



An Employee-Owned Company

January 17, 2017

Ms. Christine Beck
California Department of Fish and Wildlife
Christine.Beck@wildlife.ca.gov

Reference: Regional Office Notification of Burrowing Owl and Least Bell's Vireo Presence/Absence Surveys for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Beck:

As required by our Scientific Collecting Permits, this letter is to notify the California Department of Fish and Wildlife (CDFW) of our intent to conduct a habitat assessment and breeding season survey for the CDFW species of special concern burrowing owl (*Athene cunicularia*) and presence/absence surveys for the federally and state listed as endangered and CDFW species of special concern least Bell's vireo (*Vireo bellii pusillus*) within the proposed Beyer Park Development Project (Project) site. The Project site is located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figure 1). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures.

Surveys will be conducted according to the California Department of Fish and Wildlife *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) and USFWS *Least Bell's Vireo Survey Guidelines* (USFWS 2001). Brenna Ogg (SC-9997) will serve as the lead biologist/surveyor. Other RECON Environmental, Inc. biologists/surveyors may include Beth Procsal (SC-10557), Erin McKinney (SC-11526), Brian Parker (SC-4448), Wendy Loeffler (SC-6264), Alex Fromer (SC-11525), and Kayo Valenti (SC-11672).

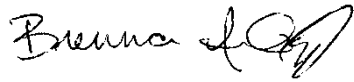
<i>Name of project:</i>	Beyer Park Development Project
<i>Location:</i>	The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).
<i>Survey Area:</i>	The areas to be surveyed comprise suitable habitat within the project site and surrounding 300-foot buffer for least Bell's vireo and surrounding 150-meter (approx. 500-foot) buffer (see Figure 1). The actual survey area will be documented in the post-survey report.

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A post-survey report detailing the results of this season's survey will be submitted to the CDFW within 45 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333, extension 118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,



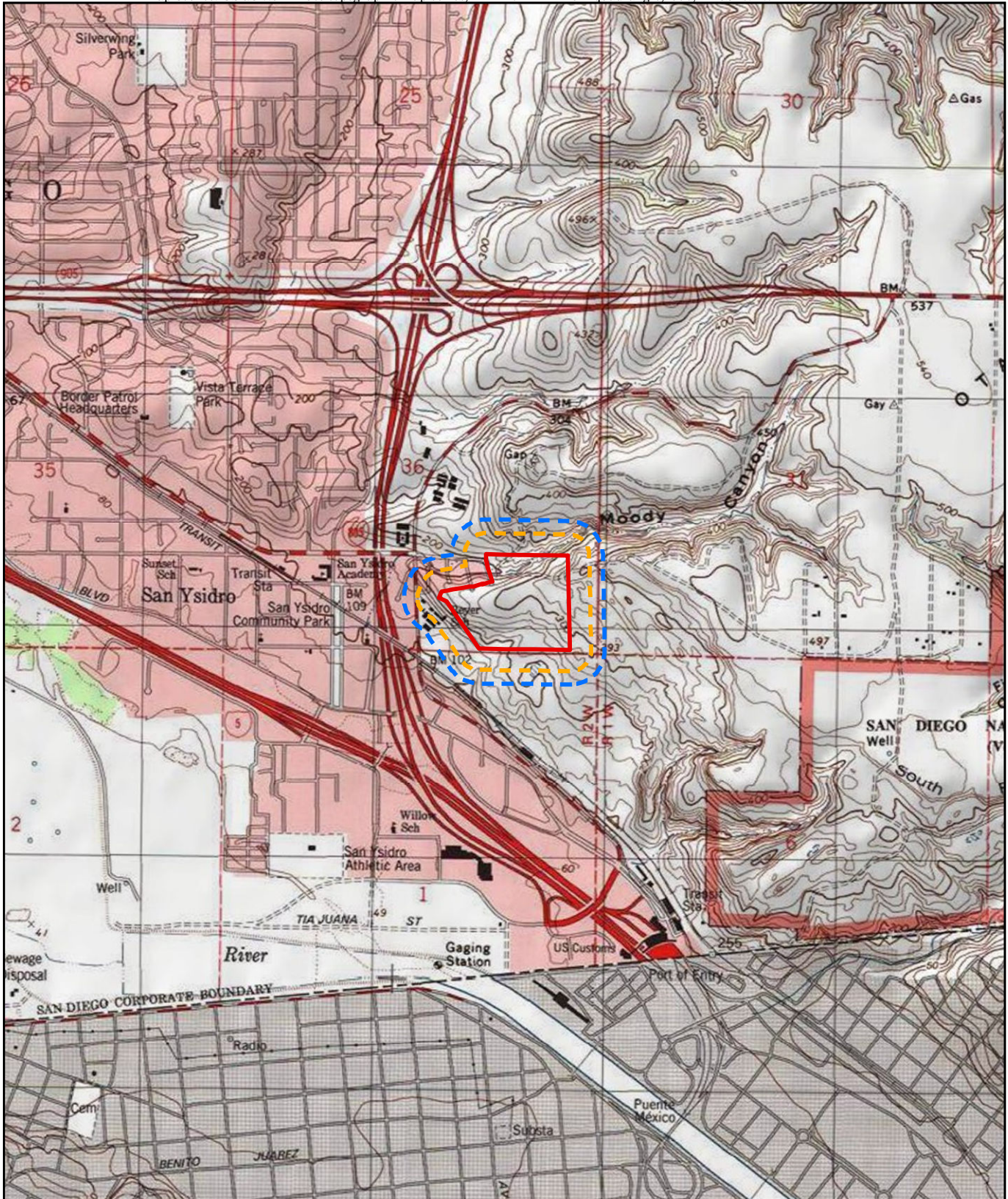
Brenna Ogg
Senior Biologist
SC-9997

BAO:sh

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

- California Department of Fish and Wildlife
2012 Staff Report on Burrowing Owl Mitigation. March 7.
- U.S. Fish and Wildlife Service
2001 Least Bell's Vireo Survey Guidelines. January 19.
- U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



-  Project Boundary
-  Least Bell's Vireo Survey Area
-  Burrowing Owl Survey Area

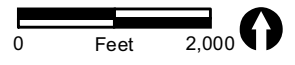


FIGURE 1

Beyer Park Development Project
2017 Burrowing Owl and Least Bell's
Vireo Survey Locations on USGS Map



An Employee-Owned Company

August 23, 2017

Ms. Esther Burkett
California Department of Fish and Wildlife
Wildlife Branch – Nongame Wildlife
1812 9th Street
Sacramento, CA 95811

Reference: Results of the 2017 Burrowing Owl Breeding Season Surveys for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Burkett:

This letter is to notify the California Department of Fish and Wildlife (CDFW) of the results of the 2017 breeding season surveys for burrowing owl (*Athene cunicularia*), a CDFW Species of Special Concern, conducted for the City of San Diego's Beyer Park Development Project (project). A burrowing owl species description, survey area conditions, survey methods, and results are discussed in detail below. Burrowing owl was detected within the project survey area during 2017 focused breeding season surveys.

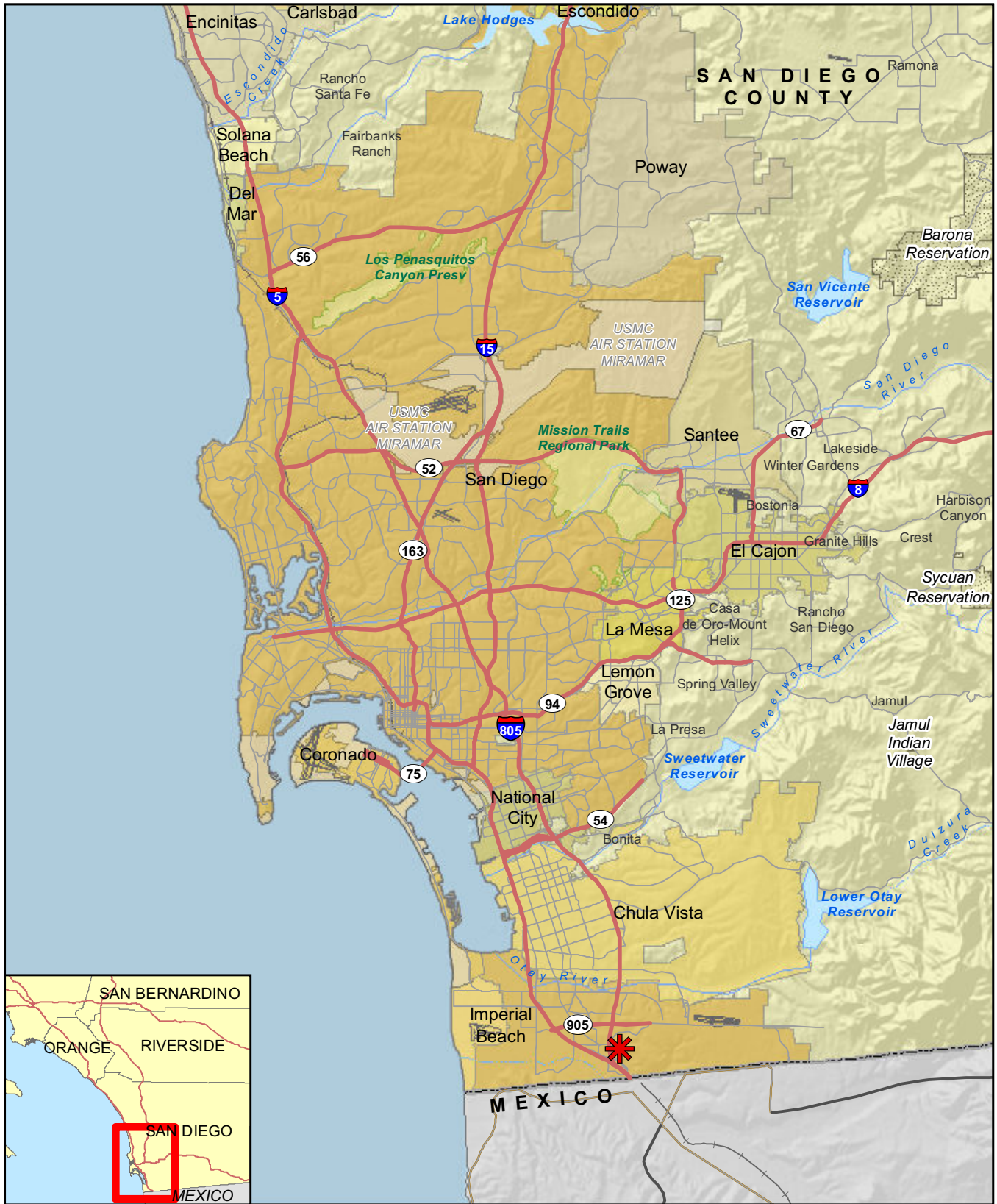
The project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; U.S. Geological Survey 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071. The surrounding 150-meter buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 64506110, 66701001, 66613009, 66613007, 66613028, 63817014, and 63828017; as well as the entirety of APNs 66613006, 66613005, 66613004, and 66613008.

The project site is situated within the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan boundary. An aerial view of the project area is shown on Figure 3.

The project site includes 44 acres with approximately 12.6 acres considered usable for the proposed recreational park. The proposed park may include lighted multi-purpose sports fields, a skate park, a lighted basketball court, children's play areas, a comfort station/concession building, picnic facilities including a picnic shelter, viewpoints/overlooks and interpretive signage, bicycle paths and racks, nature trails, parking areas, walkways, security lighting, and landscaping. The project is currently in the conceptual design and preliminary environmental review phase.

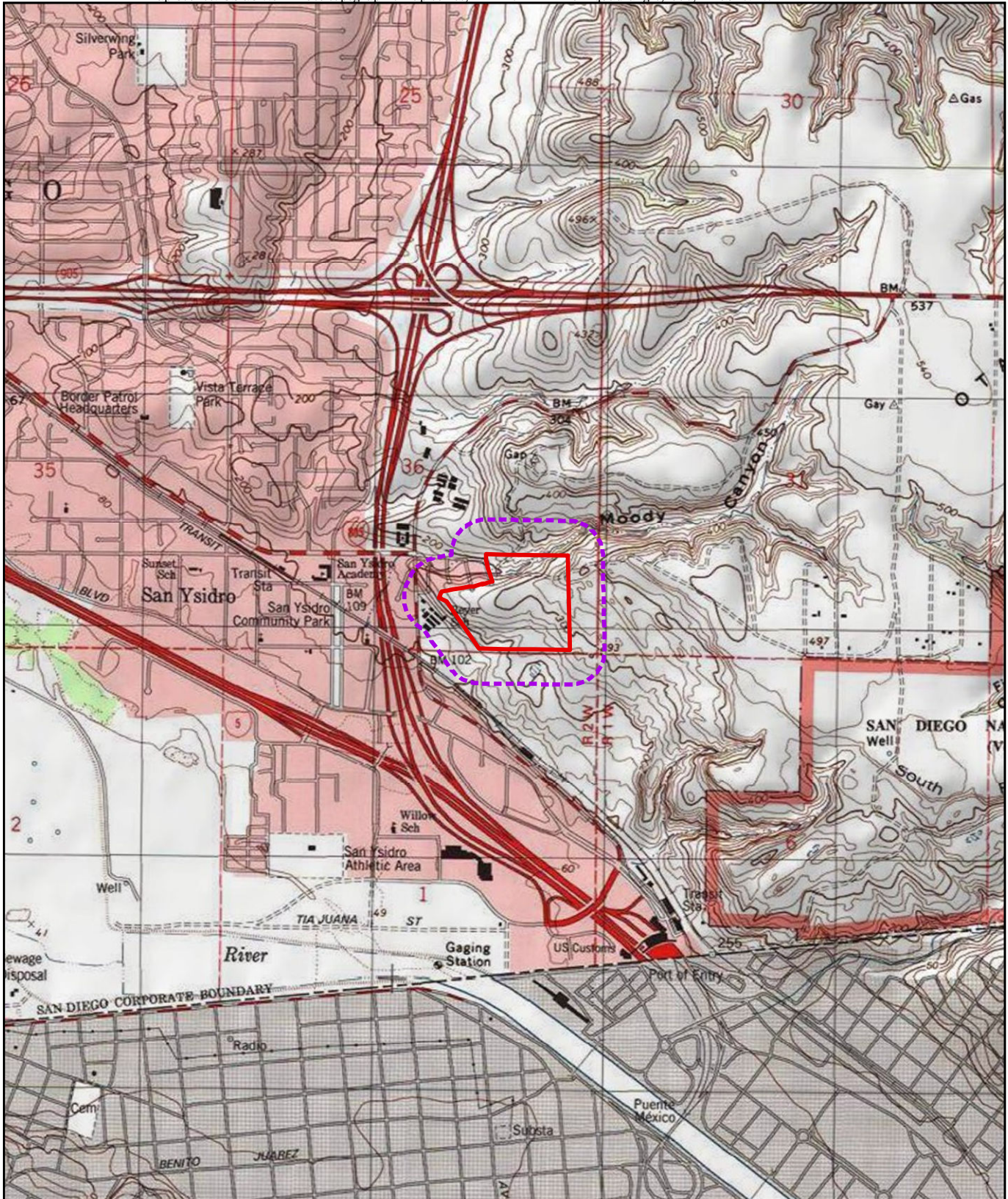
BURROWING OWL SPECIES DESCRIPTION

The burrowing owl is a CDFW Species of Special Concern, and western burrowing owl (*A. c. hypugaea*), the western subspecies, is covered by the County of San Diego Multiple Species Conservation Program. This subspecies is primarily restricted to the western United States and Mexico. A year-round resident in San Diego County, breeding burrowing owls remain in only five primary areas in San Diego County, including Otay Mesa, Imperial Beach, Naval Air Station North Island, Warner Valley, and Borrego Valley (Unitt 2004). The closest reported occurrence to the survey area is on Otay Mesa approximately one mile to the southeast, and it dates back to 1994 (CDFW 2017; County of San Diego 2017).



 Project Location

FIGURE 1
Regional Location





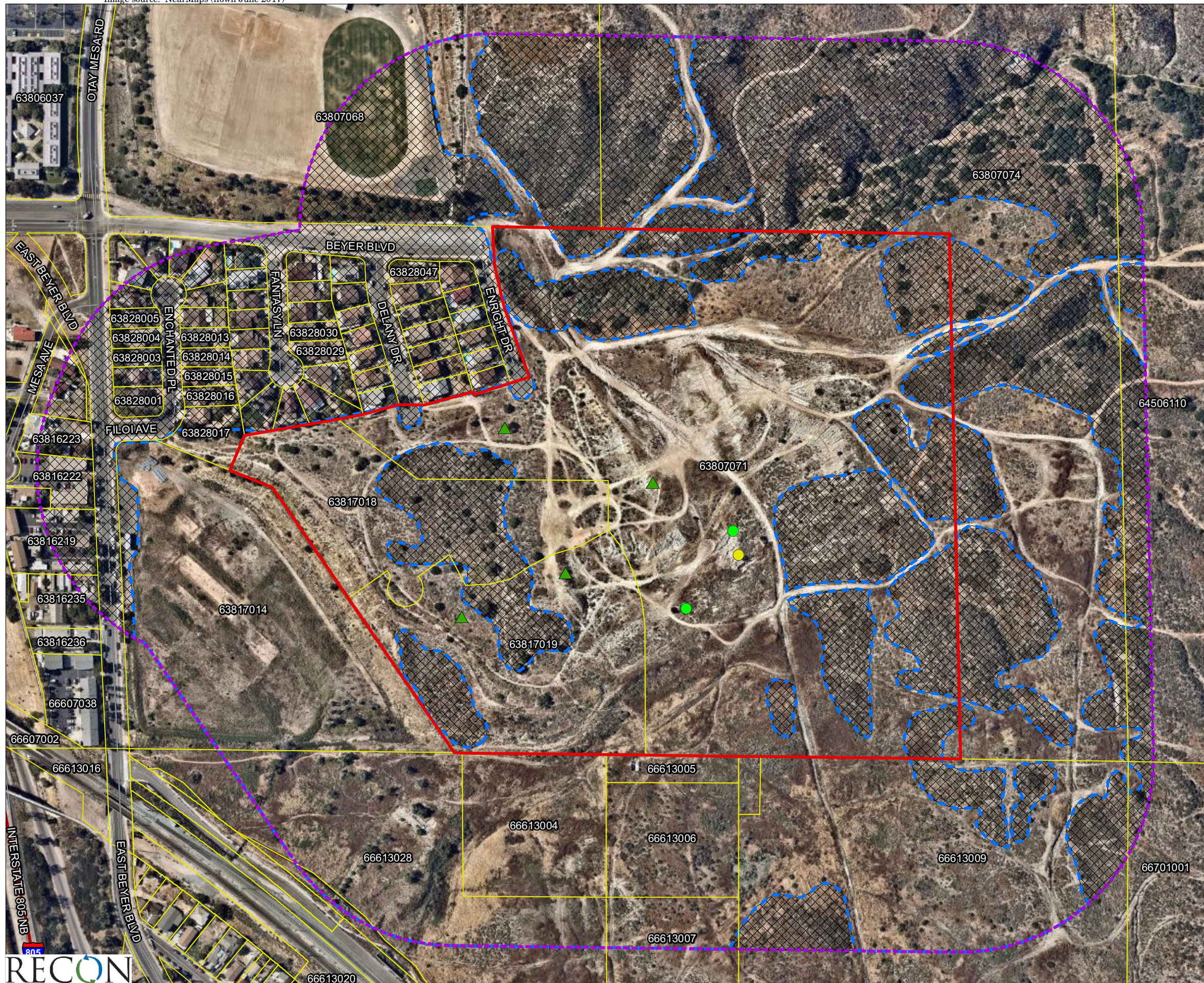









-  Project Boundary
-  Burrowing Owl Habitat Assessment Area (150-meter buffer)

FIGURE 2

Project Location on USGS Map



-  Project Boundary
-  Parcel Boundaries
-  Burrowing Owl Habitat
-  Assessment Area (150-meter buffer)
-  Burrowing Owl Suitable Habitat
-  Not Suitable Habitat
-  Burrowing Owl and Active Burrow Observation
-  Burrowing Owl Observation
-  Potentially Suitable Burrow

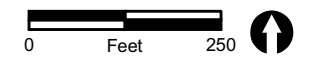


FIGURE 3
Burrowing Owl 2017 Breeding Season
Survey Area and Results

Habitat for the burrowing owl includes dry, open areas of short grass with level to gentle topography and well-drained soils (CDFW 2012). These areas are also often associated with fossorial mammals, such as California ground squirrel (*Spermophilus beecheyi*) (Haug et al. 1993). Burrowing owls are known to use multiple burrows, which include nesting burrows and “satellite” burrows. “Satellite” burrows are non-nesting burrows used to seek protection from predators and for roosting during the non-breeding season (CDFW 2012).

