4.4 Biological Resources

This section describes the existing biological resources conditions of the project site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed project. The analysis included in this section is based on the findings of the document listed below, as well as publicly available information referenced throughout this section and provided in full in Section 4.4.8, References. Sources used for this section include the following:

- **Appendix C:** Biological Resources Technical Report (BRTR); prepared by Dudek; dated August 14, 2025

4.4.1 Existing Conditions

An initial biological reconnaissance survey was to identify the existing conditions, map vegetation, and determine potential biological constraints to the project. Methodologies of the reconnaissance survey and BRTR are explained in Section 4.4.4, Impacts Analysis.

The project site is generally located along the northern boundary of the City of Irvine (City) in central Orange County, California (Figure 3-1, Project Location). Specifically, the project is located east of the Portola Parkway and Jeffrey Road intersection and is bounded by Portola Parkway to the south, Jeffrey Road/Hicks Haul Road to the west, and Bee Canyon Access Road to the east. Hicks Canyon Wash forms the northern boundary of the site. The project site is situated in Sections 20, 21 and 29 of Township 5 South, Range 8 West and can be found on the El Toro U.S. Geological Survey 7.5-minute topographic quadrangle map (USGS 2022). The project site consists of the following parcels: Assessor's Parcel Numbers 104-117-66, 104-117-67, 104-117-68, 104-117-69, 104-117-70, 104-117-12, 104-117-14, 104-117-15, 104-117-17, 104-117-18, 104-117-23, and 104-117-29.

The 120-acre residential village would include an approximately 104.19-acre development footprint, consisting of residential houses, parks, and streets, the Jeffrey Open Space Trail (JOST), and fuel management zones, referred to herein as the project site. Focused surveys for least Bell's vireo (*Vireo bellii pusillus*) and coastal California gnatcatcher (*Polioptila californica californica*) also include an adjacent 500-foot buffer, referred to herein as the survey area.

The project site has been subject to agricultural land use dating back to at least 1946 (NETR 2025), consisting of agricultural fields and facilities. As of 2018, agricultural fields in the northeastern section of the project site appear to have been graded and used for soil stockpiling or were left fallow. During surveys in 2024 and 2025, wheat fields were being actively farmed in the southwestern section of the property. The project site is heavily disturbed with non-native plant species, both cultivated as a part of past and current agricultural activities and naturalized via recruitment of invasives onto the site. Most notably, the project site is heavily impacted by stinknet (*Oncosiphon pilulifer*), poison hemlock (*Conium maculatum*), shortpod mustard (*Hirschfeldia incana*), and crowndaisy (*Glebionis coronaria*), which are on the California Invasive Plant Council (Cal-IPC) Inventory list (Cal-IPC 2025). Land use surrounding the project site consists of existing residential developments, consisting of the Stonegate neighborhood to the south and the Orchard Hills neighborhood to the west, and undeveloped Natural Community Conservation Plan & Habitat Conservation Plan, County of Orange Central & Coastal Subregion (NCCP/HCP) reserve lands to the east and north.

The most significant change in topography within the project site is its location at the southern end of Hick's Canyon, which is situated within the foothills of the Santa Ana Mountains. The environmental setting of the project site is described in greater detail in the sections below.

Climate

The project site is located within the foothills of the Santa Ana Mountains, west of the Peninsular Range, approximately 19 miles east of the Pacific Ocean. It is in a Mediterranean climate characterized by mild, dry summers and wet winters. Average temperatures in the City range from an annual low of 40°F to an annual high of 85°F, and the area generally receives a yearly rainfall of about 12.86 inches per year (WRCC 2025).

Soils

According to the Natural Resources Conservation Service Web Soil Survey (USDA 2025), the project site occurs within Orange County and Part of Riverside County California soil survey area (CA678). Ten soil types were found within the project site: Anaheim clay loam, 15% to 30% slopes; Anaheim clay loam, 30% to 50% slopes; Balcom clay loam, 15% to 30% slopes; Calleguas clay loam, 50% to 75% slopes, eroded; Cieneba sandy loam, 15% to 30% slopes; Metz loamy sand; San Emigdio fine sandy loam, 0% to 2% slopes; Soper gravelly loam, 30% to 50% slopes, Major Land Resource Area (MLRA) 20; Sorrento loam, 0% to 2% slopes, warm Mean Annual Air Temperature, MLRA 19; and pits.

Observed surface soils throughout the majority of the project site are highly disturbed due to historical agricultural and industrial uses. Two soil types mapped within the project site, Metz loamy sand and pits, are considered hydric by the Natural Resources Conservation Service (USDA 2025); however, these portions of the project site are primarily developed or in an upland setting.

Terrain

The project site is located in central Orange County and occurs predominantly on flat agricultural fields and facilities. The site gently slopes from northeast to southwest and has a relatively flat grade, with an elevation ranging between 330 feet above mean sea level (amsl) and 515 feet amsl.

Vegetation Communities and Land Cover Types

Vegetation communities were mapped in the field during the biological reconnaissance survey. Mapping found that the project site consists of developed, disturbed, and agricultural land and a mix of native and non-native vegetation communities (Figure 4.4-1, Vegetation and Land Cover Map). A total of 11 vegetation communities and land cover types were mapped in the project site (Table 4.4-1). The vegetation communities and land covers listed here were adapted from the Manual of California Vegetation, Online Edition (CNPS 2025a).

Vegetation communities and land cover types mapped on the project site include two native vegetation communities, five naturalized vegetation communities, and four non-natural land cover types. These vegetation communities and land covers are described in further detail below and are summarized in Table 4.4-1. Vegetation communities with a state rarity rank of S1, S2, or S3, as well as those communities regulated by the resource agencies (U.S. Army Corps of Engineers [USACE], Regional Water Quality Control Board [RWQCB], and/or California Department of Fish and Wildlife [CDFW]), such as riparian habitats, are considered sensitive natural communities. No vegetation communities with a state rarity rank of S1, S2, or S3 were mapped on the project site. One riparian vegetation community (mulefat thickets), which is considered sensitive, was mapped in the previously permitted portion of the project site. Vegetation communities and land cover types are described in further detail below.

Table 4.4-1. Vegetation Communities and Land Cover Types Within the Project Site

Vegetation Communities and Land Cover Types	Alliance[a]	Association	Ranking[b]	Project Site (Acres)[c]
Native Vegetation Communities				
Laurel sumac scrub	*Malosma laurina* shrubland alliance	*Malosma laurina* association	G4 S4	5.21
Mulefat thickets	*Baccharis salicifolia* shrubland alliance	*Baccharis salicifolia* association	G5 S5	0.37
		Native Vegetation Communities Subtotal		*5.58*
Naturalized Vegetation Communities				
Upland mustards or star-thistle fields	*Brassica nigra*–*Centaurea* (*solstitialis*, *melitensis*) herbaceous semi-natural alliance	*Hirschfeldia incana* association	GNA SNA	18.68
		Centaurea melitensis association	GNA SNA	1.26
Red brome or mediterranean grass grasslands	*Bromus rubens*–*Schismus* (*arabicus*, *barbatus*) herbaceous semi-natural alliance	*Bromus rubens*–mixed herbs association	GNA SNA	2.55
Eucalyptus–tree of heaven–black locust groves	*Eucalyptus* spp.–*Ailanthus altissima*–*Robinia pseudoacacia* woodland semi-natural alliance	*Eucalyptus* (*globulus*, *camaldulensis*) association	GNA SNA	2.56
Pepper tree or myoporum groves	*Schinus* (*molle*, *terebinthifolius*)–*Myoporum laetum* forest & woodland semi-natural alliance	*Schinus molle* association	GNA SNA	0.68
		Naturalized Vegetation Communities Subtotal		*25.72*
Non-Natural Land Cover Types				
General agriculture	None	None	None	35.60
Urban/developed	None	None	None	21.33
Disturbed habitat	None	None	None	15.32
Ornamental plantings	None	None	None	0.63
		Non-Natural Land Cover Types Subtotal		*72.88*
			Total	**104.19**

Notes:

1 The term "semi-natural" is used in the Manual of California Vegetation to distinguish vegetation types dominated by non-native plants from natural vegetation communities (CNPS 2025a).

2 The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, S = subnational/state). The numbers have the following meaning (NatureServe 2025):
1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure
NA = no applicable ranking

3 Totals may not sum precisely due to rounding.

Laurel Sumac Scrub

Laurel sumac scrub includes laurel sumac as dominant or co-dominant in the shrub canopy with California sagebrush, bigpod ceanothus (*Ceanothus megacarpus*), bush monkeyflower, coastal buckwheat (*Eriogonum cinereum*), California brittlebush, California buckwheat, chaparral yucca, toyon (*Heteromeles arbutifolia*), hollyleaf redberry, lemonade sumac, sugar sumac, purple sage (*Salvia leucophylla*), black sage, and poison oak. These communities typically occur on steep slopes where soils are shallow and fine textured (CNPS 2025a). Laurel sumac scrub is mapped in the northern portion of the project site in uplands associated with a mapped drainage feature. It is also mapped in the eastern extent of the project site, west of Bee Canyon Access Road. Areas mapped as laurel sumac also include non-native trees, such as river redgum (*Eucalyptus camaldulensis*) and Peruvian peppertree (*Schinus molle*), as well as scattered native riparian trees and shrubs, such as blue elderberry (*Sambucus mexicana*), mulefat (*Baccharis salicifolia*), and Goodding's willow (*Salix gooddingii*), that were too low in cover to be considered dominant. Additionally, these areas contain a high cover of poison hemlock, shortpod mustard, and crowndaisy, which are included in the Cal-IPC Inventory (Cal-IPC 2025).

The laurel sumac scrub alliance has a rank of G4S4, meaning it is globally secure and secure in the state (NatureServe 2025). Therefore, this alliance is not considered a sensitive vegetation community by CDFW (CDFW 2025a). The association within the laurel sumac scrub alliance mapped on site is the *Malosma laurina* association. This association is also ranked as G4S4 and is therefore not considered sensitive by CDFW (2025a).

Mulefat Thickets

Mulefat thickets feature mulefat as the dominant or co-dominant shrub in the canopy. Mulefat thicket communities are characterized by a continuous two-tiered canopy that is less than 16 feet (5 meters) in height, with one tier under 16 feet and the secondary tier under 6.5 feet (2 meters) in height. Mulefat thickets commonly have a sparse herbaceous layer (CNPS 2025a). Species associated with this alliance include California sagebrush, coyote brush (*Baccharis pilularis*), laurel sumac, tree tobacco (*Nicotiana glauca*), arrow weed (*Pluchea sericea*), blackberry (*Rubus* spp.), sandbar willow (*Salix exigua*), arroyo willow (*Salix lasiolepis*), blue elderberry (*Sambucus nigra*), and tamarisk (*Tamarix ramosissima*). Emergent trees present at low covers may include foothill pine (*Pinus sabiniana*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), oak trees (*Quercus* ssp.), and willows (CNPS 2025a). Mulefat thickets are mapped in the northern corner of the project site, entirely within the previously permitted area.

Mulefat thickets has a rank of G5S4, meaning it is globally secure and apparently secure in California (NatureServe 2025). The association within the mulefat thickets alliance mapped on site is the *Baccharis salicifolia* association. This association is ranked as G5S5, secure both globally and within California, and is therefore not considered sensitive by CDFW (2025a). However, this riparian vegetation community is considered a sensitive vegetation community.

Upland Mustards or Star Thistle Fields

This semi-natural alliance is described by the Manual of California Vegetation as non-native ruderal forbs that are dominant in an open to continuous herbaceous layer, with emergent shrubs or trees that may be present at low cover (CNPS 2025a). Areas dominated by shortpod mustard and Maltese star-thistle (*Centaurea melitensis*) are present throughout the project site. Both species are listed in the Cal-IPC inventory. Within the project site, upland mustards and star thistle fields are primarily located in former agricultural areas. These areas also included a high cover of other invasives, most notably stinknet and crowndaisy, which are also included in the Cal-IPC Inventory (Cal-IPC 2025).

Upland mustards or star-thistle fields semi-natural alliance is ranked by CDFW (2025) as a GNA SNA alliance. This ranking indicates that globally and within California, the alliance is not applicable for a conservation status rank (NatureServe 2025). Two associations within the upland mustards or star-thistle fields alliance were mapped on site: *Hirschfeldia incana* and *Centaurea melitensis*. The *Centaurea melitensis* association is also ranked as GNA SNA while the *Hirschfeldia incana* association is provisionally ranked as GNA SNA (CDFW 2025a).

Red Brome or Mediterranean Grass Grasslands

Red brome or Mediterranean grass grasslands communities include red brome (*Bromus rubens*), Mediterranean grass (*Schismus arabicus*), and/or common Mediterranean grass (*Schismus barbatus*) as dominant or co-dominant species, with other non-natives in the herbaceous layer. This alliance has an open to continuous herbaceous layer that is less than 2.5 feet (75 centimeters) in height. Emergent trees and shrubs may be present at low cover. Red brome or Mediterranean grass grasslands can be found along all topographic settings and soil textures (CNPS 2025a). Red brome or Mediterranean grass grassland were mapped on uplands in the northern portion of the project site.

The red brome or Mediterranean grass grasslands semi-natural alliance is ranked by CDFW (2025a) as a GNA SNA alliance. This ranking indicates that globally and within California, the alliance is not applicable for a conservation status rank (NatureServe 2025). The association within the red brome or Mediterranean grass grasslands alliance mapped on site is the *Bromus rubens* - mixed herbs association. This association is not ranked by CDFW (2025a).

Eucalyptus–Tree of Heaven–Black Locust Groves

This semi-natural alliance is described by the Manual of California Vegetation as non-native trees planted as groves and windbreaks. The *Eucalyptus* (*globulus, camaldulensis*) association refers to areas dominated by eucalyptus trees (*Eucalyptus* spp.) with an open to continuous canopy and sparse to intermittent shrub and herb layers (CNPS 2025a). Stands of eucalyptus trees were mapped along the eastern boundary of the project bordering Bee Canyon Access Road.

This semi-natural alliance is ranked as GNA SNA by CDFW (2025a), indicating that globally and within California, the alliance is not applicable for a conservation status rank (NatureServe 2025). The association within the Eucalyptus–tree of heaven–black locust groves alliance mapped on site is the *Eucalyptus* (*globulus, camaldulensis*) association. This association is ranked as GNA SNA (CDFW 2025a).

Pepper Tree or Myoporum Groves

This semi-natural alliance is described by the Manual of California Vegetation as non-native trees planted as groves and windbreaks where pepper tree (*Schinus* spp.) or Myoporum dominate in an open to continuous canopy less than 59 feet (18 meters) in height, with a simple to diverse herbaceous layer (CNPS 2025a). Small patches of pepper tree groves are present along the eastern boundary bordering Bee Canyon Access Road.

Pepper tree or Myoporum groves semi-natural alliance is ranked as GNA SNA by CDFW (2025a), indicating that globally and within California, it is not applicable for a conservation status rank (NatureServe 2025). The association within the Pepper tree or Myoporum groves alliance mapped on site is the *Schinus molle* association. This association is ranked as GNA SNA (CDFW 2025a).

General Agriculture

General agriculture is not described by the Manual of California Vegetation but is described within the Orange County Habitat Classification System (Gray and Bramlet 1992). Agricultural land refers to non-native anthropogenic habitat including dryland field crops, irrigated row and field crops, vineyards and orchards, dairies, stockyards, stables, and nurseries. The southwestern section of the project site supports actively maintained agricultural fields.

Agriculture is not a listed vegetation community under the California Natural Community List (CDFW 2025a); as such, this community is not globally or state ranked and is not considered a sensitive natural community under the California Environmental Quality Act (CEQA).

Urban/Developed Land

According to Oberbauer et al. (2008), the Urban/Developed Land mapping unit refers to areas that have been constructed upon or otherwise physically altered to an extent that native vegetation is no longer supported. Developed land is characterized by permanent or semi-permanent structures, pavement or hardscape, and landscaped areas that often require irrigation. Urban and/or developed land on the project site consists of work yards associated with on-site industrial and agricultural facilities and paved access roads. There are stands of non-native ornamental trees within the developed facilities in the central and northeastern portions of the project site.

Urban/Developed Land is not a listed vegetation community under the California Natural Community List (CDFW 2025a); as such, this community is not globally or state ranked and is not considered a sensitive natural community under CEQA.

Disturbed Habitat

The Disturbed Habitat mapping unit is not recognized by the Natural Communities List (CDFW 2025a) but is described by Oberbauer et al. (2008). The Disturbed Habitat mapping unit refers to areas that lack vegetation but still retain a pervious surface, or that are dominated by a sparse cover of non-native grasses and ruderal species, such as wild oat (*Avena fatua*), black mustard (*Brassica nigra*), red brome, and prickly lettuce (*Lactuca serriola*). Disturbed habitat is mapped throughout the project site, associated with dirt access roads, work yards, and areas along Jeffrey Road and Portola Parkway. Human-made features associated with agricultural activities (i.e., basins, ditches) are also mapped as disturbed habitat on the project site. Vegetation within areas mapped as disturbed habitat was limited to Cal-IPC Inventory listed invasives, such as stinknet, shortpod mustard, and crowndaisy (Cal-IPC 2025).

Disturbed habitat is not a listed vegetation community under the California Natural Community List (CDFW 2025a); as such, this community is not globally or state ranked and is not considered a sensitive natural community under CEQA.

Ornamental Plantings

The Ornamental Plantings mapping unit is not recognized by the Natural Communities List (CDFW 2025a) but is described by Gray and Bramlet (1992). The Ornamental Plantings mapping unit refers to areas that are consistently managed and planted with decorative tree, shrub, and herbaceous species. Ornamental Plantings border urban development on the northern portion of the project site adjacent to the unnamed drainage on site.

Ornamental Plantings is not a listed vegetation community under the California Natural Community List (CDFW 2025a); as such, this community is not globally or state ranked and is not considered a sensitive natural community under CEQA.

Floral Diversity

A total of 135 species of native or naturalized plants, 63 native (47%) and 72 non-native (53%), were recorded on the site during the survey. No rare plants were observed on the project site. A list of plant species observed in the project site is presented in Appendix B, Species Compendium, to Appendix C, BRTR, of this Draft EIR.

Wildlife

A total of 89 species of wildlife were observed in the project site, consisting of 86 native species and 3 non-native species. A cumulative list of wildlife species observed within the project site is presented in Appendix B, Species Compendium, to the BRTR.

Reptiles and Amphibians. Four reptile species were observed during surveys. Species observed include orange-throated whiptail (*Aspidoscelis hyperythra*), gophersnake (*Pituophis catenifer*), western fence lizard (*Sceloporus occidentalis*), and side-blotched lizard (*Uta stansburiana*). One amphibian species, Baja California treefrog (*Pseudacris hypochondriaca*), was observed during the surveys.

Birds. A total of 73 bird species were observed on the project site, representing 31 different families. Common species frequently observed include hooded oriole (*Icterus cucullatus*), bushtit (*Psaltriparus minimus*), lazuli bunting (*Passerina amoena*), house finch (*Haemorhous mexicanus*), lesser goldfinch (*Spinus psaltria*), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), Anna's hummingbird (*Calypte anna*), Allen's hummingbird (*Selasphorus sasin*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), mourning dove (*Zenaida macroura*), barn swallow (*Hirundo rustica*), Bewick's wren (*Thryomanes bewickii*), and California towhee (*Melozone crissalis*).

