that takes a broad scale, ecosystem approach to planning for the protection and perpetuation of biological diversity throughout California by protecting both habitats and the species within these habitats while also accommodating compatible land use.

An NCCP plan identifies and provides for the regional protection of plants, wildlife, and their habitats, while allowing compatible and appropriate economic activity in the region. By including key interests in the process and by working with landowners, environmental organizations, and other interested parties, an NCCP plan provides the framework for a local agency to oversee the numerous activities that compose the development of a conservation plan. Within California, there are currently 23 active NCCP plans covering more than 11 million acres, and several draft NCCP plans are pending approval. The City is a signatory to the Implementation Agreement of the NCCP/HCP for the central and coastal subregion of Orange County. This is implemented at the local level through the Irvine Open Space Initiative. See Section 4.3.2.3.a for this information.

4.3.2.3 Regional Regulations

a. Orange County Central and Coastal Natural Community Conservation Plan/Habitat Conservation Plan

In May of 1996, the City, the County of Orange, various other cities, and landowners entered into an agreement to place certain lands within the NCCP/HCP Reserve and commit to certain responsibilities under this plan. Most of the northeastern part of the City is part of the NCCP/HCP. Additional NCCP/HCP reserve lands also exist in other parts of the City. Development is limited within the NCCP/HCP areas to "Covered Activities" and compatible uses. All proposals for development that are within the NCCP/HCP are required to meet these requirements and would be reviewed by the City prior to approval.

b. Local Coastal Program

Implementation of Coastal Act policies are accomplished primarily through the preparation of a Local Coastal Program (LCP). The LCP is typically prepared and adopted by a municipality or county, and then reviewed and approved by the Coastal Commission. Under the California Coastal Act, "environmentally sensitive area" denotes any area in which plant or animal life, or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. The LCP protects water quality and the biological productivity of coastal waters, promotes avoidance and minimization of dredging, diking, and filling sediments, and provides mitigation of wetland impacts. The LCP primarily covers 40 acres within the western area of the Irvine Business Complex.

4.3.2.4 Local Regulations

a. Irvine Open Space Initiative

In 1988, City residents approved the "Irvine Open Space Initiative." This initiative created the framework to preserve large, contiguous open space areas for conservation and open space as phased master-planned growth occurred in other areas of the City. This initiative set the stage for the preservation of natural open space resources that are home to a variety of wildlife species and habitats, including special status species. The Irvine Open Space Preserve, as it now is known, protects more than 93,000 acres of land from the "mountains to the sea," linking the Cleveland National Forest, San Joaquin Marsh (San Joaquin Wildlife Sanctuary), Laguna Coast Wilderness Park, and other resources.

The Cleveland National Forest encompasses 460,000 acres and is the southernmost national forest in California located in San Diego, Riverside, and Orange counties. The San Joaquin Wildlife Sanctuary is a 300-acre constructed wetland in the floodplain of San Diego Creek just above its outlet to Upper Newport Bay. The Laguna Coast Wilderness Park encompasses 7,000 acres in the San Joaquin Hills and features some of the last remaining undeveloped coastal canyons in southern California and the only natural lakes in Orange County.

The City has committed to protect and manage the Irvine Open Space Preserve consistent with the NCCP/HCP. The City and many other local governments and public and private agencies adopted the NCCP/HCP to cover this area. Of the NCCP/HCP acres in the City, 10,587 are designated for the habitat reserve system, and 813 acres are non-reserve lands called special linkages. The special linkages contain biological value that could enhance connectivity between elements of the reserve system. The City is required to implement the NCCP/HCP and review project proposals for consistency with the plan.

b. Existing General Plan (2000)

The existing general plan established a preservation land use designation with the aim of identifying lands that contain visually significant ridgelines, biotic communities of high significance, geologic constraints, and cultural resources. This designation covers more than 11,000 acres, or nearly one-

quarter of the land mass in the City. The Conservation and Open Space Element identifies goals, objectives, and policies to maintain and preserve these resources.

Key objectives and policies include, but are not limited to, the following:

Objective L-1: Implementation Action Program. Establish an implementation action program that provides the opportunity to permanently protect and preserve designated conservation and open space areas as development of designated commercial, industrial, institutional, and residential areas occurs.

Objective L-2: Biotic Resources. Maintain and preserve areas with significant and diverse biotic communities.

- Policy (f): Locate intensive human use in preservation areas away from areas with rare or endangered species, including migratory bird species and rare plant species..
- Policy (j): Light-sensitive biotic areas should be protected from glare caused by outdoor lighting fixtures.
- Policy (k): If determined necessary through project review, a wall or fence combined with vegetation screening shall be constructed between light-sensitive habitat areas and adjacent urban development. Similar measures should be taken wherever light and glare might produce adverse impacts upon light-sensitive biotic areas.