The burrowing owl is diurnal and typically perches during daylight at the entrance to its burrow or on adjacent structures, such as low posts. Nesting occurs from March through August. Burrowing owls form a pair bond for more than one year and exhibit high site fidelity, reusing the same burrow and/or nesting areas year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Burrowing owls are opportunistic feeders, eating arthropods, small mammals and birds, and occasionally amphibians and reptiles (Haug et al. 1993).

Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this species include the poisoning of squirrels and prairie dogs, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

SITE DESCRIPTION AND HABITAT ASSESSMENT SUMMARY

Prior to initiating the focused surveys, RECON Environmental, Inc. (RECON) biologists Brenna Ogg and JR Sundberg conducted a biological constraints survey of the project site in June 2016. Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for burrowing owl within the project site and surrounding 150-meter buffer was identified. Based on these constraints survey results, Busby Biological Services, Inc. (BBS) biologists Erik LaCoste, Darin Busby, and Andrew Kort conducted a focused burrowing owl habitat assessment on 127.4 acres within the project area and surrounding 150-meter buffer on March 6 and 9, 2017 (BBS 2017).

The assessment area contains varied topography that generally increases in elevation from the southwest to the northeast, ranging from flat, tiered areas in the central and western portions to undulating hills and steep canyon slopes in the northern, eastern, southern, and western portions. Two soil types occur within the assessment area: Olivenhain cobbly loam, 9 to 30 percent slopes (ohE) in the east and south, and Olivenhain cobbly loam, 30 to 50 percent slopes (ohF) in the north and west (USDA 2017). Urban/developed land occurs in the northwestern portion of the assessment area. Vegetation communities within the assessment area include maritime succulent scrub, disturbed maritime succulent scrub, coastal sage scrub, disturbed coastal sage scrub, disturbed land (i.e., disturbed habitat), mule fat scrub, and non-native grassland. Per the CDFW guidelines, vegetation community classifications should follow Sawyer et al. (2009). However, Holland classifications (1986) as modified by Oberbauer et al. (2008) and the City of San Diego Biology Guidelines (City of San Diego 2012) were used to remain consistent with the City’s reporting requirements. A large portion of the assessment area has been subjected to recent and historic disturbance and impacts from unauthorized access.

As detailed in the habitat assessment summary report (BBS 2017), approximately 68.9 acres of the 127.4-acre assessment area contain potentially suitable habitat for breeding, resident, and migrant wintering burrowing owl. The potentially suitable habitat areas range from having low to high potential to support burrowing owl, and in general contain low to moderate shrub density, friable soils, few to numerous fossorial mammal burrows and debris piles, open to moderately open foraging habitat, and potentially suitable topography and hydrological features.

The majority of the areas that have a low potential to support burrowing owls occur in the northern undeveloped portions of the assessment area. These areas contain steep slopes, moderately dense vegetation, narrow dirt roads surrounded by dense vegetation, few to no fossorial mammal burrows, and/or little to no adjacent foraging habitat.

The majority of the areas that were identified as having a moderate potential to support burrowing owls occur in the southern and eastern portions of the project site and survey buffer. These areas contain gentle to moderate slopes, friable soils, and few fossorial mammal burrows; and at the time of the habitat assessment, these areas supported open to moderately dense vegetation, narrow dirt roads surrounded by moderately dense vegetation, and/or a moderate amount of open foraging habitat. However, when the season progressed into spring, the suitability of these areas for burrowing owl decreased, as the garland daisy (*Glebionis coronaria*) became a dominant species, forming dense stands, reaching four to six feet in height and, in turn, obstructing visibility at or close to ground level. Photographs 1, 2, and 3 show the progression of this plant from early March to July in the southeastern portion of the survey area.

The majority of the areas that have a high potential to support burrowing owls occur in the central and western portions of the project site and survey buffer. These areas contain flat to gentle slopes, open vegetation, friable soils, numerous fossorial mammal burrows, and/or large, open foraging areas.

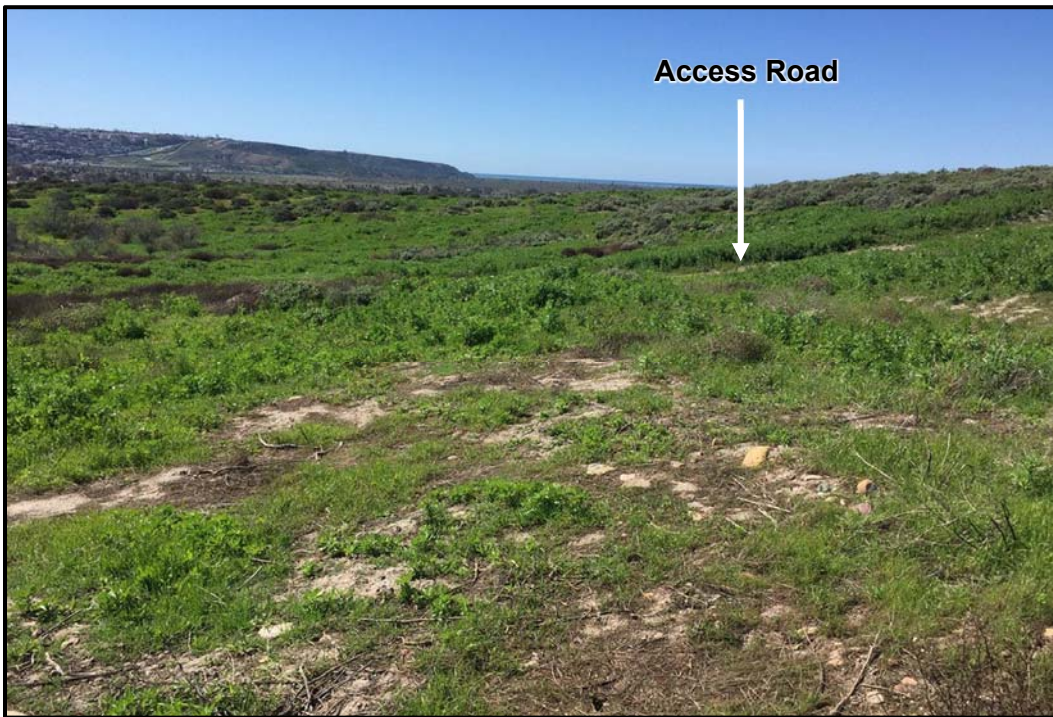
Burrows from fossorial mammals and debris piles that have potential to be used by burrowing owl for nesting, roosting, and cover are scattered in low density throughout the assessment area. In addition, areas of eroded and friable soils that have a potential to support fossorial mammals occur along road banks, slopes, and drainages within areas of little to no vegetation.

BREEDING SEASON SURVEY METHODS

RECON biologists Brenna Ogg, Diana Saucedo, Kayo Valenti, and Sonya Vargas, and Busby Biological Services, Inc. biologists Erik LaCoste and Garrett Huffman conducted four survey visits to 68.9 acres of habitat considered suitable for burrowing owl (see Burrowing Owl Suitable Habitat on Figure 3) within the habitat assessment area. In accordance with CDFW breeding season survey guidelines for this species (CDFW 2012), each survey was conducted between morning civil twilight and 10:00 A.M., and the surveying biologists walked line transects within all accessible portions of suitable habitat, stopping at the start of each transect and approximately every 100 meters to scan the survey area with binoculars. Transects were typically spaced approximately 15 to 20 meters apart, as much of the suitable habitat areas support open and low-growing vegetation, allowing for good visibility. Transect spacing was narrowed in areas of denser and/or taller vegetation.

Direct access was only available to 37.6 acres of the survey area, which included the project boundary and one parcel, APN 63807074, in the 150-meter buffer. Therefore, all remaining areas within the 150-meter buffer were surveyed only by using binoculars from the edge of the project boundary. Topography and low-lying vegetation allowed for good visibility and survey coverage in the western 150-meter buffer. However, due to the presence of dense stands of garland daisy, visibility in some of the buffer area in the southeast portion of the survey area was partially obstructed, as shown in Photograph 3.

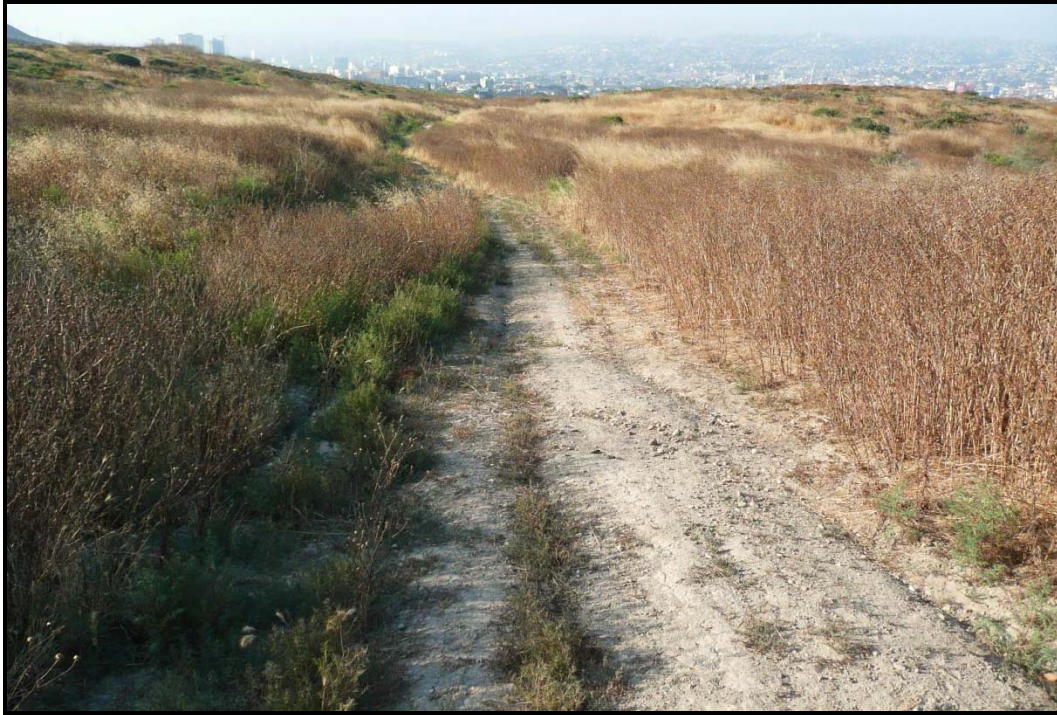
An approximate total of 30 hours and 25 minutes of field effort was devoted to the breeding season surveys. The surveying biologist(s) recorded any burrowing owl and other sensitive wildlife species observations, active owl burrows, and potentially suitable burrows and compiled lists of wildlife species detected. Locations of sensitive species were recorded on a one-inch-equals-150-foot aerial map or using a hand-held global positioning system unit. The survey visit numbers, dates, personnel, times, and weather conditions are provided in Table 1. As shown in Table 1, weather conditions were fair, and air temperatures were mild during all survey visits and are not expected to have negatively affected burrowing owl activity or the survey results. Each survey included periods with air temperatures above 68 degrees Fahrenheit and cloud cover below 75 percent, and all surveys were conducted when winds were below 12 miles per hour.



PHOTOGRAPH 1
Habitat in Southeastern Portion of Project Site, Facing West.
Taken March 6, 2017. Compare to Photograph 2.



PHOTOGRAPH 2
Habitat in Southeastern Portion of Project Site, Facing West.
Taken April 6, 2017. Compare to Photograph 1.



PHOTOGRAPH 3
Garland Daisy-dominated Vegetation in Southeast Corner of Survey Area, Facing South-southeast. Taken July 6, 2017.

Table 1 Survey Dates, Personnel, Times, and Weather Conditions for 2017 Burrowing Owl Breeding Season Surveys					
Survey Number	Date	Surveyors	Times	Acres Surveyed per Hour	Weather Conditions
1	3/29/2017	E. LaCoste G. Huffman	06:15–09:45 A.M.	9.8	54–74°F, clear sky, wind 1–8 mph
2	5/4/2017	B. Ogg D. Saucedo	05:40–09:30 A.M.	9.0	64–76°F, 100% clearing to 0% cloud cover (marine layer), wind 0–6 mph
3	6/8/2017	B. Ogg K. Valenti	05:20–09:10 A.M. 05:15–10:00 A.M.	8.0	65–69°F, 100% clearing to 15% cloud cover (marine layer), wind 0–4 mph
4	7/6/2017	B. Ogg S. Vargas	05:30–08:50 A.M. 05:30–09:20 A.M.	9.6	68–77°F, 100% clearing to 0% cloud cover (marine layer), wind 0–5 mph

°F = degrees Fahrenheit; % = percent; mph = miles per hour.

Each of the surveying biologists' qualifications are summarized below.

Ms. Ogg has over 11 years of experience conducting general biological surveys, constraints analyses, and impact assessments; environmental compliance monitoring; habitat restoration; mitigation implementation and monitoring; and focused surveys for sensitive floral and faunal species – including coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*) – in a variety of habitats in southern California. Ms. Ogg has years of experience conducting habitat assessments and focused breeding and non-breeding season surveys for burrowing owl, as well as construction monitoring for avoidance of impacts to this species. Ms. Ogg's experience with burrowing owl includes projects in San Diego, Imperial, and Riverside counties in California, and Yuma County in Arizona.

Mr. LaCoste has worked as a wildlife biologist in southern California for the past 20 years. He has worked with both federally and state-listed plant and wildlife species; conducted focused, protocol-level surveys for state and federally listed coastal California gnatcatcher and southwestern willow flycatcher (*Empidonax traillii extimus*); and performed focused, protocol-level presence/absence surveys, habitat assessments, and biological monitoring for many other federally and state-listed sensitive wildlife species including burrowing owl and least Bell's vireo. He has conducted burrowing owl habitat assessments, surveys, and monitoring on projects throughout San Diego and Imperial counties.

Mr. Huffman has worked as a field biologist in southern California for approximately eight years, specializing in avian surveys. Relevant work has included conducting presence/absence surveys for burrowing owl and serving as a construction monitor to establish appropriate buffers to prevent negative impacts to nesting birds. Mr. Huffman has worked on projects in San Diego, Imperial, Riverside, and San Bernardino counties that have required these specific services and/or burrowing owl experience.

Ms. Saucedo has over 18 years of biological and natural resource management experience, with over 10 years in southern California with emphasis on general and focused sensitive plant and wildlife species surveys, vegetation mapping, habitat assessments, evaluation of impacts to sensitive species, and preparation of biological technical reports and environmental impact statements. She has conducted habitat assessments and presence/absence surveys for a variety of wildlife species including burrowing owl and coastal California gnatcatcher. Burrowing owl survey experience includes projects on the Santa Ana River and El Sobrante Landfill and Open Space Preserve in Riverside County; transmission line projects in Imperial County; and various projects within San Diego County including Otay Mesa, Kearny Mesa, and Marine Corps Air Station (MCAS) Miramar.

Ms. Valenti has over 11 years of experience as a biologist in southern California, has participated in the San Diego Audubon Society Introductory Birding Course in 2012, and has conducted numerous focused bird surveys since early 2011. Ms. Valenti has conducted general and focused biological surveys; habitat assessments and focused presence/absence surveys for upland and riparian bird species, including coastal California gnatcatcher (under supervision) and least Bell's vireo; environmental compliance monitoring; and habitat restoration implementation and monitoring. Ms. Valenti's experience with burrowing owl includes construction monitoring for avoidance of impacts to this species on projects near Calexico, California, and Yuma, Arizona.

Ms. Vargas is a restoration biologist with two years of experience in southern California. She performs sensitive bird surveys, nesting bird surveys, non-native weed species surveys, sensitive plant species surveys, and vegetation transect monitoring. Ms. Vargas has conducted several burrowing owl surveys in Riverside and Imperial counties. In addition, she has conducted several nest surveys for various construction projects in San Diego County.

BREEDING SEASON SURVEY RESULTS

Burrowing Owl Observations

A minimum of one burrowing owl was observed within the project site during focused breeding season surveys. Specifically, one adult burrowing owl was observed during the first focused breeding season survey on March 29, 2017, and was using a burrow within the east-central portion of the project site. One adult burrowing owl was also observed incidentally in the same general area during two separate biological surveys conducted by RECON on March 9 and April 4, 2017. These burrowing owl observations are shown as point locations on Figure 3 and may represent the same individual. No burrowing owls or sign of active burrows were observed at these locations during the second through fourth focused surveys or during any other biological surveys conducted between April 5 and May 23, 2017.

The area in the immediate vicinity of the burrowing owl observations consists of a gentle southwest-facing slope with bare soil that has eroded over time and formed many shallow to deep rills and cuts. The burrow associated with the burrowing owl observation on March 29, 2017, is shown in Photograph 4. This area lies at the edge of the central portion of the project site and supports a mix of open disturbed land, disturbed maritime succulent scrub, and Diegan coastal sage scrub. It has been subjected to ongoing human disturbance, such as off-road vehicle use, radio control car use, and pedestrian activity. Specifically, the area immediately adjacent to the observed burrow location contains a radio-control car course with small wooden bridges, pin flags, and sign of ongoing use.

California ground squirrel is present throughout the survey area, and multiple potentially suitable (greater than 11 centimeters in diameter) burrows were observed during the focused surveys, as shown on Figure 3. However, no burrowing owl sign (e.g., cast pellets, prey remains, molted feathers, excrement at burrow entrances) or burrowing owl individuals were observed at or adjacent to any other burrow locations within the survey area.

