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MEMORANDUM

DATE: November 21, 2019

TO: John Arnau, Manager, Environmental Services, CEQA/Habitat Support, OC Waste & Recycling

FROM: Bo Gould, LSA Senior Biologist and Jessica Lieuw, LSA Assistant Biologist

SUBJECT: Final Biological Resources Technical Memorandum for the Capistrano Greenery at the Prima Deshecha Landfill in San Juan Capistrano, Orange County, California

The purpose of this Biological Resources Technical Memorandum is to describe and document potential impacts to biological resources—including sensitive and special-status species—associated with the implementation of the proposed Capistrano Greenery (project) at the Prima Deshecha Landfill, located at 32250 Avenida La Pata in San Juan Capistrano, California. This technical information is provided for project review under the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), the Federal Endangered Species Act, and other pertinent regulations.

PROJECT DESCRIPTION

OC Waste & Recycling (OCWR) proposes to implement a green waste composting operation at the 1,530-acre Prima Deshecha Landfill (landfill) property located in San Juan Capistrano, unincorporated Orange County, and San Clemente, California (Figure 1; all figures are attached). The proposed "Capistrano Greenery" will allow OCWR to assist Orange County cities and the County unincorporated area in meeting State recycling mandates for the recycling of organic waste materials.

Currently, the landfill accepts approximately 100 tons per day (TPD) of processed green material (PGM) for beneficial reuse at the landfill, originating from incorporated cities in Orange County and the County unincorporated area. This material is grinded and screened at existing materials recovery facilities and composting operations, and then loaded into transfer trucks that carry approximately 20-ton payloads for delivery to the landfill (i.e., approximately 5 two-way truck trips per day). This green waste material is predominately from residential sources within Orange County. For the proposed Capistrano Greenery, it is proposed that a maximum of 200 TPD of material be composted per day, which will include PGM and horse manure. Under existing regulations, green waste composting operations can receive up to 20 percent manure by volume. Therefore, the Capistrano Greenery will have the ability to accept up to 40 TPD of horse manure for composting, although it is anticipated that the operation will receive much lower daily tonnages of horse manure. The 100 TPD of PGM that is already being received at the landfill will be transferred over to the Capistrano Greenery operation.

The Capistrano Greenery composting operation will be developed in an approximately 18.6-acre area of the western portion of the Zone 1 landfill, as shown on Figure 1, immediately south of Stockpile C, in an area that is not currently being used for active landfilling. A crushed asphalt base will be placed over the entire area that will be used for PGM storage and for composting operations. The Capistrano Greenery will accept a maximum of 200 tons per day of PGM, with a maximum on-site storage of materials of 53,768 cubic yards (i.e., feedstock, compost – active, curing and final product) on-site at any given time. PGM will be brought to the Capistrano Greenery and placed in a designated unloading area (that can accommodate a storage of approximately 1,000 cubic yards of PGM). Since the PGM will have already been grinded and screened before being brought to the landfill, the material will be transported by front-end loaders as soon as possible and placed into new compost piles. The layout of the compost piles is shown on Figure 2. Any highly contaminated or highly odorous loads will be immediately transported to the active landfill area and disposed. The active compost pile dimensions will be no greater than 8 feet in height, 20 feet wide and 150 feet in length. The active compost process will take up to 72 days to complete.

Composting is a natural biological process that biodegrades organic waste and turns it into a valuable organic fertilizer. Composting is carried out under controlled aerobic conditions (i.e., requires oxygen). In this process, various microorganisms, including bacteria and fungi, break down organic material into simpler substances. The effectiveness of the composting process is dependent upon the environmental conditions present within the composting system, which include oxygen, temperature, moisture, material disturbance, organic material and the size and activity of microbial populations.

For the proposed Capistrano Greenery, OCWR is proposing to utilize open windrow composing methods. With open windrow composting, the green waste is placed in long rows called windrows. The windrows are turned (using a compost windrow turner or front-end loader) to improve porosity and oxygen content, mix in or remove moisture, and redistribute cooler and hotter portions of the pile. Open windrow composting is a commonly used composting operation method. Composting process control parameters include the initial ratios of carbon and nitrogen rich materials, the amount of bulking agent added to assure air porosity, the pile size, moisture content and turning frequency. The temperature of the windrows must be measured and logged constantly to determine the optimum time to turn them for quicker compost production.

Heavy equipment will include a windrow turner, two front-end loaders, a mobile screen, a water truck and a truck. The Capistrano Greenery operation will require three employees to operate all of the heavy equipment described above for building, turning, watering and monitoring the compost piles, and to perform other miscellaneous duties. Five full-time employees will be needed to provide sufficient staffing for days off, vacations, etc. For open-windrow composting, the windrow turner will turn each active compost pile as needed. Composting operations require significant volumes of water to facilitate the composting process, to regulate temperatures and to prevent fires. Water will also be required for dust control. The landfill operation currently uses both potable and reclaimed water. Landfill operations primarily use reclaimed water. Current reclaimed water usage for landfill operations is approximately 50,000 gallons per day. Potable water is used for the landfill administrative building and crew quarters and for habitat mitigation areas. The bulk of current potable water use is for the habitat mitigation areas. Current potable water consumption is

approximately 133,000 gallons per day. For the 200 TPD composting operation, it is estimated that up to 80,000 gallons of potable water will be needed each day for moistening the compost piles and for dust control. Altogether, the Prima Deshecha Landfill operation and the Capistrano Greenery will use approximately 213,000 gallons of potable water per day. As the windrows are turned, water will be added to maintain optimum moisture content of 45-60% within the piles. The temperature of each compost pile will be taken and recorded each operating day. Capistrano Greenery employees will continuously monitor the active compost piles for odor generation, vectors and potential for fire generation.

After the active compost process has been completed, the compost will be placed in curing piles for further stabilization of the compost product. The layout of the curing piles is shown on Figure 2. The curing process will take up to 48 days to complete. After the curing process is complete, the finished compost will be screened to remove oversized uncomposted material and residual solid waste. Altogether, the composting process may take up to 120 days or 4 months. Finished compost will be placed in a temporary storage area that can accommodate up to 1,400 cubic yards of finished compost. The finished compost will be delivered to end users located within and outside of Orange County. At 200 TPD, and using 20-ton per load end dump trucks, the Capistrano Greenery will generate approximately 10 two-way new truck trips per day, with these trucks taking finished compost to end markets. In addition, there will be 5 additional new two-way truck trips associated with increasing the current amount of PGM accepted at the landfill from 100 TPD to 200 TPD.

OCWR will implement an odor impact minimization plan for the Capistrano Greenery operation. Testing of finished compost (i.e., after the curing process is complete) for pathogens and metals will be performed in accordance with California Code of Regulations Title 14 requirements.

The Capistrano Greenery will be designed and operated to meet all Orange County Fire Authority (OCFA) requirements. This will include but not be limited to the spacing between windrows; the number, width and length of fire lanes; and the distance of the windrows and material storage areas to flammable vegetation. In addition, the Capistrano Greenery will have fire hydrants – the number and locations to be determined by OCFA. The fire hydrants, with a 2.5” outlet, will be located around the perimeter of the composting operation at spacing of approximately 1,000 feet. Fire hydrants shall be set back a minimum of 20 feet from any pile.

Methane generated by the underlying landfill area will not result in surface fires at the composting area through the effective maintenance and monitoring of the landfill gas collection system.

There is an existing City of San Juan Capistrano Water District 24” domestic potable water main located along the landfill ridgeline, approximately 600 feet west of the proposed composting facility location. A new 8” to 12” waterline would need to be constructed to bring water from the 24” water main to the proposed composting facility location. The new waterline would connect to a water distribution system within the composting area to provide operations water throughout the facility. It is estimated that the composting operation would require a maximum of approximately 80,000 gallons of potable water per day. Since the landfill operation uses approximately 133,000 gallons of potable water per day for the administration building/crew quarters and for the habitat mitigation areas; altogether, the composting operation and these landfill uses will use approximately 213,000 gallons of potable water per day.

Appropriate asphalt material will be placed over the entire landfill area where the composting will occur so that there will be no impacts to the underlying waste prism. The design of the proposed composting operation shall account for the underlying refuse and comply with any landfill-related regulations.

For the Capistrano Greenery, the site will be graded such that the center of each compost pile will be located on a high point and the compost deck will be graded at 2 percent toward the access lanes which will be graded at 2 percent to the south, conveying flows to an approximate 7.85-acre feet lined composting operation pond, that will be constructed to capture storm water runoff and leachate from the composting operation. The location of the lined composting operations pond is shown on Figure 2. The composting operation lined pond dimensions were determined based on National Oceanic and Atmospheric Administration (NOAA) precipitation data based for a 25-year, 24-hour storm event (per Order WQ 2015-0121-DWQ, General Waste Discharge Requirements for Composting Operations) and the appropriate tributary boundary of the compost area. The compost operating area will require perimeter berms between 2-3 feet high, depending on the location, to convey flows from a 25-year, 24-hour storm to the lined pond. In addition, in accordance with standard engineering practices, the pond will be designed to accommodate an additional two feet of freeboard above the water level of the design storm event to accommodate waves and splashing from water flows. OCWR shall fully contain all surface water runoff and leachate resulting from the composting operation. Collected surface water runoff and leachate will be collected on-site from the composting operation lined pond, and reused with the composting operation. Collected surface water runoff and leachate will not be discharged to the landfill storm water drainage system.

For the acceptance of green waste materials, the Capistrano Greenery will have the same hours of operation as the Prima Deshecha Landfill – Monday through Saturday, 7 AM – 5 PM. No incoming green waste materials will be accepted on Sundays and the six major holidays. The Capistrano Greenery will be open on Sundays for composting operations only, primarily to monitor the compost piles. The Capistrano Greenery will not be open to the public. OCWR shall maintain accurate records of various categories of waste materials processed at the Capistrano Greenery, including the residual waste that will be disposed at the Prima Deshecha Landfill, as required under the Disposal Reporting System regulations at Title 14, California Code of Regulations (CCR), Sections 18800-18814.11.