Mammals. A total of five mammal species were observed on the project site, including desert cottontail rabbits (*Sylvilagus* audubonii.), coyote (*Canis latrans*), and California ground squirrel (*Otospermophilus beecheyi*).

Invertebrates. Four bee species and two butterfly species were detected on the project site. Common species observed include western honeybee (*Apis mellifera*), Vosnesensky bumble bee (*Bombus vosnesenskii*), yellow bumble bee (*Bombus fervidus*), and cabbage white (*Pieris rapae*). Other common invertebrate species that could forage within suitable floral nectar resources onsite include checkered white (*Pontia protodice*), west coast lady (*Vanessa annabella*), and painted lady (*V. cardui*). Numerous other insects and invertebrates are expected to occur in the native vegetation communities on the project site.

Sensitive Plants and Wildlife

Endangered, rare, or threatened species, as defined in CEQA Guidelines Section 15380(b) (14 CCR 15000 et seq.), are referred to as "special-status species" in this Draft EIR and include (1) plant and wildlife species listed or proposed for listing as endangered or threatened under the federal Endangered Species Act (FESA); (2) plant and wildlife species listed, or which are candidates for listing, as endangered or threatened under the California Endangered Species Act (CESA); (3) plant species with a California Rare Plant Rank (CRPR) of 1 or 2, as designated by the California Native Plant Society (2025b); (4) Species of Special Concern (SSC), as designated by CDFW (CDFW 2025b); (5) Fully Protected species, as described in California Fish and Game Code Sections 4700 and 3511; and (6) Birds of

Conservation Concern as designated by the U.S. Fish and Wildlife Service (USFWS 2021). Plant and wildlife species that are "covered" under the NCCP/HCP are also evaluated in this report (County of Orange 1996).

Special-Status and NCCP/HCP Covered Plant Species

A summary of all special-status plant species known to occur in the vicinity of the project site and plant species covered under the NCCP/HCP, along with their habitat requirements and potential to occur determination, is provided in the BRTR. The BRTR provides evaluations for each of these species' occurrence in the project vicinity and their potential to occur on site based on known range, habitat associations, preferred soil substrate, life form, elevation, and blooming period.

No special-status plants were observed during focused botanical surveys conducted in May and July 2025 for the BRTR. One special-status plant species, intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*), which is also a covered species in the NCCP/HCP, was determined to have a high potential to occur. This evaluation was based on a review of the species' known distribution within the region, their known habitat associations, and the site conditions observed during the biological reconnaissance survey. The species' status, primary habitat associations, life form, blooming period, elevation range, and potential to occur are summarized in Table 4.4-2. A discussion of the evaluation is detailed further below and in Section 4.4.4. Southern California black walnut (*Juglans californica*), a CRPR 4.2 plant, was also observed within the project site. Six individuals were mapped along the drainage in the northern portion of the project site.

Table 4.4-2. Special-Status and NCCP/HCP Covered Plant Species with a High Potential to Occur

Scientific Name	Common Name	Status (Federal/ State/NCCP/CRPR)	Primary Habitat Associations/ Life Form/Blooming Period/ Elevation Range (feet amsl)	Potential to Occur
Calochortus weedii var. *intermedius*	intermediate mariposa-lily	None/None/Yes/1B.2	Chaparral, coastal scrub, and valley and foothill grasslands in rocky substrates. Perennial herb that blooms May–July at elevations between 345–2,805 feet amsl.	High potential to occur in limited areas (i.e., road cuts along Bee Canyon Access Road); low potential to occur within remainder of the project site.

Notes: NCCP = Natural Community Conservation Plan & Habitat Conservation Plan, County of Orange Central & Coastal Subregion; CRPR = California Rare Plant Rank; amsl= above mean sea level.
Status: CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere; .2: Moderately threatened in California (20%–80% occurrences threatened/moderate degree and immediacy of threat).

Intermediate Mariposa Lily (*Calochortus weedii* var. *intermedius*). This perennial bulbiferous herb is ranked 1B.2 by CRPR. Plants with a 1B ranking are considered rare, threatened, or endangered in California and elsewhere, with the majority endemic to California and rare throughout their entire range. Plants with a 0.2 threat rank are moderately threatened in California, with 20%–80% of occurrences threatened with a moderate degree/immediacy of threat (CNPS 2025b). This is a covered species under the NCCP/HCP.

Intermediate mariposa lily blooms from May to July at elevations ranging between 345 feet amsl and 2,805 feet amsl, in chaparral, coastal scrub, and valley and foothill grasslands, preferring rocky substrate. Minimal rocky habitat is present within the project site, limited to road cuts along Bee Canyon Access Road.

Intermediate mariposa lily was not observed during focused botanical surveys, which were conducted within this species' blooming period in May and July 2025. However, there are nearby records for this species, including a 2023 record within the southern boundary of the project site (iNaturalist 2025). Additionally, California Natural Diversity Database (CNDDB) occurrence records for this species are located approximately 0.1 miles from the project site, with numerous observations within 3 miles of the project site in NCCP/HCP reserve lands to the east and north. Intermediate mariposa lily is a bulbiferous herbaceous species that may not have bloomed during the drier than normal conditions during 2025; therefore, due to potential on-site and numerous nearby observations, the potential for this species to occur within the project site is high where small patches of remnant suitable habitat occur (i.e., on road cuts along Bee Canyon Access Road). This species has a low potential to occur in the remainder of the project site due to disturbance from historical land use and lack of suitable habitat.

Special-Status and NCCP/HCP Covered Wildlife Species

A summary of all special-status wildlife species known to occur in the vicinity of the project site, wildlife species covered under the NCCP/HCP, along with their habitat requirements, potential to occur in the survey area, and survey observations, is provided in Appendix D, Special-Status Wildlife Potential to Occur, of the BRTR. Six special-status wildlife species were observed on the project site: monarch (*Danaus plexippus*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), least Bell's vireo, and Crotch's bumble bee. Three special-status wildlife species were determined to have a moderate potential to occur within the project site or the 500-foot buffer: San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*), red diamondback rattlesnake (*Crotalus ruber*), and coastal California gnatcatcher. Two non-special-status NCCP/HCP covered species were observed within the project site: red-shouldered hawk (*Buteo lineatus*) and coyote (*Canis latrans*). One non-special-status NCCP/HCP covered species was determined to have a high potential to occur: orange-throated whiptail. Special-status and NCCP/HCP covered species that were observed and determined to have a moderate to high potential to occur are presented in Table 4.4-3 and discussed in further detail below. Special-status species with a low potential to occur and species that are not expected to occur are excluded from further discussion in this report, with the exception of burrowing owl and mountain lion (*Puma concolor*), due to their high sensitivity status.

Table 4.4-3. Special-Status and NCCP/HCP Covered Wildlife Species Observed or with a Low to High Potential to Occur

Scientific Name	Common Name	Listing Status (Federal/ State/NCCP)	Habitat	Potential to Occur
Birds				
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC, SC/No	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to nest; low potential to overwinter.
Buteo lineatus	red-shouldered hawk	None/None/Yes	Nests in dense riparian areas, especially with adjacent edges, swamps, marshes, and wet meadows for hunting	Observed; low potential to nest.

Table 4.4-3. Special-Status and NCCP/HCP Covered Wildlife Species Observed or with a Low to High Potential to Occur

Scientific Name	Common Name	Listing Status (Federal/ State/NCCP)	Habitat	Potential to Occur
Elanus leucurus (nesting)	white-tailed kite	None/FP/No	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Observed; moderate potential to nest.
Icteria virens (nesting)	yellow-breasted chat	None/SSC/No	Nests and forages in thickets of willows, vine tangles, and dense brush	Observed; high potential to nest.
Setophaga petechia (nesting)	yellow warbler	None/SSC/No	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Observed; high potential to nest.
Polioptila californica californica	coastal California gnatcatcher	FT/SSC/Yes	Nests and forages in various sage scrub communities, often dominated by California sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Not expected to nest within the project site; moderate potential to forage and nest in coastal sage scrub located in the 500-foot buffer in future years.
Vireo bellii pusillus (nesting)	least Bell's vireo	FE/SE/Yes	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Observed; nesting on site and high potential to nest in future years.
Invertebrates				
Bombus crotchii	Crotch's bumble bee	None/SCE/No	Open grassland and scrub communities supporting suitable floral resources.	Observed; moderate potential to nest.
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	FPT/None/No	Wind-protected tree groves with nectar sources and nearby water sources	Observed; not expected to overwinter.
Mammals				
Canis latrans	Coyote	None/None/Yes	Many areas except very highly urbanized areas	Observed; high potential to occur in future years.

Table 4.4-3. Special-Status and NCCP/HCP Covered Wildlife Species Observed or with a Low to High Potential to Occur

Scientific Name	Common Name	Listing Status (Federal/ State/NCCP)	Habitat	Potential to Occur
Puma concolor	mountain lion - Southern California/Central Coast ESU	None/SC/No	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	Low potential to occur; natal dens are not expected to occur.
Reptiles				
Aspidoscelis hyperythra	orange-throated whiptail	None/WL/Yes	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	High potential to occur.
Aspidoscelis tigris stejnegeri	San Diegan tiger whiptail	None/SSC/Yes	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas.	Moderate potential to occur.
Crotalus ruber	red diamondback rattlesnake	None/SSC/Yes	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Moderate potential to occur.

Notes: NCCP/HCP = Natural Community Conservation Plan & Habitat Conservation Plan, County of Orange Central & Coastal Subregion; NCCP = NCCP/HCP.
Status:
Federal
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
FE: federally endangered
FPT: federally proposed for listing as threatened
FT: federally threatened
State
FP: California fully protected species
SC: state candidate for listing as threatened or endangered
SCE: state candidate for listing as endangered
SE: state listed as endangered
SSC: California Department of Fish and Wildlife (CDFW) Species of Special Concern
WL: CDFW Watch List

Burrowing Owl

Burrowing owl is a USFWS Bird of Conservation Concern, a CDFW SSC, and a state candidate for listing under CESA. It occurs throughout North and Central America west of the eastern edge of the Great Plains south to Panama. The winter range is much the same as the nesting range, except that most burrowing owls migrate south from the Great Plains and the Great Basin in winter (Poulin et al. 2020). Most burrowing owls that breed in Canada and the northern United States are believed to migrate south during September and October and north during March and April and into the first week of May. These individuals winter within the nesting habitat of more southern populations. Thus, winter observations may include migratory individuals and the resident population. The burrowing owls in Northern California are believed to migrate (Coulombe 1971).

In California, burrowing owls are year-round residents of flat, open, dry grassland and desert habitats at lower elevations. They can inhabit annual and perennial grasslands and scrublands characterized by low growing vegetation. They may be found in areas that include trees and shrubs if the cover is less than 30%; however, they prefer treeless grasslands (Bates 2006). Although burrowing owls prefer large, contiguous areas of treeless grasslands, they have also been known to occupy fallow agriculture fields, golf courses, cemeteries, road allowances, airports, vacant lots in residential areas and university campuses, and fairgrounds when nest burrows are present (Bates 2006; County of Riverside 2008). They typically require burrows made by fossorial mammals, such as California ground squirrels. This species also prefers sandy soils with higher bulk density and less silt, clay, and gravel (Lenihan 2007).

Protocol wintering and breeding season surveys for this species were negative. Due to a lack of recent breeding records and breeding season observations in central Orange County, this species is considered to be extirpated as a breeder and is not expected to nest on the project site (CDFW 2025c; iNaturalist 2025; Gervais et al. 2008). However, suitable overwintering habitat (e.g., grassland and agricultural land with small mammal burrows) is present on the project site with multiple recent winter observations within 3 miles (CDFW 2025c; iNaturalist 2025). Therefore, this species has a low potential to overwinter on site in future years.

Red-Shouldered Hawk

Red-shouldered hawk is an NCCP/HCP covered species and is a year-round resident of coastal California. They nest in riparian and oak woodlands but can also nest in eucalyptus groves or residential areas in southern California (Dykstra et al. 2020). These medium-sized buteo hawks are diurnal hunters, hunting from perches or by flying low to the ground for small mammals, reptiles, amphibians, and occasionally birds and invertebrates. Red-shouldered hawks nest in large trees but have been observed to avoid nesting near red-tailed hawks (Dykstra et al. 2020).

A red-shouldered hawk was incidentally observed flying over the project site during 2025 field surveys. This species has a low potential to nest because riparian habitat within the project site is small in size and degraded. Additionally, red-tailed hawks were observed nesting on site, which likely would deter red-shouldered hawks as noted in Birds of the World (Dykstra et al. 2020).

White-Tailed Kite

White-tailed kite is a state fully protected species that occurs mainly in lowlands of southern and northwestern cismontane California in savannah, open woodland, marshes, cultivated fields, and partially cleared lands (Zeiner et al. 1990). White-tailed kite hunts in the morning and late afternoon for voles and mice, usually near farmlands. It is non-migratory but can be nomadic and dispersive in its movements and often occurs in communal roosts (Dunk 2020). Nests are made of piled sticks and twigs and placed near the tops of oak, willow, or other trees near marshes and foraging areas (Zeiner et al. 1990).

This species was observed during a field survey conducted on March 20, 2025. No nesting was observed on site during several surveys conducted between July 24, 2024, and July 22, 2025, within its breeding period; however, trees suitable for nesting with adjacent foraging habitat occur on the project site and numerous (>10) known CNDDB occurrences are present within 10 miles (CDFW 2025c). Therefore, this species has a moderate potential to nest on the project site in future years.

Yellow-Breasted Chat

Yellow-breasted chat is a CDFW SSC and resident of riparian areas in coastal and Northern California (Zeiner et al. 1990). This species inhabits dense thickets and tangles near water (Zeiner et al. 1990).

This species was observed within the northeastern portion of the project site in areas mapped as laurel sumac scrub. Laurel sumac scrub is typically considered an upland habitat; however, during surveys, this vegetation community atypically appeared to stand in as substitute habitat for riparian-associated birds using the site. Mulefat thickets mapped within the project site are located in the previously permitted area associated with adjacent development; this vegetation community was no longer present or providing suitable habitat for the species during 2025 surveys. Therefore, yellow-breasted chat is present on site and has a high potential to nest in laurel sumac scrub on the project site.

Yellow Warbler

Yellow warbler is a CDFW SSC and summer resident of riparian areas in coastal California and the foothills of the Sierra Nevada (Zeiner et al. 1990). This species is most often found in willows and cottonwoods but also inhabits a variety of wooded habitats (Zeiner et al. 1990).

This species was observed in wooded areas throughout the project site. Wooded areas and riparian stand-in habitat, such as laurel sumac scrub, within the project site provide suitable nesting habitat. Therefore, yellow warbler is present and has a high potential to nest on the project site.

Coastal California Gnatcatcher

Coastal California gnatcatcher is federally listed as threatened and is a CDFW SSC. It is also an NCCP/HCP covered species. It is closely associated with coastal sage scrub habitat and typically occurs below 950 feet amsl and on slopes less than 40% (Atwood 1990), but coastal California gnatcatcher have also been observed at elevations greater than 2,000 feet amsl. The species is primarily threatened by loss, degradation, and fragmentation of coastal sage scrub habitat, and is also impacted by brown-headed cowbird (*Molothrus ater*) nest parasitism (Braden et al. 1997).

Protocol surveys for coastal California gnatcatcher were negative. The project site does not contain suitable coastal sage scrub habitat. However, suitable coastal sage scrub habitat is present off site in the property east of Bee Canyon Access Road, where a population of this species has been consistently documented (CDFW 2025c); therefore, this species has a moderate potential to occur and to nest in off-site habitat in future years. The methods and results of the focused coastal California gnatcatcher surveys are provided in Appendix E, Coastal California Gnatcatcher Survey Report, to the BRTR.

Least Bell's Vireo

Least Bell's vireo is a federally and state-listed endangered species that is conditionally covered under the NCCP/HCP. It nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams, as well as adjacent shrubland late in the nesting season. Nesting habitats in cismontane and coastal areas include willow (*Salix*) riparian scrub, mulefat scrub, and Fremont cottonwood. In the coastal portions of its Southern California range, it occurs in lower areas of canyons, typically below 2,000 feet amsl.

Least Bell's vireo was observed in laurel sumac scrub on site and in adjacent areas during the 2025 focused surveys. Within the project site, a total of seven territories were observed over the course of the focused surveys, with four confirmed to be occupied by mated pairs, and nesting was confirmed at two territories. One singing individual was only observed once early in the season and was therefore presumed to be a migrant. Six more territories were observed off site within the 500-foot buffer across Bee Canyon Access Road. This species has a high potential to nest on the project site and in suitable habitat within 500 feet of the project site in future years. As mentioned above under "Yellow-Breasted Chat," laurel sumac scrub is usually considered an upland vegetation community but appeared to stand in as an atypical substitute habitat for riparian-associated birds, including least Bell's vireo, during 2025 field surveys.

Crotch's Bumble Bee

Crotch's bumble bee is a state candidate for listing and, as such, is afforded protection by CESA equivalent to a threatened listing. This species is found in open grassland and scrub habitats and has been found to persist in semi-natural habitats surrounded by intensely modified landscapes. This species is restricted to a very limited climatic range that is much hotter and drier than most bumble bees thrive in. It uses a wide array of flowers; food plants include *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia,* and *Salvia* (Williams et al. 2014).

Crotch's bumble bee was observed within the project site during focused surveys. One transient individual was observed in the eastern portion of the project site, and one foraging worker was observed in the western portion of the project site (Figure 4.4-2, Special-Status Species). No nests were detected during surveys. This species may forage for nectar on the Salvia species (*Salvia mellifera*) and other floral resources within suitable off-site coastal sage scrub present east of the project site across Bee Canyon Access Road and within vegetation communities on the project site. Hymenoptera (bees) and Lepidoptera (butterflies) were observed on site during the biological surveys, and suitable floral nectar resources and scrub habitat capable of supporting these species can persist year-round on site. In addition, the nearest known CNDDB occurrence record (from 2016) is 4.6 miles east from the project site. Potential nesting resources, such as small mammal burrows, brush piles, debris piles, rock piles, and bare ground were observed within the project site. Additionally, areas under tree cover with insulating leaf litter within the project site could provide overwintering habitat (CDFW 2023). Therefore, there is a moderate potential for Crotch bumble bee nesting to occur on the project site. The methods and results of the focused Crotch's bumble bee surveys are provided in Appendix F, Crotch's Bumble Bee Survey Report, to the BRTR.