Data for the burrowing owl occurrences were submitted to the California Natural Diversity Database on August 23, 2017 via email.

Burrowing Owl Predator Observations

The following wildlife species that are considered predators of burrowing owls were detected during focused or other biological surveys conducted on-site: coyote (*Canis latrans*), bobcat (*Lynx rufus*), northern harrier (*Circus cyaneus hudsonius*), red-tailed hawk (*Buteo jamaicensis*), and prairie falcon (*Falco mexicanus*). Coyote and bobcat were only detected by vocalization and sign such as tracks and scat. None were directly observed during focused burrowing owl surveys. A pair of northern harrier was observed repeatedly throughout the central portion of the survey area, foraging and occasionally perching atop some small dirt



PHOTOGRAPH 4
Active Burrowing Owl Burrow,
Taken March 29, 2017

mounds within a few hundred feet of the burrowing owl observation locations. However, when observed during the focused burrowing owl surveys, these individual northern harriers would only utilize the site temporarily. Although northern harriers were repeat visitors, their presence was not constant, and no sign of nesting was observed on-site. Red-tailed hawks were also observed on multiple occasions. Individuals were typically observed flying high overhead or foraging within and perching atop a chain-link fence in the western portion of the survey area, over 1,000 feet from the active burrow location. Prairie falcon was only observed twice during all biological surveys conducted thus far by RECON for this project, each time flying overhead. No sign of predation on burrowing owl was observed on-site. A complete list of avian species detected during the surveys is provided in Table 2.

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
ODONTOPHORIDAE	NEW WORLD QUAIL	
<i>Callipepla californica californica</i>	California quail	O, V
ACCIPITRIDAE	HAWKS, KITES, & EAGLES	
<i>Buteo jamaicensis</i>	red-tailed hawk	O, V
<i>Circus cyaneus hudsonius</i>	northern harrier	O
FALCONIDAE	FALCONS & CARACARAS	
<i>Falco mexicanus</i>	prairie falcon	O
LARIDAE	GULLS, TERNS, & SKIMMERS	
<i>Larus californicus</i>	California gull	O
COLUMBIDAE	PIGEONS & DOVES	
<i>Columba livia</i>	rock dove (I)	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	O, V
<i>Zenaida macroura marginella</i>	mourning dove	O, V
STRIGIDAE	TYPICAL OWLS	
<i>Athene cunicularia hypugaea</i>	western burrowing owl	O, B
APODIDAE	SWIFTS	
<i>Aeronautes saxatalis</i>	white-throated swift	O, V
TROCHILIDAE	HUMMINGBIRDS	
<i>Calypte anna</i>	Anna's hummingbird	O, V
TYRANNIDAE	TYRANT FLYCATCHERS	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	O, V
<i>Sayornis saya</i>	Say's phoebe	O, V
<i>Tyrannus verticalis</i>	western kingbird	O
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	O, V
VIREONIDAE	VIREOS	
<i>Vireo bellii pusillus</i>	least Bell's vireo	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES	
<i>Aphelocoma californica</i>	California scrub-jay	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	O, V
<i>Corvus corax clarionensis</i>	common raven	O, V
HIRUNDINIDAE	SWALLOWS	
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	O, V
AEGITHALIDAE	BUSHTIT	
<i>Psaltriparus minimus melanurus</i>	bushtit	O, V
TROGLODYTIDAE	WRENS	
<i>Salpinctes obsoletus obsoletus</i>	rock wren	O, V

Table 2 Avian Species Observed		
Scientific Name	Common Name	Evidence of Occurrence
<i>Thryomanes bewickii</i>	Bewick's wren	O, V
SYLVIIDAE	GNATCATCHERS	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	O, V
TIMALIIDAE	BABLERS	
<i>Chamaea fasciata henshawi</i>	wrentit	O, V
MIMIDAE	MOCKINGBIRDS & THRASHERS	
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	O, V
STURNIDAE	STARLINGS & MYNAS	
<i>Sturnus vulgaris</i>	European starling (I)	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS	
<i>Phainopepla nitens lepida</i>	phainopepla	V
PARULIDAE	WOOD WARBLERS	
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	V
EMBERIZIDAE	EMBERIZIDS	
<i>Melospiza melodia</i>	song sparrow	O, V
<i>Melozona [=Pipilo] crissalis</i>	California towhee	O, V
<i>Pipilo maculatus</i>	spotted towhee	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	O, V
CARDINALIDAE	CARDINALS & GROSBEAKS	
<i>Passerina amoena</i>	lazuli bunting	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES	
<i>Icterus cucullatus nelsoni</i>	hooded oriole	O, V
<i>Sturnella neglecta</i>	western meadowlark	O, V
FRINGILLIDAE	FINCHES	
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	O, V, N
Nomenclature from American Ornithologists' Union 2015 and Unitt 2004.		
(I) = Introduced species		
Evidence of Occurrence		
B = Burrow		
O = Observed		
V = Vocalization		
N = Nest		

Other Sensitive Avian Species Observations

The following four additional sensitive avian species were detected within or adjacent to the survey area during focused burrowing owl surveys: northern harrier (CDFW Species of Special Concern [SSC]), prairie falcon (CDFW Watch List), least Bell's vireo (federally and state endangered, CDFW SSC), and coastal California gnatcatcher (federally threatened, CDFW SSC). Focused surveys for least Bell's vireo and coastal California gnatcatcher were completed for this project in 2017. In addition, a biological technical report will be prepared for this project following completion of 2017 biological surveys. Therefore, all other sensitive species observations will be addressed in detail in the associated survey reports and/or biological technical report. Data for these additional sensitive species occurrences were or will be submitted to the California Natural Diversity Database concurrent with completion of the focused survey reports or biological technical report.

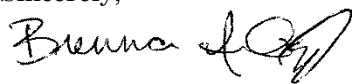
DISCUSSION OF SURVEY RESULTS AND AVOIDANCE AND MITIGATION REQUIREMENTS

The burrowing owl observations described above suggest that the central portion of the survey area is being used by a minimum of one burrowing owl as wintering habitat. The latest burrowing owl observation on-site was early in the breeding season, and no sign of breeding burrowing owl was observed on-site. This apparent use of the site correlates well with the observed changes in vegetation throughout the seasons. Although the central portion of the survey area maintains open habitat conditions throughout the year, the dominance of garland daisy in the disturbed land in the southeastern portion of the survey area causes substantial seasonal changes in the habitat's structure. Areas dominated by garland daisy can be functionally similar to short-grass vegetation when the garland daisy plants have died back and deteriorated, typically from late summer through winter. However, these areas quickly change to dense, tall vegetation as new garland daisy plants sprout and reach full maturity, typically during spring and early summer. This results in a decrease in suitability of the habitat for foraging burrowing owl during much of the breeding season.

Due to the positive survey results during breeding season surveys, no non-breeding season surveys are planned for this project. Take avoidance (pre-construction) focused surveys for this species will be required at least 14 days prior to ground disturbance to detect the presence of burrowing owls and inform necessary take avoidance actions (CDFW 2012). Within the Multi-habitat Planning Area (MHPA), impact to this species must be avoided. Outside the MHPA, impacts to this species must be avoided to the maximum extent practicable. In accordance with the coverage conditions in the City of San Diego MSCP Subarea Plan, any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies, and habitat-based mitigation will be required for impacts to occupied habitat. Any avoidance, minimization, or mitigation measures will be developed in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (2012) and require approval from the wildlife agencies.

We certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Ms. Ogg at 619-308-9333 extension 118 or bogg@reconenvironmental.com with any questions regarding this survey.

Sincerely,



Brenna Ogg
Senior Biologist
CDFW Scientific Collecting Permit SC-9997

8/23/2017

Date



Erik LaCoste
Senior Biologist
CDFW Scientific Collecting Permit SC-9735

8/23/2017

Date

Ms. Esther Burkett
Page 15
August 23, 2017



Garrett Huffman 8/23/2017
Biologist Date
CDFW Scientific Collecting Permit SC-12948



Diana Saucedo 8/23/2017
Biologist Date
CDFW Scientific Collecting Permit SC-006138



Kayo Valenti 8/23/2017
Biologist Date
CDFW Scientific Collecting Permit SC-11672



Sonya Vargas 8/23/2017
Biologist Date

BAO:eab

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

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An Employee-Owned Company

August 3, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Coastal California Gnatcatcher Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of the results of the 2017 focused presence/absence survey for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*; gnatcatcher) conducted for the City of San Diego's Beyer Park Development Project (project). The survey methods, survey area conditions, and results are discussed in detail below. Gnatcatchers were detected within the project survey area during each survey visit.

The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; U.S. Geological Survey 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071. The surrounding 300-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, and 63828017; as well as the entirety of 66613005 and 66613008.

The project site is situated within the boundary of the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan boundary. An aerial view of the project area is shown on Figure 3.

The project site includes 44 acres with approximately 12.6 acres considered usable acres for the proposed recreational park. The proposed park may include lighted multi-purpose sports fields, a skate park, a lighted basketball court, children's play areas, a comfort station/concession building, picnic facilities including picnic shelter, viewpoints/overlooks and interpretive signage, bicycle paths and racks, nature trails, parking areas, walkways, security lighting, and landscaping. The project is currently in the conceptual design and preliminary environmental review phase.

SURVEY METHODS

Prior to initiating the focused surveys, RECON Environmental, Inc. (RECON) biologists Brenna Ogg and JR Sundberg conducted a biological constraints survey of the project site in June 2016. Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for gnatcatcher within the project site and surrounding 300-foot buffer was identified. During the focused survey visits, species composition, height, and density of the vegetation communities within the suitable habitat areas were further assessed for their potential to support gnatcatcher.

RECON biologists Brenna Ogg and Diana Saucedo and Busby Biological Services, Inc. biologist Darin Busby conducted three survey visits to 52.4 acres of habitat considered suitable for gnatcatcher (Figure 3) within

the project site and surrounding 300-foot buffer. RECON biologist Kayo Valenti assisted under supervision during one of the survey visits. In accordance with USFWS protocol survey guidelines for this species (USFWS 1997), the surveying biologists walked all accessible portions of suitable habitat and periodically used taped gnatcatcher vocalizations in an attempt to elicit initial calls. However, the areas within the 300-foot buffer south and west of the project boundary could not be directly accessed; therefore, these areas were surveyed by using binoculars and listening from the edge of the project boundary. In addition, the biologists used taped vocalizations very infrequently due to the prevalence of northern mockingbird (*Mimus polyglottos polyglottos*)—a potential avian nest predator—throughout the survey area. Use of any taped vocalizations was suspended when potential nest predators were detected in the vicinity. An approximate total of 24.5 hours of field effort was devoted to the survey. The surveying biologist(s) compiled lists of wildlife species detected and recorded the location of any observed sensitive wildlife species on a one-inch-equals-150-foot aerial map or using a hand-held global positioning system unit. The survey visit numbers, dates, personnel, times, and weather conditions are provided in Table 1. Ms. Ogg is authorized to conduct presence/absence gnatcatcher surveys under USFWS 10(a)(1)(A) permit TE-134338-3. Ms. Saucedo is authorized under permit TE-221287-1, and Mr. Busby is authorized under permit TE-115373-3.

Survey Number	Date	Surveyors	Times	Acres Surveyed per Hour	Weather Conditions
1	4/5/2017	B. Ogg	06:30–11:40*	6.8	50–78°F, clear sky, wind 0–9 mph
		D. Saucedo	06:30–10:30*		
2	4/27/2017	B. Ogg	07:00–09:10, 09:30–10:20, 10:50–11:20	7.3	60–70°F, 100% cloud cover, wind 0–6 mph
		D. Saucedo	07:15–08:50, 09:15–11:20		
3	5/23/2017	B. Ogg, K. Valenti	06:00–11:10	5.5	62–69°F, 100% clearing to 40% cloud cover (marine layer), wind 0–8 mph
		D. Busby	06:45–11:10		

°F = degrees Fahrenheit; % = percent; mph = miles per hour.
 *A total of 25 minutes of these survey periods was devoted to a focused coastal cactus wren survey.

Per the protocol survey guidelines (USFWS 1997), three survey visits were conducted for gnatcatcher. Because the project area is within the City of San Diego MSCP Subarea Plan boundary, the survey area is considered part of an active Natural Community Conservation Planning area. The three surveys were conducted a minimum of seven days apart.

SURVEY AREA

The northern and eastern portions of the survey area are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the survey area. The southern and western portions transition into multiple terraces with a steep manufactured slope and graded field (previous school site) along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation communities/land cover types that occur within the project area and surrounding 300-foot buffer include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, disturbed maritime succulent scrub, mule fat scrub, non-native grassland, disturbed land, and urban/developed land.

Vegetation communities and land cover types are characterized in accordance with Oberbauer et al. (2008) and the City of San Diego Biology Guidelines (City of San Diego 2012). The survey area for gnatcatcher totals approximately 52.4 acres and includes all potentially suitable gnatcatcher habitat within the project area and surrounding 300-foot buffer (see Figure 3). Habitat considered suitable for gnatcatcher includes the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub. These vegetation communities are described below.

Diegan coastal sage scrub is present within the western portion of the survey area, largely within the project boundary, and a small portion of Moody Canyon in the northern portion of the survey area. In the western stands, the Diegan coastal sage scrub comprises a mix of California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), broom baccharis (*Baccharis sarothroides*), and laurel sumac (*Malosma laurina*). Vegetation cover is generally above 70 percent, and typical shrub height is between two and four feet with the occasional taller laurel sumac and broom baccharis. The Diegan coastal sage scrub that occurs along Moody Canyon in the northern portion of the survey area is taller, denser, and dominated by lemonade berry (*Rhus integrifolia*).

The disturbed Diegan coastal sage scrub occurs along the manufactured slope at the edge of the project boundary, in a swale at the northwestern edge of the project boundary, and in other scattered areas that show sign of previous human-caused soil disturbance and ongoing disturbance from unauthorized pedestrian activity and dumping. The species composition is similar to the undisturbed stands of Diegan coastal sage scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia (*Acacia* sp.), tamarisk (*Tamarix ramosissima*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and non-native grasses.

Maritime succulent scrub is the dominant vegetation community within the survey area. In the northwestern portion of the survey area, the maritime succulent scrub is dominated by coast cholla (*Cylindropuntia prolifera*) with waterjacket (*Lycium andersonii*), California box-thorn (*L. californicum*), cliff spurge (*Euphorbia misera*), and jojoba (*Simmondsia chinensis*) occurring as common species. The combined vegetative cover of cactus and shrub species is at or above 75 percent and typical shrub height is between two and four feet. Throughout the remainder of the maritime succulent scrub in the survey area, the coast cholla occurs in scattered patches, and dominant species include San Diego bur-sage (*Ambrosia chenopodiifolia*), jojoba, cliff spurge, coast prickly pear (*Opuntia littoralis*), California buckwheat, San Diego viguiera (*Bahiopsis laciniata*), California sagebrush, and fish-hook cactus (*Mammillaria dioica*).

Similar to the disturbed Diegan coastal sage scrub, the disturbed maritime succulent scrub occurs in areas that have been subjected to human-caused disturbance and non-native plant species invasion. The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia, fountain grass (*Pennisetum setaceum*), garland daisy (*Glebionis coronaria*), and non-native grasses.

SURVEY RESULTS

Multiple gnatcatcher detections were recorded within the survey area during each of the three 2017 focused survey visits, and additional incidental observations were recorded during concurrent biological surveys conducted between February 9 and May 23, 2017. Each gnatcatcher observation point shown on Figure 3 represents one detection event, whereas each Observed Use Area represents a compilation of multiple detections. The total number of points is not intended to represent the total number of gnatcatchers present within the survey area; however, the total number of Observed Use Areas represents an estimate of the total number of breeding pairs present within the survey area. For purposes of this report, each Observed Use Area has been labeled with a letter (A through I) and is described below. A complete list of avian species detected during the surveys is provided in Table 2.

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
BIRDS (Nomenclature from American Ornithologists' Union 2015 and Unitt 2004)		
ODONTOPHORIDAE	NEW WORLD QUAIL	
<i>Callipepla californica californica</i>	California quail	O, V
ACCIPITRIDAE	HAWKS, KITES, & EAGLES	
<i>Buteo jamaicensis</i>	red-tailed hawk	O, V
<i>Circus cyaneus hudsonius</i>	northern harrier	O
FALCONIDAE	FALCONS & CARACARAS	
<i>Falco sparverius sparverius</i>	American kestrel	O
CHARADRIIDAE	LAPWINGS & PLOVERS	
<i>Charadrius vociferus vociferus</i>	killdeer	O, V
COLUMBIDAE	PIGEONS & DOVES	
<i>Columba livia</i>	rock dove (I)	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	O, V
<i>Zenaida macroura marginella</i>	mourning dove	O, V
CUCULIDAE	CUCKOOS & ROADRUNNERS	
<i>Geococcyx californianus</i>	greater roadrunner	O
CAPRIMULGIDAE	GOATSUCKERS	
<i>Chordeiles acutipennis texensis</i>	lesser nighthawk	O
APODIDAE	SWIFTS	
<i>Aeronautes saxatalis</i>	white-throated swift	O, V
TROCHILIDAE	HUMMINGBIRDS	
<i>Calypte anna</i>	Anna's hummingbird	O, V
<i>Calypte costae</i>	Costa's hummingbird	O, V
TYRANNIDAE	TYRANT FLYCATCHERS	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	O, V
<i>Sayornis saya</i>	Say's phoebe	O, V
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	O, V
VIREONIDAE	VIREOS	
<i>Vireo bellii pusillus</i>	least Bell's vireo	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES	
<i>Aphelocoma californica</i>	California scrub-jay	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	O, V
<i>Corvus corax clarionensis</i>	common raven	O, V
HIRUNDINIDAE	SWALLOWS	
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	O, V
AEGITHALIDAE	BUSHTIT	
<i>Psaltriparus minimus melanurus</i>	bushtit	O, V
TROGLODYTIDAE	WRENS	
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	O, V
<i>Salpinctes obsoletus obsoletus</i>	rock wren	O, V
<i>Thryomanes bewickii</i>	Bewick's wren	O, V
SYLVIIDAE	GNATCATCHERS	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	O, V
TIMALIIDAE	BABLERS	
<i>Chamaea fasciata henshawi</i>	wrentit	O, V

Table 2 Avian Species Observed		
Scientific Name	Common Name	Evidence of Occurrence
MIMIDAE	MOCKINGBIRDS & THRASHERS	
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	O, V
STURNIDAE	STARLINGS & MYNAS	
<i>Sturnus vulgaris</i>	European starling (I)	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS	
<i>Phainopepla nitens lepida</i>	phainopepla	V
PARULIDAE	WOOD WARBLERS	
<i>Setophaga [=Dendroica] coronata</i>	yellow-rumped warbler	O
<i>Setophaga [=Dendroica] petechia</i>	yellow warbler	O, V
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	V
<i>Oreothlypis [=Vermivora] virginiae</i>	Virginia's warbler	O
<i>Cardellina [=Wilsonia] pusilla</i>	Wilson's warbler	O, V
EMBERIZIDAE	EMBERIZIDS	
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	V
<i>Melospiza melodia</i>	song sparrow	O, V
<i>Melospiza [=Pipilo] crissalis</i>	California towhee	O, V
<i>Pipilo maculatus</i>	spotted towhee	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	O, V
CARDINALIDAE	CARDINALS & GROSBEAKS	
<i>Passerina caerulea salicaria</i>	blue grosbeak	O
<i>Passerina amoena</i>	lazuli bunting	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES	
<i>Icterus cucullatus nelsoni</i>	hooded oriole	O, V
<i>Sturnella neglecta</i>	western meadowlark	O, V
FRINGILLIDAE	FINCHES	
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	O, V, N
(I) = Introduced species		
Evidence of Occurrence		
O = Observed		
V = Vocalization		
N = Nest		

Observed Use Area A

Observed Use Area A includes gnatcatcher detections between April 5 and May 23, 2017 and represents the main area used by one breeding pair of gnatcatchers. On April 5, one male gnatcatcher with breeding plumage was observed and heard calling in the northern portion of the use area. On April 27, a pair of gnatcatchers with the male in breeding plumage was observed, and on May 23, a gnatcatcher vocalization was detected in the western portion of the use area.