PROJECT SETTING

The proposed project will be developed in an approximately 18.6 acre area within the western portion of the landfill Zone 1 area, which is within the *Dana Point, California* 7.5-minute United States Geological Survey (USGS) topographic quadrangle map (refer to Figure 1). The project site consists entirely of disturbed, barren land and ruderal grassland. Land uses surrounding the project site include active landfill operations, undeveloped open space areas, and low-density residential developments. Native habitat restoration areas are located to the west and south of the project site. The project site is currently exempt from zoning and has a land use designation of Public Facilities; Landfill Site.

Based on available mapping,[1] the project site is underlain by Alo Clay Series, Botella Loam Series, and Calleguas Clay Series soils. However, the soils on the project site have been formerly disturbed by longstanding landfilling activities. The project site is approximately 400 feet above mean sea level in elevation.

METHODS

Literature Review and Records Search

LSA Biologist Jessica Lieuw conducted a literature review and records search on June 28, 2019, to identify the existence and potential for occurrence of sensitive or special-status plant and animal species[2] in the vicinity of the project site. She also examined federal and State lists of sensitive species. Current electronic database records reviewed included the following:

- **California Natural Diversity Data Base information (CNDDB – RareFind 5)**, which is administered by the California Department of Fish and Wildlife (CDFW). This database covers sensitive plant and animal species as well as sensitive natural communities that occur in California. Records from six USGS quadrangles surrounding the project site (*Laguna Beach*, *San Juan Capistrano*, *Canada Gobernadora*, *Dana Point*, *San Clemente*, and *San Onofre Bluff*) were obtained from this database to assist with the field survey.

- **California Native Plant Society's (CNPS) Electronic Inventory of Rare and Endangered Vascular Plants**, which uses four specific categories or "lists" of sensitive plant species to assist with the conservation of rare or endangered botanical resources. All of the plants constituting California Rare Plant Ranks 1A, 1B, 2A, and 2B are intended to meet the status definitions of "threatened" or "endangered" in CESA and the California Fish and Game Code, and are considered by CNPS to be eligible for State listing. At the discretion of the CEQA Lead Agency, impacts to these species may be analyzed as such, pursuant to CEQA Guidelines Sections 15125(c) and 15380. Plants in Rank 3 (limited information), Rank 4 (limited records), or that are considered Locally Unusual and Significant may be analyzed under CEQA if there is sufficient information to assess potential significant impacts. Records from the six USGS quadrangles surrounding the project site were obtained from this database to assist with the field survey.

- **United States Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) Online System**, which lists all proposed, candidate, threatened, and endangered species managed by the USFWS Endangered Species Program that have the potential to occur on or

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1 United States Department of Agriculture Natural Resources Conservation Service. 2018. Web Soil Survey. Website: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx (last updated September 21, 2018; accessed July 9, 2019).

2 For the purposes of this report, the term "special-status species" refers to those species that are listed or proposed for listing under the CESA and/or federal Endangered Species Act; California Fully Protected Species; plants with a CRPR of 1, 2, or 3; California Species of Special Concern; and California Special Animals. It should be noted that "Species of Special Concern" and "California Special Animal" are administrative designations made by the CDFW and carry no formal legal protection status. However, Section 15380 of the CEQA Guidelines indicates that these species should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

near a particular site. This database also lists all known critical habitats, national wildlife refuges, jurisdictional wetlands, and migratory birds that could potentially be impacted by activities from a proposed project. LSA used an unofficial IPaC Trust Resource Report generated for the project site to assist with the field survey.

In addition to the databases listed above, historic and current aerial imagery, existing environmental reports for developments in the project vicinity, and regional habitat conservation plans and local land use policies related to biological resources were reviewed. LSA also utilized biological resources monitoring and focused survey data collected on the landfill property from the early 2000s through 2019 to inform this assessment.

Field Surveys

LSA Biologist Jessica Lieuw conducted a general biological survey of the project site on July 10, 2019. Ms. Lieuw surveyed the entire project site on foot, and noted all biological resources observed. Suitable habitat for any species of interest or concern was duly noted, and general site conditions were photographed. The weather conditions were sunny, calm, and 70˚ Fahrenheit.

In October 2019, OCWR Senior Environmental Resources Specialist Aimee Halligan observed a burrowing owl (*Athene cunicularia*), a California Species of Special Concern, foraging near the project site (but not within the site boundaries). Since that time, focused surveys have been conducted and are planned to continue until January 2020 to determine the nature and extent of burrowing owl occupancy within or near the project site.

RESOURCES EVALUATED

Vegetation

The project site is strictly upland in nature with dominant vegetation consisting of disturbed, ruderal grassland with patches of mixed herbaceous invasive species and bare ground. There are no special-status natural communities within the project site boundaries or in the immediate vicinity. Ongoing soil disturbance and the resulting competitive exclusion by invasive nonnative plants limit the potential for native flora to occur on the project site. The following describes the vegetation and land cover types occurring within the project site using the Orange County Habitat Classification System (HCS) as articulated by Jones & Stokes Associates, Inc.[1] A complete list of plant species identified within and adjacent to the proposed project site is contained in Appendix D.

- **Ruderal Grassland (4.6 of the HCS):** A majority of the project site consists of disturbed ruderal grassland. Ruderal grassland consists of disturbed areas dominated by weedy or pioneering plant species including[2] Harding grass (*Phalaris aquatica*)*, slender ice plant (*Mesembryanthemum nodiflorum*)*, Russian thistle (*Salsola tragus*)*, prickly lettuce (*Lactuca*

[1] Jones & Stokes Associates, Inc. 1993. *Methods Used to Survey the Vegetation of Orange County Parks and Open Space Areas and The Irvine Company Property.* February 10. (JSA 92-032.) Sacramento. Prepared for the County of Orange, Environmental Management Agency, Environmental Planning Division, Santa Ana, California.

[2] An asterisk denotes nonnative species.

serriola)*, San Diego wirelettuce (*Stephanomeria diegensis*), telegraph weed (*Heterotheca grandiflora*), and common horseweed (*Erigeron Canadensis*), among many others. Several isolated native shrubs, including California encelia (*Encelia californica*), coyote brush (*Baccharis pilularis*), and California buckwheat (*Eriogonum fasciculatum*), are present along the margins of the project site within areas mapped as ruderal grassland.

- **Disturbed or Barren (16.1 of the HCS):**Disturbed or barren areas lack vegetation or are dominated by a sparse cover of ruderal vegetation. Weedy or pioneering plant species noted as occurring in these areas include nonnative brome grasses (*Bromus* sp.)*, cheeseweed (*Malva parviflora*)*, white sweetclover (*Melilotus albus*)*, fivehook bassia (*Bassia hyssopifolia*)*, and rabbitsfoot grass (*Polypogon monspeliensis*)*. Areas mapped as disturbed or barren mostly consist of unpaved landfill access roads and prior landfill stockpiling/staging/laydown areas that exist within in the project site.

A total of 51 vascular plant species were identified within the project site during the July 2019 field survey (refer to Attachment C). A total of 36 (approximately 71 percent) of these plant species represent nonnative taxa, reflecting a high level of disturbance within the project site.

As previously noted, native habitat restoration areas exist immediately to the west and south of the proposed project site. These restoration sites consist of mature native coastal sage scrub (CSS) and chaparral vegetation on north-northeast facing slopes. Areas immediately east and north of the project site consist of disturbed/barren and ruderal areas within the Zone 1 area of the landfill property.

Wildlife

Native wildlife habitat is largely absent on the project site. Furthermore, the lack of ground cover and suitable foraging habitat make the site undesirable for many native wildlife species. Eleven wildlife species were observed during the field survey. The following native species were observed: funereal duskywing (*Erynnis funeralis*), variegated meadowhawk (*Sympetrum corruptum*), pallid-winged grasshopper (*Trimerotropis pallidipennis*), western fence lizard (*Sceloporus occidentalis*), American crow (*Corvus brachyrhynchos*), mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), California towhee (*Melozone crissalis*), California horned lark (*Eremophila alpestris actia*), and American kestrel (*Falco sparverius*). One nonnative species was observed during the field survey, cabbage white (*Pieris rapae*)*.

Special-Status Species

San Juan Capistrano supports various special-status natural communities, plants, and animals. Attachment B provides tables that identify those special-status plant and animal species known to occur or that potentially occur in the vicinity of the project site (based on the literature review and experience in the region) and includes detailed information about each species' habitat and distribution, State and Federal status designations, and probability of occurrence within the project site. As stated in the methodology section above, the background research included occurrence records from six USGS topographic quadrangles surrounding the survey area. A six USGS quadrangle search covers a large, variable geographic and topographic area containing numerous habitat types

not found within or around the project site. As such, many of the species listed in Appendix C are not anticipated to occur on the project site due to historic and ongoing anthropogenic disturbances and/or the lack of suitable habitat.

The literature review identified 38 special-status plant species that are known to occur within a six-quadrangle radius of the project site (refer to Attachment B). The majority of the rare plant species that were identified in the databases have specialized habitat requirements (i.e., they occur on predominantly alkaline soils, woodland, riparian, or wetland habitats, etc.) that do not occur within the project site. Historic anthropogenic disturbances have greatly altered the natural hydrologic regimes and have either eliminated or greatly impacted the pre-settlement habitats needed to support the special-status plant species identified in the CNDDB and CNPS queries. As such, the specific habitats, soil substrates or "micro-climates" necessary for special-status plant species to occur are absent within the boundaries of the project site. Based on site observations coupled with the habitat suitability analysis conducted during the July 2019 site survey, no special-status plant species are expected to occur within the project site.

The historic and ongoing anthropogenic disturbances on the project site and adjacent parcels (i.e., landfill operations, highways, and urban development, etc.) have greatly altered, eliminated, or impacted the pre-settlement habitats needed to support most of the special-status animal species identified in the CNDDB and USFWS queries (refer to Attachment B). Nevertheless, the project site contains foraging habitat for common and special-status raptors such as northern harrier (*Circus hudsonius*) and white-tailed kite (*Elanus leucurus*); however, due to the lack of perennial shrubs, mature trees, and sufficient ground cover within the project site, potential raptor nesting habitat is absent from the project site. Suitable avian nesting habitat in the project site is limited to that which supports ground-nesting species such as California horned lark (*Eremophila alpestris actia*) and other birds that may nest in the annual herbaceous cover. California horned lark, a California Special Animal (CSA), was observed on site during the July 10, 2019 survey. Northern harrier, a California Species of Special Concern (SSC), is known to forage on the landfill property in the vicinity of the project site. At least two burrowing owls, a California SSC, were observed occupying burrows in the vicinity of the project site (outside of the proposed project disturbance limits) in October-November 2019. Surveys are ongoing to determine the nature (e.g., overwintering, breeding, or migrating) and extent of burrowing owl occupancy within or near the project site boundaries. Conditions within the project site are marginally suitable for burrowing owl breeding due to the lack of suitable burrow habitat, but suitable foraging habitat is present on the project site and throughout the general project vicinity.

