# Appendix C
# Habitat Assessment

# MEMORANDUM

**To:** Leslie Dumas, P.E.
Senior Water Resource Engineer, RMC Water and Environment

**From:** James Hickman
Biologist, ICF International

**Date:** January 17, 2014; revised October 23, 2014 by RMC

**Re:** Habitat Assessment for the Proposed Malibu Civic Center Wastewater Treatment Facility Project, City of Malibu, Los Angeles County, California

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ICF conducted vegetation mapping and a habitat assessment of special-status species for the proposed Malibu Civic Center Wastewater Treatment Facility Project (proposed Project) within the city of Malibu, Los Angeles County, California (Figure 1). This Project consists of the Civic Center Wastewater Treatment Facility (CCWWTF), ~~six~~ nine pump stations, and approximately 13.3 miles of pipeline. The 4.8-acre CCWWTF site is located northwest of the intersection of Pacific Coast Highway (PCH, or State Route 1) and Civic Center Way. More specifically, the proposed wastewater treatment facility would be located on the south side of Civic Center Way and extend approximately 0.20 mile, from PCH to just east of Winter Canyon Road (Figure 2). The wastewater treatment facility location, which is depicted on the U.S. Geological Survey (USGS) Malibu Beach, California, 7.5-minute topographic quadrangle map, is centered at approximately 34.0360°N latitude, -118.6984°W longitude (NAD83). The proposed wastewater treatment facility site is within the limits of ~~the existing Winter Canyon Wastewater Treatment Plant~~24000 Civic Center Way, where a small-scale privately-owned and operated wastewater treatment facility currently operates serving Malibu Colony Plaza and other locations.

This report provides the methods, results, and conclusions of the vegetation mapping and habitat assessments conducted for the CCWWTF.

## Project Description

Construction of the proposed Project would meet the terms of the Memorandum of Understanding (MOU) between the Lost Angeles Regional Water Quality Control Board (RWQCB) and the City of Malibu (City) to reduce the City's reliance on on-site wastewater and/or sewage disposal systems (OWSDs), also known as "septic systems," and lead to the development of a centralized wastewater treatment facility that would collect, treat, reuse, and/or dispose of the City's projected wastewater flow from the "Prohibition Zone," as described in the RWQCB's ~~Memorandum of Understanding~~MOU with the City dated August 25, 2011.

The City is proposing to build a wastewater treatment facility on an approximately 4.8-acre site (i.e., the limits of disturbance) (Figure 3). The proposed treatment plant would consist of various below-ground

elements, including aeration basins, concrete anoxic basins, post-anoxic basins, and recirculation facilities. The above-ground elements would include an operations building, a crane for removing membrane bioreactor filters for maintenance, ultraviolet (UV) disinfection facility, recycled water storage tank, pump station, landscape screening, and a driveway for vehicles. In addition, an off-site collection system would convey wastewater flows within the Prohibition Zone to the proposed wastewater treatment facility (Figure 4). An off-site recycled water distribution system would be constructed to distribute disinfected tertiary-treated effluent from the treatment facility to various land uses for reuse purposes. Additionally, a portion of the treated effluent would be percolated and/or injected in the deep aquifer of the Malibu Valley Groundwater Basin. The collection and distribution systems would consist of underground pipelines that would, generally, run beneath public rights-of-way or within easements. Phase~~s~~ 1 ~~through 3~~ of the collection and recycled water distribution systems would follow existing street alignments, including Civic Center Way, Stuart Ranch Road, Cross Creek Road, Webb Way, Malibu Road, Winter Canyon Road, Malibu Canyon Road, and a small portion of PCH. Phases 2 and 3 of the collection and recycled water distribution systems would follow existing street alignments as shown in Figure 4.

The proposed Project, as described herein, is the preferred alternative; therefore, no other alternatives are analyzed in this report.


**Figure 1**
**Regional Location Map**
**Malibu Civic Center Wastewater Treatment Facility Project**

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**Figure 2**
**Project Location Map**
**Malibu Civic Center Wastewater Treatment Facility Project**


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**Figure 3**
**Disturbance Area**
**Malibu Civic Center Wastewater Treatment Facility Project**


**Figure 4**
**Prohibition Zone Off-site Collection System**
**Malibu Civic Center Wastewater Treatment Facility Project**

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## Methods

ICF biologist James Hickman visited the wastewater treatment facility site on May 17, 2013. Weather conditions during the field visit were as follows: Temperatures ranged from 68°F to 72°F, winds were 1 to 3 miles per hour, skies were clear, and visibility was good. It had not rained prior to the site visit. During the field visit, vegetation mapping and habitat assessments were conducted on the 4.8-acre wastewater treatment facility site. Natural vegetation communities were mapped to the hundredth of an acre using A Manual of California Vegetation (Sawyer, Keeler-Wolf, and Evans 2009). Appendix A provides photographs taken during the field visit.

On November 7, 2013, ICF biologist Russell Sweet conducted a field reconnaissance survey of the proposed Phase 1 and 2 pipeline, sewer main, and pump station locations. Weather conditions during the field visit were as follows: Temperatures ranged from 66°F to 72°F, wind speeds from 0 to 3 miles per hour, skies were clear, and visibility was good. Natural vegetation communities were noted and mapped.

Special-status plants, animals, and natural communities in California that have special regulatory or management status were evaluated to determine their potential to occur within the wastewater treatment facility site. A list of special-status plants, animals, and natural communities in the vicinity was developed with use of the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB) (CDFW 2013), ~~and~~ the California Native Plant Society's (CNPS's) Electronic Inventory (CNPS 2013), and the United States Fish and Wildlife Service's (USFWS) Information, Planning and Conservation System (IPAC) Database for Malibu Beach, California (USGS 1950), and the surrounding USGS 7.5-minute topographic quadrangle maps (Point Dume, Topanga, Thousand Oaks, Calabasas, and Canoga Park). Appendix B provides the list of special-status species and natural communities that were reviewed for the proposed Project. The database queries document only those species within the CNDDB special-status species record (i.e., reported to the CNDDB). Therefore, this does not preclude the possibility of their presence within or adjacent to the Project area.