Vegetation within and adjacent to Observed Use Area A is composed of maritime succulent scrub on a south-facing slope (Photograph 1). The maritime succulent scrub in this area is dominated by coast cholla, waterjacket, California box-thorn, cliff spurge, and joboba with shrub cover at or above 75 percent.

Observed Use Area B

Observed Use Area B includes gnatcatcher detections between April 5 and May 23, 2017, and represents the main area used by one breeding pair of gnatcatchers. On April 5, a possible nest swap was observed, when a male in breeding plumage was first observed traveling quietly and low in the shrubs. Shortly thereafter, the male ducked down into the vegetation and was replaced by a female who quietly flew off to the west. On April 27, the pair was again detected foraging just east of the possible nest location. On May 4, an incidental gnatcatcher detection (vocalization) was recorded within this use area during another biological survey conducted for this project. On May 23, a male in breeding plumage, likely belonging to this pair, was observed twice traveling to and from the adjacent north-facing slope east of the mapped use area, once chasing a juvenile gnatcatcher and once engaging in an apparent territorial dispute with another mature male from Observed Use Area C (described below).

Vegetation within Observed Use Area B comprises dense maritime succulent scrub, with 80 percent or greater vegetation cover, on a moderate to steep south-facing slope (Photograph 2). Dominant shrub species include San Diego bur-sage, coast cholla, jojoba, cliff spurge, San Diego viguiera, and big saltbush (*Atriplex lentiformis*). Dirt roads bound this use area to the north, west, and south, and one old overgrown road cut intersects this use area in the eastern portion. The old road cut is overgrown with scattered native shrubs and non-native annuals, including garland daisy, tocalote (*Centaurea melitensis*), and black mustard (*Brassica nigra*).

Observed Use Area C

Observed Use Area C includes gnatcatcher detections between April 27 and May 23, 2017, and represents the main area used by one breeding pair of gnatcatchers. On April 27, a pair of gnatcatchers was observed using the eastern portion of this use area. The male, in breeding plumage, was calling and observed carrying nest material. On May 23, a male in breeding plumage was observed foraging at the western tip of this use area and then traveling uphill toward the central portion of this use area. A male in breeding plumage, assumed to be the same individual, was later in the same day observed twice outside the northern edge of this use area, once chasing a juvenile to the east and once engaging in an apparent territorial dispute with the mature male from Observed Use Area B (described above).

Vegetation within this use area is composed of maritime succulent scrub with 60 percent or greater vegetation cover on south- and west-facing slopes (Photograph 3). Dominant shrub species include San Diego bur-sage, jojoba, San Diego viguiera, cliff spurge, California buckwheat, and California sagebrush. Non-native annuals, including garland daisy and non-native grasses, are also common and occur in scattered patches, typically adjacent to old road cuts and other areas that show sign of previous human disturbance.

Observed Use Areas D, E, F, and G

Observed Use Areas D, E, F, and G represent a minimum of two and maximum of four breeding pairs. Although distinct use areas seemed apparent, two of these use areas overlapped. In addition, only the presence of two mature males in this vicinity could be confirmed at any one time. Each use area is described in detail below.

Observed Use Area D

Observed Use Area D includes gnatcatcher detections from April 4 and 5, 2017. On April 4, a gnatcatcher was detected incidentally in the western portion of the use area during another biological survey conducted for this project. On April 5, a gnatcatcher pair was detected. The male, in breeding plumage, was observed and heard calling, while the female remained quiet.

Vegetation within Observed Use Area D comprises maritime succulent scrub on a southwest-facing slope (Photograph 4). Dominant shrub species include San Diego bur-sage, California sagebrush, San Diego viguiera, and California buckwheat; other common shrubs include broom baccharis, lemonade berry, and

jojoba. Vegetation cover is generally 60 percent or greater, with scattered unvegetated erosional rills and patches of open soil with cryptogamic crust. Shrub height is typically two to three feet with an occasional jojoba reaching five feet.

Observed Use Area E

Observed Use Area E includes gnatcatcher detections from May 23, 2017. On this day, a pair was observed foraging together throughout this use area, and a third individual (likely juvenile) was later observed at the western edge of this use area.

Vegetation within Observed Use Area E comprises maritime succulent scrub on a moderate south-facing slope (no photograph available). The dominant native shrub species is San Diego bur-sage, and other common plant species include jojoba, fascicled tarweed (*Deinandra fasciculata*), and black mustard.

Observed Use Area F

Observed Use Area F includes gnatcatcher detections from February 9, April 5, and April 27, 2017. The February 9 detection was incidental during another biological survey conducted for the same project. On April 5, a pair of gnatcatchers was heard calling and observed moving throughout the central and eastern portions of the use area. On April 27, a pair was again observed in the central portion of the use area at the same time a separate pair was observed in Observed Use Area G, described below.

Observed Use Area F includes two separate stands of maritime succulent scrub, with disturbed land between (Photograph 5). The maritime succulent scrub supports a mix of California buckwheat, jojoba, San Diego bur-sage, San Diego viguiera, and cliff spurge with shrub cover at or above 50 percent. At the time of the surveys, the disturbed land supported a dense stand of garland daisy, which reached an average height of four to five feet, and a mostly unvegetated dirt road.

Observed Use Area G

Observed Use Area G includes gnatcatcher detections from April 27 and May 23, 2017. On April 27, a family group of gnatcatchers with two fledglings was observed. The mature male was initially observed carrying food. The mature male and female were then observed foraging together, and the two juveniles were observed shortly thereafter. As mentioned above, while this family group was being observed, the presence of a separate gnatcatcher pair was confirmed in Observed Use Area F. On May 23, a mature male was observed chasing two juveniles eastward from Observed Use Area G.

Vegetation within Observed Use Area G comprises maritime succulent scrub on a gradual south- to southeast-facing slope (Photograph 6). The scrub in this area is dominated by San Diego bur-sage; other common shrub species include San Diego viguiera and jojoba. Vegetation cover is generally 60 percent or greater with average shrub height at two to three feet.

Observed Use Areas H and I

Observed Use Areas H and I represent a minimum of one and maximum of two breeding pairs. Although distinct use areas seemed apparent, only the presence of one mature male in this vicinity could be confirmed at any one time. Each use area is described in detail below.

Observed Use Area H

Observed Use Area H includes gnatcatcher detections from April 27 and May 23, 2017. On April 27, a family group of gnatcatchers with three juveniles was observed. On May 23, one male in breeding plumage and two individual gnatcatchers lacking a black cap were observed on a south-facing slope within tall stands of garland daisy. All flew to the east, and after a few moments, one uncapped individual was again observed at

the southwestern tip of this use area. Based on behavior, it is likely that the two uncapped individuals were juvenile and were being chased from their natal territory or from a neighboring pair's territory.

Vegetation within Observed Use Area H comprises disturbed maritime succulent scrub and disturbed land (Photograph 7). This use area straddles a shallow drainage, with a south-facing slope in the northern portion. Tall (five to six feet high), dense stands of garland daisy occur around patches of two- to three-foot high jojoba and San Diego bur-sage.

Observed Use Area I

Observed Use Area I includes gnatcatcher detections from focused surveys conducted on April 5 and May 23, 2017, and an incidental observation from March 28, 2017.

On March 28 and April 5, one male in breeding plumage was observed and heard calling on the west-facing slope in this use area. On May 23, a male in breeding plumage was initially detected perching in a Peruvian pepper tree (*Schinus molle*) and black mustard stalks at the northeastern tip of this use area. This individual then flew down the south-facing slope and westward, to the west-facing portion of the manufactured slope.

Vegetation within Observed Use Area I comprises maritime succulent scrub and disturbed maritime succulent scrub on south- and west-facing slopes (Photograph 8). San Diego bur-sage and jojoba are dominant shrub species. Other common perennial plant species include broom baccharis, cliff spurge, coast prickly pear, California buckwheat, and California sagebrush, with patches of coast cholla. Vegetation cover is 60 percent or greater with shrub height typically between two and four feet.

Other Gnatcatcher Detections

The majority of the detections shown as points on Figure 3 likely represent individual gnatcatchers already represented by the mapped observed use areas discussed above, with the addition of one likely pair in the northwestern corner of the survey area and one possible pair in the southeastern corner. Many of the point detections on Figure 3 represent juvenile dispersal as well as outlying locations where adult males were observed chasing juveniles beyond what appeared to be their typical use area or territory. Other detections may represent expansions of the mapped observed use areas but could not be directly tied to any one use area, as the individuals' movement could not be sufficiently tracked. In the northwestern corner of the survey area, although the individual(s) were not observed, gnatcatchers were repeatedly detected by call in this area throughout the survey period, and no movement between these locations and the next closest use area was observed. Therefore, the presence of an additional breeding pair is likely. In the southeastern corner of the survey area, only one vocal gnatcatcher detection was recorded on April 5, 2017. However, the distance of this detection from the next closest mapped gnatcatcher locations and the timing of this detection in the breeding season suggest the potential presence of another pair.

Summary of Gnatcatcher Detections

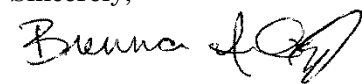
Based on the gnatcatcher detections discussed above, a minimum of six and maximum of 11 breeding pairs is estimated to occupy the survey area. The majority of the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub within the survey area is considered suitable breeding habitat for gnatcatcher. The only exception is some portions of the disturbed Diegan coastal sage scrub in the westernmost portion of the survey area, as the shrub density and height are lower than are typically preferred for nesting by this species. The entirety of the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub, as well as the disturbed land and mule fat scrub, also provide suitable foraging habitat and habitat for dispersal of juveniles. Data for these occurrences were submitted to the California Natural Diversity Database on July 13, 2017 via email.

Other Sensitive Avian Species Observations

The following six additional sensitive avian species were detected within or adjacent to the survey area during focused coastal California gnatcatcher surveys: northern harrier (*Circus cyaneus*; California Department of Fish and Wildlife [CDFW] Species of Special Concern [SSC]), least Bell's vireo (*Vireo bellii pusillus*; federally and state endangered, CDFW SSC), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; CDFW SSC), yellow warbler (*Setophaga [=Dendroica] petechia*; CDFW SSC), Virginia's warbler (*Oreothlypis virginiae*; CDFW Watch List), and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; CDFW Watch List). Focused surveys for least Bell's vireo and coastal cactus wren are being or were completed for this project in 2017. In addition, a biological technical report will be prepared for this project following completion of 2017 biological surveys. Therefore, this report focuses only on detections of coastal California gnatcatcher, and all other sensitive species observations will be addressed in the associated survey reports and/or biological technical report. Data for these additional sensitive species occurrences will be submitted to the California Natural Diversity Database concurrent with completion of the biological technical report.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. Please contact me at bogg@reconenvironmental.com with any questions regarding this survey.

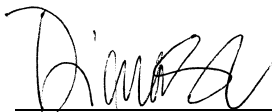
Sincerely,



8/3/2017

Brenna Ogg
Senior Biologist
USFWS Permit Number TE-134338-3
CDFW Scientific Collecting Permit SC-9997

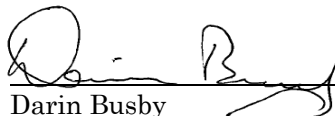
Date



8/3/2017

Diana Saucedo
Biologist
USFWS Permit Number TE-221287-1
CDFW Scientific Collecting Permit SC-006138

Date



8/3/2017

Darin Busby
Principal Biologist
USFWS Permit Number TE-115373-3
CDFW Scientific Collecting Permit SC-006243

Date

BAO:jg

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Esther Burkett, California Department of Fish and Wildlife

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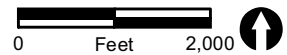
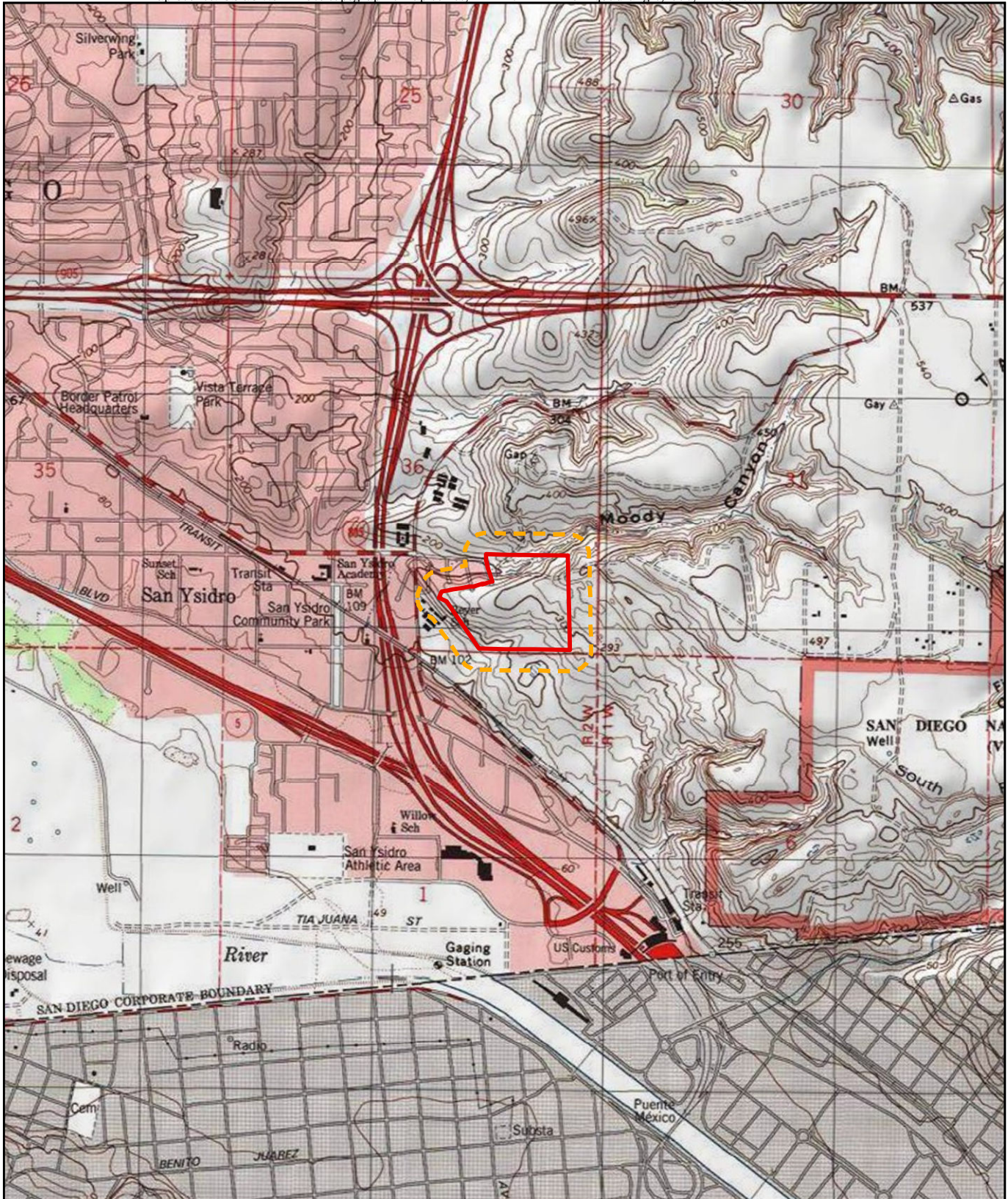
 Project Location

FIGURE 1
Regional Location





-  Project Boundary
-  300-foot Buffer

FIGURE 2

Project Location on USGS Map



- Project Boundary
- 300-ft Buffer
- Gnatcatcher Suitable
- Not Gnatcatcher Suitable Nesting Habitat
- Gnatcatcher Observed Use Area
- Gnatcatcher Detection
- Possible Gnatcatcher Nest

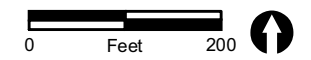


FIGURE 3
Coastal California Gnatcatcher
2017 Survey Area and Results



PHOTOGRAPH 1
Vegetation in Observed Use Area A,
Facing North



PHOTOGRAPH 2
Vegetation in Observed Use Area B,
Facing Northeast



PHOTOGRAPH 3
Vegetation in Observed Use Area C,
Facing Northeast



PHOTOGRAPH 4
Vegetation in Observed Use Area D,
Facing North



PHOTOGRAPH 5
Vegetation in Observed Use Area F,
Facing West



PHOTOGRAPH 6
Vegetation in Observed Use Area G,
Facing Northwest



PHOTOGRAPH 7
Vegetation in Observed Use Area H,
Facing North



PHOTOGRAPH 8
Vegetation in Observed Use Area I,
Facing North



**Enhancement and Restoration of
Maritime Succulent Scrub as Habitat
for Western Burrowing Owl and Beach
Goldenaster for the Beyer Park
Development Project
San Diego, California**

Prepared for

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Public Works Department
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RECON Number 8359-1

November 26, 2019

A handwritten signature in cursive script that reads "Meagan Olson".

Meagan Olson, Restoration Ecologist

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Acronyms

CDFW	California Department of Fish and Wildlife
City	City of San Diego
DSD	Development Services Department
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MSCP	Multiple Species Conservation Program
PEP	Plant Establishment Period
Plan	mitigation and restoration plan
PWD	Public Works Department
SDZ ICR	San Diego Zoo Institute for Conservation Research
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

The purpose of this mitigation and restoration plan (Plan) is to provide a guide for measures to mitigate for impacts to maritime succulent scrub and Diegan coastal sage scrub habitats during the construction of Beyer Park. Mitigation for both vegetation communities will be accomplished through the enhancement of adjacent maritime succulent scrub and disturbed maritime succulent scrub, and the restoration of disturbed areas to maritime succulent scrub. Occupied habitat for western burrowing owl and beach goldenaster individuals will be impacted during construction. This Plan will also serve as the mitigation plan for both western burrowing owl (*Athene cunicularia hypugaea*) and beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*). As a result, artificial burrows for western burrowing owls will be installed and enhancement and restoration of maritime succulent scrub determined to be occupied by western burrowing owl will be executed so that the mitigation areas will also serve as appropriate western burrowing owl habitat. The enhancement and restoration will also include installation of beach goldenaster individuals. This Plan includes a discussion of existing conditions, an implementation and maintenance plan, ecological performance standards, monitoring requirements, and details for long-term and adaptive management.