Suitable nesting habitat for a variety of common and special-status bird species occurs adjacent to the site within the native habitat restoration area. Birds and raptors are afforded special protections while nesting under the California Fish and Game Code as well as the Federal Migratory Bird Treaty Act.

One federally listed special-status bird species, coastal California gnatcatcher (*Polioptila californica californica*; CAGN), is known to breed at multiple sites on the landfill property. OCWR and designated biologists, including LSA, have conducted annual surveys and nest monitoring of this species and other listed species on the landfill property over the last decade. The project site is located in a portion of the landfill where CAGN have never been documented as occurring, and the

project is sited nearly a quarter mile—and separated by natural topographic barriers—from the nearest documented nest location (based on data collected by LSA from 2010-2018 and ECORP Consulting, Inc. in 2019).

The evaluation of special-status animal species occurrence within and adjacent to the project site was based on a habitat suitability analysis and extensive existing biological survey data collected from the landfill property. It did not include exhaustive or focused surveys to determine their presence or absence, but did include direct observation of on-site and off-site conditions and a review of the CNDDB records and other data documenting recorded occurrence data from the area to conclude whether or not a particular species could be expected to occur. Based on this analysis, it is unlikely that any of the special-status wildlife species listed in Attachment B would be directly affected by the project.

Critical Habitat

There is no designated or proposed critical habitat for any species within the project site.

Wildlife Movement and Habitat Connectivity

The project site is located within an area that has been previously disturbed by longstanding landfill operations. Active landfill operations are located to the immediate east of the project site. Potential wildlife movement corridors, including undeveloped lands adjacent to the project site, would not be directly affected by the project. Given the isolated and disturbed nature of the project site, it is unlikely that the site serves as an important corridor for animals moving locally, regionally, or in broader migrations. Migratory bird species may utilize the project site for foraging; however, the usage is likely transient and limited to species that forage over open grassland areas. The project site does not possess any characteristics that would indicate a locally significant stopover point for migratory species including raptors or waterfowl. No known wildlife movement corridors occur within the project site.

Wetlands and Potentially Jurisdictional Drainage Features

The project site is located within an upland area that has been previously disturbed by longstanding landfill operations. There are no records indicating wetlands or jurisdictional drainage features exist (or historically existed) on the project site. A concrete v-ditch (excavated in dry land and conveying ephemeral storm water runoff) is located adjacent to the western project site boundaries. No potentially jurisdictional features were observed during the site survey, and no further analysis regarding wetlands or potentially jurisdictional drainages or wetlands is warranted.

IMPACT FINDINGS

Vegetation and Habitat Impacts

The project would not result in any direct impacts to native habitats or sensitive natural communities. Permanent direct impacts to nonnative and invasive vegetation would occur with project implementation.

Consistency with Adopted Habitat Conservation Plan/Natural Community Conservation Plan and Local Policies

The project site is located within the Orange County Southern Subregion Habitat Conservation Plan (HCP) area and OCWR is a participating landowner. The project site is within an area designated by the HCP as developed (e.g., the Prima Deshecha Landfill is a covered development project). The project site is not located within a designated HCP reserve area or other sensitive conservation area identified by State, regional, or local plans. Protected trees are absent from the project site. OCWR will implement measures for the protection and conservation of covered species, including the burrowing owl. Thus, project implementation would not conflict with any regional conservation plan or local policies related to biological resources.

Special-Interest Species

Given the disturbed condition of the project site and lack of appropriate habitats, no special-status plant species are expected to occur within the project site or to be adversely affected by the project.

Adequate habitat for most of the animal species listed in Attachment B is absent from the project site. While California horned lark was observed on site, grasshopper sparrow has a moderate probability of occurrence on the project site, and two burrowing owls have been documented in the immediate project vicinity, adhering to the recommended impact avoidance, minimization, and mitigation measures outlined below will avoid, minimize, and/or mitigate (as applicable) potential significant impacts to these species. With successful implementation of recommended measures, no significant direct impacts on special-status animal species are anticipated result from the project.

The project site is located adjacent to areas containing mature CSS vegetation (e.g., the "biological pre-mitigation area") and several special-status animal species have potential to be indirectly affected project construction and operational activities through increased noise, vibration, and dust. Such indirect disturbance has the potential to affect foraging patterns and disorient special-status species occurring in adjacent habitat areas, although species occurring within this area are likely habituated to frequent disturbance associated with longstanding landfill operations that historically occurred within the project site. Best management practices (BMPs) implemented during construction would minimize potential adverse indirect effects to the biological pre-mitigation area, and the recommended impact avoidance, minimization, and mitigation measures outlined below will avoid, minimize, and/or mitigate (as applicable) potential indirect impacts on occupied burrowing owl habitat.

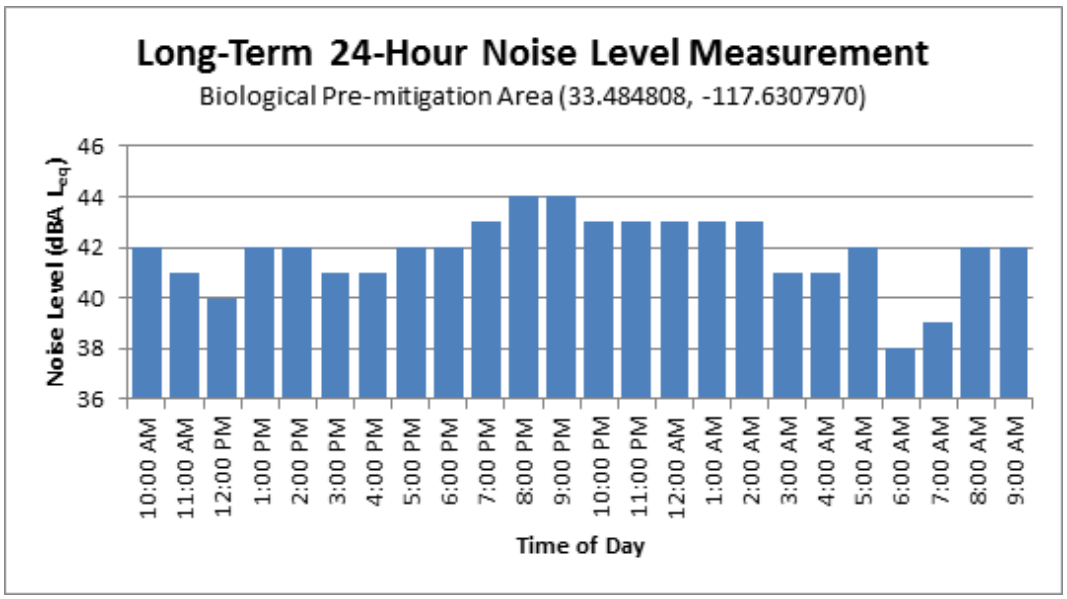
As part of this assessment, a long-term (24-hour) noise level measurement was conducted within the biological pre-mitigation area adjacent to the project site. The measurement was conducted from 10:00 a.m. on July 15 through 10:00 a.m. on July 16, 2019 with a Larson Davis Type 2 Spark 706RC dosimeter. Measured noise sources include wind, birds, distant landfill heavy equipment (such as dump trucks and scrapers) moving intermittently, and occasional aircraft. The graph and table below show hourly L_{eq} results from the long-term noise level measurement. As Table A and Graph A show, the measured hourly average noise levels range from 39 dBA L_{eq} to 42 dBA L_{eq} during the hours in which the project would operate (7 a.m to 5 p.m.).

Table A: Long-Term (24-Hour) Noise Level Measurement Result

Measurement Number	Start Time	Date	Noise Level (dBA L_{eq})
1	10:00 AM	7/15/19	42
2	11:00 AM	7/15/19	41
3	12:00 PM	7/15/19	40
4	1:00 PM	7/15/19	42
5	2:00 PM	7/15/19	42
6	3:00 PM	7/15/19	41
7	4:00 PM	7/15/19	41
8	5:00 PM	7/15/19	42
9	6:00 PM	7/15/19	42
10	7:00 PM	7/15/19	43
11	8:00 PM	7/15/19	44
12	9:00 PM	7/15/19	44
13	10:00 PM	7/15/19	43
14	11:00 PM	7/15/19	43
15	12:00 AM	7/16/19	43
16	1:00 AM	7/16/19	43
17	2:00 AM	7/16/19	43
18	3:00 AM	7/16/19	41
19	4:00 AM	7/16/19	41
20	5:00 AM	7/16/19	42
21	6:00 AM	7/16/19	38
22	7:00 AM	7/16/19	39
23	8:00 AM	7/16/19	42
24	9:00 AM	7/16/19	42

Source: Compiled by LSA (2019).
dBA Leq = equivalent continuous sound level measured in A-weighted decibels

Graph A: Ambient Noise Levels in Habitat Areas Adjacent to the Project Site



Source: Compiled by LSA (2019).
dBA Leq = equivalent continuous sound level measured in A-weighted decibels

The project would use off-road equipment on site for composting activities during project operation. It was anticipated that a windrow turner, two front-end loaders, one water truck, and one dump truck would be used. It was assumed that the windrow turner would generate similar levels of noise as bulldozers. The composite noise level from all of the equipment described above during project operations would be 86 dBA L_{eq} at 50 ft.

The project equipment would operate at approximately 65 ft from the nearest portion of the habitat area and approximately 500 ft from the most distant portion of the habitat area. At distances of 65 ft and 500 ft, operational noise levels would be reduced to 84 dBA L_{eq} and 66 dBA L_{eq}, respectively. These project-related operational noise levels would represent infrequent increases of 27 dBA to 45 dBA above the lowest existing measured hourly average noise level during the hours in which the project would operate (7 a.m. to 5 p.m.).