Objective L-3: NCCP/HCP Implementation Areas. Participate in the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) program to accomplish multi-species and multi-habitat conservation.

Objective L-12: Water. Coordinate land planning efforts with the appropriate federal, state & local agencies and landowners to encourage the integration of existing and future water sources (reservoirs, lakes, and drainage courses) into development.

c. Municipal Code

Title 5 (Planning), Division 7 (Sustainability in Landscaping), Chapter 4 (Urban Forestry)

Chapter 4, also known as the Urban Forestry Ordinance, outlines the provisions for the protection and enhancement of the existing urban forest resource by application of sustainability in landscaping policies and through the provision of professional management. For example, if any trees are removed, the applicant is required to carry out a tree survey and obtain a permit for their removal in accordance with the City's urban forestry ordinance (including 1:1 replacement).

Title 3 (Community Services), Division 4 (Parks), Chapter 1 (In General)

Section 3-4-132 (Protection of Natural, Cultural, Structural and Archaeological Resources) of Chapter 1 prohibits any person from possessing, destroying, injuring, defacing, removing, digging or disturbing from its natural state any of the following: plants, wildlife, artifacts, minerals, landscape structures, improvements, wood, and natural products.

d. Zoning Ordinance

Chapter 5-8 (Irvine Business Complex Residential Mixed-Use Overlay District)

Section 5-8-4.A.1 (Development Adjacent to San Diego Creek or San Joaquin Marsh) of Chapter 5-8 outlines the provisions for development adjacent to the San Diego Creek or San Joaquin Marsh, including: the prohibition of highly reflective glass windows and use of building angles in order to reduce light and glare impacts on the creek and marsh environment and reduce the incidence of bird collisions, and the prohibition of the use of exotic plant species in landscape plans that may be invasive to native habitats.

Chapter 8-16 (Open Space Management and Conservation Plan)

Chapter 8-16 of the Zoning Ordinance, Open Space Management and Conservation Plan (OSMCP) requires the preparation of plans for qualified development projects. The OSMCP facilitates compliance with biotic policies identified in biotic resources objectives L-2, and L-3, and L-12 of the Conservation and Open Space Element, the timing and phasing of mitigation measures, and the responsibilities for implementation. It is required that the OSMCP is prepared in conjunction with a concept plan and/or zone change application and in accordance with the City's guidelines for open space management and conservation plan reports. Additionally, the plan must address "transition zones" described in the Zoning Ordinance.

e. Commission Resolution No. 09.2968

Standard conditions are adopted by Planning Commission Resolution No. 09-2968 that assist staff in applying standardized wording for frequently used conditions of approval to discretionary and subdivision applications. Standard conditions are applied on a case-by-case basis depending upon the specifics of the application. Companion conditions are cross-referenced and are required to be used together. The following standard conditions related to hazards and hazardous materials apply:

Standard Condition 2.20 (Wildlife Habitat Clearance)

Prior to the issuance of permits for any grading activity including, but not limited to, clearing, grubbing, mowing, discing, trenching, grading, fuel modification, agriculture planting activity, and/or other related construction activity for a project that will involve removal of native plant communities and wildlife habitat, the applicant shall obtain written authorization from the appropriate Federal, State, and local agencies having jurisdiction over the habitat area. The authorization shall state that said activity complies with the regulations enforced by those agencies. Additionally, any mitigation requirements set forth by such agencies shall be incorporated into the project's final design plans. This written authorization, along with plans and mitigation measures, shall be submitted to the

Director of Community Development for review and shall have been approved by the Director prior to issuance of a permit for any grading activity.

Standard Condition 3.13 (Open Space Education)

Prior to issuance of the first building permit for a project adjacent to open space, location, design, and text for wild land interface signage shall be approved by the Director of Community Services in conjunction with the approval of the Master Landscape and Trails Plan, if any, or the Landscape Plan. The signage shall be located at all trailheads adjacent to the development. The signage shall educate users of the responsibilities associated with wild land interface and shall address relevant issues including the role of natural predators in the wild lands and how to minimize impacts of human and domestic pets on native communities and their inhabitants.

Standard Condition 6.10 (Open Space Education)

For any project adjacent to open space, the project applicant or subsequent builder shall distribute a wild land interface brochure to all owners, residents, and/or tenants (to be obtained from The Nature Reserve of Orange County www.naturereserveoc.org) to educate owners, residents, and/or tenants of the responsibilities associated with living at the wild land interface. The brochure shall address relevant issues, including the role of natural predators in the wild lands and how to minimize impacts of human and domestic pets on native communities and their inhabitants.