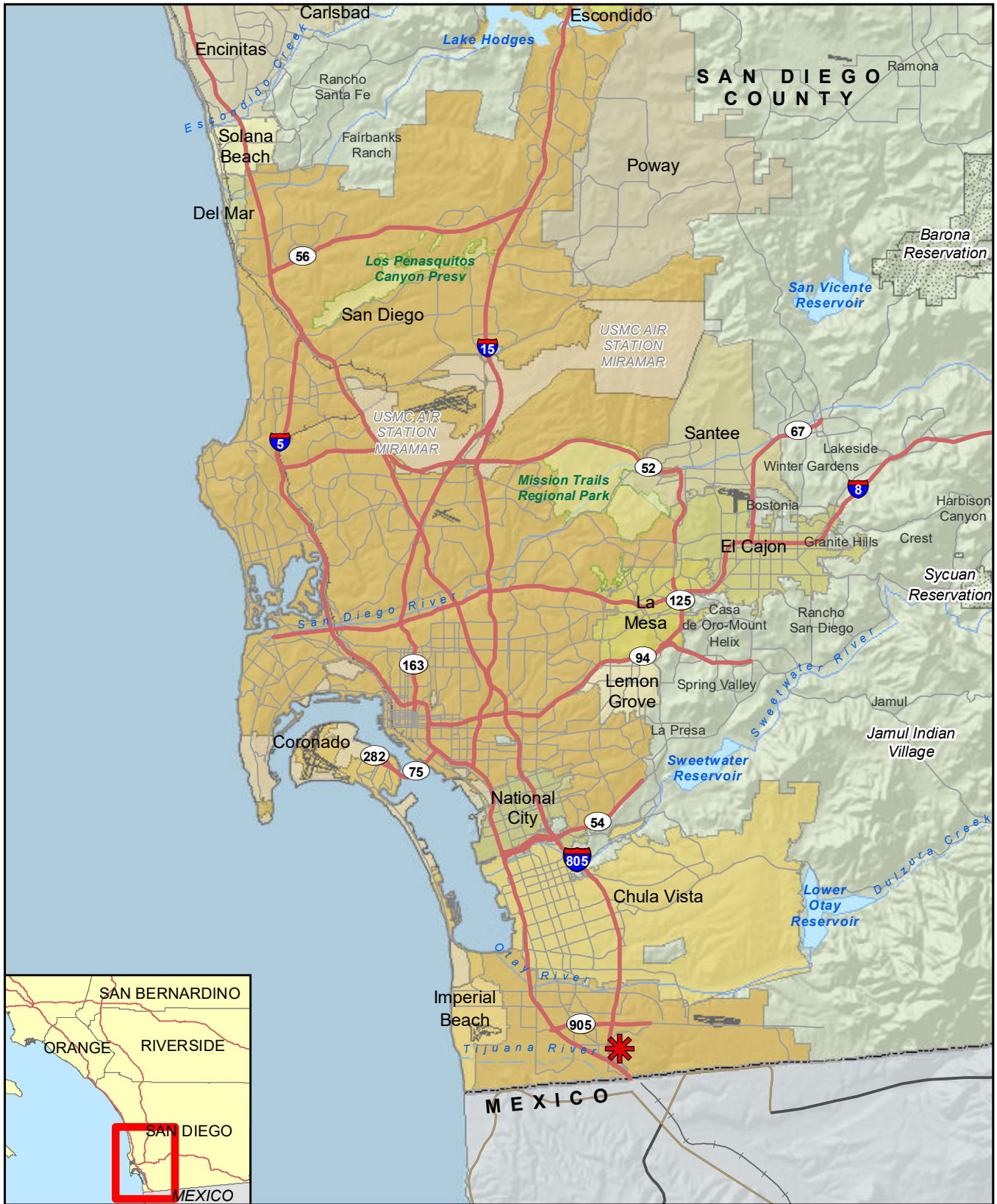
1.1 Project Location

The mitigation site is located on undeveloped City of San Diego (City) park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro, city of San Diego (Figures 1–3). The mitigation site (site) is located immediately east of the Beyer Park development footprint. The mitigation site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey (USGS) 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 2; USGS 1996). The mitigation site totals 14.12 acres and is situated on two parcels: Assessor Parcel Numbers 6380707100 and 6381701900 (Figure 4).

The mitigation site is situated within the City’s Multiple Species Conservation Program (MSCP) Subarea Plan boundary. The majority of the site is located within the City’s Multi-Habitat Planning Area (MHPA) boundary (see Figure 4).

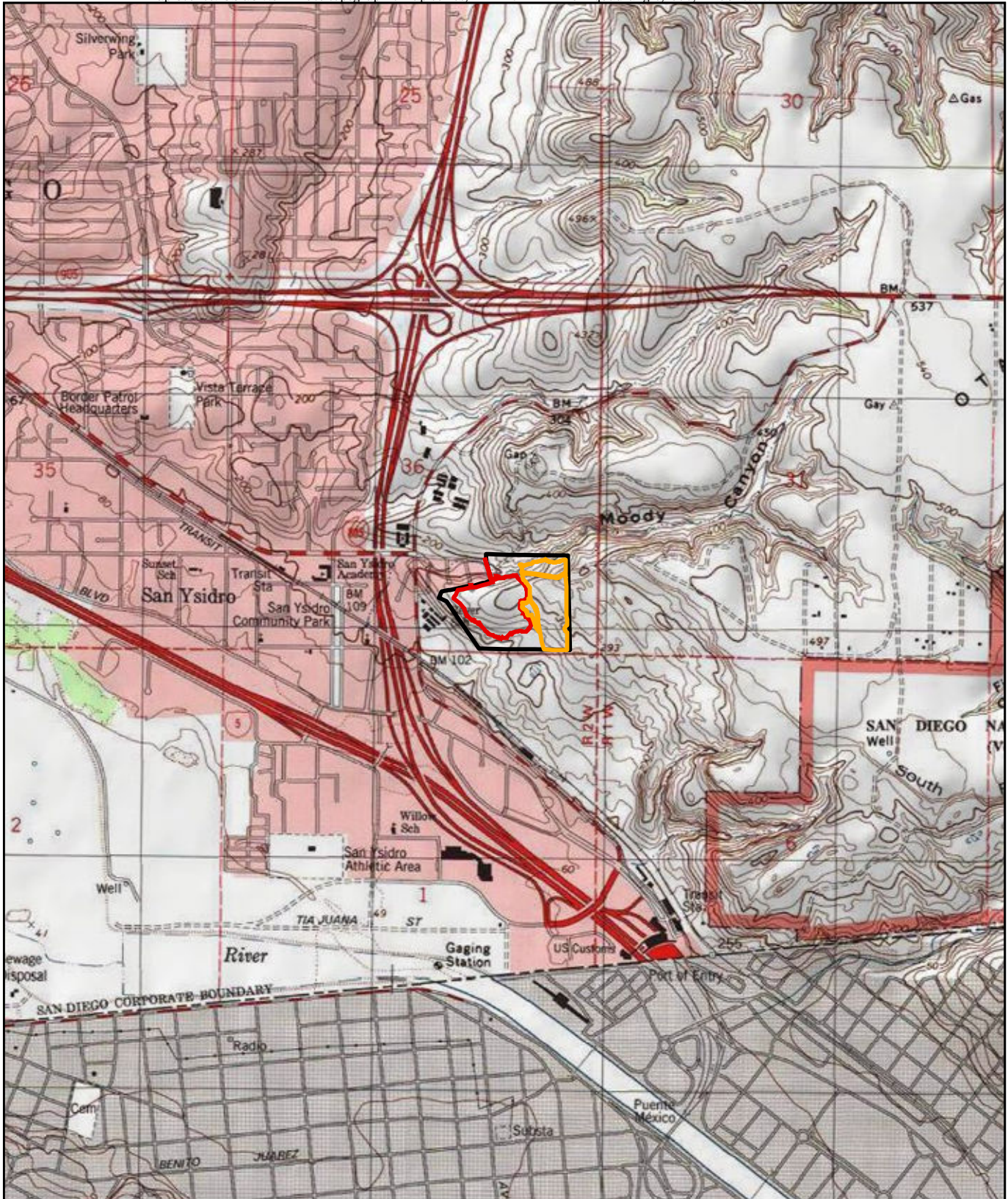
1.2 Mitigation Requirements


The City proposes the Beyer Park Development Project (project), which entails development and operation of a new community park with turf sports fields, picnic/gathering spaces, trails, a children’s play area, a skate park, a fitness area, a half basketball court, a dog park, a comfort station, and other associated amenities and facilities. Additional details of the park are included in the Biological Technical Report (RECON 2019).



***** Project Location

FIGURE 1
Regional Location



-  Project Boundary
-  Mitigation Site
-  Beyer Park Development Project

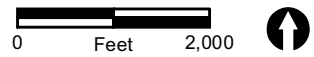
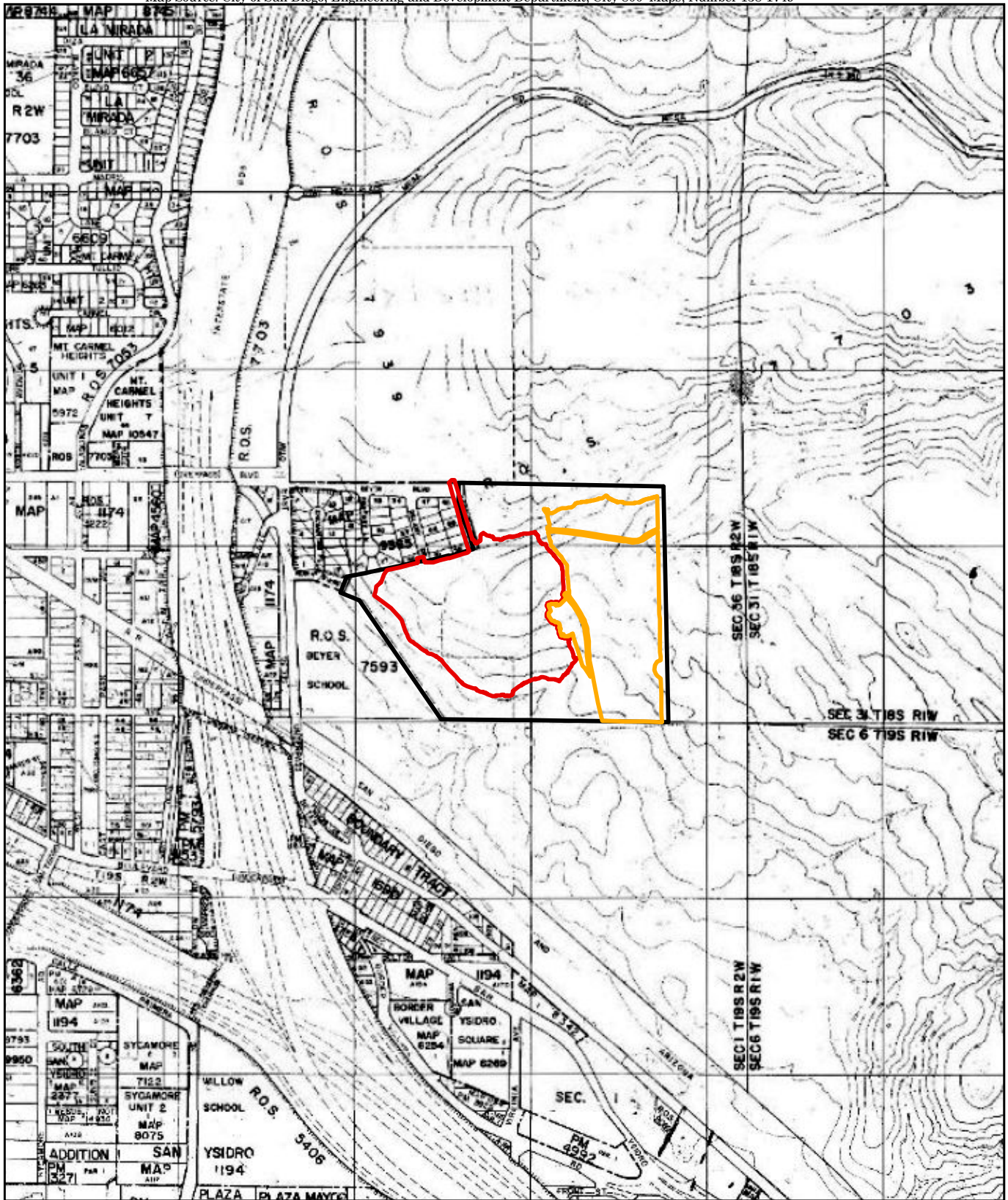





FIGURE 2

Project Location on USGS Map



-  Project Boundary
-  Mitigation Site
-  Beyer Park Development Project

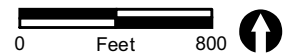
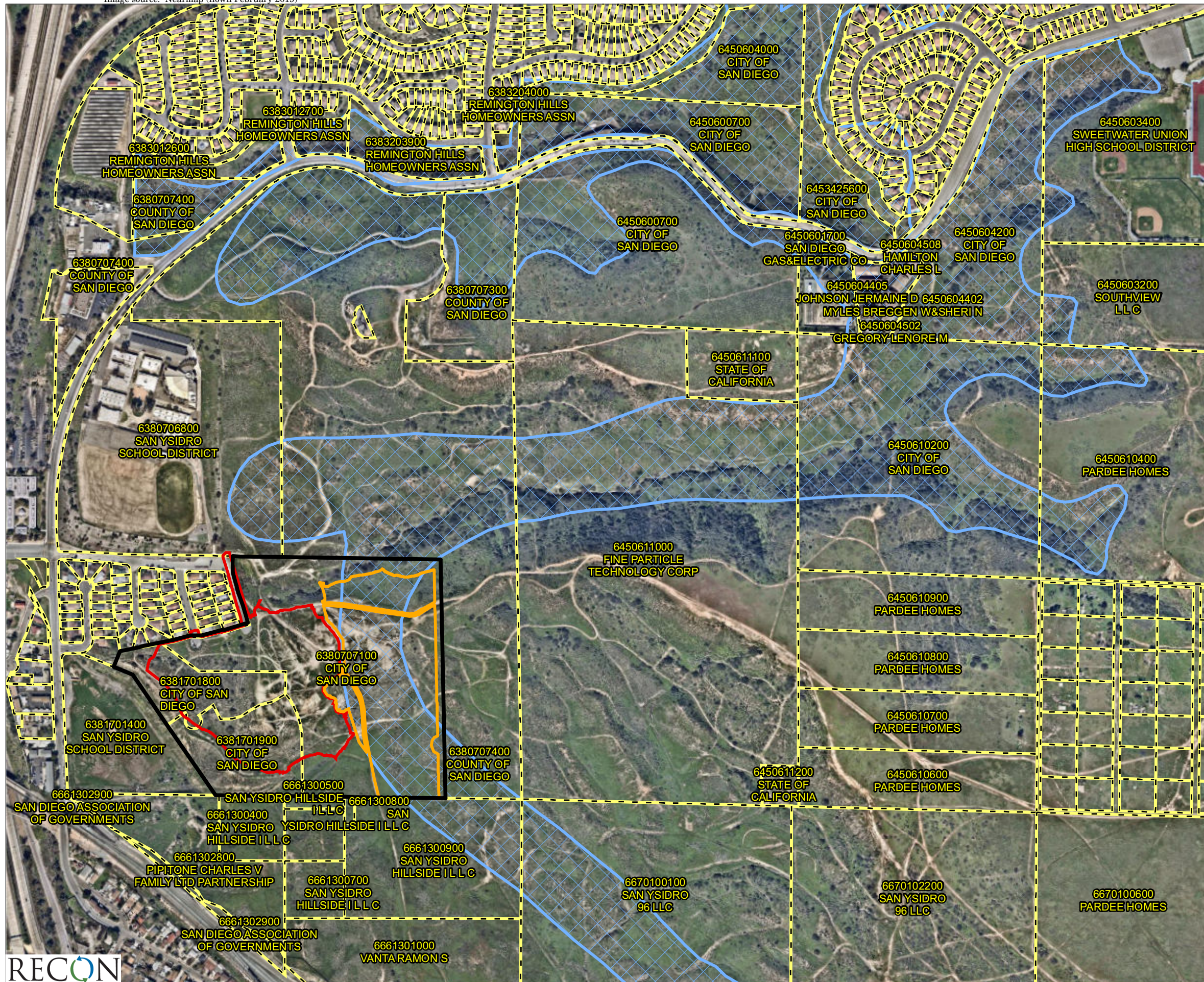







FIGURE 3

Project Location on City 800' Map



-  Project Boundary
-  Beyer Park Development Project
-  Mitigation Site
-  Parcels
-  City of San Diego MHPA

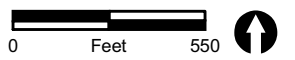


FIGURE 4
Project Location on Aerial Photograph

The project would result in direct impacts to 0.91 acre of maritime succulent scrub (Tier I), 4.86 acres of disturbed maritime succulent scrub (Tier I), 1.41 acres of Diegan coastal sage scrub (Tier II), and 4.29 acres of disturbed Diegan coastal sage scrub (Tier II; Table 1). These impacts would be mitigated through on-site mitigation: restoration of 3.70 acres of disturbed land and enhancement of 10.42 acres of maritime succulent scrub and disturbed maritime succulent scrub, for a total of 14.12 acres (Table 2).

Portions of the habitat that will be impacted by park construction have been determined to be occupied by burrowing owl and beach goldenaster individuals. Approximately 13.55 acres of occupied burrowing owl habitat (Table 3) will be impacted and requires mitigation of 10.42 acres of occupied burrowing owl habitat per mitigation requirements in Table 3 in the City's Land Development Code – Biology Guidelines (City of San Diego 2018a). The maritime succulent scrub that will be enhanced and restored for Tier I and II mitigation is also occupied burrowing owl habitat. Therefore, mitigation for occupied habitat will occur within the maritime succulent scrub enhancement/restoration areas described above. Up to 25 beach goldenaster individuals will be impacted and will be mitigated in-kind within the restoration area.

The mitigation for impacts to Tier I (maritime succulent scrub) and Tier II (Diegan coastal sage scrub) sensitive vegetation communities will be met through enhancement and restoration of maritime succulent scrub, a Tier I community. In addition, enhancement and restoring maritime succulent scrub habitat will also meet mitigation requirements for the following two sensitive species: western burrowing owl and beach goldenaster. The mitigation area encompasses the area within the MHPA but also incorporates adjacent lands outside of the MHPA to the east and southwest.