Monarch Butterfly

Monarch butterfly is a federal candidate for listing under the federal Endangered Species Act. Within the United States, monarch butterflies follow a pattern of seasonal migration, in which spring and summer breeding occurs in New England, the Great Lakes region, and the northern Rocky Mountains from May through late August to mid-September. The Rocky Mountains population migrates to wintering grounds along the California coast (Urquhart 1987). Over-wintering sites in California are usually comprised of roost trees sheltered by a larger grove or windrow of trees (Pelton et al. 2016). Native Monterey pine (*Pinus radiata*) and Monterey cypress (*Cupressus macrocarpa*), as well as the non-native Tasmanian blue gum, are tree species most commonly used for winter roosting, though monarch clusters have also been found on other large trees found in coastal areas, such as river redgum, California sycamore (*Platanus racemosa*), coast redwood (*Sequoia sempervirens*), and coast live oak (*Quercus agrifolia*) (Xerces Society 2016, 2017).

Monarch butterfly was observed flying through the project site during 2024–2025 field surveys. However, trees on the project site are not sufficiently sheltered from wind to provide winter roosting habitat. In addition, the nearest known overwintering roost occurrence is 12.4 miles away (CDFW 2025c). Therefore, this species may occur on site as a transient but is not expected overwinter on the project site.

Coyote

Coyote is an NCCP/HCP covered species and a permanent resident throughout the state, occurring in almost all habitats with elevations as high as 9,840 feet amsl. They inhabit open brush, scrub, shrub and herbaceous habitats as well as opportunistically associating with croplands. The species will dig dens, usually on brushy, south-facing slopes, and utilize natural cavities in rocky areas, hollow trees and logs, caves, and holes. Coyotes are omnivorous opportunists, with a diet consisting mostly of rodents and rabbits but also occasionally fruits, amphibians, reptiles, fawns, and birds and their eggs (CDFW 2025d).

Coyote individuals, scat, and trails were observed on several occasions during 2024-2025 field surveys. Additionally, open fields with small mammal populations offer ample forage opportunities for the species. The project site also contains dense vegetation and structures that would provide denning habitat. This species has a high potential to occur on the project site in future years.

Mountain Lion

The Southern California and central coast evolutionary significant units of mountain lion are state candidates for listing and, as mentioned previously, afforded protection by CESA equivalent to a threatened listing. Mountain lions are large predatory mammals that inhabit a wide variety of habitat types, such as deserts, humid coast forests, arid hillsides, scrub, and oak woodlands, but often utilize areas with dense undergrowth and cover (CDFW 2025d).

This species is known to occur in the Santa Ana Mountains and is expected to be present in the open space areas to the northeast of the project site. Access to the project site is constrained by Highways 241 and 261, Bee Canyon Access Road, and urban development. Therefore, mountain lion has a low potential to occur. Natal dens of the species are not expected due to surrounding disturbance from agricultural and industrial activities.

Orange-Throated Whiptail

Orange-throated whiptail is a state Watch List species and NCCP/HCP covered species occurring on the cismontane side of the Peninsular Ranges in Orange, Riverside and San Diego Counties with an elevational range extending from near sea level to 3,410 feet amsl. They inhabit low-elevation coastal scrub, chamise–redshank chaparral, mixed chaparral, and valley–foothill hardwood habitats. They prefer patches of brush and rocks in washes and other sandy areas while utilizing dense vegetation and surface debris to forage for small arthropods. Breeding usually occurs in April and hatchlings emerge from August to early September (CDFW 2025d).

Although orange-throated whiptail was not observed on site during 2024–2025 surveys, suitable chaparral habitat is present within the project site. Additionally, an orange-throated whiptail individual was incidentally observed off site during a focused coastal California gnatcatcher survey of the 500-foot buffer south of Bee Canyon Access Road. There are numerous known occurrences in the vicinity of the project site, including an iNaturalist observation on the project site in the already permitted area where construction was ongoing at the time of field surveys (CDFW 2025c; iNaturalist 2025).

San Diegan Tiger Whiptail

San Diegan tiger whiptail is a CDFW SSC and NCCP/HCP covered species that occurs in coastal Sothern California, mostly west of the Peninsular Ranges and south of the Transverse Ranges as well as north into Ventura County and south into Baja California. They can primarily be found in hot and dry open areas with sparse foliage in chaparral, woodland and riparian ecosystems. This species forages for small invertebrates and lizards near cover to which they can rapidly escape (Nafis 2025).

Although this species was not observed during 2024–2025 surveys, suitable dry open habitat is present on the project site. In addition, there are known occurrences in the vicinity of the project site (CDFW 2025c; iNaturalist 2025).

Red Diamondback Rattlesnake

Red diamondback rattlesnake is a CDFW SSC and NCCP/HCP covered species that occurs in southwestern California, from the Morongo Valley west to the coast, and south along the Peninsular Ranges to mid–Baja California (Nafis 2025). It inhabits arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland, cultivated areas on the desert slopes of mountains, and rocky desert flats. The breeding period for this species is July through September (Nafis 2025).

Although this species was not observed during 2024–2025 surveys, suitable chaparral, grassland, and cultivated habitat is present on the project site. In addition, there are known occurrences in the vicinity of the project site (CDFW 2025c; iNaturalist 2025).

Jurisdictional Wetlands and Waters

A formal delineation of potentially jurisdictional waters and wetlands was conducted by Dudek on July 24, 2024. The results of this jurisdictional delineation are provided in Appendix G, Aquatic Resources Delineation Report, to the BRTR, which details the methods, results, and all data forms. The project site is located within the Peters Canyon Wash and Lower San Diego Creek watersheds within the larger Newport Bay watershed. Flows from this watershed generally flow toward the southwest and discharge to the Pacific Ocean through Newport Bay.

The results of the jurisdictional delineation determined that one unnamed drainage, Non-Wetland Waters (NWW) 1, is present along the northern boundary of the project site. The drainage is depicted as a blue line on the U.S. Geological Survey 7.5-minute Lake Forest, California quadrangle map (USGS 2022); it begins at the confluence of two drainages approximately 2,500 feet east of the project site and flows west for approximately 3,300 feet before connecting to Hicks Canyon Wash. Hicks Canyon Wash flows into Peters Canyon Wash, which is a direct tributary to San Diego Creek, and flows eventually into the Pacific Ocean, a traditional navigable water.

NWW-1 was determined to be ephemeral using the Streamflow Duration Assessment Method. Additionally, no hydrophytic vegetation was observed at this feature. Based on these results, field observations, and best professional judgment, the tributary lacks relatively permanent water (i.e., surface water flows are likely only present in direct response to precipitation).

Three additional features associated with agricultural use within the project site were observed in the southern region, including two agricultural basins and one agricultural irrigation ditch. The basins exhibited wetland hydrology, and hydrophytic vegetation was observed within them, including tamarisk (*Tamarix ramosissima*) and cottonwood trees (*Populus* sp.). Wetland sampling points were taken within each basin, and the basins were determined not to be wetlands due to lack of hydric soils (Appendix G to the BRTR). Examination of historical aerial

maps indicates that the two basins were not present prior to 2003, and the irrigation ditch does not show evidence of surface water connectivity with downstream drainages. Therefore, the two basins and irrigation ditch are human-made agricultural features wholly within upland areas and are not jurisdictional.

Because NWW-1 was determined to be ephemeral, and the agricultural irrigation ditch and basins did not exhibit evidence of hydric soils or connectivity, no jurisdictional areas potentially regulated by USACE are present on the project site.

Portions of NWW-1 within the ordinary high water mark (OHWM) were identified as non-wetland waters of the state subject to regulation by the RWQCB under the Porter–Cologne Water Quality Control Act (Porter–Cologne Act). Because CDFW regulates from bank to bank, certain portions of the NWW-1 where the top of a channel bank extended beyond the OHWM are subject to regulation by CDFW as streambed. Table 4.4-4 details the jurisdictional extent and location of NWW-1. Figures 4.4-3 and 4.4-4 (Potential Jurisdictional Aquatic Resources – RWQCB and CDFW) depict the potential jurisdictional extents regulated by RWQCB and CDFW, respectively.

Table 4.4-4. Aquatic Resources Summary for the Project Site

Feature Name	Location (Latitude/Longitude; Decimal Degrees)	Acreage
RWQCB Non-Wetland Waters of the State		
NWW-1 (Unnamed Tributary to Hicks Canyon Wash)	33.719625°, −117.730824°	0.07
CDFW Streambed		
NWW-1 (Unnamed Tributary to Hicks Canyon Wash)	33.719625°, −117.730824°	0.26

Notes: RWQCB = Regional Water Quality Control Board; NWW = Non-Wetland Waters; CDFW = California Department of Fish and Wildlife.

Within NWW-1, the OHWM was delineated to be potentially regulated by RWQCB. This feature may also be regulated by CDFW beyond the OHWM to the top of bank. In total, 0.07 acres of non-wetland waters (below the OHWM) of RWQCB jurisdiction and 0.26 acres of CDFW streambed (below and above the OHWM, to top of bank) occur on the project site (Appendix G to the BRTR).

Wildlife Corridors, Habitat Linkages, and Nursery Sites

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for dispersal or migration of animals, as well as dispersal of plants (e.g., via wildlife vectors). Wildlife corridors contribute to population viability in several ways: (1) they assure continual exchange of genes between populations, which helps maintain genetic diversity; (2) they provide access to adjacent habitat areas representing additional territory for foraging and mating; (3) they allow for a greater carrying capacity; and (4) they provide routes for colonization of habitat lands following local population extinctions or habitat recovery from ecological catastrophes.

Habitat linkages are patches of native habitat that function to join two larger patches of habitat. They serve as connections between habitat patches and help reduce the adverse effects of habitat fragmentation. Although individual animals may not move through a habitat linkage, the linkage is a potential route for gene flow and long-term dispersal. Habitat linkages may serve both as habitat and avenues of gene flow for small animals such as reptiles, amphibians, and rodents. Habitat linkages may be represented by continuous patches of habitat or by nearby habitat "islands" that function as steppingstones for dispersal and movement (especially for birds and flying insects).

The project site consists primarily of agricultural land and associated roads, lots, and buildings. Undeveloped but maintained areas include slopes along the eastern boundary of the project site and the drainage along the northern boundary of the project site. The project site occurs at the northern extent of dense urban areas within the City of Irvine. Development of the Orchard Hills neighborhood was actively ongoing west of the project site during the time of surveys, and dense residential development is present to the south and southwest. Undeveloped land associated with NCCP/HCP reserve lands lies immediately north and east of the project site. The eastern edge of the project site is bounded by Bee Canyon Access Road, which is heavily trafficked by trucks traveling to and from the Frank R. Bowerman Landfill, located approximately 2 miles east of the project site. Movement to/from the project site from open space in the Santa Ana Mountains is also constrained by State Route (SR) 241 to the east and north and by SR-261 to the west.

The project site has the potential to provide for local wildlife movement of common wildlife species to and/or from open space to the east and may function as a stop-over site for avian species moving through the area. However, the project site itself does not function as a wildlife corridor or habitat linkage between two larger blocks of native habitat. The project site does not contain any native wildlife nursery sites.

City Protected Trees

Trees subject to a City of Irvine Municipal Code tree removal permit are present on the project site. The project site includes several trees that may meet the definition of a significant tree pursuant to the Municipal Code, composed of a broad array of non-native ornamental and naturalized species, including kaffir plum (*Harpephyllum caffrum*), Peruvian pepper tree, blue jacaranda (*Jacaranda mimosifolia*), Jerusalem thorn (*Parkinsonia aculeata*), Chinese banyan (*Ficus macrocarpa*), monkeypod (*Pithecellobium dulce*), eucalyptus, and Italian stone pine (*Pinus pinea*), among many others, as well as native trees like coast live oak, Southern California black walnut, Goodding's willow, and Fremont cottonwood.

4.4.2 Relevant Plans, Policies, and Ordinances

Federal

Federal Endangered Species Act

The federal Endangered Species Act (FESA) of 1973, as amended, (16 USC 1531 et seq.) serves as the enacting legislation to list, conserve, and protect threatened and endangered species, and the ecosystems on which they depend, from extinction. In addition, for those wildlife species listed as federally endangered, FESA provides for the ability to designate critical habitat, defined as that habitat considered "essential to the conservation of the species" and that "may require special management considerations or protection." Under FESA Section 7, if a project that would potentially result in adverse impacts to threatened or endangered species includes any action that is authorized, funded, or carried out by a federal agency, that agency must consult with USFWS to ensure that any such action is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat for that species. FESA Section 9(a)(1)(B) prohibits the taking, possession, sale, or transport of any endangered fish or wildlife species. "Take" is defined to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC 1532 (19)). With respect to any endangered species of plant, Sections 9(a)(2)(A) and 9(a)(2)(B) prohibit the possession, sale, and import or export, of any such species, and prohibits any action that would "remove and reduce to possession any such species from areas under federal jurisdiction; maliciously damage or destroy any such species on any such area; or remove, cut, dig up, or damage

or destroy any such species on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law." Pursuant to FESA Section 10(a)(1)(B), USFWS may issue a permit for the take of threatened or endangered species provided that such taking is "incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50, Section 10.13 of the Code of Federal Regulations. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country and is enforced in the United States by USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50, Section 20 of the Code of Federal Regulations. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). On December 22, 2017, the Department of Interior issued a legal opinion (M-Opinion 37050) that interpreted the above prohibitions as only applying to direct and purposeful actions of which the intent is to kill, take, or harm migratory birds; their eggs; or their active nests. Incidental take of birds, eggs, or nests that are not the purpose of such an action, even if there are direct and foreseeable results, was not prohibited. On January 7, 2021, USFWS published a final rule (the January 7 rule) that codified the previous administration's interpretation, which after further review was determined to be inconsistent with the majority of relevant court decisions and readings of the MBTA's text, purpose, and history. On May 7, 2021, USFWS published a proposed rule to revoke the January 7 rule, which would result in a return to implementing the statute as prohibiting incidental take. On July 19, 2021, USFWS announced the availability of two revised economic analysis documents for public review that evaluate the potential for the proposed rule to impact small entities, including businesses, governmental jurisdictions, and other organizations. The public review period on these documents ended on August 19, 2021. A final rule revoking the January 7 rule was published on October 4, 2021, and went into effect on December 3, 2021. In their summary of the October 4, 2021, final rule, USFWS explained that "the immediate effect of this final rule is to return to implementing the MBTA as prohibiting incidental take and applying enforcement discretion, consistent with judicial precedent and longstanding agency practice prior to 2017" (86 FR 54642).

Clean Water Act

The Clean Water Act provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires a project operator for a federal license or permit that allows activities resulting in a discharge to waters of the United States to obtain state certification, thereby ensuring that the discharge will comply with provisions of the Clean Water Act . RWQCBs administer the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the United States. Section 404 establishes a permit program administered by USACE that regulates the discharge of dredged or fill material into waters of the United States, including wetlands. USACE implementing regulations are found at 33 Code of Federal Regulations (CFR) 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the U.S. Environmental Protection Agency in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

Wetlands and Other Waters of the United States

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources and can fall under the jurisdiction of several regulatory agencies. USACE exerts jurisdiction over waters of the U.S., including all waters that are subject to the ebb and flow of the tide; wetlands

and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds; and tributaries of the above features.

The extent of waters of the U.S. is generally defined as that portion that falls within the limits of an OHWM. Typically, the OHWM corresponds to the water surface elevation of a 2-year flood event (USACE 2008). In addition, waters of the United States may include wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, defined by USACE as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 CFR 328.3[b]; 40 CFR 230.3[t]). Indicators of three wetland parameters (i.e., hydric soils, hydrophytic vegetation, and wetlands hydrology), as determined by field investigation, must be present for a site to be classified as a wetland by USACE.

State

California Endangered Species Act

CDFW administers the California Endangered Species Act (CESA), which prohibits the take of plant and animal species designated by the Fish and Game Commission as endangered or threatened in California. Under CESA Section 86, "take" is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA Section 2053 stipulates that state agencies may not approve projects that will "jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of habitat essential to the continued existence of those species, if there are reasonable and prudent alternatives available consistent with conserving the species or its habitat which would prevent jeopardy."

CESA defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." CESA defines a threatened species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter. Any animal determined by the Commission as rare on or before January 1, 1985, is a threatened species." A candidate species is defined as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Commission has formally noticed as being under review by the department for addition to either the list of endangered species or the list of threatened species, or a species for which the Commission has published a notice of proposed regulation to add the species to either list." CESA does not list invertebrate species.

California Department of Fish and Wildlife Special-Status Plants

Special-status plant species are defined as plants that are legally protected or that are otherwise considered sensitive by federal, state, or local resource conservation agencies. These species fall into one or more of the following categories:

- Listed by the federal government under the federal Endangered Species Act of 1973 or by the state of California under the California Endangered Species Act of 1970 as endangered, threatened, or rare.
- Plant species that are proposed for listing under the federal Endangered Species Act.
- A candidate for state listing as endangered or threatened

- Taxa that are biologically rare, very restricted in distribution, or declining throughout their range but not currently threatened with extirpation.
- Population(s) in California that may be peripheral to the major portion of a taxon's range but are threatened with extirpation in California.
- Taxa closely associated with a habitat that is declining in California at a significant rate (e.g., wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats).

Taxa considered to be "rare, threatened, or endangered in California" as defined by CDFW and assigned a CRPR. The CDFW system includes six rarity and endangerment ranks for categorizing plant species of concern, as follows:

- CRPR 1A – Plants presumed to be extinct in California
- CRPR 1B – Plants that are rare, threatened, or endangered in California and elsewhere
- CRPR 2A – Plants presumed to be extinct in California, but more common elsewhere
- CRPR 2B – Plants that are rare, threatened, or endangered in California, but more common elsewhere
- CRPR 3 – Plants about which more information is needed (a review list)
- CRPR 4 – Plants of limited distribution (a watch list)

Plants ranked as CRPR 1A, 1B, 2A, or 2B may qualify as endangered, rare, or threatened species within the definition of CEQA Guidelines Section 15380. CDFW recommends that potential impacts to CRPR 1 and 2 species be evaluated in CEQA review documents. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to CEQA Guidelines Section 15380, but these species may be evaluated on a case-by-case basis.

California Department of Fish and Wildlife Species of Special Concern

CDFW maintains a list of vertebrate animal species considered of "special concern" because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. A Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated from the state or, in the case of birds, is in its primary seasonal or breeding role
- Is listed as threatened or endangered federally, but not by the state
- Meets the state definition of threatened or endangered, but has not formally been listed
- Is experiencing, or formerly experienced, serious noncyclical population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for threatened or endangered status by the state
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s) that, if realized, could lead to declines that would qualify it for threatened or endangered status by the state

Impacts to SSC are typically evaluated and mitigated within the context of an environmental impact report or other document prepared pursuant to CEQA.

California Fish and Game Code Section 1600 – Lake and Streambed Alteration Agreement

Under Sections 1600–1616 of the California Fish and Game Code, CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the "bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit" (Section 1601). In practice, CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

California Department of Fish and Wildlife – Wetlands Protection Regulations

CDFW derives its authority to oversee activities that affect wetlands from state legislation. This authority includes California Fish and Game Code Sections 1600–1616 (lake and streambed alteration agreements), the California Endangered Species Act (protection of state-listed species and their habitats, which could include wetlands), and the Keene–Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, CDFW asserts authority over wetlands within the state through any of the following: review and comment on USACE Section 404 permits, review and comment on CEQA documents, preservation of state-listed species, or lake and streambed alteration agreements.