Standard Condition 6.11 (Open Space Landscaping)

Prior to the issuance of landscape construction plans for lots adjacent to any open space areas, the interface between the natural and developed areas shall be designed to employ techniques to minimize slopes and decrease slope angles, as well as, where appropriate, recreate natural features (i.e., drainage courses, rock outcroppings, landscaping, etc.), especially within areas adjacent to the NCCP Reserve, pursuant to the provisions of the approved NCCP/HCP. The landscape plans shall be reviewed by the Director of Community Services, and approved by the Director of Public Works, with regard to the landscaped interface.

f. Existing Plans, Programs, and Policies

Compliance measures are regulations imposed uniformly by the approving agency based on the proposed action taken and are required of the proposed project to reduce its potential environmental effects. Because these features are standard requirements, they do not constitute mitigation measures. The following measures are existing plans, programs, or policies (PPP) that apply to the proposed project and will help to reduce and avoid potential impacts related to biological resources:

- PPP BIO-1: Compliance with Section 404 of the CWA
- PPP BIO-2: Compliance with Section 401 of the CWA
- PPP BIO-3: Compliance with Section 1600 of the California Fish and Game Code
- PPP BIO-4: Compliance with the MBTA
- PPP BIO-5: Compliance with the Orange County Central and Coastal NCCP/HCP
- PPP BIO-6: Compliance with CESA

- PPP BIO-7: Compliance with Zoning Ordinance Division 8- Conservation and Open Space Phased Dedication Districts, Chapter 8-16 (Open Space Management and Conservation Plan)
- PPP BIO-8: Compliance with Zoning Ordinance Chapter 5-8 (Irvine Business Complex Residential Mixed-Use Overlay District)
- PPP BIO-9: Compliance with Municipal Code Title 5 (Planning), Division 7 (Sustainability in Landscaping), Chapter 4 (Urban Forestry)
- PPP BIO-10: Compliance with Standard Condition 2.20 (Wildlife Habitat Clearance)

Proposed General Plan Strategies and Policies

In addition to the above-listed PPPs, the following proposed Goals, Objectives, Policies, and Implementation Actions are applicable to the analysis of biological resources and would replace existing goals, strategies, and policies outlined in the City's existing General Plan following project approval:

Conservation and Open Space Element

Goal 2: Implement the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) agreement and program to accomplish multi-species and multi-habitat conservation.

Objective COS-2. Effectively implement the Natural Communities Conservation Plan/Habitat Conservation Plan (NCCP/HCP) agreement and program to achieve comprehensive conservation goals, including the preservation and management of diverse species and habitats across the designated area, ensuring long-term ecological sustainability and biodiversity conservation.

- **Policy (a)**: Review project proposals within the reserve system to assure consistency with the NCCP/HCP implementation agreement and program.
- **Policy (b)**: Assure that nonparticipating landowners provide evidence of payment of mitigation fees.
- **Policy (**c) Manage all City open space lands enrolled in the NCCP/HCP Reserve System consistent with the terms, conditions and obligations of the NCCP/HCP permit and Implementation Agreement and associated RRMPs, including the City's obligation to restore CSS habitat in exchange for development of the open space trail system authorized in the RRMP.
- **Policy (d)**: Use the NCCP as a Program EIR for CEQA purposes, applying the Coastal Sage Scrub (CSS) mitigation measures applicable to planned activities.
- **Policy (e)**: Adopt fuel modification ordinances and standards consistent with the Fuel Modification Zones established in the NCCP/HCP.
- **Policy (f)**: Encourage and avoid adverse impacts to wildlife movement corridors connecting the Santa Ana Mountains to the coast open space areas of Bommer and Shady Canyons, Laguna Coast Wilderness Park and Crystal Cove State Park.

Goal 5: Maintain and preserve large, contiguous areas which contain significant multiple hazards and resources.

Objective COS-5. Safeguard and conserve large, contiguous areas housing significant and diverse hazards and resources, ensuring their preservation and maintenance to mitigate environmental risks and support ecological sustainability within the City's conservation and open space framework.