The literature review included the U.S. Fish and Wildlife Service's (USFWS's) Species Occurrence Database (reviewed August 15, 2013) (USFWS 2013a) as well as USFWS mapping of designated critical habitat (reviewed August 15, 2013) (USFWS 2013b). Additionally, the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (USDA 2013) for the Project site and buffer was reviewed.

The City of Malibu Local Coastal Program and Local Implementation Plan (LCP/LIP) (2002) was also reviewed). The purpose of the plan is to implement policies of the California Coastal Act as well as policies of the City of Malibu. The Environmentally Sensitive Habitat Area (ESHA) overlay map included in the LCP/LIP was reviewed to see if the proposed sites of the wastewater treatment facility and collection and distribution systems or adjacent areas are within or adjacent to an ESHA (see Appendix D for the ESHA map). The purpose of the ESHA overlay zone is to protect and preserve areas in which plant

or animal life, or their habitats, is either rare or especially valuable (City of Malibu 2002). ESHA buffer areas and implemented mitigation measures are consistent with the LCP/LIP.

## Existing Conditions

The proposed wastewater treatment facility site is at 24000 Civic Center Way and currently contains a small-scale privately-owned and operated wastewater treatment facility that serves Malibu Colony Plaza and other locations~~contains the existing Winter Canyon Wastewater Treatment Plant, which is currently operational~~. The central portion of the site is regularly mowed and maintained and contains dirt roads that provide access to the facilities. The existing facilities on the site are minimal and include storage tanks, seepage pits, leach fields, and other types of infrastructure associated with the treatment plant. The majority of the eastern border of the site, along Civic Center Way, is fenced; a utility line traverses the western edge of the site. The immediate surroundings are dominated by residential and institutional development to the north and east. PCH forms the southern boundary of the wastewater treatment facility site. Areas south of PCH are composed of a mixture of disturbed and natural lands (e.g., vacant lots, residential uses, and a barren field that supports mostly ruderal/nonnative vegetation but also intermittent areas of natural vegetation). Lands west of the wastewater treatment facility site are composed of disturbed open space that supports ruderal and natural vegetation.

The topography of the site is relatively flat, with a slight northwest-to-southeast sloping trend. A small slope starts along the eastern edge of the wastewater treatment facility site and rises approximately 50 feet to the west. Elevations at the site range from approximately 50 feet above mean sea level (AMSL) at the southeast corner of the wastewater treatment facility site (at the intersection of Civic Center Way and PCH), up to approximately 100 feet AMSL in the northwest portion of the site. Winter Canyon Creek was observed in the southeastern portion of the wastewater treatment facility site. The feature is depicted as a blue-line stream on the Malibu Beach topographic quadrangle map (USGS 1950) and the LCP/LIP ESHA maps.

Areas where off-site infrastructure (such as collection and recycled water pipelines and pump stations) would be installed are generally developed with residential and commercial uses. However, there are patches of open space between some developments. The impact areas associated with off-site infrastructure would occur adjacent to existing paved roadways or other previously disturbed areas (i.e., dirt and paved lots). These areas are not within any mapped ESHA; however, some developed areas may be part of an ESHA buffer. As per Section 4.5 of the LCP/LIP, maintenance is permitted for public services purposes in disturbed areas within or near an ESHA.

### Vegetation

The proposed wastewater treatment facility site contains three vegetation communities: annual brome grasslands, lemonade berry scrub, and arroyo willow thicket (Figure 5). The wastewater collection and recycled water pipelines and pump stations would be generally located along roadway rights-of-way or easements in close proximity to existing residential and commercial developments. Vegetated

communities located adjacent to the proposed pipeline alignments are coastal sage scrub, mixed coastal sage-ruderal scrub, and paved, developed barren-ruderal (Figure 6). Each vegetation community is described below. Areas that are not designated on the ESHA overlay map but meet the definition of an ESHA in the LCP/LIP will have the same requirements as an ESHA. Appendix C contains a list of the plants that were observed during the field visit.

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**Figure 5**
**Vegetation Map**
**Malibu Civic Center Wastewater Treatment Facility Project**