Given that (1) there are topographic barriers between the project site and all documented CAGN territories, (2) there is spatial separation between proposed project components and existing habitat, (3) the project is sited in proximity to ongoing landfill operations, and (4) the project would have limited operational noise impacts, long-term significant indirect effects to CAGN—and other special-status species that have potential to occur in the biological pre-mitigation area—are not anticipated.

As stated, focused surveys are being conducted through January 2020 to determine the nature and extent of burrowing owl occupancy in areas within or near the project site. As of November 21, 2019, no burrowing owls have been observed within the project site boundaries, and suitable burrows are generally absent from the project site. However, at least two active burrows have been

observed in the vicinity of the site: one burrow site is located approximately 200 feet to the east of the project site boundaries, and one burrow site is located approximately 700 feet to the north of the project site boundaries. Suitable foraging and burrowing habitat is relatively abundant in the greater project vicinity, including within the landfill pre-mitigation areas and HCP supplemental open space areas, which are protected. It is currently unknown whether the two owls observed are overwintering, migrating, or establishing a breeding territory or territories. Burrowing owl overwintering is very uncommon in this area, and nesting burrowing owls have not been documented in the HCP planning area. Pursuant to the Section 13.2.5 (a) of the HCP and relevant resource agency guidelines, focused surveys will continue and appropriate measures will be implemented to avoid, minimize, and/or mitigate potential project-related impacts, depending on the nature and extent of burrowing owl occupancy. With successful implementation of the recommended measures, project implementation is not expected to have a significant adverse effect on any special-status animal species.

Wildlife Movement

No permanent barriers would be placed within any known wildlife movement corridors. Due to the disturbed and isolated nature of the project site, project implementation would not have a significant impact on wildlife movement, and no mitigation measures are required.

Wetlands and Potentially Jurisdictional Drainage Features

The project would not result in any impacts to jurisdictional waters.

RECOMMENDED IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

Measure BIO-1 General Nesting Bird Surveys and Avoidance of Active Nests. Any vegetation removal, construction, or grading activities should take place outside of the active nesting bird season (i.e., February 1–August 31), when feasible, to ensure compliance with the California Fish and Game Code. Should these activities take place during this period, a qualified biologist should conduct a nesting bird survey no more than 3 days prior to the start of such activities. Any available focused survey data, particularly with regard to CAGN and/or burrowing owl nesting locations, should be referenced prior to the survey. If construction activities using heavy equipment (i.e., graders, bulldozers, and excavators, etc.) continue through the nesting season, weekly nesting bird surveys shall be conducted until the construction activities are completed. Each nesting bird survey shall include the work area and areas adjacent to the site (within 500 feet, as feasible) that could potentially be affected by project-related activities such as noise, vibration, increased human activity, and dust, etc. For any active nest(s) identified, the qualified biologist shall establish an appropriate buffer zone around the active nest(s). The appropriate buffer shall be determined by the qualified biologist based on species, location, and the nature of the proposed activities. Project activities shall be avoided within the buffer zone until the nest is deemed no longer active, as determined by the qualified biologist.

Measure BIO-2 Burrowing Owl Avoidance, Minimization, and Mitigation Measures. Consistent with the Conservation Strategy for burrowing owl as established in Section 13.2.5 (a)(2)(b) of the HCP, focused pre-construction surveys will continue through January 2020 to determine the nature and extent of burrowing owl occupancy within 1,000 feet of the project site. Pre-construction nesting surveys will be conducted in conjunction with those described in Measure BIO-1. If construction is planned to occur while burrowing owls are present within 1,000 feet of the project site (including access routes), a qualified biologist will monitor project construction activities and burrowing owl status, and determine appropriate avoidance, minimization, or compensation measures to be implemented.

If nesting burrowing owls are found within the direct and indirect impact areas (as determined by the qualified biologist), avoidance measures will be implemented, including no direct disturbance of active dens during the breeding season and maintaining approximately 6-7 acres of undisturbed, contiguous foraging habitat (or about a 300-foot radius) around the nest site throughout the breeding season or until the nest site is no longer active and no burrowing owls are present. If a previously-occupied nesting burrow is directly impacted during construction (following confirmation that no owls are present), an artificial burrow in suitable habitat will be constructed at least 300 feet from the impacted areas and such that at least 6-7 acres of suitable foraging habitat are contiguous with the new burrow.

If non-breeding burrowing owls are found within the direct and indirect impact areas (as determined by the qualified biologist), passive relocation techniques (e.g., burrow exclusion and creation of alternative burrow habitat) may be employed outside of the nesting season to avoid direct and indirect impacts to occupied sites. Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to allow owls to leave the burrow and temporarily exclude burrowing owls from re-entering, or permanently exclude burrowing owls and close burrows after verifying burrows are empty during site monitoring and scoping. If a previously-occupied burrow is directly impacted during construction (following burrow exclusion and confirmation that no owls are present), an artificial burrow in suitable habitat will be constructed at least 300 feet from the impacted areas and such that at least 6-7 acres of suitable foraging habitat are contiguous with the new burrow.

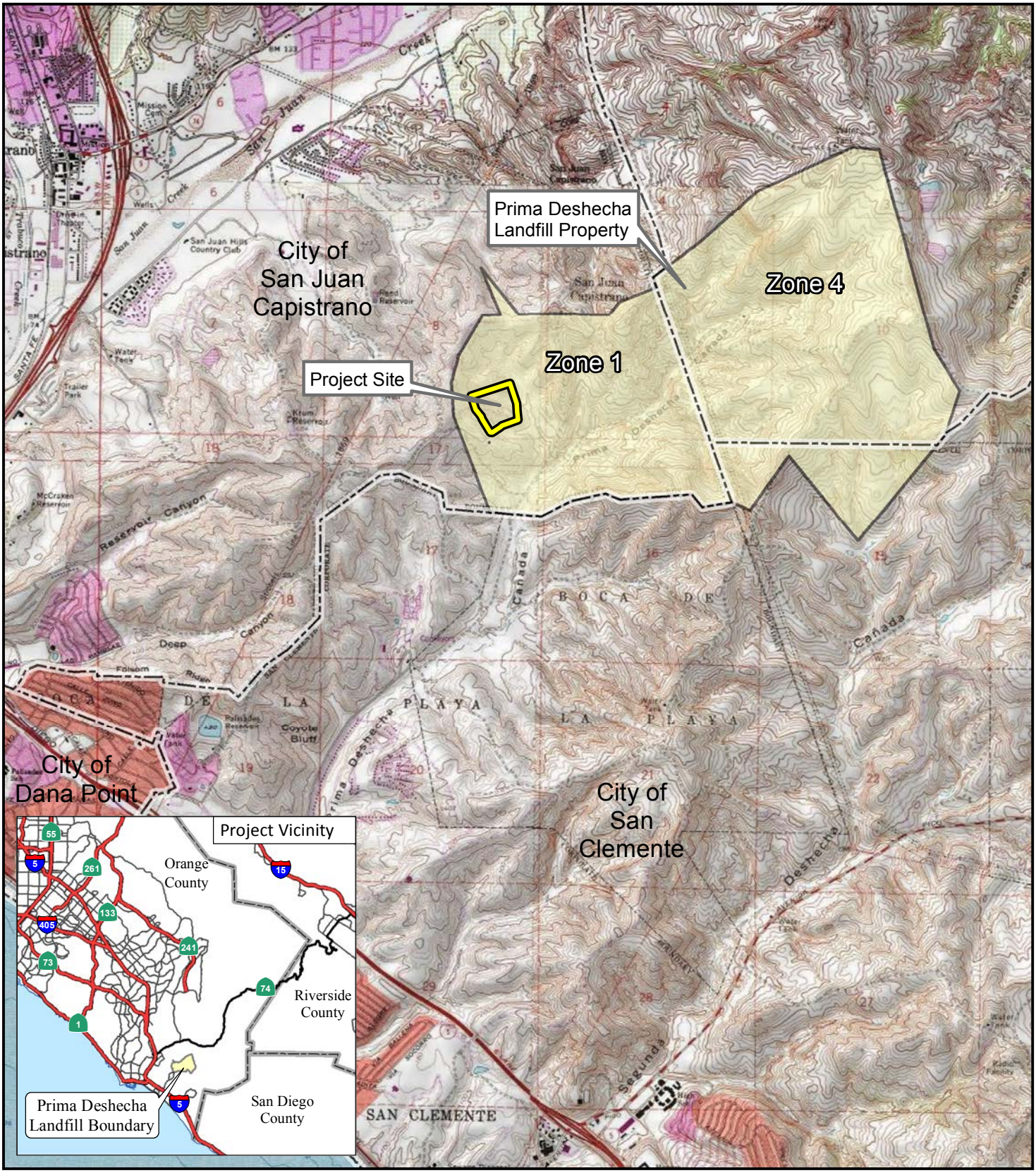
If occupied burrows are not directly impacted either through burrow exclusion or project construction activities, then no compensatory mitigation or construction of artificial burrows is required.

CONCLUSION

With successful implementation of the recommended impact avoidance, minimization, and mitigation measures described above, the project would not result in any significant impacts to native habitats or special-status biological resources.