- **Policy (d)**: Ensure that riparian vegetation is not significantly modified, except as necessary to provide fire protection, access roads, and flood control, drainage, water, sewer and utility facilities, and except where habitat is to be enhanced as part of a mitigation program approved by the California Department of Fish and Wildlife or Implementation of the NCCP/HCP.
- **Policy (e)**: Participate in cooperative efforts with federal, state, and county agencies and landowners in planning, managing, and restoring regionally significant conservation and open space areas within the City and its sphere of influence (Lomas Ridge, Bommer and Shady Canyons, and San Joaquin Marsh).
- **Policy (g)**: Maintain significant riparian areas within preservation areas as natural corridors, sources of shelter, and water for wildlife.
- **Policy (h)**: Minimize intensive human use in preservation areas which sustain rare or endangered species, including migratory birds and rare plant species. Ensure use patterns and levels remain consistent with the NCCP/HCP and associated Recreation and Resource Management Plan (RRMPs).
- **Policy (i)**: Preserve and enhance the San Joaquin Marsh as a habitat resource and mitigation bank through implementation of the "San Joaquin Marsh Habitat Enhancement and Wetlands Creation Program."
- **Policy (j)**: Seek the least environmentally damaging and feasible alternatives where modifications of the natural topography are necessary in preservation area. Ensure that all impacts to preservation areas enrolled in the NCCP/HCP reserve system are consistent with the Implementation Agreement and associated RRMPs.
- **Policy (k)**: Ensure that any public road, arterial highway, transportation corridor, or utility that must pass through preservation areas outside the NCCP/HCP Reserve is the least environmentally damaging feasible alternative to the preservation area's environmental characteristics.
- **Policy (l)**: Ensure continuity and continued enhancement of the Agua Chinon and Wildlife Corridor in Planning Area 51.
- **Policy (m)**: Encourage special linkages for wildlife corridors, when feasible and suitable, within the City and sphere of influence as well as in non NCCP/HCP Reserve areas containing "target and identified species."

4.3.3 Significance Determination Thresholds

The City has adopted Appendix G of the State CEQA Guidelines as the significance thresholds for biological resources. A project would normally have a significant effect on the environment if the project would:

1) Have a substantial adverse effect, either directly or through habitat modifications, 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 Wildlife (CDFW) or US Fish and Wildlife Service (USFWS);

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 CDFW or USFWS;

3) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

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;

5) Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance; or

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.

4.3.4 Methodology

A biological resources technical report was prepared for the project that included a review of current federal, state, and local regulations; aerial imagery; U.S. Geological Survey (USGS) topographic maps; U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey maps; climate information for the City; and reputable online resources that provide data for the region. In addition, existing biological resource documents for the Central and Coastal Subregion of Orange County, California NCCP/HCP were also reviewed for pertinent information. Queries were also made of the CNDDB and USFWS Listed Species Database to identify known sensitive biological resources in the vicinity of the City.

4.3.5 Topic 1: Sensitive Species

Would the project result in a substantial adverse impact, either directly or through habitat modifications, to any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the CDFW or USFWS?

4.3.5.1 Impact Analysis

The proposed project would facilitate future development consisting of residential uses required to meet the City's Regional Housing Needs Assessment (RHNA) requirement, nonresidential uses within the Great Park, continued development of nonresidential uses at the same intensities as permitted under the existing General Plan, and the extension of Ada roadway.

Buildout of the project would have the potential to directly and/or indirectly impact candidate, sensitive, or special status species. Potential direct impacts would include removal of habitat through future development and redevelopment projects that support sensitive species. As noted below, while future development would largely occur within the focus areas on developed and/or disturbed land and avoid known occurrences of sensitive species, future development may occur throughout

the City, including on vacant parcels with habitat types that may support sensitive species. Additionally, future development may result in indirect impacts to sensitive plant or wildlife species due to excess noise, lighting, or runoff generated during construction of projects both within and outside the focus areas. Furthermore, project construction could result in direct impacts to nesting or migratory birds from the removal of mature trees and/or native vegetation within project areas during the typical bird breeding season (January 15 to September 15; PPP BIO-4).

The project has been designed to minimize impacts to sensitive species by primarily focusing on future development and redevelopment within the proposed Focus Areas. Figure 4.3-1 presents the locations of the proposed Focus Areas in relation to mapped vegetation communities. As shown in Figure 4.3-1, there are no mapped vegetation communities within Focus Area 1, limited amounts in Focus Area 2, and some habitat in Focus Area 3. Additionally, the mapped vegetation communities in Focus Area 2 overlap with the Orange County NCCP/HCP Non-Reserve Open Space presented in Figure 4.3-3, and the mapped vegetation communities in Focus Area 3 overlap with the Orange County NCCP Reserve. Therefore, focusing development and redevelopment within areas that consist primarily of developed and/or disturbed land would minimize adverse impacts to sensitive species. All future development would be required to demonstrate compliance with CESA (PPP BIO-6), as well as the requirements of the MBTA for the protection of nesting birds, especially during the breeding season (January 15 to September 15). Furthermore, Goal 2, Objective COS-2 and Goal 5, Objective COS-5 of the Conservation and Open Space Element Update includes objectives and policies aimed to further conserve and restore natural ecosystems, protect biodiversity, and expand access to green space. Compliance with updated Conservation and Open Space Element goals, objectives, and policies would serve to further support the City's goal of protecting biological resources.