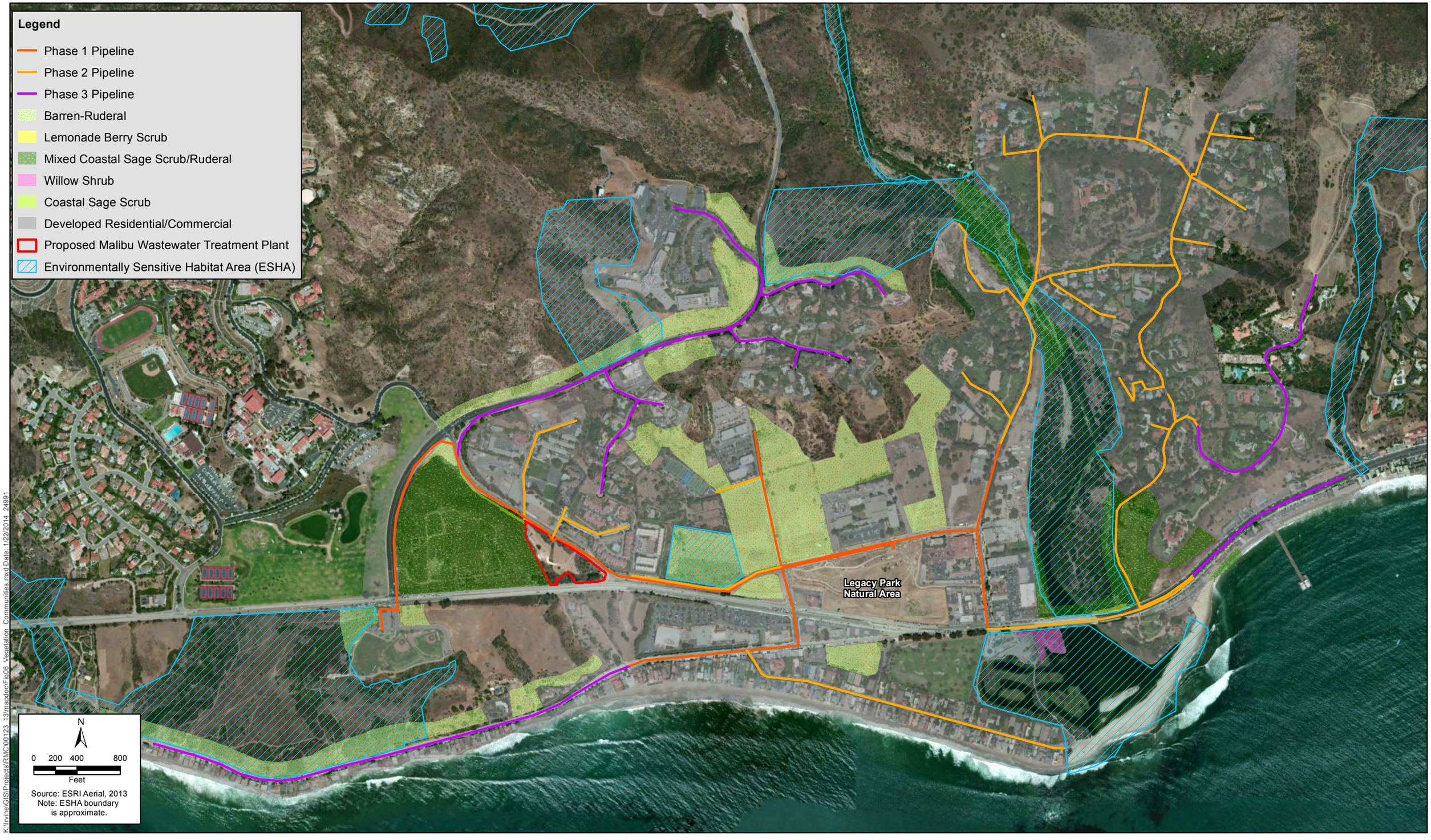


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**Figure 6**
**Vegetation Communities**
**Malibu Centralized Wastewater Project**

***Bromus (diandrus, hordeaceous) Brachypodium Distachyon Semi-natural Herbaceous Stands (annual brome grasslands)***

Approximately 4.3 acres of annual brome grasslands were mapped on the proposed wastewater treatment facility site. The majority of the central portion of the site is disturbed and dominated by bare ground and nonnative brome (*Bromus* sp.) grasses. This area is regularly mowed as part of operations at the existing wastewater treatment facility. Along the fence line, near Civic Center Way, this community is not maintained and includes dense patches of tree tobacco (*Nicotiana glauca*) and castor bean (*Ricinus communis*) between large black elderberry (*Sambucus nigra*) and eucalyptus trees (*Eucalyptus* sp.). Along the southern boundary, where the wastewater treatment facility site parallels PCH, this community includes brome grasses, sporadic coyote brush (*Baccharis pilularis*), carnation spurge (*Euphorbia terracina*), and a row of eucalyptus trees. Additional plants observed in this portion of the community include black mustard (*Brassica nigra*), canyon sunflower (*Venegasia carpesioides*), and a variety nonnative grasses. Walking paths, dirt roads, and other disturbances were found within this community.

***Rhus integrifolia Shrubland Alliance (lemonade berry scrub)***

Approximately 0.18 acre of lemonade berry scrub was mapped on the proposed wastewater treatment facility site. This scrub community, which is limited to the sloped portion of the site along the western edge of the property, is composed of shrubs, including lemonade berry (*Rhus integrifolia*), laurel sumac (*Malosma laurina*), and canyon sunflower, as well as various nonnative grasses. A few scattered Southern California black walnut (*Juglans californica*) trees, a designated CNPS California Rare Plant Rank (CRPR) 4.2 species, were observed in this community. The density and height of the shrubs in the community vary but are generally more than 60 percent of the cover and 6 feet in height.

***Salix lasiolepis Shrubland Alliance (arroyo willow thickets)***

Approximately 0.36 acre of arroyo willow thicket was mapped on the proposed wastewater treatment facility site. The arroyo willow thicket (commonly referred to as southern willow scrub) community is found only in the southeastern corner of the site in association with Winter Canyon Creek. This community is dominated by arroyo willow (*Salix lasiolepis*) and contains a few sporadic Southern California black walnuts and some nonnative grasses, including fountain grass (*Pennisetum setaceum*) and pampas grass (*Cortaderia jubata*). Winter Canyon Creek flows through this community; the arroyo willow is densest around the drainage feature, becoming more sparse toward the outer portions of this community. Away from the creek, the understory is composed of various upland species, including Carnation spurge, black mustard, and canyon sunflower. This riparian community is considered a sensitive natural community by CDFW when it is in association with drainage features and meets the definition of ESHA, according to the LCP/LIP ESHA overlay.

***Coastal Sage Scrub***

Approximately 850 linear-feet of coastal sage scrub is located from the northwest boundary of the wastewater treatment facility to Malibu Canyon Road, south of Civic Center Way. This vegetated community is also located west of the proposed facility location. This scrub community is dominated by laurel sumac, California sagebrush (*Artemesia californica*), coyote brush (*Baccharis pilularis*), black walnut, goldenbush (*Hazardia squarrosa*), white and purple sage (*Salvia apiana* and *Salvia leucophylla*).

***Mixed Coastal Sage-Ruderal Scrub***

Areas of mixed coastal sage-ruderal scrub is located east of Malibu Canyon Road, from PCH north to the intersection of Civic Center Way and on the northwest side of Malibu Canyon Road north from Civic Center way to Malibu Knolls Road. These areas are characterized by California sagebrush, coyote brush, white sage, black mustard (*Hirsfeldia* sp.) and brome species.