California Fish and Game Code, Section 1940 – Sensitive Natural Communities

California Fish and Game Code Section 1940 requires CDFW to develop and maintain a vegetation mapping standard for the state. More than half of the vegetation communities in the state have been mapped through the Vegetation Classification and Mapping Program.

Natural vegetation communities are evaluated by CDFW and are assigned global (G) and state (S) ranks based on rarity of and threats to these vegetation communities in California. Natural communities with ranks of S1 through S3 (S1: critically imperiled; S2: imperiled; S3: vulnerable) are considered sensitive. Sensitive natural communities are communities that have a limited distribution and are often vulnerable to the environmental effects of projects. These communities may or may not contain special-status species or their habitats. For purposes of this assessment, sensitive natural communities include vegetation communities listed in CDFW's CNDDB and communities listed in the Natural Communities List with a rarity rank of S1, S2, or S3 (S1: critically imperiled; S2: imperiled; S3: vulnerable). Additionally, all vegetation associations within the alliances with ranks of S1 through S3 are considered sensitive habitats. CEQA requires that impacts to sensitive natural communities be evaluated and mitigated to the extent feasible.

California Fish and Game Code, Sections 3503, 3503.5, 3511, 3513

Section 3503 of the California Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Section 3503.5 protects all birds of prey (raptors) and their eggs and nests. Section 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

California Fish and Game Code, Section 4150

California Fish and Game Code Section 4150 states that a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a non-game mammal. A non-game mammal may not be taken or possessed under this code. All bat species occurring naturally in California are considered non-game mammals and are therefore prohibited from take as stated in California Fish and Game Code Section 4150.

Porter–Cologne Water Quality Control Act

The Porter–Cologne Act established the State Water Resources Control Board and each RWQCB as the principal state agencies responsible for the protection of water quality in California. As noted under the discussion of the Clean Water Act, the Santa Ana RWQCB has regulatory authority over the project area.

The Porter–Cologne Act provides that "All discharges of waste into the waters of the State are privileges, not rights." Waters of the state are defined in Section 13050(e) of the Porter–Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." All dischargers are subject to regulation under the Porter–Cologne Act, including both point and nonpoint source dischargers. As noted in the discussion of the Clean Water Act, the Santa Ana Regional Water Quality Control Board is the appointed authority for Section 401 compliance in the project area.

California Environmental Quality Act

CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been generally modeled after the definition in FESA and Chapter 1.5 of the California Fish and Game Code that addresses rare or endangered plants and animals. Appendix G of the CEQA Guidelines requires a lead agency to determine whether or not a project would "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 or U.S. Fish and Wildlife Service." CEQA Guidelines Section 15065 requires that a lead agency find an impact to be significant if a project would "substantially reduce the number or restrict the range of an endangered, rare, or threatened species."

Regional

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

The proposed project is located in the Central Subarea of the NCCP/HCP. The NCCP/HCP, which covers an approximately 208,000-acre planning area in central and coastal Orange County, is a planning and policy document designed to protect and manage habitat supporting a broad range of plant and animal populations within the Central and Coastal Subregion of Orange County and intended to avoid, minimize and mitigate for alterations to coastal sage scrub and other covered habitats constituting 'harm' or 'harass' and therefore take under FESA that are incidental to Planned Activities in the Central and Coastal Subregion. To accomplish this goal, the NCCP/HCP creates a subregional habitat reserve system (Reserve System) and implements a coordinated program to manage biological resources within the Reserve (County of Orange 1996). The Implementing Agreement for the NCCP/HCP was reviewed and approved by USFWS and the California Department of Fish and Game (now CDFW) in 1996.

Local

City of Irvine Municipal Code

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

Chapter 4: Urban Forestry, Article E, Section 5-7-410 of the City of Irvine Municipal Code requires a tree removal permit from a City Arborist to remove any significant tree on public or private land except when:

- Safety Hazard. Deemed to an immediate hazard to life or property.
- Condition. Dead, decayed or diseased beyond correction; or malformed or stunted due to crowding.
- Trees causing damage to structures or deemed to be incompatible with the growing space available.

Trees are defined as any woody plant species that can typically grow with a single trunk with distinguishable crown and a height of 15 feet or greater at maturity. Significant trees include public trees in the right-of-way of public streets, public trees located in and around parks and other public facilities, trees in common areas located in village edges and landscape or parking lot setbacks on arterial streets, private trees on nonresidential properties to the extent zoning ordinance requirements are effective, and trees in eucalyptus (*Eucalyptus globulus*) windbreaks and trees in remnant eucalyptus windbreaks of the same ages as known windbreak trees in the City. Removal of trees shall be replaced at a 1:1 ratio either on site or in a similar location, in a different location on site, or off site as outlined in the Urban Forestry Guideline manual based on the determination of the City Arborist.

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.

Irvine 2045 General Plan – Conservation and Open Space Element

The General Plan Conservation and Open Space Element contains a variety of goals, objectives, and policies related to the protection of biological resources (City of Irvine 2024):

Goal 1. Ensure the permanent protection and preservation of designated conservation and open space areas amidst the development of commercial, industrial, institutional, and residential zones.

Objective COS-1: Continue the implementation of programs that effectively integrate the protection and preservation of conservation and open space areas with the development of designated zones.

Policy (a): Continue to prioritize the identification and delineation of conservation and open space areas within the city's planning framework.

Policy (b): Require developers to conduct comprehensive environmental assessments to identify potential impacts on designated conservation and open space areas during project planning.

Policy (c): Encourage the adoption of land use zoning regulations that incorporate buffer zones around conservation and open space areas to mitigate adverse impacts from adjacent development.

Policy (d): Facilitate partnerships between public agencies, private developers, and conservation organizations to acquire, manage, and maintain designated conservation and open space areas.

Policy (e): Implement incentives such as density bonuses or development credits for projects that contribute to the enhancement or restoration of conservation and open space areas.

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: Continue to 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 Recreation and Resource Management Plan (RRMPs), including the City's obligation to restore Coastal Sage Scrub (CSS) habitat in exchange for development of the open space trail system authorized in the RRMP.

Policy (d): Use the NCCP as a Program Environmental Impact Report for purposes of consistency with the California Environmental Quality Act, 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 viable 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 10. Enhanced open space accessibility and utilization, and conservation efforts of resources.

Objective COS-10: The City commits to creating and fostering well-integrated and sustainable open space resources available to City residents and visitors.

Policy (d): Balance access to open space for outdoor passive and active recreation with conservation needs consistent with City's Open Space management obligations and permit conditions such as the NCCP/HCP. Policy

Policy (j): Safeguard and maintain biotic communities and habitats within designated conservation and open space areas in alignment with Environmental Protection and Climate Action Element, NCCP/HCP and Resource Management Plans, including the protection of native flora and fauna, restoration of degraded habitats, and management practices aimed at enhancing biodiversity and ecological resilience.

4.4.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to biological resources are based on Appendix G of the CEQA Guidelines. For the purposes of this project, a significant impact related to biological resources would occur 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 or U.S. Fish and Wildlife Service.
2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
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 a tree preservation policy or ordinance.
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.

4.4.4 Impacts Analysis

Methodology

Data regarding biological resources present in the project site were obtained through a review of pertinent literature, field reconnaissance, and focused surveys, which are described in detail below.

Literature Review

Special-status biological resources present or potentially present on the project site were identified through a literature search, conducted in 2024. The following sources were used during the literature review process:

- The CNDDB (CDFW 2025c) was queried to compile a list of potentially occurring flora and fauna tracked by the CNDDB in the El Toro quadrangle and the surrounding eight quadrangles.

- California Native Plant Society's Inventory of Rare and Endangered Plants of California, 9th online edition (CNPS 2025b), was searched to compile a list of potentially occurring special-status plants in the El Toro topographic quadrangle and the surrounding eight quadrangles.
- USFWS's Information for Planning and Consultation tool (USFWS 2025) was queried to compile a list of flora and fauna listed, candidate, or proposed for listing, under FESA within or near the project site.

The NCCP/HCP (County of Orange 1996) was also reviewed with respect to regional reserve planning and conservation.

Resource Mapping

An initial biological reconnaissance survey was conducted by Dudek biologist Tommy Molioo on July 24, 2024, to identify the existing conditions, map vegetation, and determine potential biological constraints to the project. Focused field surveys conducted by Dudek include an aquatic resources jurisdictional delineation and surveys for special-status plants, burrowing owl (*Athene cunicularia*), coastal California gnatcatcher, least Bell's vireo, western spadefoot (*Spea hammondii*), and Crotch's bumble bee (*Bombus crotchii*). Table 4.4-5 lists the dates, conditions, and focus for each survey.

Table 4.4-5. Schedule of Surveys

Date	Hours	Focus	Personnel	Conditions
07/24/2024	08:00–12:00	General biological reconnaissance	TM	71°F–82°; 10% cloud cover; 1–5 mph winds
07/24/2024	08:00–12:00	Jurisdictional delineation	VG; MSM	71°F–82°F; 10% cloud cover; 1–5 mph winds
11/27/2024	08:00–10:08	Jurisdictional delineation update	MSM; AV	59°F–64°F; 50%–100% cloud cover; 1–3 mph winds
12/19/2024	07:00–09:30	Winter BUOW Pass 1	KN; MDM	51°F–62°F; 10% cloud cover; 0–2 mph winds
01/02/2025	07:11–09:45	Winter BUOW Pass 2	KN; MDM	43°F–59°F; 0% cloud cover; 1–3 mph winds
01/16/2025	07:30–10:57	Winter BUOW Pass 3	MDM; OK	47°F–66°F; 0% cloud cover; 0–3 mph winds
01/27/2025	15:45–20:05	WESP Pass 1	MDM; RS	Air temperature: 48°F–58°F; water temperature: N/A; 30%–50% cloud cover; 0–5 mph winds
01/30/2025	07:30–11:29	Winter BUOW Pass 4	OK; SC	50°F–58°F; 30%–80% cloud cover; 1–3 mph winds
02/17/2025	08:30–10:00	WESP Pass 2	MDM	Air temperature: 53°F–63°F; water temperature: 50°F–54°F; 0% cloud cover; 3–7 mph winds
03/12/2025	17:30–19:00; 20:00–22:00	WESP Pass 3	KN; MSM	Air temperature: 55°F–57°F; water temperature: 60°F; 70%–100% cloud cover; 2–5 mph winds
03/20/2025	07:30–09:32	Breeding BUOW Pass 1	TM; SL	45°F–62°F; 0%–10% cloud cover; 0–2 mph winds

Table 4.4-5. Schedule of Surveys

Date	Hours	Focus	Personnel	Conditions
04/01/2025	17:45–19:00	WESP Pass 4	MSM	Air temperature: 60°F; water temperature: N/A; 50% cloud cover; 10 mph winds
04/16/2025	07:00–10:00	Breeding BUOW Pass 2	KN; LB	53°F–58°F; 100% cloud cover; 1–2 mph winds
04/16/2025	06:45–09:34	LBVI Pass 1	MDM	53°F–56°F; 100% cloud cover; 0–4 mph winds
04/29/2025	07:20–10:29	LBVI Pass 2	LB	52°F–66°F; 0% cloud cover; 0–2 mph winds
05/01/2025	10:48–13:25	CBB Pass 1	CA; ES	64°F–74°F; 20%–90% cloud cover; 1–4 mph winds
05/07/2025	09:17–15:30	Special-Status Plant May Pass	TP; LB	62°F–70°F; 0%–100% cloud cover; 0–1 mph wind
05/13/2025	07:07–10:46	LBVI Pass 3	LB	56°F–62°F; 50%–80% cloud cover; 0–5 mph winds
05/15/2025	07:00–10:00	Breeding BUOW Pass 3	PL; KN	60°F–70°F; 0%–70% cloud cover; 1–2 mph winds
05/22/2025	09:41–12:44	CBB Pass 2	LB; SL	70°F–79°F; 10% cloud cover; 0–4 mph winds
05/28/2025	07:55–11:00	LBVI Pass 4	JE	60°F–69°F; 70%–100% cloud cover; 0–5 mph winds
06/06/2025	08:00–12:00	CAGN Pass 1	SC	63°F–74°F; 60%–90% cloud cover; 0–4 mph wind
06/10/2025	07:00–09:00	Breeding BUOW Pass 4	MDM; LB	60°F–62°F; 100% cloud cover; 1–3 mph wind
06/10/2025	09:00–13:00	CBB Pass 3	LB, KN	62°F–71°F; 10%–100% cloud cover, 2–5 mph wind
06/11/2025	07:04–10:00	LBVI Pass 5	LB	60°F–70°F; 70%–100% cloud cover; 0–2 mph wind
06/20/2025	08:15–12:00	CAGN Pass 2	SC	65°F–72°F; 0%–50% cloud cover; 1–9 mph wind
06/24/2025	05:29–09:57	LBVI Pass 6	MSM	59°F–67°F; 70%–100% cloud cover; 0–4 mph wind
06/27/2025	08:00–12:00	CAGN Pass 3	SC	64°F–76°F; 0%–20% cloud cover; 1–8 mph wind
07/08/2025	07:10–10:08	LBVI Pass7	LB	62°F–74°F; 0%–100% cloud cover; 0–2 mph wind
07/15/2025	08:00–11:00	Special-Status Plants July Pass	AV; SZ	64°F–72°F; 30%–100% cloud cover; 1–4 mph wind
07/22/2025	05:35–09:50	LBVI Pass 8	MSM	68°F–88°F; 0%–100% cloud cover; 0 mph wind

Personnel: TM= Tommy Molioo; VG= Valerie Goodwin; MSM = Megan Minter; AV = Aleen Vartivarian; KM = Kim Narel; MDM = Max Murray; OK = Olivia Koziel; RS = Ryan Stanley; SC = Shana Carey; SL = Sony Leming; LB = Luz Badillo; CA = Callie Amoaku; ES = Eilleen Salas; TP = Tracy Park; SZ = Sharon Zarate; PL = Peter Lam; JE = Josh Elson.
Notes: mph = miles per hour; °F = degrees Fahrenheit; N/A = not applicable due to lack of surface water; TBD = to be determined; BUOW = burrowing owl; WESP = western spadefoot; LBVI = least Bell's vireo; CBB = Crotch's bumble bee; CAGN = coastal California gnatcatcher.

Vegetation Communities and Land Covers

Dudek biologist Tommy Molioo mapped vegetation communities in the field digitally using the Field Maps ArcGIS mobile application, and a GIS coverage was created. Once in ArcGIS, the acreage of each vegetation community and land cover present on the project site was determined. Native plant community classifications used in this report follow the Habitat Classification System for Orange County (Gray and Bramlet 1992) and the California Native Plant Society's A Manual of California Vegetation (Sawyer et al. 2009) where feasible, with modifications to accommodate the lack of conformity of the observed communities to those listed in the Habitat Classification System for Orange County. The initial mapping of the project site used an approximately 0.25-acre minimum mapping unit for vegetation community polygons; clusters of particular vegetation types smaller than 0.25 acres were not mapped separately from the surrounding, larger vegetation community.

Flora

All plant species encountered during the field reconnaissance surveys and potential jurisdictional delineations were identified and recorded. Latin and common names for plant species with a California Rare Plant Rank (formerly California Native Plant Society List) follow the California Native Plant Society On-Line Inventory of Rare and Endangered Plants of California (CNPS 2025b). For plant species without a California Rare Plant Rank, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2024) and common names follow the California Natural Community list (CDFW 2025a) or the U.S. Department of Agriculture Natural Resources Conservation Service PLANTS Database (USDA 2024).

Fauna

Wildlife species detected during field surveys by sight, calls, tracks, scat, or other signs were recorded. Binoculars were used to aid in the identification of observed wildlife. In addition to species actually detected, expected wildlife use of the survey area was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. Latin and common names of animals follow Nicholson (2025) for reptiles and amphibians, American Ornithological Society (AOS 2025) for birds, Mammal Diversity Database (2025) for mammals, North American Butterfly Association (NABA 2025) or SDNHM (2002) for butterflies, and Moyle (2002) for fish. Digital mobile maps on Esri Field Maps were utilized during the surveys to assist in navigating the survey area and collecting data.

Special-Status and Regulated Resources

Focused Special-Status Plant Survey

Based on the results of the literature review and the reconnaissance-level field surveys conducted in July 2024, 12 special-status plant and/or covered species were preliminarily determined to have potential to occur within the project site based on known species distribution, species-specific habitat preferences, and habitat conditions on site: Catalina mariposa lily (*Calochortus catalinae*), intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*), small-flowered mountain mahogany (*Cercocarpus minutiflorus*), prostrate spineflower (*Chorizanthe procumbens*), summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*), many-stemmed dudleya (*Dudleya multicaulis*), Palmer's grapplinghook (*Harpagonella palmeri*), Tecate cypress (*Hesperocyparis forbesii*), decumbent goldenbush (*Isocoma menziesii* var. *decumbens*), Allen's pentachaeta (*Pentachaeta aurea* ssp. *allenii*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*), and Coulter's matilija poppy (*Romneya coulteri*). Therefore, focused surveys were conducted for target species on May 7, 2025, and July 15, 2025, within the blooming period range for these species.

Surveys for special-status species were conducted by walking meandering transects throughout the entire project site, where accessible. The survey dates and biologists for the focused special-status plant surveys on the project site are included in Table 4.4-5. Focused special-status plant surveys conformed to the California Native Plant Society's Botanical Survey Guidelines (CNPS 2001), CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018), and General Rare Plant Survey Guidelines (Cypher 2002). All plant species encountered during the field surveys were identified and recorded to subspecies or variety, if applicable, to determine sensitivity status.

Focused Burrowing Owl Surveys

Focused winter and breeding season burrowing owl surveys were conducted in accordance with the March 7, 2012, Staff Report on Burrowing Owl Mitigation (CDFW 2012). Dudek biologists conducted four evenly spaced non-breeding season survey passes between December 2024 through January 2025, following the methodology of breeding-season surveys (Table 4.4-5). Dudek biologists conducted four breeding season survey passes in March through June of 2025 under suitable weather conditions, between morning civil twilight (before sunrise, when objects are visible and the horizon is clear, but it is not yet fully daylight) and 10:00 a.m. (Table 4.4-5). Surveys were scheduled at least 3 weeks apart as per CDFW protocol, with the first survey visit between February 15 and April 15, two survey visits between April 15 and June 15, and one survey visit after June 15. The first visit included a habitat assessment concurrent with searching for suitable burrows and burrowing owls.

Dudek biologists conducted the survey on foot by slowly walking 20-meter-wide (66-foot-wide) transects to inspect all vegetation for evidence of burrowing owl within the project site as well as the surrounding 500-foot buffer area. The surveys covered all portions of the site that included suitable burrowing owl habitat (i.e., short, sparse vegetation with few shrubs, level to gentle topography, and well-drained soils). Pauses were taken to scan the area with appropriate binoculars to search for burrowing owls. Any potentially suitable burrows or burrow surrogates (e.g., rock cavities, pipes, culverts, debris piles with crevices) greater than 11 centimeters (4 inches) in diameter were mapped using a GPS handheld unit with sub-meter accuracy and inspected for burrowing owl sign (e.g., owl pellets, whitewash, abundant insect remains, feathers).