Figure 4.3-2 presents the locations of the proposed Focus Areas in relation to recorded sensitive species observations within the City. As shown in Figure 4.3-2, the proposed Focus Areas have few sensitive species observations, with most observations located within surrounding conserved areas with habitat value. While future development would largely occur within the focus areas on developed and/or disturbed land and avoid known occurrences of sensitive species, future development may occur throughout the City, including on vacant parcels with habitat types that may support sensitive species. Additionally, future development may result in indirect impacts to sensitive plant or wildlife species due to excess noise, lighting, or runoff generated during construction of projects both within and outside the focus areas. Furthermore, project construction could result in direct impacts to nesting or migratory birds from the removal of mature trees and/or native vegetation within project areas during the typical bird breeding season (January 15 to September 15). At a program level of analysis, it cannot be known with certainty that impacts to sensitive species.

4.3.5.2 Significance of Impacts

At a program level of analysis, it cannot be known with certainty that impacts to sensitive species could be fully avoided, which would be considered a potentially significant impact.

4.3.5.3 Mitigation

As part of the project approval process, each future proposed project shall include an initial site assessment to determine if sensitive biological resources could be present within and/or adjacent to the proposed development project and whether the project site lies inside the NCCP/HCP Reserve System (including the Irvine Open Space Preserve of the Irvine Open Space Initiative) or Special Linkage Areas or whether it lies outside. If no sensitive biological resources have a potential to occur within and/or adjacent to the proposed project, the City may approve the proposed project to proceed without further biological resource analyses. If sensitive biological resources have potential to occur, the following general biological mitigation measures would apply.

BIO-1: Prior to project approvals, applicants for future development projects with the potential to disturb sensitive biological resources shall include a biological resources survey. The survey shall be conducted by a qualified biologist. The biological resources survey shall include, but not be limited to:

- A search of available literature and biological databases, such as CNDDB to determine sensitive biological resources that have been reported from the proposed project vicinity.
- Mapping vegetation communities on the proposed project site.
- A general assessment and mapping of all potential jurisdictional resources (wetlands and riparian habitats).
- Evaluating wildlife movement corridors in the vicinity of the proposed project site.

BIO-2: If the proposed development project site supports vegetation communities that may provide habitat for special status plant or animal species, a focused habitat assessment shall be conducted by a qualified biologist to determine the potential for special status plant and/or animal species to occur within or adjacent to the proposed development project area.

BIO-3: If one or more special status species has the potential to occur within the proposed development project area, focused species surveys shall be conducted to determine the presence/absence of these species to adequately evaluate potential direct and/or indirect impacts to these species.

BIO-4: If construction activities are not initiated immediately after focused surveys have been completed, additional pre-construction special status species surveys may be required to assure impacts are avoided or minimized to the extent feasible. If pre-construction activities are required, a qualified biologist would perform these surveys as required for each special status species that is known to occur or has a potential to occur within or adjacent to the proposed development project area.

BIO-5: The results of the biological survey shall be presented in a biological survey letter report for proposed development projects with no significant impacts, or in a

biological technical report for proposed development projects with significant impacts that require mitigation to reduce the impacts to below a level of significant.

BIO-6: If sensitive biological resources are identified within or adjacent to the proposed development project area, the construction limits shall be clearly flagged to ensure impacts to sensitive biological resources are avoided or minimized to the extent feasible. Prior to implementing construction activities, a qualified biologist shall verify that the flagging clearly delineates the construction limits and that sensitive resources to be avoided.

BIO-7: If sensitive biological resources are known to occur within or adjacent to the proposed development project area, a project-specific contractor training program shall be developed and implemented to educate project contractors on the sensitive biological resources within and adjacent to the proposed development project area and measures being implemented to avoid and/or minimize impacts to these species. A qualified biologist shall develop and implement the contractor training program.

BIO-8: If sensitive biological resources are present within or adjacent to the proposed development project area and impacts may occur from implementation of construction activities, a qualified biological monitor may be required during a portion or all of the construction activities to ensure impacts to the sensitive biological resources are avoided or minimized to the extent feasible. The specific biological monitoring requirements shall be evaluated on a project-by-project basis. The qualified biological monitor shall be approved by the City on a project-by-project basis based on applicable experience with the sensitive biological resources that may be impacted by the proposed development project activities.

4.3.5.4 Significance of Impacts after Mitigation

Implementation of mitigation measures BIO-1 through BIO-8 would identify potential impacts to sensitive species and appropriate measures to reduce the impacts to below a level of significance. Implementation of mitigation measure BIO-1 would reduce impacts on sensitive and special status species to a less than significant level.

4.3.6 Topic 2: Sensitive Riparian Habitats

Would the project result in a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?

4.3.6.1 Impact Analysis

The proposed project would facilitate future development consisting of residential uses required to meet the City's RHNA requirement, nonresidential uses within the Great Park, continued development of nonresidential uses at the same intensities as permitted under the existing General Plan, and the extension of Ada roadway.