**Table 1
Direct Impacts to Vegetation and Associated Mitigation**

Vegetation Community by City of San Diego Tier	Direct Impacts to Vegetation-Outside MHPA (acres)	Mitigation Ratios		Required Mitigation (acres)		Proposed Enhancement (acres)	Proposed Restoration (acres)	Total Proposed Mitigation (acres)
		Inside the MHPA	Outside the MHPA	Preserved Inside the MHPA	Preserved Outside the MHPA			
Tier I								
Maritime succulent scrub	0.91	1:1		0.91	0	0.91	0	0.91
Disturbed maritime succulent scrub	4.86	1:1		4.86	0	4.86	0	4.86
<i>Subtotal (Tier I)</i>	<i>5.77</i>			<i>5.77</i>	<i>0</i>	<i>5.77</i>	<i>0</i>	<i>5.77</i>
Tier II¹								
Diegan coastal sage scrub	1.41	1:1		1.41	0	1.41 ¹		1.41
Disturbed Diegan coastal sage scrub	4.29	1:1		0.60	5.54	0.60	0	6.14
			1.5:1			2.64	0	
			1.5:1				2.90 ²	
<i>Subtotal (Tier II)</i>	<i>5.70</i>			<i>2.01</i>	<i>5.54</i>	<i>4.65¹</i>	<i>2.90²</i>	<i>7.55</i>
Tier IV								
Disturbed land	5.05	0:1	0:1	0	0	0	0.80	0.80
Ornamental plantings	0	0:1	0:1	0	0	0	0	0
Other Land Cover Types								
Urban/Developed Land	0.64	0:1	0:1	0	0	0	0	0
<i>Subtotal (Tier IV)</i>	<i>5.69</i>			<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Subtotal (All Tiers)</i>	<i>17.16</i>			<i>7.78</i>	<i>5.54</i>	<i>10.42</i>	<i>3.70</i>	<i>0</i>
Total	17.16			13.32		10.42	3.70³	14.12

¹Tier II habitat will be mitigated with Tier I habitat. Due to surrounding MSS habitat it is likely that historically this habitat would have been MSS prior to routine disturbance.

²Restoration of Tier I maritime succulent scrub habitat will be accomplished through conversion of disturbed lands.

³An additional 0.8 acre of disturbed land will be restored in anticipation that some of the edge areas near the trails and roads may not achieve success criteria. Total mitigation will be 14.12 acres.

Table 2 Mitigation Summary	
Mitigation Method	Fulfillment of Mitigation (acre) ¹
Restoration ¹	2.90
Enhancement ²	10.42
Additional restoration of disturbed land ³	0.80
TOTAL	14.12
¹ Restoration will consist of converting disturbed lands to Tier I maritime succulent scrub appropriate for burrowing owl foraging and nesting. Restoration and enhancement acreages combined meet the required mitigation for impacts to Tier I and Tier II habitats. ² Enhancement will be focused on improving maritime succulent scrub appropriate for burrowing owl foraging and nesting. Restoration and enhancement acreages combined meet the required mitigation for impacts to Tier I and Tier II habitats. ³ An additional 0.80 acre of disturbed land will be restored in anticipation that some of the edge areas near the trails and road may not achieve success criteria. Total mitigation will be 14.12.	

Table 3 Required and Proposed Mitigation for Burrowing Owl Impacts					
Vegetation Community by City of San Diego Tier	Direct Impacts to Occupied BUOW Habitat- Outside MHPA (acres)	Mitigation Ratio ¹		Required Amount of Occupied Habitat to Fulfill Mitigation (acres) ²	
		Inside the MHPA	Outside the MHPA	Inside the MHPA	Outside the MHPA
Tier I					
Maritime succulent scrub	0.20	1:1	2:1	0.20	0
Disturbed maritime succulent scrub	3.91	1:1	2:1	3.91	0
Tier II					
Diegan coastal sage scrub	0.18	1:1	1.5:1	0.18	0
Disturbed Diegan coastal sage	4.28	1:1	1.5:1	0.60	5.53
Tier IV					
Disturbed land	4.89	0:1	0:1	0	0
Ornamental plantings	0	0:1	0:1	0	0
Other Land Cover Types					
Urban/Developed Land	0.09	0:1	0:1	0	0
TOTAL	13.55			10.42	
¹ Mitigation ratios are consistent with Table 3 of the Land Development Code Biology Guidelines. ² 10.42 acres of occupied habitat is required for mitigation. Any areas successfully preserved in excess of the required amount may be utilized by the City for burrowing owl mitigation.					

During the biological surveys, it was determined that the project site had potential to support burrowing owl. This required that the guidelines outlined in the MSCP Subarea Plan Area Specific Management Directives be implemented (Appendix A of City of San Diego 1997). Table 4 and the section below outline those requirements and how this Plan will address those requirements.

Table 4	
Area Specific Management Directives	
Area Specific Management Directives of the MSCP Subarea Plan	Proposed Action of Mitigation Plan
<p>Conditions: During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows.</p>	<p>During the habitat assessment it was determined that appropriate habitat was present within the project site due to the open nature of the vegetative structure, amount of disturbance, and presence of fossorial mammal burrows. The habitat mapped as suitable/occupied for the species is composed of open, low-growing maritime succulent scrub with patches of bare ground. In March and April of 2017, surveys were conducted in accordance with California Department of Fish and Wildlife (CDFW) breeding season survey guidelines (CDFW 2012). Burrowing owl sightings occurred on three separate occasions, four potential burrows were observed within the project site and one active burrow was observed east of the park development footprint, within the central west edge of the mitigation site. Burrowing owl sightings may represent the same individual. Based on the data, it is expected that at least one burrowing owl may utilize the site for wintering or transient stopovers during the wintering/non-breeding season (RECON 2017). The project site and active burrow are outside but adjacent to the MHPA. <u>The proposed mitigation is partially within the MHPA.</u></p>
<p>If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable;</p>	<p>Construction of the park will impact 13.55 acres of occupied habitat outside of the MHPA.</p>
<p>any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies;</p>	<p>Burrow exclusion and closure procedures are documented in this Plan in the event that potential burrows are observed within the mitigation site prior to park construction and restoration implementation. Pre-activity surveys will be conducted to determine the status of the burrowing owl on-site so that appropriate measures can be put in place. Passive methodologies will be employed to relocate the burrowing owl, if present, using a combination of burrow exclusion and creation of artificial burrows within the adjacent land preserved for burrowing owl mitigation.</p>
<p>mitigation for impacts to occupied habitat (at the Subarea Plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements.</p>	<p>This Plan outlines the enhancement and restoration of occupied habitat through the creation of artificial burrows to encourage nesting and enhancement and restoration of foraging habitat through vegetation management. In addition, the amount of enhancement and restoration of occupied habitat is done at the mitigation ratios set forth for the underlying sensitive vegetation and are shown in Table 1.</p>
<p>Management plans/directives must include: enhancement of known, historical and potential burrowing owl habitat;</p>	<p>The area to be enhanced/restored has been established as occupied habitat through several observations of a single burrowing owl and a potential active burrow during breeding season protocol surveys within the last three years. This Plan details how the habitat will be preserved and enhanced to support burrowing owl in the future, including the installation of an artificial burrowing owl cluster in suitable habitat away from park operations.</p>
<p>management for ground squirrels (the primary excavator of burrowing owl burrows).</p>	<p>Ground squirrels are present within the mitigation site in high quantities. Ground squirrel populations will be documented during annual assessment to ensure that there is not any drastic change in population.</p>

Table 4 Area Specific Management Directives	
Area Specific Management Directives of the MSCP Subarea Plan	Proposed Action of Mitigation Plan
Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat.	Three artificial burrows are planned for installation per this Plan. Enhancement of disturbed maritime succulent scrub, enhancement of existing maritime succulent scrub, and species-specific restoration (for burrowing owl) of disturbed habitat to maritime succulent scrub are outlined in this Plan to enhance foraging habitat.
Management plans must also include: monitoring of burrowing owl nest sites to determine use and nesting success;	A single burrowing owl was observed on-site during the breeding season protocol surveys completed in support of the biological technical report. No pairs or nesting was observed. However, this Plan requires monitoring for burrowing owl activity including nesting.
predator control;	It has been recommended in the biological technical report that tall structures installed within the park (light poles, etc.) feature roosting deterrents so that new perching areas are not created for predators.
establishing a 300 foot-wide impact avoidance area (within the preserve) around occupied burrows.	Passive methodologies will be employed to relocate any burrowing owl, if present, using a combination of burrow exclusion and creation of artificial burrows within the adjacent land preserved for burrowing owl mitigation. Proposed artificial burrow sites are planned for installation and will be located 300 feet or more from the project boundary.

The project would also result in impacts to 13.55 acres of burrowing owl occupied habitat. During surveys conducted in accordance with California Department of Fish and Wildlife (CDFW) breeding season survey guidelines (CDFW 2012), three burrowing owl observations occurred on separate occasions between March and April 2017 (these observations may represent the same individual). Based on the data, it is expected that at least one burrowing owl may utilize the site for wintering or transient stopovers during the wintering/non-breeding season (RECON 2017). The habitat mapped as suitable/occupied for the species is composed of open, low-growing maritime succulent scrub with patches of bare ground. Mitigation for these impacts would include installation of a cluster of three artificial burrows to provide suitable habitat for at least one pair of western burrowing owl, restoration and enhancement of 14.12 acres of open maritime succulent scrub habitat, and a five-year maintenance and monitoring program.

Lastly, there would be impacts to up to 25 beach goldenaster individuals and mitigation is required to reduce these impacts to less than significant. Impacts to beach goldenaster would be mitigated through on-site restoration. Only one individual was relocated during two site visits in spring 2019. A pre-construction survey will be conducted prior to project implementation which may result in a revision to the number of individuals mitigated.

Per the City MSCP Subarea Plan Appendix A, this Plan includes enhancement of known, historical, and potential burrowing owl habitat; management for ground squirrels; enhancement through artificial burrow installation and vegetation management; monitoring of burrowing owl use of the site during breeding and non-breeding seasons; and an implementation and maintenance plan designed to prevent predation of burrowing owls.

2.0 Existing Conditions

This section describes the existing physical and biological conditions of the areas within the proposed mitigation site and surrounding area. This includes a summary of land use, topographical features, soils, and hydrological features observed during biological surveys conducted between June 13, 2016, and August 7, 2017.

2.1 Physical Characteristics

2.1.1 Existing Land Use

The proposed mitigation site consists of undeveloped City land, with residential development approximately 500 feet to the northwest and County of San Diego (County) open space preserve to the east. The project footprint is west of the mitigation site. The mitigation site currently consists of maritime succulent scrub, disturbed maritime succulent scrub, and disturbed land (Figure 5). A large portion of the vegetation within the mitigation site has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps, trash dumping, and radio-controlled car running and course building).

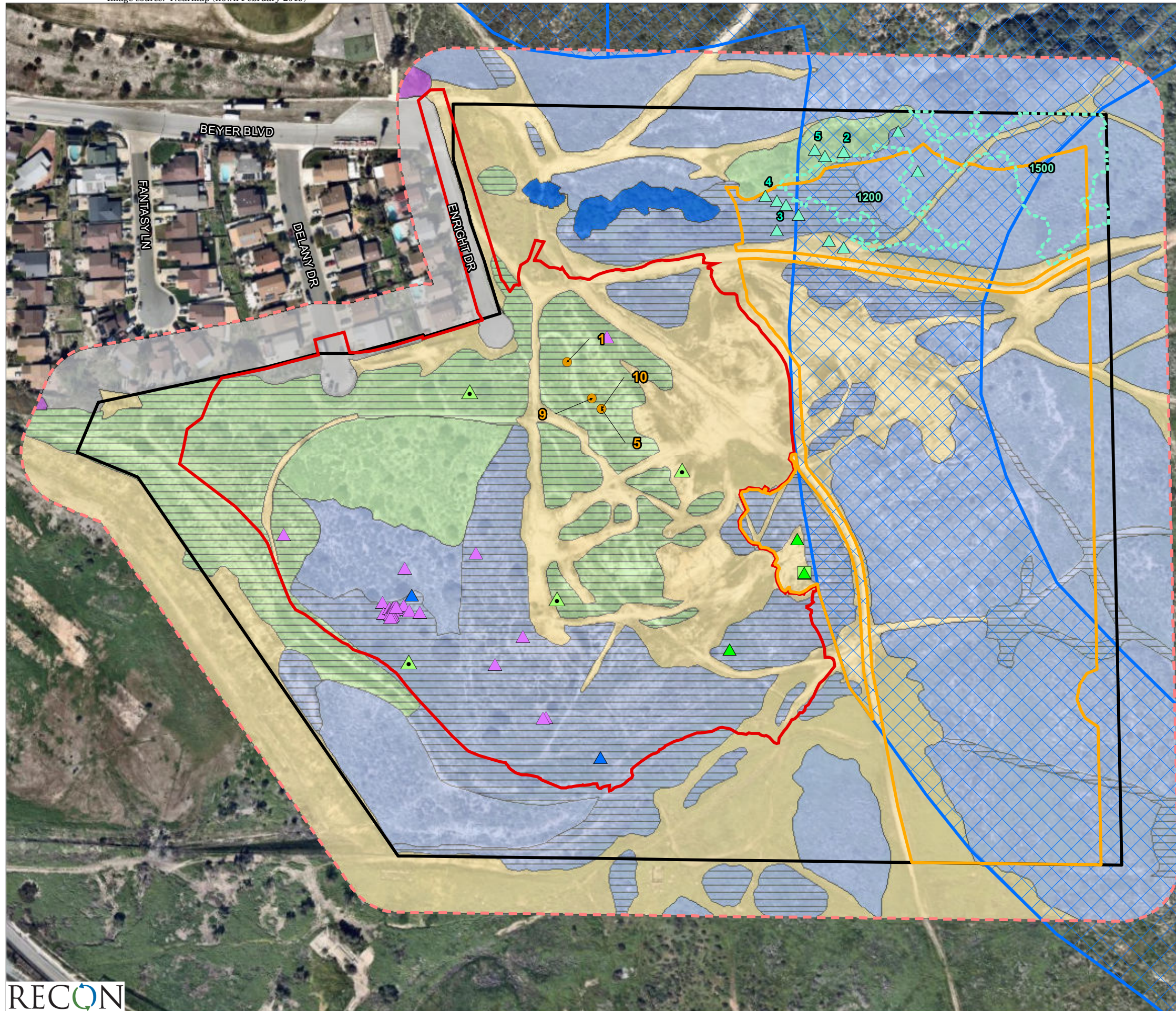
2.1.2 Topography and Soils

The mitigation site is characterized by north-, south-, and west-facing slopes with numerous wide, exposed terraces.

Two soil types occur within the mitigation site: Olivenhain cobbly loam, 9 to 30 percent slopes (ohE), in the south and Olivenhain cobbly loam, 30 to 50 percent slopes (ohF) in the north (Figure 6; U.S. Department of Agriculture 2017). Olivenhain cobbly loam soils formed in ancient cobbly and gravelly alluvium and are located on marine terraces and mesas. The topsoil is typically well-drained cobbly loam with a very cobbly clay subsoil. Low slopes tend to form mima mounds on the surface, whereas steeper areas are easily eroded and tend to form gullies and cut banks (Natural Resource Conservation Service 2015).

2.1.3 Hydrology

The mitigation site is located near the northern extent of the Tijuana River watershed. Moody Canyon, which contains an unnamed tributary of the Tijuana River, occurs just within the northern end of the mitigation site.



- Project Parcels Boundary
 - Beyer Park Development Project
 - Mitigation Site
 - 100-foot Survey Buffer
 - City of San Diego MHPA
- Vegetation Communities/Land Cover Types**
- Mule Fat Scrub
 - Maritime Succulent Scrub
 - Disturbed Maritime Succulent Scrub
 - Disturbed Diegan Coastal Sage Scrub
 - Diegan Coastal Sage Scrub
 - Disturbed Land
 - Ornamental
 - Urban/Developed
- Burrowing Owl Observation**
- Burrowing Owl with Active Burrow Observation
 - ▲ Burrowing Owl Observation
 - ▲ Potentially Suitable Burrow
- MSCP Covered Species**
- Otay tarplant
- Not MSCP Covered Species**
- Beach Goldenaster
- Plants Recommended for Salvage**
- ▲ Fish-hook Cactus
 - ▲ San Diego Barrel Cactus

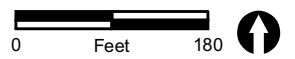
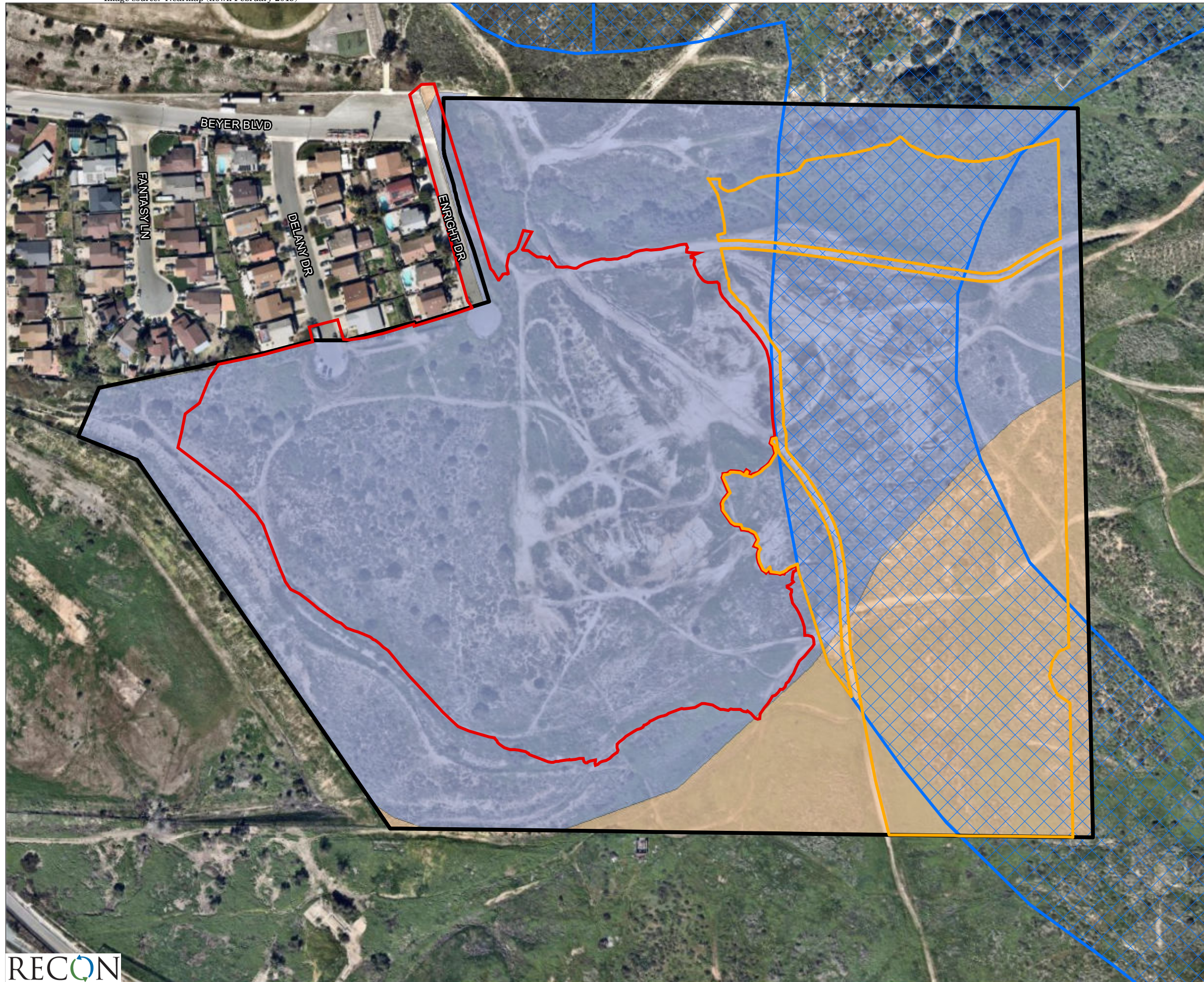








FIGURE 5
Existing Biological Resources



-  Project Parcels Boundary
-  Beyer Park Development Project
-  Mitigation Site
-  City of San Diego MHPA
- Soil Classification**
-  Olivenhain cobbly loam, 9-30 % slopes
-  Olivenhain cobbly loam, 30-50 % slopes

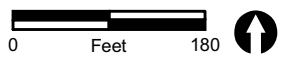


FIGURE 6
Project Location on Soils Map

2.2 Biological Conditions

There are three vegetation communities within the 14.12-acre mitigation site: maritime succulent scrub (8.30 acres), disturbed maritime succulent scrub (2.13 acres), and disturbed land (3.70 acres; see Figure 5).