Focused Coastal California Gnatcatcher Surveys

Focused protocol surveys for the federally listed threatened coastal California gnatcatcher were conducted in the project site between June 6, 2025, and June 27, 2025. The survey was conducted within weather conditions and time frames appropriate for the detection of gnatcatchers. Weather conditions and survey dates are provided in Table 4.4-5. The survey routes focused on areas within the project site and a 500-foot-wide buffer (the survey area) that contain typical suitable habitat to support coastal California gnatcatcher (i.e., California sagebrush-dominated scrub), as well as additional vegetation types that would not typically support coastal California gnatcatcher but that were included in the survey area due to the observation of foraging and dispersing coastal California gnatcatcher on the project site within these vegetation types.

The survey was conducted following the currently accepted USFWS protocol for coastal California gnatcatcher (USFWS 1997). The project site is part of the Central/Coastal Subarea within the NCCP/HCP. Therefore, the coastal California gnatcatcher focused survey included three survey passes at a minimum of 7-day intervals between visits during the breeding season (March 15 through June 30). In accordance with the protocol, no more than 100 acres of suitable habitat were surveyed by a single permitted biologist during each site visit conducted. Survey routes allowed for complete audible and visual coverage of all suitable coastal California gnatcatcher habitat within the project site (Figure 3, Coastal California Gnatcatcher Survey Route, in Appendix C to the BRTR). A recording of

gnatcatcher vocalizations was played approximately every 50 to 500 feet to induce responses from potentially present gnatcatchers. Vocalization playback would have been terminated immediately upon detection of any gnatcatchers to minimize the potential for harassment.

Focused Least Bell's Vireo Surveys

Eight protocol-level presence/absence surveys for the state- and federally listed endangered least Bell's vireo were conducted on the project site between April and July 2025 (Table 4.4-5). Surveys along linear routes were conducted to cover all potential habitat within the survey area. Surveys were originally planned to occur along the drainages on site; however, biologists adjusted their routes to include laurel sumac (*Malosma laurina*) scrub due to observations of atypical least Bell's vireo use of the vegetation community.

The eight surveys for least Bell's vireo followed the USFWS least Bell's vireo survey guidelines (USFWS 2001), which state that a minimum of eight survey visits should be made to all riparian areas and any other potential vireo habitats between April 10 and July 31. The site visits are required to be conducted at least 10 days apart to maximize the detection of early and late arrivals, females, non-vocal birds, and nesting pairs. Taped playback of vireo vocalizations was not used during the surveys. Surveys were conducted between dawn and noon and were not conducted during periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather. Focused least Bell's vireo survey routes are depicted on Figure 4, Least Bell's Vireo Survey Route, in the BRTR.

Focused Western Spadefoot Surveys

Focused western spadefoot surveys were conducted in the project site during the wet season between January and April of 2025 (Table 4.4-5). This species is designated an SSC by CDFW and it is a covered species in the NCCP/HCP. The southern distinct population segment (DPS) of this species is federally proposed for listing as threatened under FESA. However, there is no official or standard survey technique for western spadefoot. Dudek biologists conducted surveys for western spadefoot egg clusters and larvae in all suitable aquatic habitat. If observed, an extrapolation of the appropriate occupied upland area was modeled using recorded occupied breeding locations and typical movement buffers. Suitable aquatic features suitable for western spadefoot breeding were identified and their locations were recorded; these features were revisited during subsequent survey visits. Other wildlife species observed incidentally, including all frogs or toads encountered, were recorded.

Focused Crotch's Bumble Bee Surveys

Dudek biologists conducted three evenly spaced surveys for Crotch's bumble bee in May and June 2025 (Table 4.4-5), coinciding with the Colony Active Period (April through August) to ensure the highest detection probability. The surveys were conducted in accordance with the recommendations described in the CDFW's "Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species" (CDFW 2023). The first survey was conducted by Callie Amoaku, who holds a Memorandum of Understanding (MOU) and Scientific Collecting Permit (SCP) to capture Crotch's bumble bee (S-221820002-22332-001). Surveys occurred at least one hour after sunrise, were concluded at least 3 hours before sunset and were not conducted during wet conditions (e.g., foggy, raining, or drizzling) or windy conditions (i.e., sustained winds greater than 8 miles per hour). The surveys were conducted during optimal conditions when there were sunny to partly sunny skies with temperatures greater than 60°F. Suitable habitat within the project site was visually surveyed for 1 person-hour per 3 acres of potential habitat. Biologists walked meandering transects throughout the vegetated areas with the highest cover of floral resources, with a goal of observing bumble bees in passing and observing bumble bee nest sites associated with small mammal burrows or other appropriate soil cavities.

Jurisdictional Aquatic Resources Delineation

Dudek biologists conducted a formal wetlands delineation in accordance with the 1987 USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (OHWM Manual) (USACE 2008b) was used to determine the limits of non-wetland waters. Non-wetland waters were delineated on topographical maps on a mobile device in conjunction with Esri Collector. The widths of each non-wetland water were determined in the field according to the OHWM Manual. Waters of the state regulated by RWQCB were mapped in accordance with the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (SWRCB 2021).

CDFW jurisdictional areas were mapped to include the bank of the stream/channel and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

Current vegetation mapping was reviewed to assess whether the project site supports hydrophytic vegetation and potential wetlands; several areas supporting hydrophytic vegetation were also assessed for the presence of wetland hydrology and hydric soils to determine whether they were three-parameter wetlands. Jurisdictional boundaries were mapped in the field using Esri Collector on a mobile device. Wetland Determination Forms were completed for certain points within drainages or vegetation communities where a predominance of hydrophytic vegetation was present; hydrology, vegetation, and soils were assessed to determine whether USACE three-parameter wetlands were present. A Streamflow Duration Assessment Method data form was completed for non-wetland features to distinguish between ephemeral, intermittent, and perennial stream flows.

Survey Limitations

Survey limitations are primarily due to a diurnal bias for most wildlife species and drier than normal conditions, leading to fewer blooming plants.

Surveys were conducted mostly during the daytime to maximize visibility and detection of plants and most animals. As such, birds represent the largest component of vertebrate fauna recorded during the surveys, as they are usually most active during daytime hours. In contrast, daytime surveys usually result in few observations of mammals, many of which may only be active at night, particularly rodent and bat species. Therefore, identification of mammals primarily relied on detection of surface sign such as scat, burrows, and tracks. Many species of reptiles and amphibians are similarly nocturnal and/or secretive in their habits and are difficult to observe using standard meandering transects.

Irvine received approximately 6.68 inches of precipitation from September 2024 to April 2025 (Agricultural Applied Climate Information System [AgACIS] 2025) as compared with the average annual precipitation of 12.86 inches (WRCC 2025; Tustin Irvine Ranch, California weather station). Thus, the region experienced lower-than-average precipitation totals during the current rain year. This may have led to lower germination rates or, in the case of bulbiferous plants, lower sprouting rates. It is possible that some herbaceous plant species are present within the project site but were not observed during the rare plant surveys. In order to account for this, the assessment took into account the proximity of locally known occurrences, project site habitat quality, and the species' sensitivity to drought to determine the likelihood of their presence despite being absent during 2025 field surveys.

Despite these limitations, the survey work conducted within the project site provides an adequate overall assessment of floral and faunal resources for purposes of evaluating potential biological constraints in the context of CEQA.

1. Would the project 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 or U.S. Fish and Wildlife Service?

Less-Than-Significant Impact with Mitigation Incorporated. The following impact analysis covers impacts to special-status plants and wildlife and includes a discussion of both direct and indirect impacts. A "direct impact" refers to complete loss of a biological resource. For purposes of this analysis, it refers to the area where vegetation clearing, grubbing, or grading replaces biological resources. Direct impacts were quantified by overlaying the proposed impact limits on biological resources mapped within the survey area. Direct impacts would occur from grading and construction of the proposed project.

"Indirect impacts" are reasonably foreseeable effects caused by a project's implementation on remaining or adjacent biological resources outside the direct disturbance zone. For purposes of this analysis, indirect impacts may affect areas outside the development footprint boundary, including native habitats and aquatic resources in the vicinity of the project site. Indirect impacts may be short term and construction related, or long term and associated with development in proximity to biological resources. Table 4.4-2 includes the special-status and NCCP/HCP covered plant species with a moderate to high potential to occur.

Table 4.4-3 summarizes the special-status and NCCP/HCP covered wildlife species observed or with a moderate to high potential to occur.

Special-Status Plants

One special-status plant species, intermediate mariposa-lily, was determined to have a high potential to occur on sparsely shrubby road cuts along the southeastern boundary of the project site. If present, intermediate mariposa-lily individuals would be directly impacted by vegetation clearing and grading for construction of the proposed project. Potential short-term indirect impacts include construction-related dust, soil erosion, and water runoff decreasing or permanently altering habitat suitability. Potential long-term impacts are expected to be less than significant due to the already disturbed nature of the project site and surrounding areas, particularly with respect to impacts resulting from noise, dust, and invasives.

The project site and adjacent areas are largely disturbed with past agricultural and industrial use. Therefore, this species is likely to occur only on road cuts where sparsely shrubby habitat is present. These areas consist of less than 0.25 acres, and likely would not be completely occupied. In the surrounding vicinity, similar habitat types are separated from the project by paved roads or existing facilities. This species has a low potential to occur in the remainder of the project site due to disturbance from historical land use and lack of suitable habitat. Although this species is moderately threatened in California (CRPR 1B.2), removal of potentially occupied habitat and indirect impacts to nearby populations would be adverse, but not significant. The loss of intermediate mariposa-lily individuals as a result of project activities at this scale would not have a significant impact on the species due to the relatively small population this area would likely support compared with the prevalence of the species locally in Orange County (CCH2025; iNaturalist 2025). Therefore, this impact would not reduce regional populations of the species to below self-sustaining numbers.

Due to presence of minimal habitat within the project site, project implementation would not reduce regional populations of intermediate mariposa-lily to below self-sustaining numbers. Therefore, impacts to special-status plant species would be less than significant.

Special-Status Wildlife

Six special-status wildlife species were observed on the project site: monarch (*Danaus plexippus*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), least Bell's vireo, and Crotch's bumble bee. Three special-status wildlife species were determined to have a moderate potential to occur within the project site or the 500-foot buffer: San Diegan tiger whiptail, red diamondback rattlesnake, and coastal California gnatcatcher (Table 4.4-3). Additionally, vegetation on the project site would provide suitable nesting habitat for migratory birds and raptors protected under the MBTA and California Fish and Game Code Sections 3503.5, 3503, and 3513. If present at the start of construction, these species would be directly and permanently impacted by vegetation clearing and grading related to construction of the proposed project.

Monarch Butterfly

Monarch butterfly is not expected to overwinter in trees on the project site. Therefore, the project would result in a less-than-significant impact on monarch butterfly and no mitigation is required.

Non-Listed Special-Status Birds and Regulated Nesting Birds

The proposed project has the potential to directly and indirectly impact non-listed special-status birds, as well as birds protected under the MBTA and California Fish and Game Code, that nest on or adjacent to the project site during construction. Impacts to these species would be potentially significant absent mitigation. Mitigation Measure (MM) BIO-1 (Avian Nest Avoidance; see Section 4.4.5, Mitigation Measures, for the text of all measures specific to biological resources) requires complete avoidance of the avian nesting season, pre-construction nesting bird surveys if the nesting season cannot be avoided, and establishment of no-disturbance buffers around active nests if found. Additionally, MM-BIO-2 (Demarcation of Disturbance Limits) requires installation of temporary fencing and/or staking around the perimeter of the work areas prior to construction activities, installation of silt fencing within 100 feet of aquatic resources, and installation of temporary 6-foot-high chain-link fencing covered with dust cloth within 500 feet of least Bell's vireo habitat, which also often coincides with habitat for yellow warbler, yellow-breasted chat, and other nesting birds. Therefore, implementation of MM-BIO-1 and MM-BIO-2 would reduce direct and indirect impacts to non-listed special-status and nesting birds to less significant with mitigation incorporated.

Burrowing Owl

The proposed project has the potential to result in direct and indirect impacts to burrowing owl should this species occupy the project site or adjacent areas during construction. Impacts to burrowing owl due to project implementation would be potentially significant absent mitigation. MM-BIO-3 (Pre-Construction Burrowing Owl Survey) requires preconstruction surveys to determine presence or absence of burrowing immediately prior to start of construction. If burrowing owl is found to have colonized the project site prior to the initiation of ground-disturbing activities, MM-BIO-3 requires preparation of a Burrowing Owl Management Plan, as well as implementation of avoidance measures and monitoring. In the case that take cannot be avoided, MM-BIO-3 outlines the pathway for obtaining an Incidental Take Permit pursuant to

California Fish and Game Code Section 2081, which would also include compensatory mitigation of occupied habitat at a minimum of a 1:1 ratio. Additionally, MM-BIO-2 requires installation of temporary fencing and/or staking around the perimeter of the work areas prior to construction activities. Therefore, direct and indirect impacts to burrowing owl would be reduced to less than significant with implementation of MM-BIO-2 and MM-BIO-3.

Least Bell's Vireo

The proposed project will result in the permanent loss of occupied least Bell's vireo habitat. Should project activities occur during the vireo breeding season, the project could also result in direct and/or indirect impacts to least Bell's vireo individuals, active nests, eggs, or young. Impacts to least Bell's would be potentially significant absent mitigation. MM-BIO-4 (Least Bell's Vireo Mitigation) requires obtaining incidental take authorization for least Bell's vireo under the terms of the NCCP/HCP or instead through consultation and permitting with CDFW and USFWS (i.e., federal Section 7 consultation or federal Section 10 processes, and state 2080.1 consistency determination or 2081 Incidental Take Permit requirements). Obtaining conditional coverage under the NCCP/HCP would require, at minimum, preparation and implementation of a mitigation plan, compensatory mitigation for impacted least Bell's vireo habitat (i.e., 5.02 acres of laurel sumac scrub), monitoring and adaptive management, seasonal avoidance of directly impacting least Bell's vireo habitat, noise monitoring for construction related activities within 500 feet of least Bell's vireo habitat, biological monitoring for construction within 500 feet of least Bell's vireo habitat. Additionally, MM-BIO-2 requires installation of temporary fencing and/or staking around the perimeter of the work areas prior to construction activities, installation of silt fencing within 100 feet of aquatic resources, and installation of temporary 6-foot-high chain-link fencing covered with dust cloth within 500 feet of least Bell's vireo habitat, reducing short-term indirect impacts to less than significant. Compensatory mitigation associated with MM-BIO-4 would reduce long-term indirect impacts to less than significant through preservation of suitable habitat within the region. Therefore, direct and indirect impacts to least Bell's vireo would be reduced to less than significant with implementation of MM-BIO-2 and MM-BIO-4.

Crotch's Bumble Bee

Should Crotch's bumble nest on the project site during construction, the proposed project has the potential to directly and indirectly impact this species, which would be potentially significant absent mitigation. MM- BIO-5 (Crotch's Bumble Bee Pre-Construction Surveys) requires pre-construction surveys in order to determine presence or absence of Crotch's bumble bee immediately prior to start of construction. If Crotch's bumble bee is identified and nest resources are detected, MM-BIO-5 provides avoidance measures to avoid take. In the case that avoidance of take is not feasible, MM-BIO-5 provides guidance on obtaining incidental take authorization pursuant to Section 2081 of the Fish and Game Code as well as requirements for compensatory mitigation for the loss of nesting habitat. Therefore, impacts to Crotch's bumble bee would be reduced to less than significant with implementation of MM-BIO-5.

Special-Status Reptiles

Direct impacts to special-status reptiles, should they be present on site during construction, would be potentially significant absent mitigation. MM-BIO-6 (Biological Monitoring) requires environmental training, pre-construction sweeps, regular spot checks during construction, relocation of wildlife out of harm's way, and covering or providing escape routes within steep excavations to ensure avoidance of direct impacts to any special-status reptiles species. Additionally, MM-BIO-2 requires installation of temporary

fencing and/or staking around the perimeter of the work areas prior to construction activities. Therefore, direct and indirect impacts to special-status reptiles would be reduced to less than significant with implementation of MM-BIO-2 and MM-BIO-6.

Mountain Lion

Mountain lions are not expected to have natal dens on the project site and individual mountain lions would be expected to avoid the area during construction. Therefore, there will be no impact on mountain lions as a result of the proposed project and no mitigation is required.

Coastal California Gnatcatcher

Direct impacts to coastal California gnatcatcher are not expected to occur as a results of project implementation due to lack of suitable habitat within the project site. The project site does not contain coastal sage scrub habitat to support coastal California gnatcatcher. Therefore, this species is not expected to occur within the project site. Areas in the 500-foot-wide buffer south of Bee Canyon Access Road do support coastal sage scrub. Although focused protocol surveys in this buffer area were negative, a population of this species has been observed frequently in the adjacent property (CDFW 2025c) and has a moderate potential to occur in future years. As such, the Project has the potential to indirectly impact these species if the adjacent habitat becomes occupied in future years and Project activities occur within 500 feet. Visual disturbance, noise, or vibrations from Project activities such as nearby grading, vegetation removal, or construction could disrupt breeding activities and cause nest failure. During construction activities, indirect effects to coastal California gnatcatcher could include construction-related noise, dust, soil erosion, and water runoff decreasing or permanently reducing the quality of nearby habitat where these species may be present. Potential long-term impacts are expected to be less than significant due to the already disturbed nature of the project site and surrounding areas. The proposed project could indirectly impact coastal California gnatcatcher nesting within 500 feet of construction activities, which would be a potentially significant impact absent mitigation. MM-BIO-7 (Coastal California Gnatcatcher Monitoring) requires noise monitoring within coastal sage scrub habitat within the 500-foot-wide buffer and ceasing of activities when project activity noise exceeds 60dB. Therefore, indirect impacts to coastal California gnatcatcher would be reduced to less than significant with implementation of MM-BIO-7.

Summary

All impacts relating to project impacts that would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species would be less than significant with mitigation incorporated.

2. ***Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?***

Direct Impacts

Less-Than-Significant Impact. Implementation of the proposed project would result in permanent impacts to 104.19 acres of vegetation communities and land covers mapped on the project site (Table 4.4-6). Approximately 20.73 acres of these impacts are within an area previously permitted as part

of a separate project, were already cleared at the time of the Notice of Preparation (NOP) for the proposed project and are not attributable to the proposed project. Impacts attributable to the proposed project include the permanent loss of approximately 83.46 acres of vegetation communities and land covers. Impacts to vegetation communities and land covers on the project site, including both previously permitted impacts and project impacts, are summarized in Table 4.4-6 and depicted on Figure 4.4-5, Project Impacts, with impacts attributable to the proposed project depicted as "permanent impacts" on Figure 4.4-5.