ATTACHMENT A

FIGURES



LSA

LEGEND

Prima Deshecha Landfill Boundary

Project Site

FIGURE 1

N

0 1600 3200

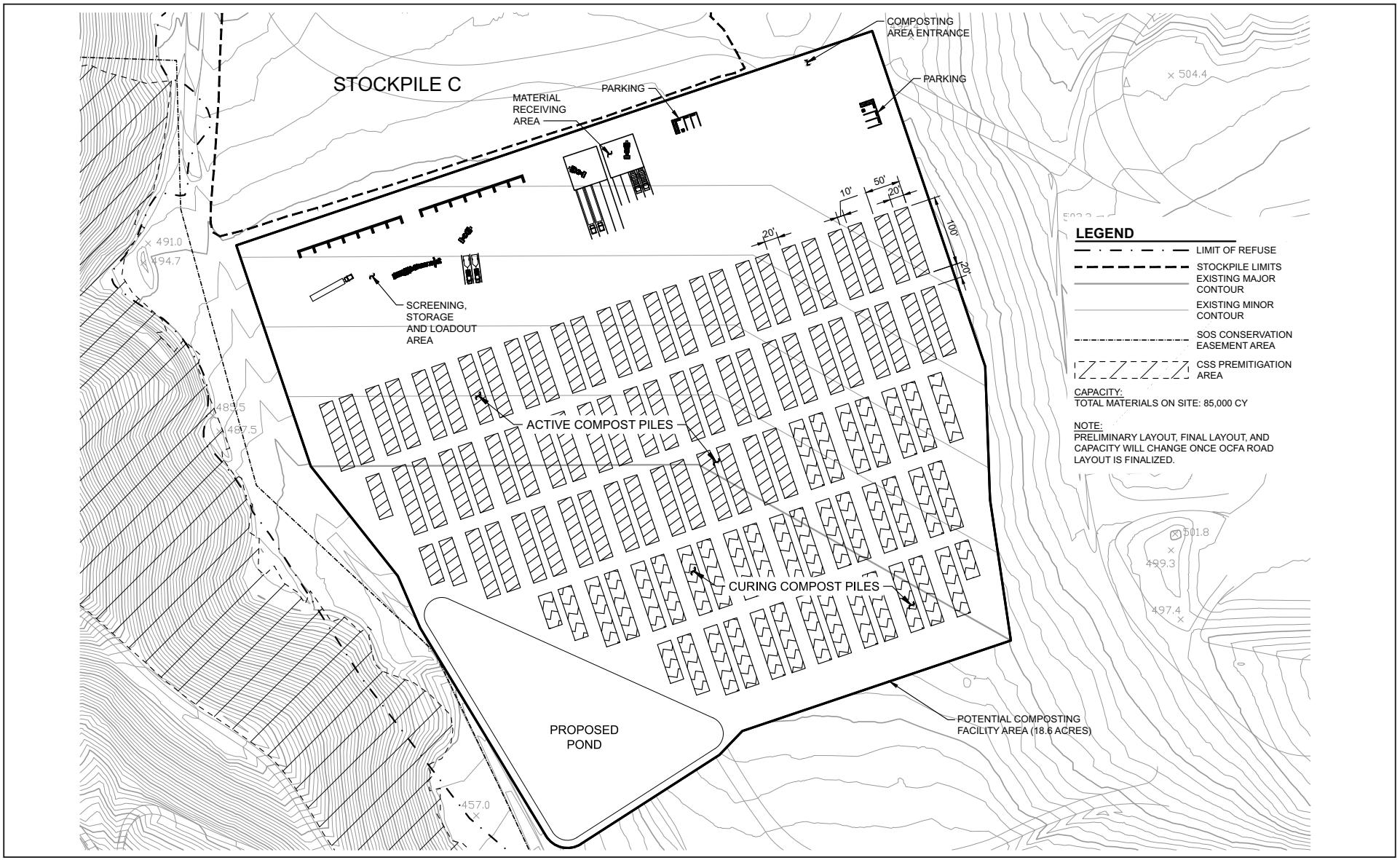
FEET

Capistrano Greenery at Prima Deshecha Landfill

Regional and Project Location

SOURCE: USGS 7.5' QUAD - Canada Gobernadora (1988); Dana Point (1975); San Clemente (1975), CA

I:\OCY1701.15\GIS\MXD\ProjectLocation_USGS.mxd (7/25/2019)



LSA

FIGURE 2

SOURCE: Tetra Tech

Capistrano Greenery at Prima Deshecha Landfill

Site Plan

I:\OCY1701.15\G\Site Plan.cdr (7/26/2019)

LSA

LEGEND

Project Area

Coastal Sage Scrub Restoration Area

Vegetation Type

Disturbed or Barren (4.57 ac)

Ruderal Grassland (14.04 ac)

N

0 100 200

FEET

SOURCE: Nearmap (06/2019)

I:\OCY1701.15\GIS\MXD\VegetationMap.mxd (7/9/2019)

FIGURE 3

Capistrano Greenery at Prima Deshecha Landfill

Vegetation Map

Overview of disturbed/barren areas and ruderal grassland vegetation within the project site. Photo taken near the western project site boundary, facing northeast toward active landfill operations. July 16, 2019.

Photo showing the northwestern portion of the project site. July 16, 2019.

LSA

FIGURE 4

Capistrano Greenery at Prima Deshecha Landfill

Representative Site Photographs

I:\OCY1701.15\G\Bio\Photos_Site_Capo-Grn_3pg.cdr (7/30/2019)

View of the concrete v-ditch and coastal sage scrub restoration area located to the west of the project site. July 16, 2019.

Disturbed/barren areas and ruderal grassland vegetation within the southwestern portion of the project site. July 10, 2019.

LSA

FIGURE 4

Capistrano Greenery at Prima Deshecha Landfill

Representative Site Photographs

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Overview of the central portion of the project site, facing west. July 10, 2019.

View of the eastern portion of the project site, facing south. July 10, 2019.

LSA

FIGURE 4

Capistrano Greenery at Prima Deshecha Landfill

Representative Site Photographs

I:\OCY1701.15\G\Bio\Photos_Site_Capo-Grn_3pg.cdr (7/30/2019)

ATTACHMENT B

SPECIAL-STATUS SPECIES IDENTIFIED AS POTENTIALLY OCCURRING IN THE PROJECT VICINITY

Table B-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
Aphanisma	*Aphanisma blitoides*	US: - CA: - CNPS: 1B.2	Annual herb. Occurs on sandy or gravelly soils. Habitat types include coastal bluff scrub, coastal dunes, and coastal scrub habitats between 0 and 984 ft in elevation.	February–June	**Not Expected.** There are no known occurrences in the project vicinity[1] and suitable habitat is absent from the project site.
Coulter's saltbush	*Atriplex coulteri*	US: - CA: - CNPS: 1B.2	Perennial herb. Found in alkaline or clay soils. Habitat types include coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grasslands. Elevation from 10 to 1510 ft.	March–October	**Not Expected**. While there are historical occurrence records in the project vicinity (CNDDB 1903 and 2002), this perennial species was not observed on the project site and suitable habitat is absent from the project site.
South coast saltscale	*Atriplex pacifica*	US: - CA: - CNPS: 1B.2	Annual herb. Habitat types include coastal dunes, coastal bluff scrub, coastal scrub, and playas between 0 and 460 ft in elevation.	March–October	**Not Expected.** There are no known occurrences in the project vicinity, and suitable habitat is absent from the project site.
Parish's brittlescale	*Atriplex parishii*	US: - CA: - CNPS: 1B.1	Annual herb. Found in alkaline soils. Habitat types include chenopod scrub, playas, and vernal pools. Elevation from 25 to 82 ft.	June–October	**Not Expected.** There are no known occurrences in the project vicinity, and suitable habitat is absent from the project site.
Davidson's saltscale	*Atriplex serenana* var. *davidsonii*	US: - CA: - CNPS: 1B.2	Annual herb. Found in alkaline soils in coastal bluff scrub and coastal scrub. Elevation from 32 to 656 ft.	April–October	**Not Expected.** There are no known occurrences in the project vicinity, and suitable habitat is absent from the project site.
Thread-leaved brodiaea	*Brodiaea filifolia*	US: FT CA: CE CNPS: 1B.1	Perennial bulbiferous herb. Found in clay soils. Habitat type includes chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, and vernal pools. Elevation from 80 to 3675 ft.	March–June	**Not Expected.** While there are historical occurrence records in the project vicinity (CNDDB 1997, 2001, 2004, 2010, and 2011), suitable habitat is absent from the project site.
Intermediate mariposa lily	*Calochortus weedii* var. *intermedius*	US: - CA: - CNPS: 1B.2	Perennial bulbiferous herb. Habitat types include chaparral, coastal scrub, and valley and foothill grassland. Often occurs in dry, rocky soils from 395 ft to 2,805 ft in elevation.	May–July	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.

Table B-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
Southern tarplant	*Centromadia parryi* ssp. *Australis*	US: - CA: - CNPS: 1B.1	Annual herb. Habitat types include vernal pools, margins of marshes and swamps, and vernally mesic valley and foothill grasslands, sometimes with saltgrass on alkaline soils. Found up to 1,400 ft in elevation.	May–November	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is largely absent from the project site.
Orcutt's pincushion	*Chaenactis glabriuscula* var. *orcuttiana*	US: - CA: - CNPS: 1B.1	Annual herb. Habitat types include coastal bluff scrub (sandy) and coastal dunes. Found up to 330 ft in elevation.	January–August	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is largely absent from the project site.
Long-spined spineflower	*Chorizanthe polygonoides* var. *longispina*	US: - CA: - CNPS: 1B.2	Annual herb. Habitat types include chaparral, coastal sage scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Often occurs in clay soils between 100 ft and 5,019 ft in elevation.	April–July	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
San Miguel savory	*Clinopodium chandleri*	US: - CA: - CNPS: 1B.2	Perennial shrub. Habitat types include chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland. Occurs in rocky, gabbroic, or metavolcanic soils between 390 ft and 3,550 ft in elevation.	March–July	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Summer holly	*Comarostaphylis diversifolia* ssp. diversifolia	US: - CA:- CNPS: 1B.2	Perennial evergreen shrub. Habitat types include in chaparral and Cismontane woodland between 100 ft and 2,600 ft in elevation.	April–June	**Absent**. This perennial shrub would have been observed if it were present on the site.
Blochman's dudleya	*Dudleya blochmaniae* ssp. *blochmaniae*	US: - CA: - CNPS: 1B.2	Perennial herb. Habitat types include coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland. Occurs in rocky, often clay or serpentine soils between 5 ft and 1,480 ft in elevation.	April–June	**Absent**. This perennial species would have been observed if it were present on the site.