Maritime succulent scrub is the dominant existing vegetation community within the mitigation site and is comprised of an open density of low growing shrubs. The maritime succulent scrub is dominated by San Diego bur-sage (*Ambrosia chenopodifolia*), jojoba (*Simmondsia chinensis*), cliff spurge (*Euphorbia misera*), coast prickly pear (*Opuntia littoralis*), California buckwheat (*Eriogonum fasciculatum*), San Diego viguiera (*Bahiopsis laciniata*), and California sagebrush (*Artemisia californica*). Otay tarplant (*Deinandra conjugens*) also occurs in the maritime succulent scrub found within the northern portion of the site. The species composition and general cover parameters in these undisturbed habitat areas was used as a guide in developing the restoration program throughout the mitigation site.

The disturbed maritime succulent scrub occurs throughout the mitigation site in areas that have been subjected to human-caused disturbance and non-native plant species invasion. The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including black mustard (*Brassica nigra*) and non-native grasses.

Disturbed land within the mitigation site consists of a complex of dirt roads and unauthorized pedestrian and off-road vehicle trails traversing the site, as well as a series of open areas characterized by exotic vegetation. The vegetated portions of disturbed land are dominated primarily by garland daisy (*Glebionis coronaria*) and Russian thistle (*Salsola tragus*), with scattered non-native grasses. The disturbed areas of the site also support evidence of fossorial mammal burrows.

2.3 Rationale for Expecting Success

2.3.1 Restoration Goals

The goals for this mitigation project are to restore, enhance, and maintain maritime succulent scrub habitat that is suitable for burrowing owl, beach goldenaster, and Otay tarplant (although mitigation for Otay tarplant is not a requirement of this project) (Photographs 1 through 5). Currently degraded areas will be improved through restoration to native maritime succulent scrub habitat suitable for burrowing owl foraging and nesting and beach goldenaster. Areas that currently support suitable burrowing owl habitat and Otay tarplant will be maintained to continue to support those species.



PHOTOGRAPH 1
Existing On-site Low-growing, Open Maritime Succulent Scrub
Habitat to be Enhanced as Suitable Burrowing Owl Habitat,
Central Portion of the Mitigation Site, Facing West, May 2019



PHOTOGRAPH 2
Existing On-site Disturbed Maritime Succulent Scrub Habitat to be
Enhanced to Suitable Burrowing Owl Habitat, Central Portion of the
Site Facing South, May 2019



PHOTOGRAPH 3
Trail Planned for Closure, Northern Portion of the Mitigation Site,
Facing East, May 2019



PHOTOGRAPH 4
Proposed Burrowing Owl Burrow Location, Facing Northeast,
May 2019



PHOTOGRAPH 5
Proposed Beach Goldenaster Mitigation Location, Facing Southeast,
May 2019

The restoration activities aim to restore and enhance maritime succulent scrub habitat as one contiguous patch of suitable wildlife habitat that is adjacent to additional habitat on County preserved land. Currently the site supports areas suitable for burrowing owl, including low-growing shrubs and open ground, and evidence of ground squirrel activity. The methods described in this Plan are intended to further enhance these areas and restore additional areas to maritime succulent scrub habitat that is suitable as western burrowing owl habitat.

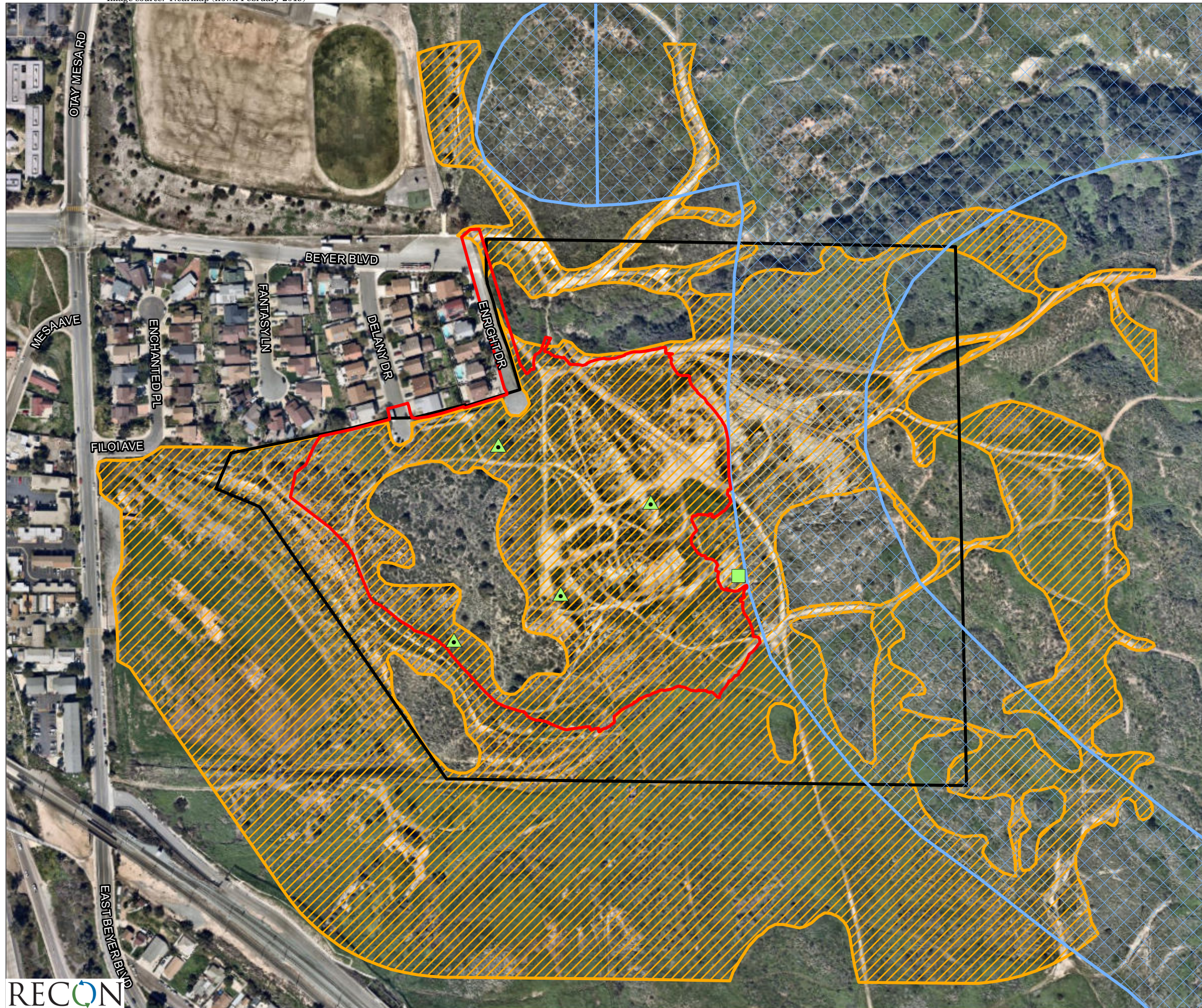
2.3.2 Restoration Site Suitability







The proposed location of the mitigation site is immediately east of the project development site, dominated by existing maritime succulent scrub habitat, and within the area where western burrowing owls and burrows were observed during focused surveys and suitable habitat was mapped during the burrowing owl habitat assessment (Figure 7; RECON 2017). The beach goldenaster-designated restoration area was chosen based on the sandy, erodible soils found in this area, which are appropriate for beach goldenaster growth and establishment. The existing maritime succulent scrub habitat within the mitigation site is fragmented and contains evidence of anthropogenic impacts, through the presence of unauthorized trails used by pedestrians and vehicles. The restoration activities described in this Plan will remove the fragmentation and effects of the anthropogenic impacts to create one contiguous patch of maritime succulent scrub that is suitable for burrowing owl foraging and nesting. In addition, it is anticipated that restoration of the disturbed lands to native habitat and enhancement of the disturbed maritime succulent scrub will reduce the extent of non-native invasive plants and will increase the habitat quality of this vegetation community.

The proposed mitigation site is considered suitable maritime succulent scrub, burrowing owl, and beach goldenaster restoration; factors that support this assessment include:

- 1) located on City-owned lands within and adjacent to the MHPA;
- 2) current use of site by fossorial mammals;
- 3) adequate site access;
- 4) proximity to water source;
- 5) proximity to existing habitat east of the site with similar soils and topography;
- 6) presence of adjacent native scrub habitat;
- 7) avoidance of utility easements; and
- 8) outside any brush management zone.

Existing utility access roads occur near the proposed mitigation site (Figure 8); these roads will facilitate both short- and long-term maintenance access for restoration activities while their location is also far enough away from proposed owl burrow locations that the occasional vehicular traffic will not pose a risk to owls or wildlife. Once restored, long-term maintenance and management of the site will be executed by the City's Parks and Recreation Department as part of their Open Space management program. No utility easements are present within the mitigation site (mitigation credit is not allowed within any easements) and potential future development in adjacent areas was taken into consideration when identifying the mitigation site.



-  Project Parcels Boundary
-  Project Impact Area
-  City of San Diego MHPA
-  Western Burrowing Owl Suitable Habitat
-  Burrowing Owl with Active Burrow Observation
-  Potentially Suitable Burrow

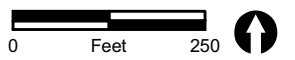
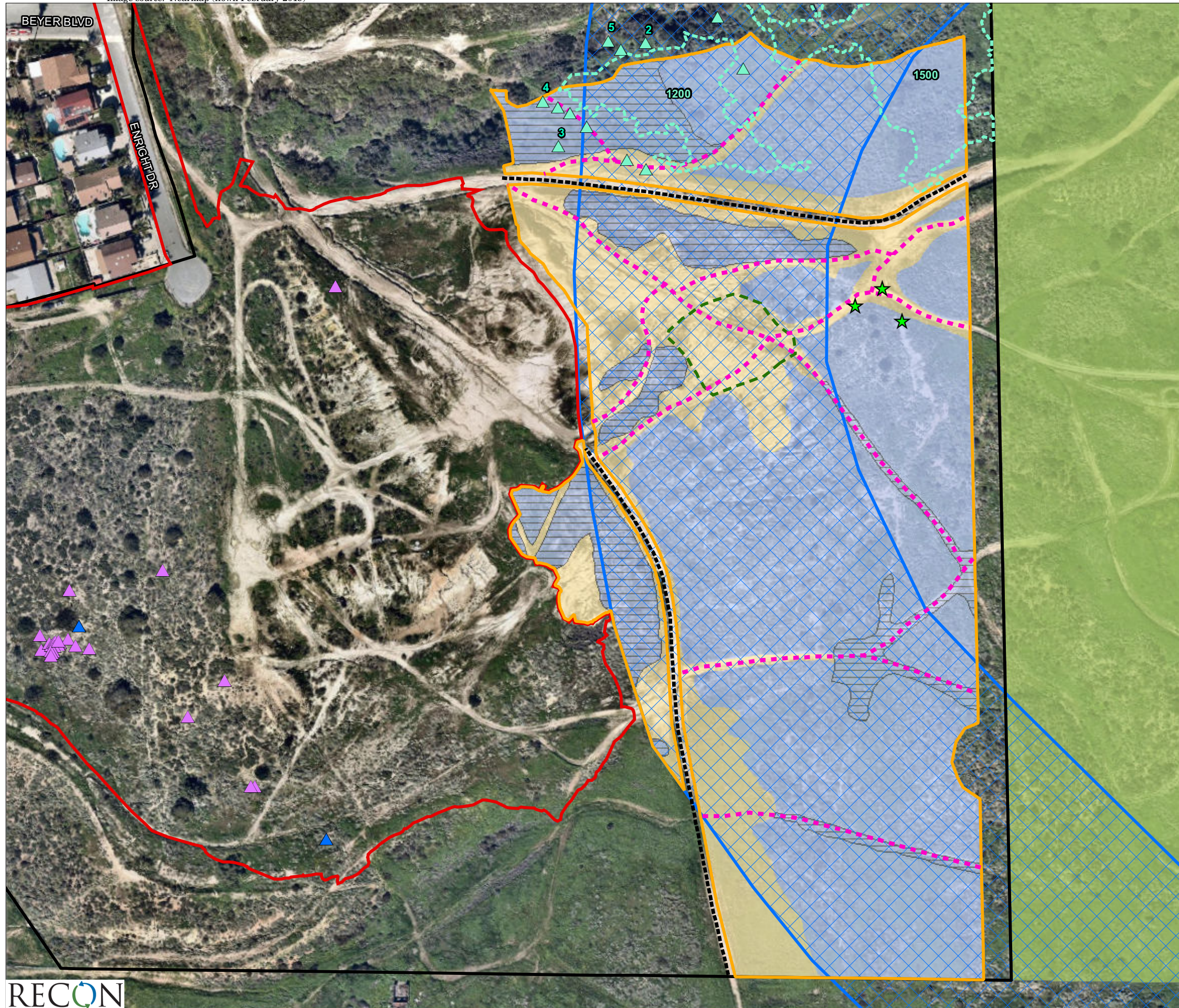


FIGURE 7
Project Location and Suitable
Burrowing Owl Habitat



-  Mitigation Site
-  Project Parcels Boundary
-  Beyer Park Development Project
-  City of San Diego MHPA
-  County Preserve
- Sensitive Plant Species Observations**
-  Otay tarplant
- Plants Recommended for Salvage**
-  Fish-hook Cactus
-  San Diego Barrel Cactus
- Mitigation Design**
- Enhancement**
-  Existing Maritime Succulent Scrub Habitat
-  Existing Disturbed Maritime Succulent Scrub Habitat
- Restoration**
-  Existing Disturbed Land
- Mitigation Details**
-  Trails to Remain Open
-  Trails to be Closed
-  Proposed Artificial Owl Burrow Locations
-  Proposed Beach Goldenaster Mitigation Location

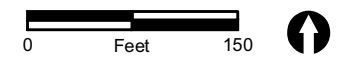


FIGURE 8
Proposed Mitigation Design

2.3.3 Restoration Viability

The viability of the proposed mitigation was assessed during the preparation of this Plan per the City's Land Development Code – Biology Guidelines (City of San Diego 2018a). The assessment included consideration of the site's connectivity to larger planned open space, the surrounding land uses, and sensitivity of maritime succulent scrub, western burrowing owl, and beach goldenaster to change. While the Beyer Park development will occur to the west of the mitigation site, land uses to the north, south, and east are largely planned as open space per the City's MHPA and County of San Diego preserve area (see Figure 4). The location of the restoration and enhancement adjacent to the larger open space preserve will reduce fragmentation of this sensitive vegetation community and increase viability and longevity of the habitat quality.

In preparing this Plan, the most current resources were utilized to develop a viable approach to mitigation for potential impacts to western burrowing owl. The San Diego Zoo Institute for Conservation Research (SDZ ICR) is a global leader in extinction research and their Recovery Ecology team works closely with local partners to help land managers protect western burrowing owl. Information regarding SDZ ICR's research can be found in their 2018 Project Report for burrowing owls (SDZ ICR 2018). The San Diego Natural History Museum's (SDNHM) research division, the Biodiversity Research Center of the Californias, is a leader in natural sciences for the scientific study of natural history, biological diversity, and evolution within southern California. Mr. Kevin Clark serves as the SDNHM's Director of Bioservices and has worked with burrowing owls conducting surveys and preparing management and mitigation plans for over 20 years.

The County of San Diego preserve area located immediately east of the mitigation site provides wildlife connectivity to the mitigation site and further suitable habitat for burrowing owls (Kevin Clark, pers. comm., May 15 and 29, 2019). Beyer Park will be located to the west; however, the proposed owl burrows were intentionally positioned towards the eastern side of the mitigation site, away from Beyer Park. Proposed burrow locations will provide a natural viewpoint for burrowing owls to observe foraging habitat within and adjacent to the mitigation site while the view of Beyer Park will be obstructed by natural topography. Burrow locations are located within or adjacent to disturbed land to avoid impacts to existing native vegetation during mound creation.

The design of Beyer Park includes several modifications to preserve the adjacent mitigation site as suitable for burrowing owl. Modifications include a single row of tall shrubs along the park's eastern perimeter to obstruct view of the park by owls and the installation of perch exclusion devices on light posts.

Burrowing owl site fidelity was considered when assessing sensitivity of burrowing owls to change. The mitigation site includes the one active owl burrow previously observed and is within 1,000 feet of the potentially suitable burrows that were observed during focused surveys and the burrowing owl habitat assessment (RECON 2017). Burrowing owls that may return to the area can readily locate the mitigation site due to its proximity to the impacted active and potential burrows. The pre-existing land use of the impact area and

mitigation site included burrowing owl foraging with no documentation of breeding. The mitigation site was designed to encourage additional use of the site for winter foraging and breeding with the inclusion of artificial owl burrows.

The artificial owl burrows recommended for installation are based on the most recent plans created by the SDZ ICR (2017). The placement of the artificial burrows within the mitigation site was determined based on the recommendations included in the SDZ ICR's Burrowing Owl Conservation and Management Plan for San Diego County (SDZ ICR 2017) and through on-site consultation with Mr. Clark of the SDNHM. Proposed artificial burrow locations are based on their location away from large populations of coast cholla (*Cylindropuntia prolifera*), which have been known to be used by wood rats to exclude owls from burrows, and from the proposed park to avoid inadvertent harassment of owls by park use.