As discussed in Section 4.4.1, Existing Conditions, vegetation communities with CDFW state rankings of S1, S2, or S3, as well as communities regulated by the resource agencies (USACE, RWQCB, and/or CDFW), are considered sensitive natural communities and impacts to these communities could be considered significant absent mitigation. Although none of the vegetation communities mapped on site have a state rarity rank of S1, S2, or S3, one riparian vegetation community (mulefat thickets) was mapped in the northern corner of the project site. Approximately 0.37 acres of mulefat thickets were mapped within the project site during the initial biological reconnaissance survey in 2024. However, these areas are entirely within the previously permitted portion of the site (see Figure 4.4-5), and at the time of the NOP for the proposed project had already been removed as a part of a separate and previously permitted project.

Table 4.4-6. Permanent Impacts to Vegetation Communities and Land Cover Types Within the Project Site

Vegetation Communities and Land Cover Types	Alliance[a]	Association	Ranking[b]	Previously Permitted Impacts (Acres)[c]	Project Impacts (Acres)[c]
Native Vegetation Communities					
Laurel sumac scrub	*Malosma laurina* shrubland alliance	*Malosma laurina* association	G4 S4	0.19	5.02
Mulefat thickets	*Baccharis salicifolia* shrubland alliance	*Baccharis salicifolia* association	G5 S5	0.37	0
		Native Vegetation Communities Subtotal		*0.55*	*5.02*
Naturalized Vegetation Communities					
Upland mustards or star-thistle fields	*Brassica nigra*–*Centaurea* (*solstitialis*, *melitensis*) herbaceous semi-natural alliance	*Hirschfeldia incana* association	GNA SNA	4.29	14.38
		Centaurea melitensis association	GNA SNA	0	1.26
Red brome or mediterranean grass grasslands	*Bromus rubens*–*Schismus* (*arabicus*, *barbatus*) herbaceous semi-natural alliance	*Bromus rubens*–mixed herbs association	GNA SNA	1.35	1.20
Eucalyptus–tree of heaven–black locust groves	*Eucalyptus* spp.–*Ailanthus altissima*–*Robinia pseudoacacia* woodland semi-natural alliance	*Eucalyptus* (*globulus*, *camaldulensis*) association	GNA SNA	0	2.56
Pepper tree or myoporum groves	*Schinus* (*molle*, *terebinthifolius*)–	*Schinus molle* association	GNA SNA	0	0.68

Table 4.4-6. Permanent Impacts to Vegetation Communities and Land Cover Types Within the Project Site

Vegetation Communities and Land Cover Types	Alliance[a]	Association	Ranking[b]	Previously Permitted Impacts (Acres)[c]	Project Impacts (Acres)[c]
	Myoporum laetum forest & woodland semi-natural alliance				
			Naturalized Vegetation Communities Subtotal	*5.64*	*20.08*
Non-Natural Land Cover Types					
General agriculture	None	None	None	0.27	35.33
Urban/developed	None	None	None	7.82	13.51
Disturbed habitat	None	None	None	6.40	8.92
Ornamental plantings	None	None	None	0.04	0.59
			Non-Natural Land Cover Types Subtotal	*14.53*	*58.35*
			Total	**20.73**	**84.08**

[a] The term semi-natural is used in the Manual of California Vegetation to distinguish vegetation types dominated by non-native plants from natural vegetation communities (CNPS 2025a).

[b] The conservation status of a vegetation community is designated by a number from 1 to 5, preceded by a letter reflecting the appropriate geographic scale of the assessment (G = global, S = subnational/state). The numbers have the following meaning (NatureServe 2025):
1 = critically imperiled
2 = imperiled
3 = vulnerable to extirpation or extinction
4 = apparently secure
5 = demonstrably widespread, abundant, and secure
NA = no applicable ranking

[c] Totals may not sum precisely due to rounding.

Indirect Impacts

Less-Than-Significant Impact. Potential indirect impacts to sensitive vegetation communities surrounding the project site would be similar to indirect impacts to special-status plant species and would include short-term construction-related effects and long-term development-related effects. However, no sensitive vegetation communities were mapped on the project site, and none are expected to occur in the areas surrounding the site. Areas west and south of the project site are either developed or are under development and lands north and east of the project site are generally disturbed with historical agricultural (i.e., grazing and farming) and industrial use. Therefore, no significant indirect impacts are expected to occur to sensitive vegetation communities.

Summary

The proposed project would result in less-than-significant direct or indirect impacts to sensitive vegetation communities and no mitigation is required.

3. Would the project 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?

Direct Impacts

Less-Than-Significant Impact with Mitigation Incorporated. A USACE wetlands delineation was conducted in accordance with the 1987 USACE Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual (OHWM Manual) (USACE 2008b) was used to determine the limits of non-wetland waters. Non-wetland waters were delineated on topographical maps on a mobile device in conjunction with Esri Collector. The widths of each non-wetland water were determined in the field according to the OHWM Manual. CDFW jurisdictional areas were mapped to include the bank of the stream/channel and outer dripline of adjacent riparian vegetation, as set forth under California Fish and Game Code Section 1602. Streambeds under the jurisdiction of CDFW were delineated using the Cowardin method of waters classification, which defines waters boundaries by a single parameter (i.e., hydric soils, hydrophytic vegetation, or hydrology) (Cowardin et al. 1979).

One unnamed drainage, NWW-1, is present in the northern portion of the project site along an agricultural access road. NWW-1 was determined to be ephemeral and therefore not USACE jurisdictional. However, this feature was assessed as potentially subject to regulation by the RWQCB and CDFW.

Direct impacts to jurisdictional waters and wetlands would be potentially significant absent mitigation. For direct impacts to 0.03 acres of non-wetland waters under RWQCB jurisdiction and 0.16 acres under CDFW jurisdiction, permits would be required and typically entail providing compensatory mitigation to offset the impacts. RWQCB regulates waters of the state under California's Porter–Cologne Act. California Fish and Game Code Sections 1600–1616 give CDFW regulatory powers over streams and lakes, as well as vegetation associated with these features. MM-BIO-8 (Waters and Wetland Mitigation) would require the applicant/developer to obtain permits from the regulatory agencies (i.e., RWQCB and CDFW), and to implement the associated compensatory mitigation and habitat mitigation and monitoring plan. Implementation of MM-BIO-8 would reduce direct impacts to jurisdictional aquatic resources to less than significant with mitigation incorporated.

Indirect Impacts

Less-Than-Significant Impact with Mitigation Incorporated. Construction-related indirect impacts may include inadvertent spillover impacts outside of the construction footprint, chemical spills, and stormwater erosion and sedimentation. Post-construction (long-term) indirect impacts from operations and maintenance activities may include changes in water quality and accidental chemical spills. Implementation of MM-BIO-8 would ensure that permits, which typically include conditions or measures that would protect adjacent waters or wetlands, would be obtained from the regulatory agencies and that the requirements of these agencies would be met. MM-BIO-2 would also require installation of temporary fencing and/or staking around the perimeter of the work areas prior to construction activities, installation of silt fencing within 100 feet of aquatic resources, and installation of temporary 6-foot-high chain-link fencing covered with dust cloth within 500 feet of least Bell's vireo habitat, which includes vegetation within drainages. MM-BIO-6 requires a biological monitor to be present during ground disturbance or removal

activities and includes dust control monitoring. Implementation of MM-BIO-2, MM-BIO-6, and MM-BIO-8 would ensure that indirect impacts related to adverse effects on state or federally protected wetlands would be less than significant with mitigation incorporated.

Summary

The project would cause both direct and indirect impacts to jurisdictional waters and wetlands. Implementation of MM-BIO-2, MM-BIO-6, and MM-BIO-8 would reduce direct and indirect impacts to jurisdictional aquatic resources to less than significant with mitigation incorporated.

4. 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?

No Impact. The project site does not contain any native wildlife nursery sites; therefore, there would be no impact to native wildlife nursery sites as a result of project implementation.

The project site is at the northern edge of existing development within the City of Irvine. Although it is adjacent to the Santa Ana Mountains and NCCP/HCP reserve lands, the site does not provide connection to open space areas farther east or north due to the existing developed lands immediately abutting the project site to the west and south. As discussed in Section 4.4.1, local wildlife movement is further constrained by Bee Canyon Access Road to the east, SR-241 to the north, and SR-261 to the west. The site does not provide suitable habitat for nesting rookeries or bat maternity roosts due to lack of perennial aquatic habitat or suitable cavern habitat.

Although the project site does provide opportunities for local wildlife movement, it does not function as a corridor or habitat linkage between two larger blocks of native habitat. Therefore, there would be no impact to wildlife corridors, habitat linkages, or native wildlife nursery sites as a result of project implementation.

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

Less-Than-Significant Impact with Mitigation Incorporated. The project has been planned in a manner consistent with the relevant goals, objectives, and policies related to biological resources in the Resources Element of the County General Plan. The project has also been planned to be consistent with the relevant goals, objectives, and policies related to biological resources in the Conservation and Open Space Element of the City General Plan. Therefore, the project would not result in direct or indirect impacts associated with these local plans.

The project has the potential to result in the removal of trees subject to a City of Irvine Municipal Code tree removal permit. The project site is known to support trees that may be subject to a tree removal permit if removed and if the tree meets the definition of a significant tree pursuant to the Municipal Code and determined necessary by the City Arborist, including kaffir plum, Peruvian pepper tree, blue jacaranda, Jerusalem thorn, Chinese banyan, monkeypod, eucalyptus, Italian stone pine, coast live oak, Goodding's willow, Fremont cottonwood, or Southern California black walnut, among many others.

Chapter 4: Urban Forestry, Article E, Section 5-7-410 of the City's Municipal Code requires a tree removal permit from a City Arborist to remove any significant tree on public or private land with exceptions including safety hazards, tree condition, and trees causing damage to structures or are incompatible with the growing space available. Trees removed shall be replaced at a one-for-one ratio either on site in a similar location, on site in a different location, or off site as prescribed in the Urban Forestry Guideline Manual based on the determination of the City Arborist. Tree replacement on site may not be feasible due to fire safety practices required by the City and state, including CFC Chapter 33 regulations and the implementation of a Fire-Resistant Landscape Plan (per MM-WF-2; see Section 4.19, Wildfire) which includes incorporating designated fuel modification zones and using plant material in accordance with the Orange County Fire Authority (OCFA) Fuel Modification Zone Plant List. Some plant communities and their associated plant species have increased flammability based on plant physiology, biological function, physical structure, and overall fuel loading. The landscape plan would be submitted to OCFA for review and approval prior to the issuance of building permits. Therefore, any trees subject to removal would require a tree removal permit and may be replaced off site due to restrictions on allowable vegetation types on the project site per OCFA. Additionally, the Applicant would be required to pay a fee in an amount established by resolution of the City Council to cover the costs of administering tree removal permits. As such, the project is considered consistent with the goals, objectives, and policies related to biological resources in the County's General Plan and City's General Plan; therefore, there would be no impact due to conflicting with the local policies of these plans as a result of the proposed project. However, the project has the potential to result in the removal of tree species subject to a tree removal permit under the City's Municipal Code and has the potential to conflict with a local ordinance if not done so accordingly, which would be considered a significant impact absent mitigation. To determine whether trees would need to be removed, implementation of MM-BIO-9 would be required to mitigate the potential impacts. Implementation of MM-BIO-9 would reduce potential impacts on local ordinances to less than significant with mitigation incorporated.

6. 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?

No Impact. The project site is within the boundaries of the NCCP/HCP (Figure 4.4-6, Orange County NCCP/HCP). The NCCP/HCP conservation strategy, which serves as the mitigation basis for incidental take of covered species and covered habitats authorized by the NCCP/HCP, is composed of several key elements, including the establishment of an approximately 37,000-acre Reserve System, implementation of the Adaptive Management Program described in the NCCP/HCP within the Reserve System, and the designation of Special Linkage Areas and Existing Use Areas to enhance biological connectivity within the Reserve System and Central/Coastal Subregion. Activities and uses within these Reserve and non-Reserve components of the NCCP/HCP are restricted and development within them is generally prohibited. Although the project site is located within the plan area of the NCCP/HCP, it is not located within the Reserve, nor is it within areas designated in the NCCP/HCP as Special Linkages or Special Use Areas. The project site is also outside the North Ranch Policy Plan Area, as described in the NCCP/HCP.

Because coastal sage scrub habitat is absent from the project site and take of coastal sage scrub species listed as endangered or threatened under CESA and/or FESA are not expected, payment of the mitigation fee for impacts outside of the Reserve to listed coastal sage scrub species, as described in Section 4.4.2, Part 4, and Section 7 of the NCCP/HCP Implementing Agreement, is not required. Construction-related minimization measures described in Section 4.4.2, part 6, of the Implementing Agreement and Section

7.5.3 of the Joint Programmatic EIS/EIR for the NCCP/HCP for development/construction in areas recommended to be authorized for incidental take of coastal sage scrub are also not applicable since the project will not result in impacts to coastal sage scrub habitat. Note, however, that the project would comply with all applicable regulations (e.g., project-specific stormwater pollution prevention plan; SCAQMD Rule 403) and would implement standard construction best management practices (BMPs), which would minimize impacts to nearby off-site coastal sage scrub habitat.

The project would result in impacts to least Bell's vireo, one of several conditionally covered "identified species" in the NCCP/HCP, which allows for incidental take provided specific conditions are met. Specific conditions related to least Bell's vireo are described in Section 8.3.2, Part 3, of the Implementing Agreement and are summarized here:

1. For incidental take of least Bell's vireo to be covered under the NCCP/HCP, the affected habitat supporting migrating or nesting least Bell's vireo must be of lesser long-term conservation value in the subregion. Incidental take resulting from loss of habitat that is of potentially significant long-term conservation value in the subregion is not covered.
2. Planned activities resulting in take of least Bell's vireo shall be consistent with a mitigation plan, to be developed in coordination with the Wildlife Agencies (USFWS and CDFW) and the Natural Communities Coalition (NCC), that:
    a. Addresses design modifications and other on-site measures that are consistent with the project's purposes, minimizes impacts, and provides appropriate feasible protections.
    b. Provides for compensatory habitat restoration/enhancement activities at an appropriate location (which may include the Reserve or other open space) and which may include planting of riparian trees and shrubs and/or cowbird trapping.
    c. Provides for monitoring and adaptive management of habitat within the Reserve System, including cowbird trapping, consistent with Chapter 5 of the NCCP/HCP.

Occupied least Bell's vireo habitat consists primarily of upland vegetation, mapped as laurel sumac scrub. Vireo typically breed in riparian areas dominated by willow species with a stratified canopy and vegetated understory. Although some mulefat and willows are present, occupied areas on site are considered atypical breeding habitat, forming a patchy network of low-quality habitat that is isolated from areas of higher-quality riparian vegetation. As such, these areas are considered to be of lesser long-term conservation value.

Should take coverage for least Bell's vireo be obtained under the NCCP/HCP, special conditions related to the preparation of a mitigation plan would be met, as described in Section 4.4.4(1). Accordingly, the project is considered consistent with the NCCP/HCP. Therefore, the project would have no impact due to a conflict with an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Impact Summary

Due to the presence of minimal habitat within the project site, project implementation would not reduce regional populations of intermediate mariposa-lily to below self-sustaining numbers. Therefore, impacts to special-status plant species would be less than significant absent mitigation. The proposed project would not result in impacts to sensitive vegetation communities. Therefore, the project would result in a less-than-significant impact on sensitive vegetation communities and no mitigation is required.

Direct impacts to jurisdictional waters and wetlands would be potentially significant absent mitigation. For direct impacts to 0.03 acres of non-wetland waters under RWQCB jurisdiction and 0.16 acres under CDFW jurisdiction, permits would be required and typically entail providing compensatory mitigation to offset the impacts. Implementation of MM-BIO-2, MM-BIO-6, and MM-BIO-8 would reduce indirect impacts to jurisdictional aquatic resources to less than significant.

The project site does not contain any native wildlife nursery sites and the project site does not function as a wildlife corridor or habitat linkage between larger blocks of native habitat. Therefore, there no impact to wildlife corridors and habitat linkages and no impact to native wildlife nursery sites would occur as a result of project implementation.

The project has the potential to result in the removal of tree species subject to a tree removal permit under the City of Irvine Municipal Code, and removal of such trees would have the potential to conflict with a local ordinance, which would be a significant impact, absent mitigation. Therefore, project implementation of MM- BIO-9 would reduce potential impacts on local ordinances to less than significant with mitigation incorporated. The project is considered consistent with the NCCP/HCP; therefore, the project would have no impact on habitat conservation plans.

4.4.5 Mitigation Measures

The following mitigation measures would address potentially significant impacts to biological resources:

MM-BIO-1 Avian Nest Avoidance. Construction activities shall avoid the migratory bird nesting season (typically January 1 through October 31 for white-tailed kite, and from February 1 through August 31 for all other species), as feasible, to reduce any potential significant impact to birds that may be nesting within or adjacent to the construction area. If construction activities must occur during the migratory bird nesting season, an avian nesting survey within 500 feet of impact areas must be conducted by a qualified wildlife biologist no more than 72 hours prior to initial ground-disturbing activities, including vegetation removal. If construction activities cease for more than 3 consecutive days, avian nesting surveys must be repeated no more than 3 days prior to resumption of construction activities.

If an active bird nest is found, the nest location shall be added to construction plans and an appropriate no-disturbance buffer shall be established around the nest, the size of which shall be determined by the biologist based on the species' sensitivity to disturbance (typically 300 feet for passerines and 500 feet for raptors and special-status species). The no-disturbance buffer shall be clearly demarcated in the field with highly visible construction fencing or flagging, and construction personnel shall avoid the buffer area until the juveniles have fledged or the nest is no longer considered active, as determined by a qualified biologist. A qualified biologist shall serve as a construction monitor during those periods when construction activities will occur near active nest areas to ensure that no inadvertent impacts to active nests occur. White-tailed kite is a California Department of Fish and Wildlife fully protected species, and a permitting pathway is not available to the project for take of the species. Therefore, the 500-foot buffer cannot be reduced if a white-tailed kite nest is found within the project site.

MM-BIO-2 Demarcation of Disturbance Limits. To prevent inadvertent disturbance to sensitive vegetation and species adjacent to the proposed project area, temporary fencing and/or staking shall be installed prior to construction activities around the perimeter of the work areas, as feasible

depending on topography and large vegetation. All construction activities, including equipment staging and maintenance, shall be conducted within the marked disturbance limits to prevent inadvertent disturbance to sensitive biological resources outside the limits of work. The marked disturbance limits shall be maintained throughout vegetation removal and grading, and any windblown trash generated by the project that collects on the fence will be regularly removed. Silt fencing shall be installed at disturbance limits where aquatic resources occur within 100 feet. Temporary 6-foot-high chain-link fencing covered with dust cloth shall be installed at disturbance limits where occupied least Bell's vireo habitat occurs within 500 feet.