Table B-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
Many-stemmed dudleya	*Dudleya multicaulis*	US: - CA: - CNPS: 1B.2	Perennial herb. Habitat types include chaparral, coastal scrub, and valley and foothill grassland. Usually occurs in heavy, often clay soils from 45 ft to 2,370 ft in elevation.	April–July	**Absent**. While there is one historic occurrence record in the project vicinity (CNDDB 1987), this perennial species would have been observed if it were present on the site.
Laguna Beach dudleya	*Dudleya stolonifera*	US: FE CA: CE CNPS: 1B.1	Perennial stoloniferous herb. Found in rocky soils. Habitat types include chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.	May–July	**Absent**. This perennial species would have been observed if it were present on the site.
Sticky dudleya	*Dudleya viscida*	US: - CA: - CNPS: 1B.2	Perennial herb. Habitat types include coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub. Occurs in rocky soils between 32 ft and 1,804 ft in elevation.	May–June	**Absent.** This perennial species would have been observed if it were present on the site.
Pendleton button-celery	*Eryngium pendletonense*	US: - CA: - CNPS: 1B.1	Perennial herb. Habitat types include coastal bluff scrub, valley and foothill grassland, and vernal pools. Occurs in clay, vernally mesic areas between 50 ft and 360 ft in elevation.	April–July	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Cliff spurge	*Euphorbia misera*	US: - CA: - CNPS: 2B.12	Perennial herb. Found in rocky soils, and in coastal bluff scrub, coastal scrub, and mojavean desert scrub. Elevation from 320 ft to 1,640 ft.	December–August	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Vernal barley	*Hordeum intercedens*	US: - CA: - CNPS: 3.2	Annual herb. Habitat types include coastal dunes, coastal scrub, valley and foothil grassland (saline flats and depressions), and vernal pools. Elevation from 16 to 3280 ft.	March–June	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Mesa horkelia	*Horkelia cuneata* var. *puberula*	US: - CA: - CNPS: 1B.1	Perennial herb. Found in chaparral, cismontane woodland, and coastal scrub. Occurs in sandy or gravelly soils between 230 ft and 2,650 ft in elevation.	February–September	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.

Table B-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
California satintail	*Imperata brevifolia*	US: - CA: - CNPS: 2B.1	Perennial rhizomatous herb. Habitat types include mesic, chaparral, coastal scrub, mojavean desert scrub, meadows and seeps (often alkali) and riparian scrub. Elevation from 0 to 3,986 ft.	September–May	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Decumbent goldenbush	*Isocoma menziesii* var. *decumbens*	US: - CA: - CNPS: 1B.2	Perennial shrub. Habitat types include chaparral and coastal scrub (sandy, often disturbed areas) between 32 ft and 440 ft in elevation.	April–November	**Absent.** This perennial shrub would have been observed if it were present on the site.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	US: - CA: - CNPS: 1B.1	Annual herb. Habitat types include marshes and swamps, playas, and vernal pools up to 4,000 ft in elevation.	February–June	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Santa Catalina Island desert-thorn	*Lycium brevipes* var. *hassei*	US: - CA: - CNPS: 3.1	Perennial deciduous shrub. Found in coastal bluff scrub and coastal scrub. Elevation from 213 to 985 ft.	June–August	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Intermediate monardella	*Monardella hypoleuca* ssp. *intermedia*	US: - CA: - CNPS: 1B.2	Perennial rhizomatus herb. Usually found in understory. Habitat types include chaparral, cismontane woodland, lower montane coniferous forest. Elevation from 1,312 ft to 4,101 ft.	April–September	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Little mousetail	*Myosurus minimus* ssp. *apus*	US: - CA: - CNPS: 3.1	Annual herb. Habitat types include valley and foothill grassland, and vernal pools (alkaline). Elevation range from 65 to 2100 ft.	March–June	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Mud nama	*Nama stenocarpa*	US: - CA: - CNPS: 2B.2	Annual/perennial herb. Habitat type includes in marshes and swamps (lakes margins, and riverbanks).	January–July	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Prostrate vernal pool navarretia	*Navarretia prostrata*	US: - CA: - CNPS: 1B.1	Annual herb. Found in coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools. Occurs in mesic areas between 10 ft and 3,970 ft in elevation.	April–July	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.

Table B-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
Chaparral nolina	*Nolina cismontana*	US: - CA: - CNPS: 1B.2	Perennial evergreen shrub. Habitat type includes chaparral and coastal scrub. Occurs on sandstone or gabbro soils between 460 ft and 4,183 ft in elevation.	March–July	**Absent.** This perennial species would have been observed if it were present on the site.
Allen's pentachaeta	*Pentachaeta aurea* ssp. *allenii*	US: - CA: - CNPS: 1B.1	Annual herb. Habitat types include coastal scrub (openings) and valley and foothill grasslands. Elevation from 240 ft to 1,706 ft.	March–June	**Absent.** This perennial species would have been observed if it were present on the site.
South coast branching phacelia	*Phacelia ramosissima* var. *austrolitoralis*	US: - CA: - CNPS: 3.2	Perennial herb. Found in sandy, sometimes rocky soils. Habitat types include chaparral, coastal dunes, coastal scrub, and marshes and swamps (coastal salt). Elevation from 16 to 985 ft.	March–August	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	US: - CA: - CNPS: 2B.2	Perrenial herb. Found in sandy and gravelly soils. Habitat types include chaparral, cismontane woodland, coastal scrub, and riparian woodland.	(July) August–November (December)	**Not expected.** While there are historical occurrence records in the project vicinity (CNDDB 1978, 1985, 2007, and 2011), suitable habitat is absent from the project site.
Nuttall's scrub oak	*Quercus dumosa*	US: - CA: - CNPS: 1B.1	Perennial evergreen shrub. Habitat types include closed-coned coniferous forest, chaparral, and coastal scrub. Occurs in sandy and clay loam soils between 50 ft and 1,312 ft in elevation.	February–August	**Absent.** This perennial shrub would have been observed if it were present on the site.
Chaparral ragwort	*Senecio aphanactis*	US: - CA: - CNPS: 2B.2	Annual herb. Sometimes found in alkaline soils. Habitat types include chaparral, cismontane woodland, and coastal scrub.	January–April (May)	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Salt spring checkerbloom	*Sidalcea neomexicana*	US: - CA: - CNPS: 2B.2	Perennial herb. Found in alkaline and mesic soils. Habitat types include chaparral, coastal scrub, lower montane coniferous forest, mojavean desert scrub, and playas.	March–June	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.

Table B-1: Special-Status Plant Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status	General Habitat Description	Flowering Period	Likelihood of Occurrence on the Project Site and Rationale
Estuary seablite	*Suaeda esteroa*	US: - CA: - CNPS: 1B.2	Perennial herb found in coastal marshes and swamps up to 16 ft in elevation.	May–January	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site.
Parry's tetracoccus	*Tetracoccus dioicus*	US:- CA: - CNPS: 1B.2	Perennial deciduous shrub. Found in coastal sage scrub and chaparral habitats between 540 and 3280 ft in elevation. Occurs in Orange, Riverside, and San Diego County.	April–May	**Absent.** This perennial shrub would have been observed if it were present on the site.
Big-leaved crownbeard	*Verbesina dissita*	US: FE CA: CE CNPS: 1B.2	Perrenial herb. Habitat type includes chaparral (maritime) and coastal scrub.	(March) April–June	**Not Expected.** There are no known occurrences in the project vicinity and suitable habitat is absent from the project site. This species' known range in California is restricted to several canyons in Laguna Beach.

[1]Project vicinity = project site plus a 3-mile buffer
Status: Federal Endangered (FE), Federal Threatened (FT), Federal Candidate (FC), Federal Proposed (FP, FPE, FPT), Federal Delisted (FD), California Endangered (CE), California Threatened (CT), California Species of Special Concern (SSC), California Fully Protected Species (CFP), California Special Plant (CSP), California Special Animal (CSA), NCCP Identified Species (IS), NCCP Target Species (TS), NCCP Conditionally Covered Species (CCS), S1 = Critically Imperiled, S2 = Imperiled, S3 = Vulnerable, S4 = Apparently Secure

CNPS Designations:
1B = Rare threatened, or endangered in California and elsewhere
2B = Rare, threatened, or endangered in California, but not elsewhere
3 = Not very endangered in California
4 = Plants of Limited Distribution – Watch List

Abbreviation/Acronym Definitions:
CA = California
CNDDB = California Natural Diversity Database
CNPS = California Native Plant Society
ft = foot/feet
US = United States