***Paved, Developed, Barren-Ruderal***

The majority of the pipeline Project areas are paved, developed, with smaller locations of barren land (cleared of vegetation but the land is still undeveloped). Developed, commercial areas occur in all three phases and possess little value to wildlife species. Developed, commercial areas are characterized by residential homes, commercial businesses and landscaped areas such as along Malibu Canyon Road at Pepperdine University and along the west side of Serra Road into the gated residential community. Other portions of the pipeline locations were disked barren-ruderal areas at the time of the survey. These areas were observed along Phase 1 in the open spaces between residences and businesses; Phase 2 just east of Malibu Lagoon north of Pacific Coast Highway and Phase 3 from Malibu Knolls Road to Potter Road and from Malibu Canyon Road to the end of Malibu Crest Drive (see Figure 6). Essentially no standing vegetation remained most likely due to fire prevention practices by Los Angeles County. Because of the intense management practice of disking for fire control, this habitat possessed little use for wildlife at the time of the field survey. Current plans show six potential locations for pump stations. These six stations are located in residential and commercial occupied locations. Because these sites are currently within developed areas, they possess little value to wildlife species.

**Soils**

The mapped soils are Calcic Argixerolls, which are generally characterized as salty loam to loamy soils that derive from colluvium and calcareous sandstone (USDA 2013). These soils are well drained. No special-status plants with the potential to occur on the site are known to be restricted to this community.

**Wildlife Observed**

A total of 22 species of vertebrate animals were detected during the site visits (i.e., nineteen species of birds, two mammals, and one reptile). Refer to Appendix C for a complete list of the animals observed within the proposed wastewater treatment facility site and in the immediate vicinity of the proposed pipeline alignments and pump station locations during the site visits.

## Results

### Special-Status Plant Species

A review of the CNDDB (CDFW 2013) and CNPS (CNPS 2013) databases for a 5-mile radius from the proposed wastewater treatment facility site yielded 17 special-status plant species. Many of the special-status plant species that are documented in the region were eliminated as potentially occurring species because the habitat types, such as coastal dunes, marshes, and vernal pools, do not occur on or adjacent to the treatment facility site. Other special-status plant species were eliminated because the known elevation ranges are much higher than the site's elevation. Finally, pursuant to LIP Section 4.3(B)(4), species with a conservation status lower than California Rare Plant Ranks (CRPR) List 1 or List 2 were not evaluated. All ~~five~~ six species that were identified in the database queries as having some potential to occur on the proposed wastewater treatment facility site were determined to have a low potential to occur on-site. A complete list of the special-status plant species analyzed, including their habitat requirements, elevation ranges, life form, flowering period, conservation status, and potential to occur on the proposed wastewater treatment facility site, is provided in Appendix B.

In addition, the IPAC Database (USFWS 2014) was consulted as part of the survey process. The results of this database search were used to help identify the threatened and/or endangered species with habitat ranges in the Project area; however, this database does not take into consideration specific habitat and the results can be generalized. The following is a list of plant species identified during the IPAC search.

- California orcutt grass
- Gambel's watercress
- Marsh sandwort
- Salt Marsh bird's beak
- Spreading navaretia

While these species were considered during the habitat surveys conducted for the Project area, appropriate habitat was lacking for these species.

Although it is a low conservation status, one additional special status plant species, California black walnut (CRPR List 4.2), is evaluated as part of this assessment because it is regulated in the City of Malibu Native Tree Protection Ordinance. See the native tree discussion below.

### Special-Status Animal Species

A review of the CNDDB (CDFW 2013) database for a 5-mile radius from the proposed wastewater treatment facility site yielded ~~15~~ 23 special-status animal species, of which six (6) are not expected to occur in the study area because of habitat and range restrictions. Of the remaining 17 species, five (5) species were found to be present in the Project region, while five (5) additional species were found to

have a moderate potential to exist in the Project region and another seven (7) were considered to have a low potential to exist in the Project region. This list was developed on the basis of direct observation during the surveys conducted for this Project and known occurrences recorded in the CNDDB or other documents.

In addition, the IPAC Database (USFWS 2014) was consulted as part of the survey process. The results of this database search were used to help identify the threatened and/or endangered species with habitat ranges in the Project area; however, this database does not take into consideration specific habitat and the results can be generalized. The following is a list of wildlife species identified during the IPAC search.

- California red-legged frog
- California least tern
- Coastal California gnatcatcher
- Least Bell's vireo
- Marbled murrelet
- Southwestern willow flycatcher
- Riverside fairy shrimp
- Vernal pool fairy shrimp

While these species were considered during the habitat surveys conducted for the Project area, appropriate habitat was lacking for these species.

Burrowing owl (*Athene cunicularia*) was also considered. One federally listed species (coastal California gnatcatcher [*Polioptila californica californica*]) was determined to have a low potential to occur on-site. Three special status species, coast horned lizard (*Phrynosoma blainvillii*), spotted bat (*Euderma maculate*), and western mastiff bat (*Eumops perotis californicus*) were determined to have a ~~moderate~~ low ~~or greater~~to moderate potential to occur on-site and are discussed below. A summary of the habitat requirements, conservation status, and potential for these species to occur on the site is provided in Appendix B.

***Coast Horned Lizard***

Coast horned lizard is found in a variety of habitats, including grasslands and scrub habitats with open areas and sandy soils. The species' diet consists primarily of harvester ants (*Pogonomyrmex barbatus)*. Thus, these ants are required to be part of suitable horned lizard habitat. Argentine ants were observed to occur at the proposed wastewater treatment facility site. However, although harvester ants were not observed during the habitat assessment, it cannot be determined that they do not occur on site. Because the site contains habitat and suitable soil composition that may be used by the species, it was determined that the site has moderate potential to support the species.

***Bats***

The Project site has low quality habitat for the bat species recorded within the Project vicinity. However, evidence of bat roosting (urine stains and guano droppings) were found under a bridge over Malibu Creek, however, the species of bat roosting at this location is not known. These bats are discussed below.

The Spotted bat (*Euderma maculata*) is a cave and crevice dweller in many habitats from desert to forest and typically consumes noctuid moths and terrestrial insects. This species is a California Species of Special Concern.~~,~~ No spotted bats were observed during field surveys; however, the bridge on PCH over Malibu Lagoon showed signs (i.e., urine staining and guano droppings on the underside of the bridge and on the ground below) that bats had used the bridge as a roosting location in the past. Species specific surveys were not conducted as part of the survey effort and the study area generally lacks suitable habitat for the spotted bat. However, because the bridge did have signs of bat use, there is a ~~moderate~~ low potential that spotted bats could be roosting or usinge the bridge as a roost during foraging. Construction on the bridge could potentially affect this species.