MM-BIO-3 Pre-Construction Burrowing Owl Survey. A qualified biologist shall conduct a pre-construction survey for burrowing owls prior to initial ground-disturbing activities, including vegetation removal, to assess whether any burrowing owls have colonized the site prior to the start of construction. The pre-construction survey shall be completed no more than 14 days before initiation of site preparation or grading activities, and a second survey shall be completed within 24 hours of the start of site preparation or grading activities. If ground-disturbing activities are delayed or suspended for more than 30 days after the pre-construction surveys, the pre-construction surveys shall be repeated to ensure burrowing owl has not colonized the site since it was last disturbed. The pre-construction survey will occur within suitable habitat for burrowing owl, as determined by the biologist, and will be conducted in accordance with methods described in the CDFW 2012 Staff Report. If burrowing owls have colonized the project site prior to the initiation of ground-disturbing activities, the applicant/developer shall immediately inform the California Department of Fish and Wildlife (CDFW). Prior to ground disturbance, the applicant/developer shall prepare a Burrowing Owl Management Plan, which shall be submitted to CDFW for review and approval at least 30 days prior to initiation of ground-disturbing activities. If burrowing owls are detected after ground-disturbing activities have been initiated, CDFW shall be notified in writing and a Burrowing Owl Management Plan shall be submitted to CDFW for review and approval within 2 weeks of detection; construction activities shall not occur within 400 feet of an active burrow until CDFW approves the Burrowing Owl Management Plan. The Burrowing Owl Management Plan shall include, at a minimum, the following.

1. An impact assessment that details the number and location of occupied burrow sites and acres of burrowing owl habitat with a qualitative description of the habitat vegetation characteristics that will be impacted.
2. Avoidance measures, including no-disturbance buffers clearly delineated at a 250-foot radius around all occupied burrows located on site or within 250 feet of the disturbance footprint, with posted signs demarcating the avoidance area and by using stakes, flags, and/or rope or cord to minimize the disturbance of burrowing owl habitat. No construction shall occur within the avoidance buffer(s) without the consent of a monitoring biologist. The buffer shall remain in place until it is determined that occupied burrows have been vacated.
3. Monitoring requirements.

No take of burrowing owl shall occur without prior authorization in the form of an Incidental Take Permit (ITP) pursuant to California Fish and Game Code Section 2081. If overwintering or nesting burrowing owls are observed during the survey and impacts to burrowing owl cannot be feasibly avoided through implementation of the Burrowing Owl Management Plan, the applicant/developer will consult with CDFW and obtain appropriate take authorization from through the California Endangered Species Act ITP process. In the event an ITP is needed, occupied habitat that is temporarily impacted shall be restored to its original construction immediately following the completion of construction and compensatory mitigation for the permanent loss of occupied burrowing owl habitat shall be fulfilled through habitat replacement of equal or better functions and values to those impacted by the project at a minimum 1:1 ratio, or as otherwise determined through the ITP process. Mitigation shall be achieved through off-site conservation of habitat and/or purchase of appropriate credits at a CDFW-approved mitigation bank. If mitigation is not purchased through a mitigation bank, and lands are conserved separately, a cost estimate shall be prepared to estimate the initial startup costs and ongoing annual costs of management activities for the management of the conservation easement area(s) in perpetuity. The funding source shall be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount shall be established following the completion of a project-specific Property Analysis Record to calculate the costs of in-perpetuity land management. The Property Analysis Record shall take into account all management activities required in the ITP to fulfill the requirements of the conservation easement(s), which are currently in review and development.

MM-BIO-4 Least Bell's Vireo Mitigation. Prior to initial ground-disturbing activities, including vegetation removal, the applicant/developer shall prepare a mitigation plan in accordance with the requirements for conditional coverage identified in the Implementing Agreement for the Natural Community Conservation Plan & Habitat Conservation Plan, County of Orange Central and Coastal Subregion (NCCP/HCP). The mitigation plan shall be developed in coordination with the Wildlife Agencies (U.S. Fish and Wildlife Service and California Department of Fish and Wildlife) and the Natural Communities Coalition (NCC) and shall include, at a minimum, the following:

1. Compensatory mitigation requirements for impacts to occupied least Bell's vireo habitat, which shall be, at a minimum, 1:1 for low-quality habitat, 2:1 for moderate-quality habitat, and 3:1 for high-quality habitat, or as otherwise determined during coordination with the Wildlife Agencies. Compensatory mitigation shall be met through habitat restoration/enhancement activities at an appropriate location (which may include the reserve or other open space) and which may include planting of riparian trees and shrubs and/or brown-headed cowbird trapping.
2. Requirements for monitoring and adaptive management of least Bell's vireo habitat within the NCCP/HCP Reserve, including brown-headed cowbird trapping, consistent with Chapter 5 of the NCCP/HCP.
3. Design modifications and other on-site measures that are consistent with the project's purposes, and which avoid or minimize impacts and provides appropriate feasible protections for least Bell's vireo. At a minimum, the following measures shall be included:
    a. **Seasonal Avoidance.** To avoid direct impacts nesting individuals and eggs/young, vegetation-disturbing activities within suitable and occupied least Bell's vireo habitat shall occur from September 16 (or sooner if a Wildlife Agency–approved project biologist demonstrates to the satisfaction of the Wildlife Agencies that all nesting is complete) through March 14 to avoid the least Bell's vireo breeding season. For other project-related

construction that cannot be restricted to outside the least Bell's vireo breeding season, construction noise monitoring and reduction will be provided as detailed below.

b. **Noise Monitoring.** To minimize potential adverse impacts to least Bell's vireo from construction-related noise and vibration, non-vegetation clearing construction-related activities within 500 feet of occupied and suitable least Bell's vireo habitat would be timed to occur outside of the breeding season to the extent feasible. For construction-related activities within 500 feet (152.40 meters) of occupied or suitable least Bell's vireo habitat, and that must occur within the least Bell's vireo breeding season, on-site noise reduction techniques shall be implemented to limit construction-related noise within the occupied habitat areas to levels that do not exceed 60 A-weighted decibel (dBA) hourly energy equivalent level (L_{eq}) or pre-construction ambient noise levels, whichever is greater. Noise reduction techniques shall be implemented as necessary to ensure that noise thresholds are not exceeded. These techniques may include but are not limited to installation of temporary sound barriers, utilization of quieter equipment, adherence to equipment maintenance schedules, and/or shifting construction work away from occupied areas.

c. **Biological Monitoring.** All construction-related activities within 500 feet of occupied least Bell's vireo habitat shall be monitored by a Wildlife Agency–approved biologist. The biologist shall submit weekly letter reports (including photographs of impact areas) via email to the Wildlife Agencies while construction-related activities within 500 feet of occupied habitat are ongoing. The weekly reports will document that authorized impacts were not exceeded and all avoidance and protection measures were complied with. The reports will also summarize the duration of vireo monitoring, the location of construction activities, the type of construction that occurred, and equipment used. The reports will specify numbers, locations, and sex of vireos (if present); observed vireo behavior (particularly in relation to construction activities); and any remedial measures employed to avoid impacts to vireo individuals. Raw field notes should be available upon request by the Wildlife Agencies. Any unauthorized impacts to vireo or vireo habitat shall be reported to the Wildlife Agencies within 24 hours. A final report shall be submitted to the Wildlife Agencies and the NCC within 60 days of project completion that includes (1) as-built construction drawings with an overlay of occupied habitat that was impacted and avoided, (2) photographs of avoided occupied habitat areas, and (3) other relevant summary information documenting that authorized impacts were not exceeded and that all mitigation plan measures were generally complied with.

Prior to initial ground-disturbing activities, including vegetation removal, the applicant/developer shall obtain concurrence from the Wildlife Agencies that the NCCP/HCP conditions of coverage for least Bell's vireo have been satisfied and that incidental take of least Bell's vireo is authorized under the terms of the NCCP/HCP. If it is determined that incidental take of least Bell's vireo resulting from the project is not conditionally covered under the NCCP/HCP, take authorization shall be obtained authorization shall be obtained through the federal Section 7 Consultation or Section 10 processes and state 2080.1 consistency determination or 2081 Incidental Take Permit requirements.

MM-BIO-5 Crotch's Bumble Bee Pre-Construction Surveys. Pre-construction surveys for Crotch's bumble bee shall be conducted within the construction footprint prior to initial ground-disturbing activities, including vegetation removal, that would occur during the Crotch's bumble bee queen flight season through the gyne (reproductive female) flight season (February 1 through October 31). The pre-construction survey

shall be conducted by a qualified biologist familiar with the species' behavior and life history and shall include (1) a habitat assessment and (2) focused surveys, both of which shall be based on recommendations described in the Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species, released by the California Department of Fish and Wildlife (CDFW) on June 6, 2023, or the most current version at the time of construction. If suitable habitat is not completely cleared during the year of the initial habitat assessment and pre-construction surveys, additional pre-construction surveys shall be repeated within remaining suitable habitat each year ground-disturbing construction activities are scheduled to occur within suitable habitat during the queen flight season through the gyne flight season (February 1 through October 31). Additional pre-construction surveys would not be necessary once all suitable habitat is removed.

- The habitat assessment shall, at a minimum, include historical and current species occurrences; document potential habitat on site, including foraging, nesting, and/or overwintering resources; and identify which plant species are in bloom and their percent cover. Incidental observations of potential nest resources shall also be noted. For the purposes of this mitigation measure, nest resources are defined as abandoned small mammal burrows, bunch grasses with a duff layer, thatch, hollow trees, brush piles, and human-made structures that may support bumble bee colonies, such as rock walls, rubble, and furniture. Potential overwintering resources are defined as bare soil, leaf litter, pine needle duff layer, and bunch grasses.
- In each year that a habitat assessment is conducted, if nesting resources are determined to be present in the impact area, focused surveys shall be conducted. Focused surveys shall be performed by a biologist who is in possession of a valid Memorandum of Understanding with CDFW (and a valid Scientific Collecting Permit, if applicable) and include at least three survey passes spaced 2 to 4 weeks apart. The timing of these surveys shall coincide with the Colony Active Period for Crotch's bumble bee (April 1 through August 31) and shall coincide with the presence of floral resources on site. Surveys may occur between 1 hour after sunrise and 2 hours before sunset. Focused surveys shall not be conducted during wet conditions (e.g., foggy, raining, or drizzling) and surveyors shall wait at least 1 hour following cessation of rain to start or resume surveys. Focused surveys shall be conducted when conditions include sunny to partly sunny skies, a temperature greater than 60°F, and sustained wind speeds less than 8 mph, unless other bees or butterflies are flying, in which case focused surveys can be conducted outside of these weather parameters.
- A written survey report shall be submitted to the City and CDFW within 30 days of the completion of pre-construction surveys. The report shall include survey methods, weather conditions, and survey results, including a detailed habitat assessment, floral resources blooming and percent cover, bumble bee species observed, floral species that bumble bees were observed visiting, nesting and overwintering habitat surveyed, and a figure showing the locations of any Crotch's bumble bee nest sites or individuals observed. The survey report shall include the qualifications/resumes of the surveyor(s) and approved taxonomist(s) for identification of photo vouchers. If Crotch's bumble bee nests are observed, the survey report shall also include avoidance measures, and the location information shall be submitted to the California Natural Diversity Database at the time of, or prior to, submittal of the survey report.
- If Crotch's bumble bee is not detected during the focused surveys, no further action or mitigation would be required. If nest resources occupied by Crotch's bumble bee are detected, avoidance measures shall be implemented including, but not limited to, the establishment of no-disturbance zones within 50 feet of the nest, or within a distance determined by a qualified

biologist through evaluation of topographic features and/or distribution of floral resources. Construction shall not occur within the no-disturbance zone(s) until the colony is no longer active (i.e., no bees are seen flying in or out of the nest for 3 consecutive days, indicating the colony has completed its nesting season and the next season's queens have dispersed from the colony). If the avoidance of nests is not feasible, or if take of foraging individuals is anticipated, the applicant/developer shall consult with CDFW regarding the need for incidental take authorization pursuant to Section 2081 of the California Fish and Game Code.

- Mitigation for take of Crotch's bumble bee will be fulfilled through compensatory mitigation at a minimum 1:1 nesting habitat replacement of equal or better functions and values to those impacted by the project, or as otherwise determined through the Incidental Take Permit process. Mitigation shall be accomplished either through off-site conservation or through a CDFW-approved mitigation bank. If mitigation is not purchased through a mitigation bank, and lands are conserved separately, a cost estimate shall be prepared to estimate the initial start-up costs and ongoing annual costs of management activities for the management of the conservation easement area(s) in perpetuity. The funding source shall be in the form of an endowment to help the qualified natural lands management entity that is ultimately selected to hold the conservation easement(s). The endowment amount shall be established following the completion of a project-specific Property Analysis Record to calculate the costs of in-perpetuity land management. The Property Analysis Record shall take into account all management activities required in the Incidental Take Permit to fulfill the requirements of the conservation easement(s), which are currently in review and development.

MM-BIO-6 Biological Monitoring. To prevent impacts to areas outside the limits of disturbance, a qualified biologist shall be present on site to monitor during initial ground disturbance or vegetation removal activities.

Biological monitoring shall include the following tasks and responsibilities:

- **Tailgate Briefings.** Conduct a pre-construction briefing at the tailgate with construction personnel prior to vegetation removal or initial ground disturbance to outline the biological resources present at the subject work location, prohibition of littering, locations of covered trash receptacles, work location specific disturbance limits, procedures/training for minimizing harm to or harassment of wildlife encountered during construction.
- **Pre-Construction Sweeps.** Conduct pre-construction sweeps where construction work is scheduled for the day in areas with suitable habitat to support special-status wildlife or plants. Flush wildlife species from occupied areas immediately prior to vegetation-clearing and earth-moving activities during pre-construction sweeps.
- **Spot Checks.** Supervise and conduct regular spot checks during construction work, focusing on areas determined to have potential to support special-status species (as determined by a qualified biologist), to ensure against direct and indirect impacts to biological resources that are intended to be protected and preserved.
- **Relocating Wildlife.** A qualified biologist shall capture animals that are in immediate harm's way and cannot move out of the work area on their own and relocate them to nearby undisturbed areas with suitable habitat located outside of the construction area but as close to their origin as possible. All wildlife moved during project activities shall be documented by the biologist on site.

- **Dust Control Monitoring.** Periodically monitor the construction site to see that dust is minimized. If the biological monitor determines that dust is adversely affecting special-status species, the monitor will require the construction personnel to implement best available control measures to reduce dust. Examples of such best available control measures include periodic watering of work areas, application of environmentally safe soil stabilization materials, and/or roll compaction.
- **Open-Hole Inspections.** At the end of each workday, any open holes (including large/steep excavations) shall be inspected by the on-site biologist and subsequently fully covered to prevent entrapment of wildlife species. If fully covering the excavations is impractical, ramps will be used to provide a means of escape for wildlife that enter the excavations, or open holes will be securely fenced with exclusion fencing. If common wildlife species are found in a hole, the biological monitor shall immediately be informed, and the animal(s) shall be removed.

MM-BIO-7 Coastal California Gnatcatcher Monitoring. To minimize potential indirect impacts to coastal California gnatcatcher, construction-related activities within 500 feet of occupied habitat shall be timed to occur outside the coastal California gnatcatcher breeding season (February 15 through August 30). Should construction activities occur within 500 feet of coastal sage scrub habitat east of Bee Canyon Access Road during the breeding season (between February 15 and August 30), pre-construction surveys for coastal California gnatcatcher shall be conducted in all suitable habitat within 500 feet. Pre-construction surveys shall be conducted by a permitted coastal California gnatcatcher biologist and shall include three site visits, conducted 1 week apart, with the final site visit conducted no more than 7 days prior to the start of construction. If coastal California gnatcatcher is not detected, no further mitigation related to this species shall be required. If coastal California gnatcatcher is detected but breeding behaviors are not observed, work may proceed and weekly surveys shall continue until the individual(s) leave the area, breeding behaviors and/or nesting is detected, the breeding season ends, or construction ends. If breeding and/or an active nest is observed, the limits of the occupied habitat and a 500-foot avoidance buffer shall be delineated on construction plans, and all construction personnel working near the nest buffer shall be made aware of the presence of occupied gnatcatcher habitat. To the extent feasible, no construction activities shall occur within the 500-foot avoidance buffer during the breeding season. Should it be necessary for construction activities to occur within 500 feet of occupied habitat during the breeding season, noise monitoring would be required to ensure that project-related activities do not result in noise levels above 60 A-weighted decibels (dBA) equivalent continuous sound level (L_{eq}) (1 hour) or the ambient noise level, whichever is higher. If any project activities exceed 60 dBA or the designated existing ambient noise level, construction activities shall be halted until noise reduction measures (such as a sound wall) can be implemented to reduce noise levels to below 60 dBA hourly L_{eq} or ambient noise levels, whichever is higher.

MM-BIO-8 Waters and Wetland Mitigation. Prior to impacts within waters regulated by the Regional Water Quality Control Board (RWQCB), the applicant/developer shall coordinate with the Santa Ana RWQCB (Region 8) to ensure conformance with the requirements of the Porter–Cologne Water Quality Control Act, including applicable requirements to obtain an individual Wastewater Discharge Requirement. Prior to impacts within waters regulated by California Department of Fish and Wildlife (CDFW), the applicant/developer shall coordinate with CDFW (South Coast Region 5) to ensure conformance with California Fish and Game Code Section 1602, including applicable requirements to obtain a Lake and Streambed Alteration Agreement.

Permanent impacts to jurisdictional aquatic resources shall be mitigated through the completion of a restoration program at an applicant/developer-sponsored mitigation site. The total mitigation requirement will be 0.32 acres, providing a 2:1 mitigation-to-impact ratio, of which at least 0.03 acres shall be composed of establishment/re-establishment, ensuring no net loss of waters of the state. The balance of the mitigation requirement shall be met through a combination of creation, re-establishment, and/or enhancement.

A habitat mitigation and monitoring plan shall be prepared in accordance with resource agency guidelines and shall be approved by the Resource Agencies (i.e., RWQCB and CDFW). The habitat mitigation and monitoring plan shall include, but is not limited to, a conceptual planting plan including planting zones, grading, and irrigation, as applicable; a conceptual planting plant palette; a long-term maintenance and monitoring plan; annual reporting requirements; and proposed success criteria. Any applicant-sponsored mitigation shall be conserved and managed in perpetuity via a conservation easement and any entity performing long-term management of the mitigation lands shall be funded in perpetuity.

MM-BIO-9 Tree Ordinance Tree Inventory and Permit. Prior to issuance of a grading permit for the project, a tree inventory shall be conducted within the project development area to identify and map tree species subject to the City tree removal permit. If significant trees subject to a tree removal permit are identified within the project development area, a tree removal permit shall be obtained from the City prior to issuance of the grading permit and conditions of the tree removal permit shall be implemented.

4.4.6 Level of Significance After Mitigation

Potentially significant impacts to special-status species would be mitigated through implementation of MM-BIO-1 through MM-BIO-7. Potentially significant impacts to wetlands and waters regulated by the RWQCB would be mitigated through implementation of MM-BIO-8. Conflicts with local policies or ordinances protecting biological resources, which would be a potentially significant impact would be mitigated through compliance with MM-BIO-9. All impacts would be less than significant with mitigation incorporated.

4.4.7 Cumulative Impacts

This section provides an analysis of cumulative impacts from construction and operation of the project and other past, present, and reasonably foreseeable future projects, as required by Section 15130 of the CEQA Guidelines. Cumulative impacts refer to individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. For biological resources, there is the potential for cumulative impacts to result if similar resources are affected by both the project and one or more of the related projects. The past, present, and reasonably foreseeable future projects (i.e., cumulative projects) used for this analysis are presented in Section 3.3, Environmental Setting, of Chapter 3, Project Description, of this Draft EIR. As listed in Table 3-1, Cumulative Projects, the 18 cumulative projects within the City were considered in this analysis.