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
INVERTEBRATES				
Crotch bumble bee	*Bombus crotchii*	US: - CA: CSA	Found from coastal California east to the Sierra-Cascade crest and south into Mexico. Feeds on Antirrhinum ssp., Phacelia ssp., Clarkia ssp., Dendromecon ssp., Eschscholzia ssp., and Eriogonum ssp.	**Low probability of occurance.** While this species is known to occur in the project vicinity, suitable habitat and food plant species are largely absent from the project site.
San Diego fairy shrimp	*Branchinecta sandiegonensis*	US: FE CA: -	Endemic to vernal pools in Orange and San Diego Counties. Usually appears in late fall, winter, and spring when rains fill the small, shallow, seasonal pools.	**Not Expected.** While there are historic occurrence records in the project vicinity (CNDDB 2001), suitable vernal pool habitat is absent from the project site.
Monarch (California overwintering population)	*Danaus plexippus*	US: - CA: CSA	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (e.g., eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	**Not Expected.** While there are historic occurrence records in the project vicinity (CNDDB 1972 and 2010), suitable roosting habitat is absent from the project site.
Riverside fairy shrimp	*Streptocephalus woottoni*	US: FE CA: -	Inhabits vernal pools or other seasonal pools at least 30 centimeters in depth. Feeds on microscopic organisms (e.g., bacteria and protozoa). Dried eggs will survive in the soil through the dry seasons until pools are formed by rainwater. Native to Southern California and Baja California. Believe extirpated from many locations.	**Not Expected.** While there are historic occurrence records in the project vicinity (CNDDB 2001), suitable vernal pool habitat is absent from the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
FISHES				
Tidewater goby	*Eucyclogobius newberryi*	US: FE CA: -	Found primarily in waters of coastal lagoons, estuaries, and marshes. Benthic in nature, living at the bottom of shallow bodies of water. Habitat is characterized by brackish water in lower stream reaches where water is fairly still, not stagnant.	**Absent.** Suitable aquatic habitat is absent from the project site.
Arroyo chub	*Gila orcutti*	US: - CA: SSC	Found in slow-moving water, mud, or sand substrate. Common in streams with low gradients, can also use multiple habitats and sand substrate and are found in pools, runs, rifles, and edge-water over substrate ranging from sand and silt to boulders.	**Absent.** Suitable aquatic habitat is absent from the project site.
Steelhead – Southern California DPS	*Oncorhynchus mykiss irideus*	US: FE CA: -	Can be found in rivers and streams draining into the Pacific Ocean from Southern California to the Alaska Peninsula.	**Absent.** Suitable aquatic habitat is absent from the project site.
AMPHIBIANS				
Arroyo toad	*Anaxyrus californicus*	US: FE CA: SSC	Found in parts of the South Coast range and Southern California. Found in washes, streams, and arroyos of semi-arid lowlands. Vegetation present is willows, cottonwoods, sycamores, and coast live oaks. Adults and juveniles require moist shorelines and stable, sandy terraces.	**Not Expected.** There are historic occurrence records in the project vicinity, but suitable aquatic breeding habitat is absent from the project site.
Western spadefoot	*Spea hammondii*	US: - CA: SSC	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water persisting at least 3 weeks for breeding; burrows in loose soils during dry season. Occurs in the Central Valley and adjacent foothills, the nondesert areas of Southern California, and Baja California.	**Not Expected.** There are historic occurrence records in the project vicinity, but suitable aquatic breeding habitat is absent from the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Coast Range newt	*Taricha torosa*	US: - CA: SSC	Associated with woodlands that are often interspersed with grasslands and chaparral. Breeding takes place in streams, ponds, lakes, and reservoirs. Breeding takes place from December to May. Estivation occurs in underground retreats and perhaps in rotting logs from July to early fall.	**Not Expected.** There are historic occurrence records in the project vicinity, but suitable aquatic breeding habitat is absent from the project site.
REPTILES				
Southern California legless lizard	*Anniella stebbinsi*	US: - CA: SSC	Found in wide variety of habitat types, including sandy washes, alluvial fans, sparsely vegetated desert scrub, chaparral, and pine-oak woodlands. Requires moisture and leaf litter/surface objects. Most prevalent in coastal dune habitats in coastal counties to Baja California.	**Not Expected.** While there is one historical occurrence record in the project vicinity (CNDDB 1940), suitable habitat is absent from the project site.
Orange-throated whiptail	*Aspidoscelis hyperythra*	US: - CA: CSA	Inhabits low elevation coastal scrub, chaparral, and valley hardwood habitats. Prefers washes and other sandy areas with patches of brush and rocks. Perennial plants necessary for its major food, termites.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is absent from the project site.
Coastal whiptail	*Aspidoscelis tigris stejnegeri*	US: - CA: SSC	Wide variety of habitats, including CSS, sparse grassland, and riparian woodland; coastal and inland valleys and foothills; Ventura County to Baja California.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
Glossy snake	*Arizona elegans*	US: - CA: SSC	Found in a wide variety of habitats types, including open desert, grass land, shrublands, chaparrals, and woodlands. Records show that this species occurs in relatively open patches in a surrounding matrix of denser vegetation.	**Low probability of occurrence.** While there is one known occurrence record in the project vicinity (CNDDB 1946), potentially suitable habitat within the project site is highly disturbed.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Red-diamond rattlesnake	*Crotalus ruber*	US: - CA: SSC	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico.	**Low probability of occurrence.** While the species is known to occur in the project vicinity, potentially suitable habitat within the project site is highly disturbed. Soils on site are compacted, and the lack of cover limits the potential for occurrence.
Western pond turtle	*Emys marmorata*	US: - CA: SSC	Occurs in a variety of habitats, including woodland, grassland, and open forest. Thoroughly aquatic, existing in good-quality ponds, marshes, rivers, streams, and irrigation ditches that have rocky or muddy bottoms. Requires basking sites (e.g., partially submerged logs, vegetation mats, or open mud banks).	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
Coast horned lizard	*Phrynosoma blainvillii*	US: - CA: SSC	Occurs in CSS, open chaparral, riparian woodland, and annual grassland habitats that support adequate prey species.	**Low probability of occurrence.** While there is one historical occurrence within the project vicinity (CNDDB 1939), suitable habitat on the project site is marginal due to historic and ongoing disturbances.
Coronado skink	*Plestiodon skiltonianus interparieltalis*	US: - CA: CSA	Occurs in grassland, woodlands, pine forests, and chaparral, especially in open sunny areas like clearings and edges of creeks and rivers. Prefers rocky areas near streams with lots of vegetation.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
Two-striped gartersnake	*Thamnophis hammondii*	US: - CA: SSC	Aquatic-feeding specialist, inhabiting permanent and intermittent drainages of the seasonally arid regions of southwest California. Prefers watercourses with good riparian stands, feeds on aquatic invertebrates.	**Not Expected.** While there is one historical occurrence in the project vicinity (CNDDB 1998), suitable aquatic habitat is absent from the project site.
BIRDS				
Cooper's hawk (nesting)	*Accipiter cooperii*	US: - CA: CSA	Nests in a wide variety of woodland and forest habitats.	**Not Expected.** While this species is known to occur in the project vicinity, suitable nesting habitat is absent from the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Golden eagle	*Aquila chrysaetos*	US: BCC CA: FP	Generally open country of the Temperate Zone worldwide. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is absent from the project site.
Tricolored blackbird (nesting colony)	*Agelaius tricolor*	US: - CA: CT	Highly colonial nester largely endemic to California. Most numerous in the Central Valley and vicinity. Requires open water, protected nesting substrate, and a foraging area with insect prey within a few kilometers of the colony.	**Not Expected.** There are no colonial nesting occurrence records in the project vicinity and suitable nesting habitat is absent from the project site.
Southern California rufous-crowned sparrow	*Aimophila ruficeps canescens*	US: - CA: CSA	Resident in Southern California CSS and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.	**Low probability of occurrence.** While this species is known to occur in the project vicinity, suitable habitat is largely absent from the project site.
Grasshopper sparrow (nesting)	*Ammodramus savannarum*	US: - CA: SSC	Occurs in dense grasslands, preferring native grasslands with a mixture of forbs and shrubs.	**Moderate probability of occurrence.** The species is known to occur in the project vicinity and some suitable habitat is present on the project site.
Long-eared owl (nesting)	*Asio otus*	US: - CA: SSC	Rare resident in Southern California coastal and foothill areas and uncommon resident in desert areas. Dense willow-riparian woodland and oak woodland. Breeds from valley foothill hardwood up to ponderosa pine habitat.	**Not Expected.** There are no occurrence records in the project vicinity, and suitable nesting habitat is absent from the project site.
Burrowing owl (burrow sites and some wintering sites)	*Athene cunicularia*	US: - CA: SSC	Burrows in open, dry, annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals (most notably the California ground squirrel).	**High probability of occurrence.** There are known occurrence records in the project vicinity (CNDDB 2005 and 2006), and up to two burrowing owls were observed occupying burrows in the project vicinity in October-November 2019. While the species has not been observed within the project site boundaries and no active burrows have been observed on the project site, ongoing surveys are underway to determine the extent of occupancy near the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Coastal cactus wren (San Diego and Orange Counties only)	*Campylorhynchus brunneicapillus sandiegensis*	US: BCC CA: SSC	Occurs in CSS habitats. Requires tall *Opuntia* cactus for nesting and roosting.	**Not Expected.** While there are known occurrence records in the project vicinity (CNDDB 1990, 1991, and 2001), suitable habitat (cactus) is absent from the project site.
Northern harrier (nesting)	*Circus hudsonius*	US: - CA: SSC	Breeding northern harriers are most common in large, undisturbed tracts of wetlands and grasslands with low, thick vegetation. Western populations tend to breed in dry upland habitats, while northeastern and Midwestern populations tend to breed in wetlands. During winter they use a range of habitats with low vegetation, including deserts, coastal sand dunes, pasturelands, croplands, dry plains, grasslands, old fields, estuaries, open floodplains, and marshes.	**Low probability of occurrence.** While the species is known to forage in the immediate project vicinity, nesting within the project site is not expected due to the lack of cover and disturbed nature of the site.
White-tailed kite (nesting)	*Elanus leucurus*	US: - CA: CFP	Breeds in riparian trees (e.g., oaks, willows, and cottonwoods) in lower-elevation areas, particularly coastal valleys and plains.	**Not expected.** While the species is known to forage in the project vicinity, suitable nesting habitat is absent from the project site.
Southwestern wilow flycatcher	*Empidonax traillii extimus*	US: FE CA: CE	Common in brushy vegetation on wet areas, especially in riparian willow thickets.	**Not Expected.** While there are historical occurrences in the project vicinity (CNDDB 2003 and 2009), suitable nesting habitat is absent from the project site and the species is extremely rare in Orange County.
California horned lark	*Eremophila alpestris actia*	US: - CA: CSA	Occurs in open areas dominated by sparse low herbaceous vegetation or widely scattered low shrubs. Often found on the ground in fields.	**Present.** This species was observed on site during the July 10, 2019 survey.
Yellow-breasted chat	*Icteria virens*	US: - CA: SSC	Occurs in thick, low vegetation along forest edges and in riparian areas, powerline cuts, and old fields.	**Not Expected.** While there are occurrence records in the project vicinity, suitable habitat is absent from the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Loggerhead shrike (nesting)	*Lanius ludovicianus*	US: - CA: SSC	Typically occurs in open country with scattered shrubs and trees. Can also be found in heavily wooded habitats with large openings.	**Not Expected.** While the species has historically been reported in the project vicinity, suitable nesting habitat is absent from the project site.
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	US: - CA: CE	Occurs in salt marshes. Nests on the ground in depressions, primarily in pickleweed (*Salicornia pacifica*).	**Not Expected.** There are no occurrence records in the project vicinity, and suitable nesting habitat is absent from the project site.
Coastal California gnatcatcher	*Polioptila californica californica*	US: FT CA: SSC	Inhabits CSS in low-lying foothills and valleys up to about 1,640 ft in elevation in cismontane southwestern California and Baja California.	**Low probability of occurrence.** There are known occurrence records in the project vicinity and suitable habitat is present adjacent to the project site. Extensive surveys conducted on the landfill property have not documented breeding territories in habitats adjacent to the project site, and suitable CSS breeding habitat is absent from the project site. The project site contains marginally suitable foraging habitat.
Yellow warbler	*Setophaga petechia*	US: - CA: SSC	Breed in shrubby thickets and woods, particularly along water courses and in wetlands.	**Not Expected.** While there are occurrence records in the project vicinity, suitable riparian nesting habitat is absent from the project site.
Least Bell's vireo (nesting)	*Vireo bellii pusillus*	US: FE CA: CE	Occurs in moist thickets and riparian areas that are predominantly composed of willow and mulefat.	**Not Expected.** While there are known occurrence records in the project vicinity, suitable riparian nesting habitat is absent from the project site.
MAMMALS				
Pallid bat	*Antrozous pallidus*	US: - CA: SSC	Roosts in crevices in rocky outcrops and cliffs, caves, mines, hallows or cavities of large trees, and anthropogenic structures (e.g., bridges and buildings); may also roost near the ground in rock piles.	**Not Expected.** While there is one historic occurrence record in the project vicinity (CNDDB 1998), suitable habitat is absent from the project site.
Dulzura pocket mouse	*Chaetodipus californicus femoralis*	US: - CA: SSC	Coastal and foothill regions of California, common in areas of dense chaparral and other scrub.	**Not Expected.** There are no occurrence records in the project vicinity, and suitable habitat is absent from the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
Northwestern San Diego pocket mouse	*Chaetodipus fallax fallax*	US: - CA: SSC	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
Mexican long-tongued bat	*Choeronycteris mexicana*	US: - CA: SSC	Occurs in a variety of habitats including thorn scrub, Palo Verde-saguaro desert, semidesert grassland, oak woodland, and deciduous forests. Typically roosts in twilight area near the entrance of caves, mines, rock crevices, and abandoned buildings. Feeds on nectar and pollen of night-blooming succulents.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
Stephens' kangaroo rat	*Dipodomys stephensi*	US: FE CA: CT	Found in open habitats of CSS and grasslands in Southern California.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site. Potentially suitable habitat on the project site is highly disturbed.
Western mastiff bat	*Eumops perotis californicus*	US: - CA: SSC	Primarily a cliff-dwelling species, roosting under exfoliating rock slabs and in crevices in boulders and buildings. Travels widely when foraging.	**Not Expected**. May forage over the site occasionally but suitable roosting habitat is absent from the project site.
Western red bat	*Lasiurus blossevillii*	US: - CA: SSC	Roosts in foliage of broad-leafed trees or shrubs in streams or fields, in orchards and occasionally urban areas; commonly roosts in mature cottonwoods and sycamores. Also documented roosting in mature eucalyptus trees.	**Not Expected.** May forage over the site occasionally but suitable roosting habitat is absent from the project site.
Yuma myotis	*Myotis yumanensis*	US: - CA: CSA	Found in a variety of habitats ranging from juniper and riparian woodlands to desert regions near open water.	**Not Expected.** While the species is known to occur in the project vicinity, suitable roosting habitat is absent from the project site.