As described in Section 4.3.1.2.e above, several riparian resources have been identified within the City. The project has been designed to minimize impacts to riparian and sensitive habitats by primarily focusing future development and redevelopment within the proposed Focus Areas. Figure 4.3-1 presents the locations of the proposed Focus Areas in relation to mapped vegetation communities, some of which qualify as riparian and sensitive habitats. As shown in Figure 4.3-1, there are no mapped vegetation communities within Focus Area 1, limited amounts in Focus Area 2, and some habitat in Focus Area 3. Additionally, the mapped vegetation communities in Focus Area 2 overlap with the Orange County NCCP/HCP Non-Reserve Open Space presented in Figure 4.3-3, and the mapped vegetation communities in Focus Area 3 overlap with the Orange County NCCP Reserve. Therefore, focusing development and redevelopment within areas that consist primarily of developed and/or disturbed land would minimize adverse impacts to riparian and sensitive habitats. However, future development may occur throughout the City as part of the project, including on vacant parcels with riparian and sensitive habitats. These vacant parcels may possess riparian and other sensitive habitats. Future development would be required to demonstrate compliance with the Orange County Central and Coastal NCCP/HCP (PPP BIO-5) and CESA (PPP BIO-6), as applicable. Future projects would be required to comply with mitigation measures BIO-9 and BIO-10, which require jurisdictional delineations to be conducted for projects potentially affecting riparian habitats and all necessary authorizations to be obtained for projects affecting such resources. Furthermore, Goal 2 and Objective COS-2 of the Conservation and Open Space Element Update which seek to maintain compliance with the NCCP/HCP, with supporting policies aimed at continued compliance under this plan, would further support the City's goal of reducing impacts to riparian and sensitive habitats.

4.3.6.2 Significance of Impacts

At a program level of analysis, it cannot be known with certainty that impacts to riparian and sensitive habitats could be fully avoided, which would be considered a potentially significant impact.

4.3.6.3 Mitigation

Buildout of the project has the potential to adversely affect riparian and sensitive habitats. If no riparian and sensitive habitats have a potential to occur within and/or adjacent to the proposed project, the City may approve the proposed project to proceed without further biological resource analyses. If sensitive riparian and sensitive habitats have potential to occur, mitigation measures BIO-9 and BIO-10 below would apply.

BIO-9: Prior to project approval, if a proposed project has the potential to affect riparian and sensitive habitats and/or jurisdictional resources, a qualified biologist conduct a jurisdictional delineation following the methods outlined in the 1987 Corps Wetland Delineation Manual (USACE 1987) and the Regional Supplement to the Corps Wetland Delineation Manual: Arid West Region (USACE 2008) to map the extent of wetlands and non-wetland waters, determine jurisdiction, and assess potential impacts. The results of the delineation shall be presented in a wetland delineation letter report and shall be incorporated into the California Environmental Quality Act document(s) required for approval and permitting of the proposed project.

BIO-10: If the results of mitigation measure BIO-9 above determine that a proposed project would impact riparian and sensitive habitats and/or jurisdictional features, permits and authorizations shall be obtained from the U.S. Army Corps of Engineers, California Department of Fish and Wildlife, and/or Regional Water Quality Control Board prior to project approval. The regulatory agency authorization(s) would include specific avoidance, minimization, and mitigation measures for impacts to riparian and sensitive habitats and/or jurisdictional resources, which may include monetary contributions to a mitigation bank or habitat creation, restoration, and/or enhancement.

4.3.6.4 Significance of Impacts after Mitigation

Implementation of mitigation measures BIO-9 and BIO-10 would identify specific avoidance, minimization, and mitigation measures for impacts to riparian and sensitive habitats, which may include monetary contributions to a mitigation bank or habitat creation, restoration, and/or enhancement. Implementation of mitigation measures BIO-9 and BIO-10 would reduce impacts on riparian and sensitive habitats to a level less than significant.

4.3.7 Topic 3: Jurisdictional Wetlands and Waters

Would the project result in substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

4.3.7.1 Impact Analysis

The proposed project would facilitate future development consisting of residential uses required to meet the City's RHNA requirement, nonresidential uses within the Great Park, continued development of nonresidential uses at the same intensities as permitted under the existing General Plan, and the extension of Ada roadway.