The western mastiff bat (*Eumops perotis californicus*) occurs in low elevations in the coastal basins of Southern California. Their preferred habitat is rugged rocky areas, and day roosts are typically located in large crevices in granite or sandstone rock or buildings. It is California Species of Special Concern. No western mastiff bats were observed during field surveys and the study are generally lacks suitable habitat for the western mastiff bat. However, as the bridge on PCH over Malibu Lagoon showed signs (i.e., urine staining and guano droppings on the underside of the bridge and on the ground below) that bats had used the bridge as a roosting location in the past. Species specific surveys were not conducted as part of the survey effort. However, because the bridge did have signs of bat use, there is a low potential that western mastiff bats ~~there is a moderate potential western mastiff bats~~ could be roosting or usinge the bridge as a roost during foraging. Construction on the bridge could potentially affect this species.

The western red bat (*Lasiurus blossevillii*) typically roosts in dense foliage of broad-leafed trees such as sycamores and cottonwoods near riparian areas. This species ranges from central to Southern California and is a California Species of Special Concern. The Project area encompasses a variety of habitats; h~~.~~ ~~H~~owever, there is no associated habitat in the Project area for this species. Given this, the p~~P~~otential for this species to occur in the study area is considered to be ~~low~~moderate.

**USFWS Species List**

A review of USFWS wildlife occurrence GIS data indicates that two special-status species have been recorded in the general vicinity. Quino checkerspot butterfly (*Euphydryas editha quino*) is a federally designated endangered species. Its historic range is along the coast of Southern California in sage scrub habitats. The species is known to occur in San Diego and Riverside Counties. The USFWS record of this species is one individual from 1947. There are no recent records of the species in the Santa Monica Mountains. This species is not expected to occur on the site. Western snowy plover is a federally designated threatened species and California Species of Special Concern. This shorebird nests along sandy coasts, estuaries, rivers, and other similar habitats such as those along Malibu Lagoon. The

proposed wastewater treatment facility site does not contain suitable nesting habitat. As such, it was determined that there is little potential for this species to occur on the site.

**Critical Habitat**

A review of USFWS critical habitat documentation and maps indicates that the proposed wastewater treatment facility site does not occur within any USFWS-designated critical habitat (USFWS 2013b).

**Nesting Birds and Raptor Foraging**

Most birds and their nests are protected by the Migratory Bird Treaty Act (MBTA) as well as federal and state law. With the variety of vegetation communities, it was determined that the proposed wastewater treatment facility site has the potential to support a variety of nesting birds. The site also contains suitable nesting, roosting, and foraging habitat for several raptor species, including Cooper's hawk (*Accipiter cooperii*), American kestrel (*Falco sparverius*), and red-tailed hawk (*Buteo jamaicensis*).

**Jurisdictional Drainages**

One jurisdictional blue-line drainage feature, Winter Canyon Creek, was observed in the southeastern portion of the proposed wastewater treatment facility site adjacent to the intersection of Civic Center Way and PCH. This area is not currently mapped on the existing LCP ESHA maps; however, this drainage is considered to be an ESHA, as outlined in the LCP/LIP. See Figure 7 for a map of the drainage, ESHA area, and 100-foot buffer.

Pipelines proposed in Phase~~s 1 and~~ 2 ~~-~~would cross Malibu Creek. A Phase 1 pipeline would be located at the southern end of Malibu Creek at Malibu Lagoon, approximately 0.8 miles east of the proposed wastewater treatment facility site. National Wetland Inventory (NWI) designates Malibu Lagoon as an estuarine and marine deepwater area. A Phase 2 pipeline would follow Cross Creek Road to the north where it would cross Malibu Creek. NWI designates this location as riverine, freshwater forested/shrub wetland. Both of these locations, Cross Creek Road and PCH where the pipelines are proposed to cross Malibu Creek are considered ESHA as per the LCP.

The proposed Project would cross Malibu Creek and Malibu Lagoon over existing bridges and by boring under the creek. No disturbances are proposed within either feature.

A third potentially jurisdictional feature, Marie Canyon Creek, flows southerly from Pepperdine University to the Pacific Ocean just west of the proposed Project. Marie Canyon Creek is considered an ESHA as per the LCP. Pipeline infrastructure and a pump station are proposed along Malibu Road near the feature; however, no Project component is expected to affect the drainage feature.

**Native Trees**

The City of Malibu Native Tree Protection Ordinance is designed to protect native trees, specifically oak (*Quercus* sp.), California walnut, western sycamore (*Platanus racemosa*), alder (*Alnus rhombifolia*), and

toyon (*Heteromeles arbutifolia*). Several California black walnut trees are present on the wastewater treatment facility site.

Figure 7 depicts the ESHA buffers for the jurisdictional drainage, the willow scrub, and the protected walnut tree locations. This figure has been produced to illustrate development restrictions that could affect the wastewater treatment plant facility.

### Wildlife Movement Corridors

Wildlife corridors are pathways or habitat linkages that connect discrete areas of natural open space otherwise separated or fragmented by topography, changes in vegetation, and other natural or human-induced factors, such as urbanization. The fragmentation of natural habitat creates isolated "islands" of vegetation that may not provide sufficient area or resources to accommodate sustainable populations for a number of species and, thus, adversely affect both genetic and species diversity. Corridors often partially or largely mitigate the adverse effects of fragmentation by: 1) allowing animals to move between remaining habitats to replenish depleted populations and increase the gene pool available; 2) providing escape routes from fire, predators, and human disturbances, thus reducing the risk that catastrophic events (such as fire or disease) will result in population or species extinction; and 3) serving as travel paths for individual animals moving throughout their home range in search of food, water, mates, and other needs, or for dispersing juveniles in search of new home ranges.