Table B-2: Special-Status Animal Species Identified as Potentially Occurring or Known to Occur in the Project Vicinity

Common Name	Scientific Name	Status Listing	Habitat and Comments	Likelihood of Occurrence on the Project Site and Rationale
San Diego desert woodrat	*Neotoma lepida intermedia*	US: - CA: SSC	Found in open habitats from desert to CSS. Feeds on succulent plants, including stems and pad of cholla and prickly pear cactus and leaves of yucca.	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	US: - CA: SSC	Varied habitats, but usually associated with high cliffs or rocky areas. Spotty distribution, ranging from Southern California and southwestern Arizona through central Mexico. Roosts primarily in cliffs/rock crevices; may use buildings for roosting. Rarely roosts in bridges.	**Not Expected.** May forage over the site occasionally but suitable roosting habitat is absent from the project site.
Big free-tailed bat	*Nyctinomops macrotis*	US: - CA: SSC	Inhabits rugged and rocky terrain. Prefers rocky cliffs in weathered rock fissures and crevices. Has also been discovered roosting in buildings and in terrestrial plants.	**Not Expected.** There are no occurrence records in the project vicinity, and suitable nesting habitat is absent from the project site.
Pacific pocket mouse	*Perognathus longimembris pacificus*	US: FE CA: SSC	Inhabits friable soils along the narrow coastal plains from the northern Mexican border to Orange County (formerly Los Angeles County).	**Not Expected.** There are no occurrence records in the project vicinity and suitable habitat is largely absent from the project site.
American badger	*Taxidea taxus*	US: - CA: SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	**Low probability of occurrence.** While there are occurrence records in the project vicinity, marginally suitable habitat on the project site is highly disturbed.

[1] Project vicinity = project site plus a 5-mile buffer

Status: Federal Endangered (FE), Federal Threatened (FT), Federal Candidate (FC), Federal Proposed (FP, FPE, FPT), Federal Delisted (FD), California Endangered (CE), California Threatened (CT), California Species of Special Concern (SSC), California Fully Protected Species (CFP), California Special Plant (CSP), California Special Animal (CSA)

BCC = Birds of Conservation Concern
CA = California
CNDDB = California Natural Diversity Database
CSS = coastal sage scrub
DPS = Distinct population segments
ft = foot/feet
US = United States

ATTACHMENT C

PLANT AND WIDLIFE SPECIES OBSERVED

PLANT SPECIES OBSERVED

The following plant species were observed on the project site during the July 10, 2019 site survey. An asterisk (*) denotes that the species is not native to southern California.

EUDICOTS

Aizoaceae		**Iceplant Family**
*	*Mesembryanthemum crystallinum*	Crystal ice plant
*	*Mesembryanthemum nodiflorum*	Small-flowered ice plant
Asteraceae		**Sunflower Family**
	Baccharis pilularis	Coyote brush
*	*Carduus pycnocephalus*	Italian thistle
*	*Centaurea melitensis*	Tocalote
*	*Cynara cardunculus*	Artichoke thistle
	Deinandra fasciculata	Fascicled tarweed
	Encelia californica	California encelia
	Erigeron canadensis	Common horseweed
*	*Helminthotheca echiodes*	Bristly ox-tongue
	Heterotheca grandiflora	Telegraph weed
	Isocoma menziesii	Menzies' goldenbush
*	*Lactuca serriola*	Prickly lettuce
*	*Sonchus oleraceus*	Common sow-thistle
	Stephanomeria diegensis	San Diego wreath-plant
Brassicaceae		**Mustard Family**
*	*Brassica nigra*	Black mustard
Chenopodiaceae		**Goosefoot Family**
	Atriplex lentiformis ssp. *lentiformis*	Big saltbush
*	*Atriplex rosea*	Redscale
*	*Atriplex semibaccata*	Australian saltbush
*	*Bassia hyssopifolia*	Five-hook bassia
*	*Chenopodium album*	Lamb's quarters
*	*Chenopodium murale*	Nettle-leaved goosefoot
*	*Salsola tragus*	Russian-thistle
Euphorbiaceae		**Spurge Family**
*	*Euphorbia maculata*	Spotted spurge
Fabaceae		**Legume Family**
*	*Acacia* sp.	Acacia species

*	*Medicago polymorpha*	Common burclover
*	*Melilotus albus*	White sweetclover
*	*Melilotus indicus*	Yellow sweetclover
Malvaceae		**Mallow Family**
*	*Malva parviflora*	Cheeseweed
Papaveraceae		**Poppy Family**
	Eschscholzia californica	California poppy
Plantaginaceae		**Plantain Family**
	Plantago erecta	California plantain
Plumbaginaceae		**Leadwort Family**
*	*Limonium perezii*	Perez's sea-lavender
Polygonaceae		**Buckwheat Family**
	Eriogonum fasciculatum	California buckwheat
*	*Polygonum aviculare L.* ssp. *depressum*	Prostrate knotweed
Solanaceae		**Nightshade Family**
*	*Lycopersicon esculentum*	Tomato
	Solanum americanum	White nightshade

MONOCOTS

Arecaceae		**Palm Family**
*	*Washingtonia robusta*	Mexican fan palm
Poaceae		**Grass Family**
*	*Avena barbata*	Slender wild oat
*	*Avena fatua*	Wild oat
	Bromus carinatus	California brome
*	*Bromus hordeaceus*	Soft chess
*	*Bromus madritensis* ssp. *rubens*	Red brome
*	*Cynodon plectostachyus*	Star grass
*	*Festuca myuros* var. *myuros*	Rattail fescue
*	*Festuca perennis*	Perennial rye
	Hordeum brachyantherum	Meadow barley
*	*Hordeum murinum*	Foxtail barley
*	*Phalaris aquatica*	Harding grass
*	*Polypogon interruptus*	Ditch beard grass
*	*Polypogon monspeliensis*	Rabbitfoot grass
	Stipa sp.	Needle grass species

ANIMAL SPECIES OBSERVED

The following animal species were observed on or adjacent to the project site during the July 10, 2019 site survey. An asterisk (*) denotes that the species is not native to southern California.

ANISOPTERA	**TYPICAL DRAGONFLIES**
Libellulidae	**Skimmers**
Sympetrum corruptum	Variegated meadowhawk
LEPIDOPTERA	**BUTTERFLIES**
Pieridae	**Whites and Sulphurs**
* *Pieris rapae*	Cabbage white
Hesperiidae	**Skippers**
Erynnis funeralis	Funereal duskywing
REPTILIA	**REPTILES**
Phrynosomatidae	**Phrynosomatid Lizards**
Sceloporus occidentalis	Western fence lizard
AVES	**BIRDS**
Columbidae	**Pigeons and Doves**
Zenaida macroura	Mourning dove
Cathartidae	**New World Vultures**
Cathartes aura	Turkey vulture
Falconidae	**Caracaras and Falcons**
Falco sparverius	American kestrel
Corvidae	**Crows and Jays**
Corvus brachyrhynchos	American crow
Alaudidae	**Larks**
Eremophila alpestris actia	California horned lark
Passerellidae	**New World Sparrows**
Melozone crissalis	California towhee