As discussed in Section 4.4.4, Impacts Analysis, the proposed project has the potential to impact special-status plants and wildlife, impact jurisdictional aquatic resources, and could result in a conflict with the City of Irvine Municipal Code due to the removal of City-protected trees. Cumulative impacts to these resources are analyzed in this section. The proposed project is not expected to result in impacts to sensitive vegetation communities; impacts to wildlife corridors, habitat linkages, or native wildlife nursery sites; or conflicts with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Because the project would not incrementally contribute to the cumulative impacts of these biological resources, they are not addressed in the cumulative impact analysis.

Most of the related cumulative projects are infill projects with minimal value to biological resources, involving the development of previously disturbed or developed lands that contain limited native vegetation and are isolated from naturalized areas by surrounding development. As such, these related projects would not be expected to support habitat that would be suitable for most special-status plant and wildlife species or contain other sensitive biological resources that could be incrementally impacted by the proposed project. Therefore, with the exception of City-regulated trees, which could occur in urban settings in the City, nearly all of the related projects would not result in incremental impacts to sensitive biological resources. Three related cumulative projects (Gateway Preserve, Orchard Hills Residential Master-Neighborhood 4, and AAA plant closure) are located in areas that may support similar habitats and present similar potential biological constraints to those present on the proposed project site. Therefore, the proposed project has the potential to incrementally contribute to the cumulative impacts of protected biological resources, including special-status plant and wildlife species and their habitat, jurisdictional aquatic resources, and City-regulated trees.

As discussed in the analysis above, implementation of MM-BIO-1 through MM-BIO-9 would reduce all potentially significant project impacts to less than significant. With implementation of the project-specific mitigation measures, the project's incremental effect on special-status species, jurisdictional aquatic resources, and City-regulated trees would be less than significant when viewed in connection with the effects of the cumulative projects. Further, all cumulative projects would be subject to existing and/or future permit restrictions that satisfy applicable regulatory requirements. Lastly, the proposed project and the cumulative projects are located within the plan boundary of the NCCP/HCP. The NCCP/HCP established an approximately 37,000-acre Reserve System that serves as a permanently protected open space managed for the benefit of biological resources, as well as almost 10,000 acres of other permanent public open space and "supplemental" non-reserve habitat areas (County of Orange 1996). Based on this analysis, the Project's incremental effect on biological resources would not be cumulatively considerable and cumulative impacts on biological resources would be less than significant with mitigation incorporated.

4.4.8 References

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SOURCE: ESRI World Imagery; Open Street Map 2023

DUDEK

0 285 570 Feet

FIGURE 4.4-1

Vegetation and Land Cover Map

Irvine Gateway Village Project EIR

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SOURCE: ESRI World Imagery; Open Street Map 2023

DUDEK

0 270 540 Feet

FIGURE 4.4-2

Special-Status Species

Irvine Gateway Village Project EIR

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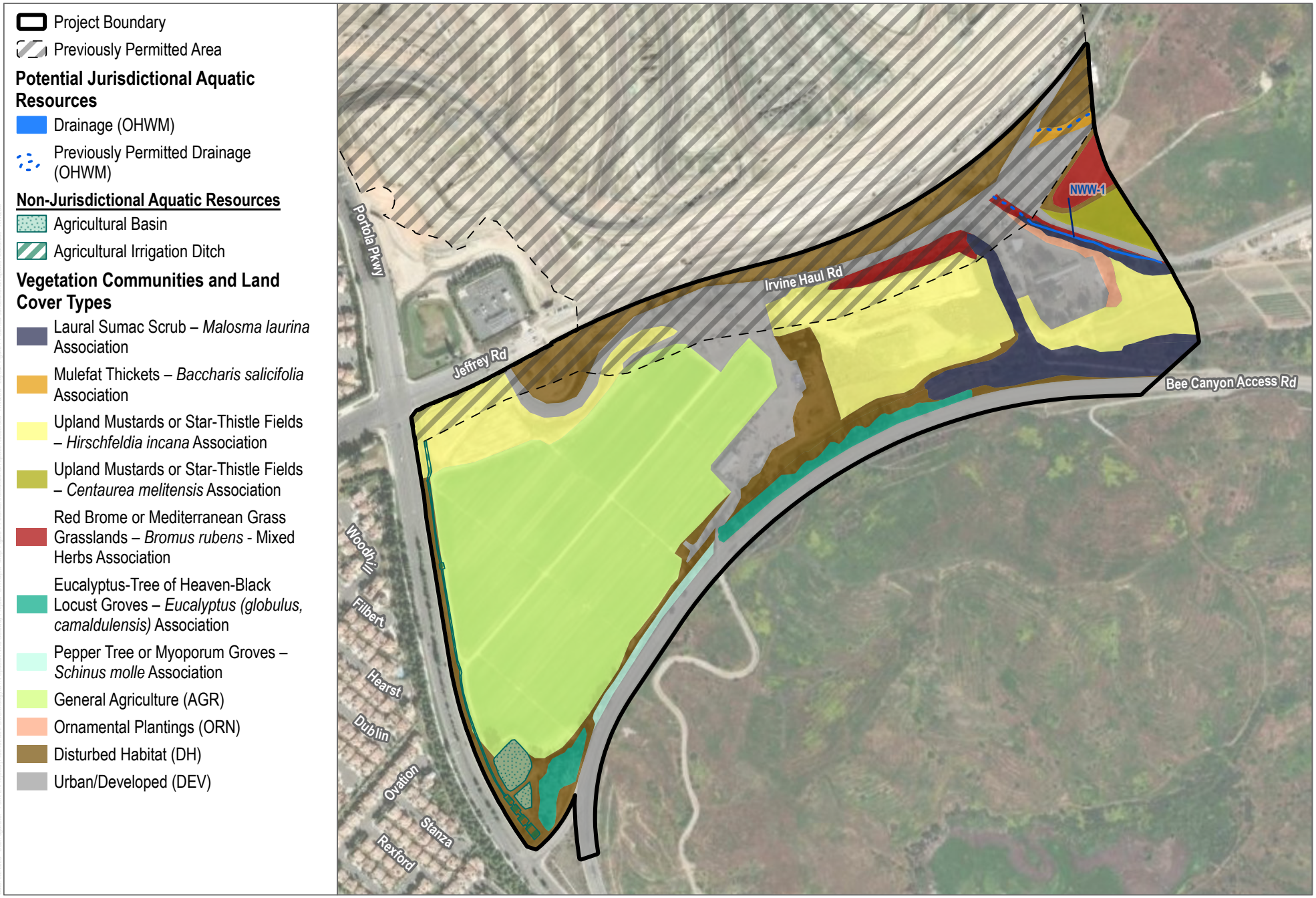

SOURCE: ESRI World Imagery; Open Street Map 2023

DUDEK

0 287.5 575 Feet

FIGURE 4.4-3

Potential Jurisdictional Aquatic Resources – RWQCB

Irvine Gateway Village Project EIR

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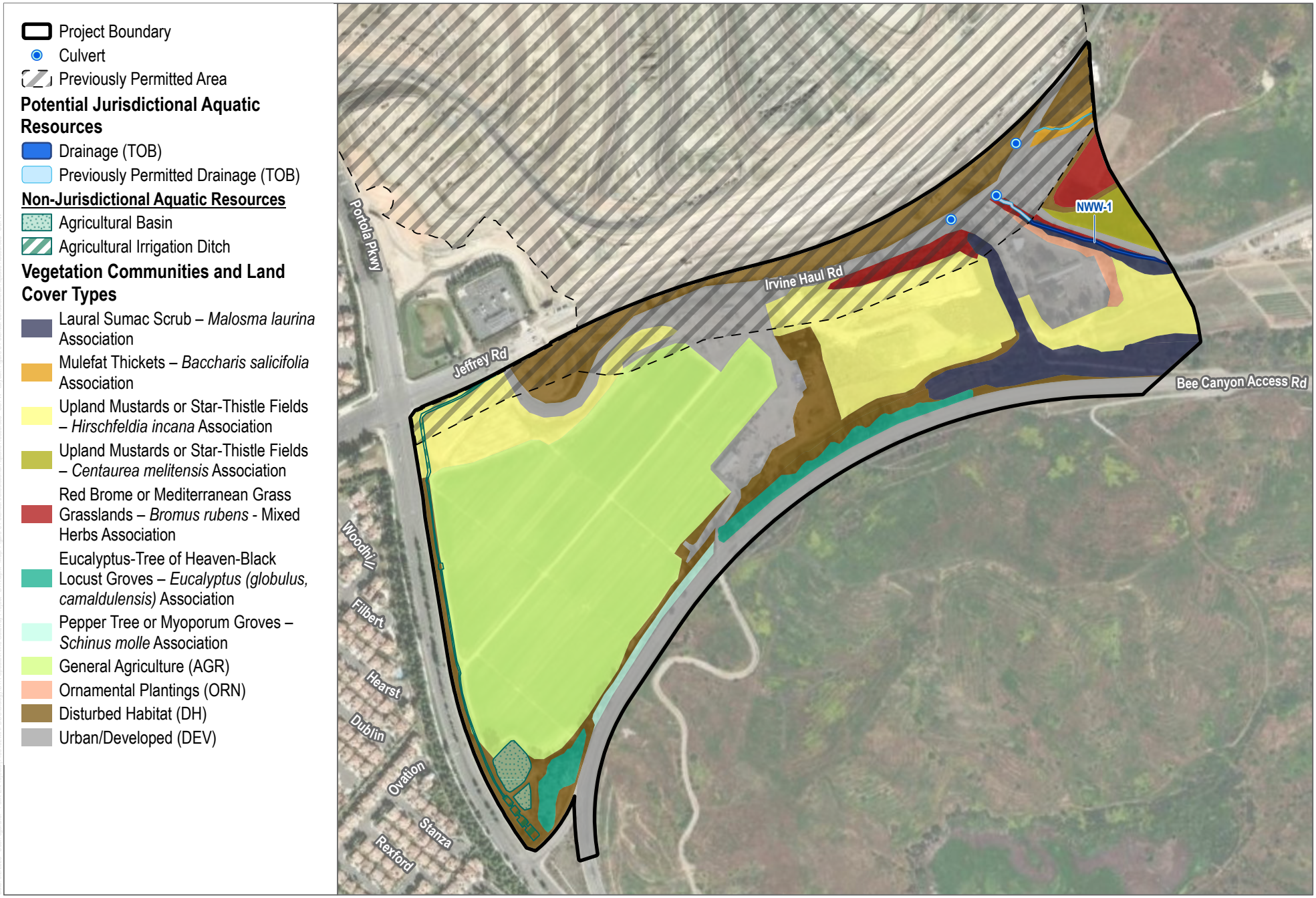

SOURCE: ESRI World Imagery 2023; Open Street Map 2023

DUDEK

0 285 570 Feet

FIGURE 4.4-4

Potential Jurisdictional Aquatic Resources – CDFW

Irvine Gateway Village Project EIR

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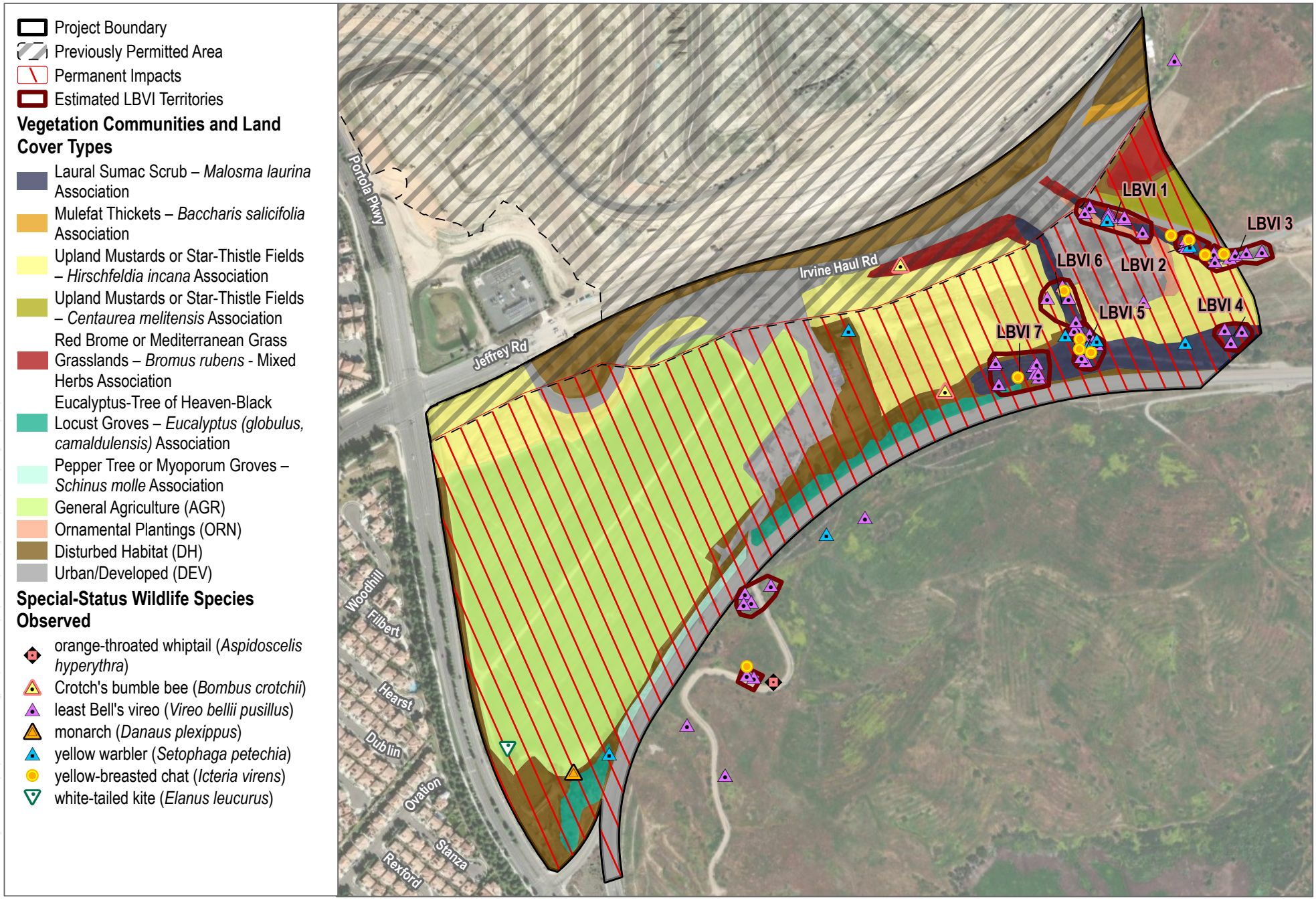

SOURCE: ESRI World Imagery; Open Street Map 2023

DUDEK

0 270 540 Feet

FIGURE 4.4-5

Project Impacts

Irvine Gateway Village Project EIR

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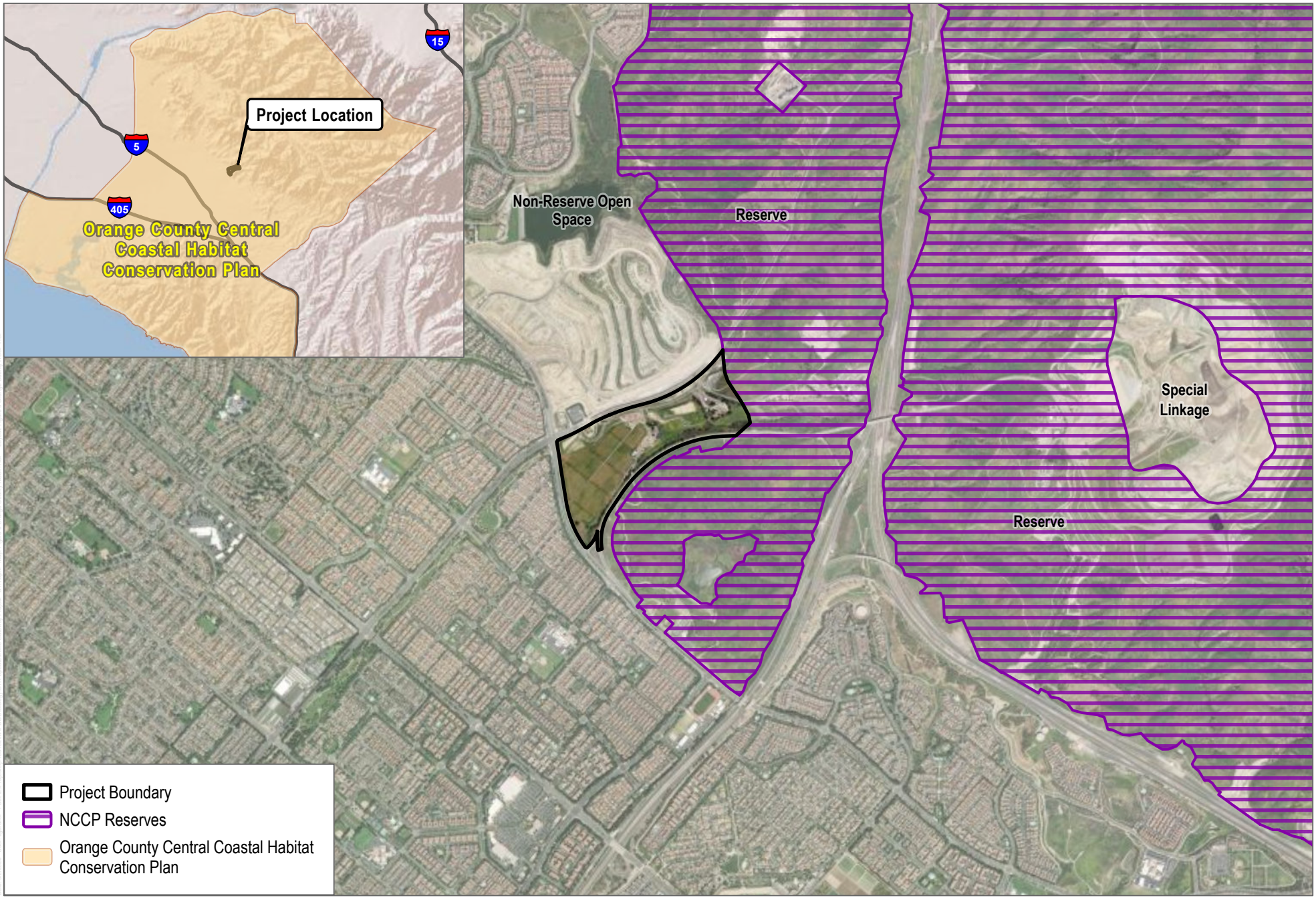

SOURCE: ESRI World Imagery; USDA NRCS 2023

DUDEK

0 1,000 2,000 Feet

FIGURE 4.4-6

Orange County NCCP/HCP

Irvine Gateway Village Project EIR

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