There are no regional or migratory wildlife corridors that have been identified by the City or Ss~~s~~tate resource agencies as occurring within the proposed disturbance area. In addition, the Project area is highly disturbed and surrounded by urban development. Consequently, the Project area is not considered to be an integral part of an identified regional wildlife corridor. The Project area does not link together large areas of wildlife habitat that are otherwise separated by natural features, vegetation changes, or human disturbance. The proposed wastewater treatment facility site is currently fenced, bordered on the north by Civic Center Way, and to the south by Pacific Coast Highway, further reducing access for wildlife to utilized the site for migration or as a corridor. The proposed Project fencing has been designed to provide the maximum setbacks possible while providing the required site security and necessary onsite clearances, and has considered wildlife protection in the fencing selection in order to protect against inadvertent damage.

## Conclusions

The majority of the proposed wastewater treatment facility site is composed of disturbed annual brome grasslands. It also contains an operational wastewater treatment facility. The site was surveyed on May 17, 2013, and then evaluated for the potential to support special-status species. First, a literature review was conducted to evaluate the potential for various special-status species to occur on-site. No special-status plant species were determined to have moderate or greater potential to occur on-site. As such, it was determined that special-status plants most likely do not occur on the treatment plant site. One special-status wildlife species (coast horned lizard) was determined to have moderate potential to occur

on the proposed wastewater treatment facility site in some capacity. Two bat special-status bat species (spotted bat and western mastiff bat) were determined to have moderate potential to occur within, or adjacent to the proposed pipeline locations. Coast horned lizards and bats may be directly affected if they occur on-site.

There is moderate to high potential for nesting birds to occur throughout the proposed wastewater treatment facility site. The removal of vegetation has the potential to affect nesting birds adversely.

Several raptor species may use the site or nearby trees for nesting or foraging. The removal of these trees may adversely affect nesting raptors.

One jurisdictional drainage feature occurs on the proposed wastewater treatment facility site. However, as outlined in Figure 7, above, this feature will not be affected during construction of the wastewater treatment facility. As discussed with City of Malibu biologist, Dave Crawford, a jurisdictional delineation would not be required if the drainage will not be affected by construction. Additionally, Project construction will be conducted outside the 100-foot ESHA buffer, ~~also~~ as shown in Figure 7, with the exception of a biofilter to be installed along the edge of the improved driveway into the facility.

As per the current construction plan, the proposed pipeline in Phase ~~1~~2 that would cross Malibu Lagoon along PCH, would be attached to the bridge on the underside of PCH. The second Phase 2 pipeline that would cross Malibu Creek along Cross Creek Road is proposed to be to be directionally bored under the drainage.

Several California black walnut trees are present on the wastewater treatment facility site. As required by Chapter 5 of the LCP/LIP (Native Tree Protection), a tree protection plan has been prepared under separate cover.


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**Figure 7**
**ESHA Boundaries and Protected Walnut Tree Locations**
**Malibu Civic Center Wastewater Treatment Facility Project**

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## Recommendations

There is a potential for roosting bats to be adversely affected by the construction of the proposed Project. The species and size of the roosts should be determined through focused surveys in areas with suitable roost sites, at the bridge crossings for Malibu Creek and Malibu Lagoon. If maternity roosts are identified, construction activities should avoid the breeding season (April 1 through August 31).

Nesting birds, including raptors, have the potential to occur throughout the proposed wastewater treatment facility site during the nesting season. All potential effects on nesting birds will be reduced by either avoiding the nesting season (generally February 15 to September 15) or conducting weekly preconstruction nesting bird surveys within the Project area and an approximate 300-foot buffer for four weeks prior to commencement of ground disturbance, vegetation removal, or construction activities, with the last survey conducted no greater than three days prior to activities. If nesting birds are found, appropriate construction-free buffers should be established according to the tolerance of the bird (as judged by the nesting bird biologist, in coordination with CDFW) and maintained until the nesting event has been determined to be completed.

California black walnut trees occur on-site and are protected by Chapter 5 of the LCP/LIP. A tree survey has been conducted, and a report is available under separate cover. Additional recommendations have been made to ensure compliance with the tree ordinance.

**Appendices**

Appendix A – Photo Log

Appendix B – Special-Status Species

Appendix C – Plant and Animal Species Observed During the Field Survey

Appendix D – ESHA and Marine Resources Map 3

## References

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# Appendix A: Photo Log

**Photographs**

**Photograph 1:** Northwesterly view from near the southeastern corner of the proposed wastewater treatment facility site.

**Photograph 2:** Southerly view from within the northern portion of the proposed wastewater treatment facility site.

## Photographs

**Photograph 3**: Southerly view near the proposed wastewater treatment facility driveway of the drainage and riparian habitat.

**Photograph 4:** Westerly view of the hill slope on the western boundary of the proposed wastewater treatment facility site.

# Appendix B: Special-Status Species

**Special-Status Plant Species Reported to Occur within 5 Miles of the Project Site (Low or Greater Potential to Occur for Listed Species; Moderate or Greater Potential for Non-listed Species)**