As described in Section 4.3.1.2e above, jurisdictional wetlands and waters have been identified within the City. The project has been designed to minimize impacts to jurisdictional wetlands and waters by primarily focusing future development and redevelopment within the proposed Focus Areas. Figure 4.3-1 presents the locations of the proposed Focus Areas in relation to mapped vegetation communities, some of which qualify as jurisdictional wetlands and waters. As shown in Figure 4.3-1, there are no mapped vegetation communities within Focus Area 1, limited amounts in Focus Area 2, and some habitat in Focus Area 3. Additionally, the mapped vegetation communities in Focus Area 2 overlap with the Orange County NCCP/HCP Non-Reserve Open Space presented in Figure 4.3-3, and the mapped vegetation communities in Focus Area 3 overlap with the Orange County NCCP Reserve. Therefore, focusing development and redevelopment within these areas that consist primarily of developed and/or disturbed land would minimize adverse impacts to jurisdictional wetlands and waters. However, future development may occur throughout the City, including on vacant parcels with jurisdictional wetlands and waters. Future development would be required to demonstrate compliance with Section 404 of the CWA (PPP BIO-1), Section 401 of the CWA (PPP BIO-2), Section 1600 of the California Fish and Game Code (PPP BIO-3), and the Orange County

Central and Coastal NCCP/HCP (PPP BIO-5) as applicable. Future projects would also be required to comply with mitigation measure BIO-9 and BIO-10, which require jurisdictional delineations to be conducted for projects potentially affecting wetlands and all necessary authorizations to be obtained for projects affecting such resources. Furthermore, Goal 5, Objective COS-5 of the Conservation and Open Space Element Update which seeks to protect environmental quality would further the City's goal of reducing impacts to wetlands.

4.3.7.2 Significance of Impacts

At a program level of analysis, it cannot be known with certainty that impacts to jurisdictional wetlands and waters could be fully avoided, which would be considered a potentially significant impact.

4.3.7.3 Mitigation

See mitigation measures BIO-9 and BIO-10 above.

4.3.7.4 Significance of Impacts after Mitigation

Implementation of mitigation measures BIO-9 and BIO-10 would identify specific avoidance, minimization, and mitigation measures for impacts to jurisdictional resources, which may include monetary contributions to a mitigation bank or habitat creation, restoration, and/or enhancement. Implementation of mitigation measures BIO-9 and BIO-10 would reduce impacts on jurisdictional wetlands and waters to a less than significant level.

4.3.8 Topic 4: Wildlife Corridors

Would the project 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?

4.3.8.1 Impact Analysis

The proposed project would facilitate future development consisting of residential uses required to meet the City's RHNA requirement, nonresidential uses within the Great Park, nonresidential uses at the same intensities as permitted under the existing General Plan, and the extension of Ada roadway.

Future development under the project would not be within the NCCP/HCP areas, which have been placed over regional and local wildlife corridors. Much of the City's open space has already been reserved or designated as special linkages, including through the Irvine Open Space Initiative. Future development under the project would be required to demonstrate compliance with the Orange County Central and Coastal NCCP/HCP (PPP BIO-5) and CESA (PPP BIO-6), as applicable, including with respect to wildlife movement. Additionally, Conservation and Open Space Element Goal 2, Objective COS-2 and Goal 5, Objective COS-5 seek to implement the NCCP/HCP and conserve and restore natural resources. These efforts include implementing the NCCP/HCP to ensure long-term ecological sustainability and biodiversity conservation and designing future projects to avoid impacts

to biological resources. Due to the anticipated location of development, combined with existing PPPs, the project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species, or with established native resident migratory wildlife corridors, including linkages identified in the Irvine Open Space Initiative. Compliance with goals, objectives, and policies in the updated Conservation and Open Space Element would also further the City's goals of reducing impacts to migratory wildlife corridors or native wildlife nursery sites.

4.3.8.2 Significance of Impacts

The project would not 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, and impacts would be less than significant.

4.3.8.3 Mitigation

Impacts would be less than significant. No mitigation is required.

4.3.8.4 Significance of Impacts after Mitigation

Impacts would be less than significant. No mitigation is required.

4.3.9 Topic 5: Local Ordinances

Would the project conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?

4.3.9.1 Impact Analysis

The proposed project would facilitate future development consisting of residential uses required to meet the City's RHNA requirement, nonresidential uses within the Great Park, continued development of nonresidential uses at the same intensities as permitted under the existing General Plan, and the extension of Ada roadway.

Future development would be required to demonstrate compliance with Section 404 of the CWA (PPP BIO-1), Section 401 of the CWA (PPP BIO-2), Section 1600 of the California Fish and Game Code (PPP BIO-3), and the Orange County Central and Coastal NCCP/HCP (PPP BIO-5) and CESA (PPP BIO-6). Furthermore, Conservation and Open Space Element Goal 2, Objective COS-2 and Goal 5, Objective COS-5 seek to conserve and restore natural resources. These efforts include implementing the NCCP/HCP to ensure long-term ecological sustainability and biodiversity conservation and requirement future projects to avoid impacts to biological resources. Therefore, impacts related to conflicts with local policies and ordinances intended to protect biological resources would be less than significant.

4.3.9.2 Significance of Impacts

The project would not conflict with local policies and ordinances intended to protect biological resources, and impacts would be less than significant.

4.3.9.3 Mitigation

Impacts would be less than significant. No mitigation is required.