| ***Scientific Name*** **Common Name** | **Status** | | | **Habitat Requirements and Elevation** | **Life Form and Flowering Period** | **Potential On-site Occurrence** |
|---|---|---|---|---|---|---|
| | **Federal** | **State** | **CNPS** | | | |
| *Atriplex coulteri* Coulter's saltbush | — | — | CRPR 1B.2 | Coastal bluffs with scrub sage scrub habitats. 9–1,380 feet | Perennial herb March–April | Low Potential: The site lacks the coastal bluffs that are typically associated with this species. |
| *California macrophylla* Round-leaved filaree | — | — | CRPR 1B.1 | Cismontane woodlands and valley and foothill grasslands with clay soils. 45–3,600 feet | Annual herb March–May | Low Potential: The site lacks cismontane woodlands, and the grasslands habitat is heavily disturbed and mowed regularly. The site lacks clay soils. |
| *Dudleya blochmaniae* ssp. *Blochmaniae* Blochman's dudleya | — | — | CRPR 1B.1 | Coastal bluff scrub, coastal sage scrub, chaparral, and grassland habitats with rocky, clay, and serpentinite soils. 15–1,350 feet | Perennial herb April–June | Low Potential: The site has a small amount of low-quality lemonade berry scrub. The grassland habitat is heavily disturbed and mowed. |
| *Isocoma menziesii* var. *decumbens* Decumbent goldenbush | — | — | CRPR 1B.2 | Chaparral and coastal scrub habitats, particularly with sandy soils. 30–400 feet | Perennial shrub April–November | Low Potential: The site contains a small amount of lemonade berry scrub that may provide habitat for this species. |
| *Atriplex serenana* var. *davidsonii* Davidson's saltscale | — | — | CRPR 1B.2 | Coastal bluffs with sage scrub habitats and alkaline soils. 30–600 feet. | Annual herb April–October | Low Potential. The Project site lacks suitable vegetation and soils. |
| *Pentachaeta lyonii* Lyon's pentachaeta | FE | CE | CRPR 1B.1 | Rocky, clay; chaparral (openings); coastal scrub; and valley and foothill grassland. 98–2,066 feet | Annual herb March–August | Less Than Reasonable Potential*:* The Project site contains chaparral |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | and grassland communities that were determined to be marginally suitable for this species. |

STATUS KEY:

Federal: FE = Federal Endangered Species

FD = Federal Delisted Species

— = None

State: CE = California State Endangered Species

CR = California State Rare Species

CNPS: CRPR = California Rare Plant Rank

CRPR 1B = Rare and Endangered in California and Elsewhere

0.1 = Seriously Endangered in California

0.2 = Fairly Endangered in California

**Special-Status Wildlife Species Reported to Occur within 5 Miles of the Project Site and Other Potentially Occurring Species (Low or Greater Potential to Occur for Listed Species; Moderate or Greater Potential for Non-listed Species)**

| ***Scientific Name*** **Common Name** | **Status** | | **Habitat Requirements** | **Potential On-site Occurrence** |
|---|---|---|---|---|
| | **Federal** | **State** | | |
| *Charadrius alexandrines nivosus* Western snowy plover | FT | SSC | The species breeds on coastal beaches, sand spits, dune-backed beaches, dunes, and beaches near creek and river mouths. | Present. The species has been recorded at Malibu Lagoon. Critical Habitat for this species is also mapped in the study area. |
| *Athene cunicularia* Burrowing owl | MBTA | SSC | Burrowing owls occur in open areas, particularly open grasslands and sparse shrub lands with suitable burrows. | Low Potential: The site contains suitable foraging habitat but lacks suitable burrows. No records occur within the reviewed area. |
| *Eucyclogobius newberryi* Tidewater goby | FE | SSC | Shallow brackish water, especially in lagoons and lower stream reaches with slow moving water. | Present. The species has been recorded in Malibu Lagoon and Malibu Creek in the study area. Critical Habitat for this species is also mapped in the study area. |
| *Gila orcuttii* Arroyo chub | — | SSC | Cool to warm, fluctuating streams with slow flowing water. Typically associated with sand or mud substrate. | Present. The species has been recorded in Malibu Lagoon and Malibu Creek in the study area. |
| *Haliotis corrugate* Pink abalone | FC | SSC | Rocky reefs in sheltered waters with abundant crevices and cavities for daytime shelter at depths ranging from 20 to 118 feet. | Moderate Potential. Malibu Bay is within the historical range of the species and is included in the recovery plan for this species. Suitable rocky reef habitat is present in the marine component of the study area. |

| ***Scientific Name*** **Common Name** | **Status** | | **Habitat Requirements** | **Potential On-site Occurrence** |
|---|---|---|---|---|
| | **Federal** | **State** | | |
| *Haliotis cracherodii* Black abalone | FE | SSC | Intertidal and shallow subtidal rocky reefs in areas with moderate to high surf and abundant crevices and cavities for daytime shelter. | Low Potential. Malibu bay is within historical range of the species but is not included in designated critical habitat. Occurrence south of Point Conception is extremely rare under current conditions. Preferred habitats are generally shallower and further inshore from the groundwater discharge zone affected by the Project. |
| *Haliotis fulgens* Green abalone | FC | SSC | Rocky reef habitats and abundant crevices and cavities for daytime shelter extending from the low intertidal to depths of at least 30 feet and possibly 60 feet. | Moderate Potential. Malibu Bay is within current range of the species and is included in the recovery plan for this species. Suitable rocky reef habitat is present in the marine component of the study area. |
| *Haliotis sorenseni* White abalone | FE | SSC | Open low- and high-relief rock or boulder habitat interspersed with sand channels. Most abundant at depths ranging from 80 to 100 feet. | Low Potential. Malibu Bay is within the current and historical range and is included in the recovery plan for this species. Suitable habitat composed of rocky reefs interspersed with sand channels is present in the marine component of the study area; however, the zone of groundwater discharge is shallower than the preferred depth range of the species so exposure potential is minimal. |

| ***Scientific Name*** **Common Name** | **Status** | | **Habitat Requirements** | **Potential On-site Occurrence** |
|---|---|---|---|---|
| | **Federal** | **State** | | |
| *Lasiurus blossevillii* Western red bat | — | SSC | This species roosts in tree and shrub foliage, especially trees with large leaves (i.e., sycamore and cottonwood), however may be found in other trees. Particularly associated with intact riparian communities, but also found in other habitats. | Moderate Potential. The study area includes trees that may include suitable roost sites. |
| *Eumops perotis californicus* Western mastiff bat | — | SSC | This species is primarily associated with large rock outcrops and cliffs. The species forages in a variety of habitats, including dry washes, flood plains, chaparral, sage scrub, oak woodland, open ponderosa pine, grassland, and agricultural areas. | Low potential. The project site lacks rock outcrops and cliffs associated with this species. |
| *Icteria virens* Yellow-breasted chat | — | SSC | This species is found in a variety of riparian habitats, especially low thickets. | Low Potential. The small patch of riparian habitat along Winter Canyon Creek presents willow habitat for the species, however, it is small and disconnected from other suitable habitat. The species is an uncommon breeder in the area. There are no current CNDDB or USFWS records for the species in the project area. |
| *Setophaga petechial* Yellow warbler | — | SSC | This species is found in a variety of riparian habitats, however, in southern California, the species is often associated with upper story canopies, but may occur in willow thickets. | Low Potential. Winter Canyon Creek provides a small patch of willow thicket habitat, though the elevation is below the typical breeding elevation. The species is an uncommon breeder in the area and no CNDDB or USFWS records occur in the project area. |
| *Neotoma lepida intermedia* San Diego desert woodrat | — | SSC | Desert scrub, coastal sage scrub, and chaparral habitats. | ~~Low~~ Moderate Potential. This species occurs in a variety of habitats, some of which occur on-site. |

| ***Scientific Name*** **Common Name** | **Status** | | **Habitat Requirements** | **Potential On-site Occurrence** |
|---|---|---|---|---|
| | **Federal** | **State** | | |
| *Thamnophis hammondii* Two-striped garter snake | — | SSC | This species is found along perennial or nearly perennial streams and other freshwater bodies with riparian vegetation. | Low Potential. While Winter Canyon Creek includes semi-permanent flow, the flow is conveyed underground for a long distance and conveys primarily storm drain runoff with little connectivity to upstream habitat. Malibu Creek within the project area is primarily brackish water and lacks riparian vegetation, and therefore is not suitable. |
| *Oncorhynchus mykiss irideus* Southern steelhead-Southern California DPS | FE | SSC | This species migrates between the Pacific Ocean and freshwater streams, rivers, and lakes. | Present. The species has been recorded in Malibu Creek. Critical Habitat for this species is also mapped in the study area. |
| ÷*Phrynosoma blainvillii* Coast horned lizard | — | SSC | Open areas in a variety of habitats with low vegetation, including grasslands, coniferous forests, woodlands, and chaparral. | Moderate Potential: The site contains suitable habitats for this species. |
| *Stereolepis gigas* Giant sea bass | — | SSC | Nearshore marine environments typically in association with rocky reefs and giant kelp beds. | Present. The site contains suitable reef and kelp forest habitat. The species has been observed in the project vicinity but remains at critically low levels of abundance. Species occurrence is increasingly likely should population recovery efforts succeed. |
| ~~*Polioptila californica californica* Coastal California gnatcatcher~~ | ~~FT, MBTA~~ | ~~SSC~~ | ~~An obligate of low-elevation sage scrub habitats. The species has a particular preference for coastal sage scrub for nesting, especially in areas dominated by California sagebrush, California buckwheat, white sage, and black sage.~~ | ~~Not Expected: The site lacks suitable sage scrub habitat. No records occur within the reviewed area.~~ |

| ***Scientific Name*** **Common Name** | **Status** | | **Habitat Requirements** | **Potential On-site Occurrence** |
|---|---|---|---|---|
| | **Federal** | **State** | | |
| STATUS KEY:<br>Federal<br>FE = Federally Endangered<br>FT = Federally Threatened<br>FP = Proposed for Listing under ESA<br>FC = Species of Concern<br>MBTA = Migratory Bird Treaty Act | | | State<br>SSC = California Species of Special Concern | |

# Appendix C: Plant and Animal Species Observed During the Field Survey

## Plant Species

| Scientific Name | Common Name |
|---|---|
| *Artemesia californica* | California sagebrush |
| *Artemesia douglasiana* | California mugwort |
| *Baccharis pilularis* | Coyote brush |
| *Bromus diandrus** | Ripgut brome |
| *Carpobrotus chilensis** | Ice plant |
| *Cortaderia jubata* | Pampas grass |
| *Encelia californica* | California brittlebush |
| *Eucalyptus* sp.* | Gum tree |
| *Euphorbia terracina** | Carnation spurge |
| *Hazardia squarrosa* | Sawtooth goldenbush |
| *Hirschfeldia incana** | Short-pod mustard |
| *Juglans californica* | California black walnut |
| *Malacothrix saxatilis* | Cliff aster |
| *Malosma laurina* | Laurel sumac |
| *Nicotiana glauca** | Tree tobacco |
| *Pennisetum setaceum** | Fountain grass |
| *Rhus integrifolia* | Lemonade berry |
| *Ricinus communis** | Castor bean |
| *Salix lasiolepis* | Arroyo willow |
| *Salvia apiana* | White sage |
| *Salvia leucophylla* | Purple sage |
| *Sambucus nigra* | Black elderberry |
| *Typha* sp. | Cattail |
| *Venegasia carpesioides* | Canyon sunflower |

* nonnative, invasive species

Source: ICF International field survey conducted on May 17, 2013.

# Animal Species

| Scientific Name | Common Name |
|---|---|
| **Birds** | |
| *Anas platyrhyncos* | Mallard |
| *Buteo jamaicensis* | Red-tailed hawk |
| *Calypte anna* | Anna's hummingbird |
| *Carduelis psaltria* | Lesser goldfinch |
| *Carpodacus mexicanus* | House finch |
| *Charadrius vociferus* | Killdeer |
| *Columba livia* | Rock pigeon |
| *Corvus corax* | Common raven |
| *Dendroica coronata* | Yellow-rumped warbler |
| *Fulica americana* | American coot |
| *Larus californicus* | California gull |
| *Larus delawarensis* | Ring-billed gull |
| *Melozone crissalis* | California towhee |
| *Mimus polyglottos* | Northern mockingbird |
| *Phalacrocorax auritus* | Double-crested cormorant |
| *Psaltriparus minimus* | Bushtit |
| *Sayornis saya* | Say's phoebe |
| *Thryomanes bewickii* | Bewick's wren |
| *Zenaida macroura* | Mourning dove |
| **Mammals** | |
| *Spermophilus beecheyi* | California ground squirrel |
| **Reptiles** | |
| *Sceloporus occidentalis* | Western fence lizard |

Source: ICF International field survey conducted on May 17, 2013 and November 7, 2013.

# Appendix D

# ESHA and Marine Resources Map 3