4.3.9.4 Significance of Impacts after Mitigation

Impacts would be less than significant. No mitigation is required.

4.3.10 Topic 6: Habitat Conservation Plan

Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

4.3.10.1 Impact Analysis

a. Orange County NCCP

The City has committed to protect and manage the Irvine Open Space Preserve consistent with the NCCP/HCP. The City and many other local governments and public and private agencies adopted the NCCP/HCP to cover this area. Of the NCCP/HCP acres in the City, 10,587 are designated for the habitat reserve system, and 813 acres are non-reserve lands called special linkages. The special linkages contain biological value that could enhance connectivity between elements of the reserve system.

Future development resulting from implementation of the project would be required to comply with the NCCP/HCP. As part of the project approval process, each future proposed project with the potential to impact biological resources would be required to conduct an initial site assessment to determine if sensitive biological resources could be present within and/or adjacent to the proposed development project (refer to mitigation measure BIO-1). Individual projects would also be assessed for compliance with the NCCP/HCP depending on whether the project site lies inside the NCCP/HCP Reserve System (including the Irvine Open Space Preserve of the Irvine Open Space Initiative) or Special Linkage Areas. If no sensitive biological resources have a potential to occur within and/or adjacent to the proposed project, the City may approve the proposed project to proceed without further biological resource analyses. If sensitive biological resources have potential to occur, future development may have the potential to conflict with the NCCP/HCP.

b. Local Coastal Program

The proposed project would facilitate future development consisting of residential uses required to meet the City's RHNA requirement, nonresidential uses within the Great Park, continued

development of nonresidential uses at the same intensities as permitted under the existing General Plan, and the extension of Ada roadway.

A small portion of Focus Area 1 is located within the coastal zone of the City's Local Coastal Plan. The majority of this area is developed with industrial and office uses, with the remaining portion of the City's coastal zone located in an area that is regulated by University of California, Irvine and is therefore not covered by the City's Local Coastal Program. Any future development facilitated by the project that would be located within the coastal zone would be required to comply with the Local Coastal Program. Specifically, future projects would be required to file for a consistency determination with the Airport Land Use Commission (ALUC) as specified in Section 4.7 of the Airport Environs Land Use Plans (AELUP). If ALUC determines that a proposed project is inconsistent with the AELUP, ALUC is required to notify the City. The City may modify the project to be consistent with the AELUP and resubmit to ALUC or the City can overrule ALUC by following the procedures in Public Utilities Code Sections 21676 and 21676.5. This procedure would require the City to hold a public hearing on the matter, make specific findings that the proposed overruling is consistent with Public Utilities Code Section 2160, and overrule ALUC by at least two-thirds vote of the applicable governing body (likely the City's Planning Commission and/or City Council).

Furthermore, the project itself requires a Local Coastal Program amendment to ensure consistency between the proposed General Plan, Zoning Ordinance, and Zoning Map amendments. Approval of a Local Coastal Program would ensure consistency with the project and the Local Coastal Program and would therefore serve to further minimize impacts to biological resources.

4.3.10.2 Significance of Impacts

If sensitive biological resources have potential to occur, future development may have the potential to conflict with the NCCP/HCP, which would be considered significant. Conflicts with the LCP would be less than significant and would not require mitigation.

4.3.10.6 Mitigation

See mitigation measures BIO-1 through BIO-10 above regarding consistency with the NCCP/HCP. Conflicts with the LCP would be less than significant and would not require mitigation.

4.3.10.4 Significance of Impacts after Mitigation

Implementation of mitigation measures BIO-1 through BIO-10 would reduce conflicts with the NCCP/HCP to a level less than significant. Conflicts with the LCP would be less than significant and would not require mitigation.

4.3.11 Cumulative Analysis

As defined in Section 15130 of the State CEQA Guidelines, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for biological resources. The study area for the assessment of cumulative impacts related to biological resources is inclusive of the City limits,

including the area covered by the LCP, as well as the Orange County Central and Coastal NCCP/HCP area, which identifies and provides for the regional protection of plants, wildlife, and their habitats, while allowing compatible and appropriate economic activity in the region. The project has focused development and redevelopment within areas that consist primarily of developed and/or disturbed land with limited biological value. Future development would be required to demonstrate compliance with Section 404 of the CWA (PPP BIO-1), Section 401 of the CWA (PPP BIO-2), Section 1600 of the California Fish and Game Code (PPP BIO-3), and the Orange County Central and Coastal NCCP/HCP (PPP BIO-5) and CESA (PPP BIO-6), as well as complete site-specific analysis that would identify the presence of sensitive species and appropriate mitigation would be applied to reduce potential impacts. Therefore, the project would not contribute to a cumulative impact to biological resources. Compliance with goals, objectives, and policies in the updated Conservation and Open Space Element would further the City's goals of reducing cumulative impacts to biological resources.