2.4 Responsible Parties

2.4.1 Project Proponent and Financial Responsibility

The project proponent (City Public Works Department [PWD]) will be responsible for retaining (1) a qualified Restoration Specialist with over five years of experience monitoring habitat restoration to oversee the entire installation and monitoring of the mitigation program in coordination with City Development Services Department (DSD) staff and (2) a qualified installation/maintenance contractor with expertise in restoration of native habitat and artificial owl burrow installation and maintenance. Contact information for the City's PWD Project Manager is provided below:

Contact: Ms. Maya Mazon
City of San Diego
Public Works Department
525 B Street, Suite 750
San Diego, CA 92101
Office: 619-533-4620

The City PWD will be responsible for financing the installation, five-year maintenance program, and biological monitor of the proposed mitigation described in this Plan.

2.4.2 Responsible Agencies

The City DSD will be responsible for issuing any necessary permits and reviewing and approving this Plan.

Contact: Mr. Mark Brunette
City of San Diego
Development Services Department
1222 First Avenue, MS 301
San Diego, CA 92101-4101
Office: 858-654-4237

Due to the location of the mitigation site on City-owned preserve lands, the City's Parks and Recreation Department will be responsible for overseeing the establishment and development of habitat during the five-year maintenance and monitoring period and beyond. The primary avenue for the City's participation is through the permitting process; reviewing and commenting on this Plan, the construction documents, and subsequent annual reports; and inspecting and commenting on significant milestones involved in the implementation of this Plan.

Contact: Ms. Gina Washington
City of San Diego
Parks and Recreation Department
Office: 858-538-8066
gWASHINGTON@sandiego.gov

2.4.3 Restoration Specialist

Overall supervision of the installation and maintenance of this restoration effort will be the responsibility of a Restoration Specialist with at least five years of maritime succulent scrub restoration and artificial burrowing owl burrow installation. The Restoration Specialist will oversee the efforts of the installation/maintenance contractor for the life of the restoration. Specifically, the Restoration Specialist will educate all participants about restoration goals and requirements; inspect plant material; directly oversee planting, seeding, weeding, installation of artificial owl burrows, and other maintenance activities; and other maintenance activities; and conduct regular monitoring as well as annual assessments of the restoration effort. The Restoration Specialist will provide the PWD Project Manager and contractor with a written monitoring memo, including a list of items in need of attention. The Restoration Specialist will prepare and submit required reports annually.

2.4.4 Installation/Maintenance Contractor

The City PWD Project Manager will hire a qualified restoration contractor, i.e., artificial burrowing owl burrow installation, sensitive plant species restoration, and native and non-native plant identification. The contractor will be a firm holding a valid C-27 Landscape Contracting License from the State of California, a valid Pest Control Business License, and a Qualified Applicator Certificate or Qualified Applicator License, with Category B, that will allow them to perform the required work for this restoration effort. The PWD Project Manager may change contractors at their discretion.

During the installation, the contractor will be responsible for initial weed control/dethatching, irrigation installation (if applicable), implementation of grow/kill cycles, mound creation, artificial burrow installation, barrier installation, and planting and seeding, as well as maintenance of the restoration site during the 120-day Plant Establishment Period (PEP) and five-year maintenance period.

Following installation, the contractor will submit marked up as-builts for all activities that occurred during implementation to the PWD Project Manager. The contractor will be held responsible for meeting the success criteria specified for the PEP until formal sign-off of the PEP has been obtained from the Restoration Specialist, PWD Project Manager, and City DSD staff.

Following formal sign-off of the PEP, the contractor will maintain the restoration areas for five years. During this period, the contractor will service the entire mitigation site according to the maintenance schedule (Section 4.0, below). Service will include, but not be limited to, weed control, irrigation maintenance, trash removal, watering, dead plant replacement, re-seeding, and pest and disease management. All activities conducted will be seasonally appropriate and approved by the Restoration Specialist and PWD Project Manager. The contractor will meet with the Restoration Specialist and PWD Project Manager at the site when requested and will perform all checklist items in a timely manner as directed.

2.4.5 Burrowing Owl Biologist

A qualified biologist with experience monitoring and surveying for burrowing owls will be required if work occurs during burrowing owl breeding season (February 1–August 31). The biologist will determine if burrowing owls are present and, if present, will work with restoration crews to direct work in a manner that avoids impacts to burrowing owls.

2.4.6 Native Plant Nursery

Seed collection and bulking, plant salvage and storage, and container plant propagation will be conducted by a nursery that specializes in native plants and contract seed collection and growing. The nursery will be responsible for providing brief updates on the progress of plant salvage, seed collection, and bulking activities to the Restoration Specialist and City PWD Biologist.

3.0 Implementation Plan

This section describes the design of the proposed mitigation and how it will be implemented. Implementation of the mitigation efforts would be conducted under the direction of the qualified habitat Restoration Specialist with close coordination with the City PWD Biologist and shall adhere to appropriate standards stated in the current City’s “Whitebook” edition (City of San Diego 2018b or updated, as relevant). Seed collection should commence at least two seasons prior to the initiation of project impacts. All other mitigation activities would commence the first summer-fall season prior to, or concurrently with, construction. Activities that take place during the burrowing owl breeding season (February 1–August 31) would require the presence of a burrowing owl monitor. The timing of artificial burrow installation and burrowing owl exclusion would be closely timed with construction activities, coordinated with the City, and will include the surveys outlined in

the Biological Technical Report (RECON 2019). The proposed mitigation design is shown on Figure 8.

3.1 Preliminary Design and Engineering

Mitigation would occur adjacent to the project site within the City-owned parcel. Mitigation would consist of improvements to maritime succulent scrub habitat through restoration and enhancement efforts. Restoration will occur on approximately 3.70 acres of disturbed lands. Disturbed land will be restored to maritime succulent scrub suitable for burrowing owl foraging and nesting through weed maintenance, container plant installation, and seeding. Decompaction of disturbed areas that are currently unauthorized trails or roads will occur, as needed. Enhancement will occur for approximately 2.13 acres of disturbed maritime succulent scrub. Disturbed maritime succulent scrub will be enhanced to maritime succulent scrub through weed maintenance. It is not anticipated that installation of container plants and/or seed will be necessary for the disturbed maritime succulent scrub areas. Approximately 8.30 acres of existing maritime succulent scrub will be further enhanced through minor weed maintenance only. All areas should be maintained as suitable burrowing owl habitat throughout the five-year maintenance and monitoring period, as described in Section 4.0. A figure depicting the suitable habitat present adjacent to the project site can be found in Figure 7. Areas not mapped as suitable habitat will be enhanced to create foraging habitat for burrowing owl. A figure depicting the mitigation site boundaries, and the enhancement and restoration areas can be found in Figure 8.

To further enhance the mitigation area, artificial owl burrows will be installed, existing Otay tarplant populations will be preserved, and an area that supports beach goldenaster will be created (see Figure 8).

Within the mitigation site, a cluster of three artificial owl burrows would be constructed and installed to provide habitat to support one breeding pair of western burrowing owls using the most up-to-date research. The site would support 14.12 acres of suitable western burrowing owl/maritime succulent habitat restored through dethatching, weed maintenance, native plant installation and hand seeding, barrier construction, and continued maintenance and monitoring. Otay tarplant will be preserved by ensuring that the population will not be disturbed during enhancement and restoration activities. Beach goldenaster would be restored through seed collection, container plant installation, and seed bulking and dispersal. Implementation activities are described in Sections 3.3 and 3.4 and ongoing maintenance and monitoring activities are discussed in Section 4.0. For beach goldenaster, a pre-construction survey will be conducted to determine the number of individuals present at the time of the proposed project. Impacted beach goldenaster individuals will be mitigated in-kind through restoration. The results of this pre-construction survey may inform the number of beach goldenaster to be planted.

If owl exclusion activities take place within burrowing owl breeding season (February 1 to August 31), additional precautions may be required and will be determined through discussion with the City PWD Biologist. Table 5 presents the order of occurrence for the

proposed restoration activities and the months in which they are to occur but does not denote frequency.

Table 5 Restoration Implementation Activities Schedule												
Order of Occurrence	Jan	Feb ¹	Mar ¹	Apr ¹	May ¹	Jun ¹	Jul ¹	Aug ¹	Sep	Oct	Nov	Dec
Pre-Construction												
1. Plant Salvage	X	X	X	X	X	X	X	X	X	X	X	X
2. Beach Goldenaster Seed Collection								X	X	X	X	
3. Beach Goldenaster Bulking									X	X	X	X
4. Mound Creation ²									X	X		
5. Artificial Owl Burrow Installation ²										X	X	
6. BUOW Exclusion/ Passive Relocation ^{2,3}									X	X	X	
7. Burrowing Owl Relocation ³		X	X	X	X	X	X	X				
Site Preparation												
8. Barrier/Signage											X	X
9. Dethatching						X	X	X				
10. Irrigation System Installation ³									X	X		
11. Grow/Kill Cycle	X	X	X	X	X							
Installation												
12. Plant Installation	X	X									X	X
13. Seeding	X	X										X
¹ BUOW breeding season ² Activities must occur prior to any ground disturbance or vegetation removal ³ If needed												

3.2 Pre-Construction Activities

Required pre-construction activities include native plant salvage; beach goldenaster survey, seed collection, bulking, and plant propagation; mound creation; artificial owl burrow installation; trail decompaction; and burrowing owl exclusion. These activities would occur prior to the start of the construction of Beyer Park, in particular, mound creation and owl burrow installation must occur prior to construction to avoid potential significant impacts to burrowing owls. Restoration activities should occur in the order included in the following sections, although seasonal variability should be taken into consideration and the contractor’s best professional judgment should be applied. Some activities may be conducted concurrently. The timing of all activities should be closely coordinated with the City PWD Biologist and Wildlife Agencies.

3.2.1 Native Plant Salvage

Native species indicative of maritime succulent scrub occurring within the impact area appropriate for salvage would be collected prior to construction activities (see Figure 5). Anticipated species to be salvaged include coast barrel cactus (*Ferocactus viridescens*) and fish-hook cactus (*Mammillaria dioica*). All plants would be salvaged from the ground using

hand tools to remove the plant and root ball and the same methods would be applied for both species. The plants would be bare rooted, root trimmed, and the plants stored under shade cloth for one to three weeks, depending on weather conditions and season, to allow roots to callus. This will prevent to and encourage protective callus development on freshly exposed surfaces. Once the roots have callused, the barrel cactus and fish-hook cactus would be transplanted either within the mitigation site or into containers to be cared for at a local native plant nursery until the mitigation site is ready for plant installation. If plants require care for longer than six months, the nursery would provide quarterly (every three months) progress updates with photos to document plant health. Brief updates would be provided to the Restoration Specialist and City PWD Biologist.

3.2.2 Beach Goldenaster Seed Collection and Propagation

Beach goldenaster seed would be collected from the existing plant populations found within the impact area once the plants have set seed, likely between August and November but may vary based on seasonal weather patterns. Collected seed would be taken to an approved native plant nursery, rough cleaned, and stored until the fall. In the fall, when temperatures cool and conditions begin to favor native perennial plant germination, the seed would be sown into flats to germinate over the winter for container plant propagation and seed bulking. Individuals would be properly cared for through flowering and seed set and seed would be collected and rough cleaned. The bulking process would continue until adequate seed quantities are obtained to meet the project requirements, which may require several seasons (at least two) of bulking. In addition, 30 beach goldenaster container plants would be produced for installation within the mitigation site. The nursery would provide quarterly (every 3 months) progress updates with photos to document progress of the bulking activities to the Restoration Specialist and City PWD biologist.

3.2.3 Barriers

Concurrent with mound creation, temporary barriers will be installed at all unauthorized access point into the mitigation site to prevent unauthorized trespassing by people and vehicles. Barriers will not be installed at locations that will prohibit entrance into the site by maintenance or water trucks for the purposes of maintaining the mitigation site. Particular attention will be given to prohibit entrance into the site from the east and south by off-road vehicles. It is recommended that physical barriers (such as k-rails, orange environmental fencing, rocks, etc.) be installed if their removal at the end of the mitigation would not cause damage to native vegetation or owl burrows, as directed by the City PWD Biologist. Once grading is complete, signs would be installed to provide notice that the area is an ecological preserve, notify that trespassing is prohibited, and cite penalties for trespass violation including liability for repair of any damage to soil or biological resources within the barrier. Signs in both Spanish and English will be mounted at approximately 200-foot intervals around the mitigation site on metal t-posts or similar.

The mitigation site will be permanently fenced with three wire cable fencing or equivalent along the perimeter of the mitigation site. Vegetation will be strategically placed along the trails and at other strategic locations, to prevent unauthorized entry and to minimize vandalism. Protection of the mitigation site from human disturbance is essential for success. Of particular importance is protection of the mitigation site from pedestrians and off-road vehicles. Any permanent fencing would be installed in consultation with the City.

3.2.4 Mound Creation

Mound creation at the site would be implemented to create suitable topography for owl burrows. Mounds would be approximately 3 feet high to allow space for the burrow installation and to provide the owls a higher elevation relative to the surroundings for perching.

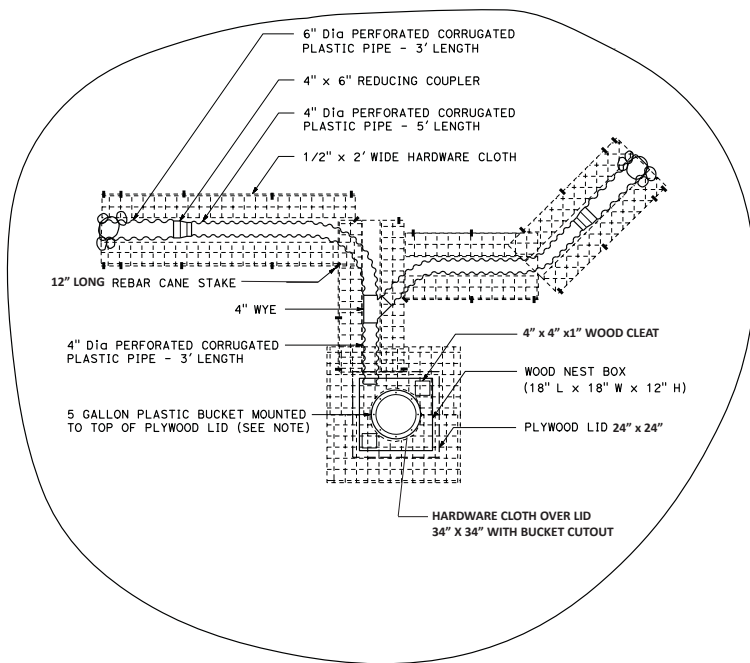
The mound creation would be conducted under the direction of the Restoration Specialist. Care would be taken during grading to avoid impacts to existing native plants. Areas that are to remain unaffected by mound creation activities would be marked prior to implementation. Grading and creation of the mounds would be done in a manner that removes or erases unauthorized trails and soil work will be done strategically to help visibly blend the unauthorized trails within the mitigation site in the approximate locations shown on Figure 8. The grading would be implemented using a small bulldozer. The equipment operator would also be experienced in habitat restoration work. The appropriate BMPs will be installed per the standards included in the current City's "Whitebook", as needed.

3.2.5 Trail Decompaction

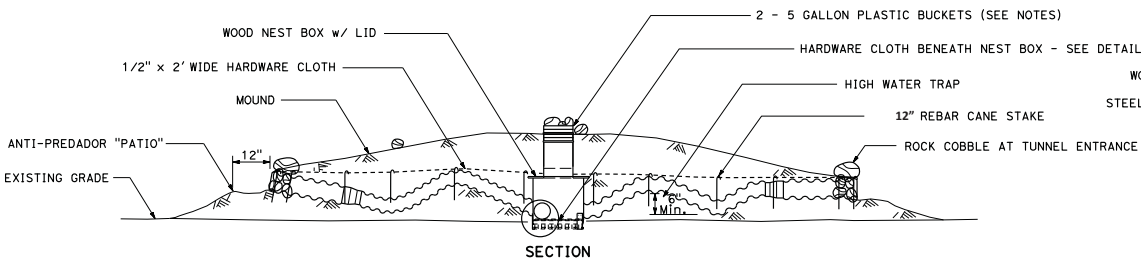
Concurrent with mound creation, trails to be closed will be decompacted, as needed. Areas where soil has become compacted from off-road-vehicle activity that may inhibit the planting and establishment of container plants will be targeted for decompaction. Trail decompaction would be conducted under the direction of the qualified restoration specialist. Trail decompaction activities will be conducted in a manner that does not result in impacts to adjacent native vegetation or soil crusts. Trail decompaction will be accomplished using a small bulldozer with ripping tines, or similar. The appropriate BMPs will be installed per the standards included in the current City's "Whitebook", as needed.

3.2.6 Owl Burrow Installation

Artificial owl burrows would be installed within the created mounds in the approximate locations shown on Figure 8. Burrows would be built and installed per the drawings shown in Figure 9. Figure 9 includes the artificial burrowing owl burrow design developed and modified by the SDZ ICR (SDZ ICR 2018). The artificial owl burrows would be constructed with wood boxes and plastic corrugated pipe and installed within the created mounds. Owl burrows would be installed per Figure 9 and in a manner that supports western burrowing owl use of the mounds, including but not limited to installing burrow entrances in appropriate locations for owl perching and installing entrances at angles that preclude rain runoff from entering burrows.



PLAN



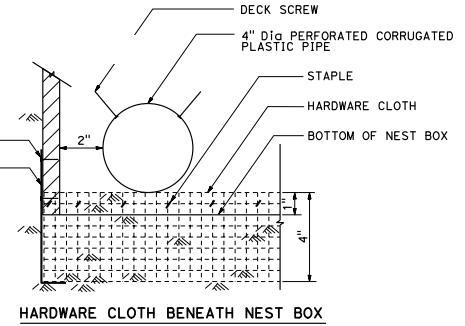
SECTION

ARTIFICIAL BURROWING OWL BURROW

NO SCALE

Notes for artificial burrowing owl burrows:

- Step 1. Use 3/4" pine for wood nest box. Use 3/4" plywood for nest box lid. Secure nest box walls with appropriate sized wood deck screws. Secure two cleats to lid positioned diagonally from each other with appropriate sized wood deck screws. Cleats can be constructed from 4" x 4" timber cut to 1" thickness. Position cleats at base of lid to keep lid from sliding off of nest box. Do not secure lid to nest box.
- Step 2. Cut 4-1/2" diameter hole in wood nest box wall 2" from corner and 1" from bottom. Extend perforated corrugated plastic pipe into nest box 2" beyond interior wall. Secure pipe to wall with two appropriate sized wood deck screws. Place 1/4" of native soil in bottom of perforated corrugated plastic pipe the entire length of the pipe.
- Step 3. All hardware cloth shall be 1/2" square mesh. Place hardware cloth (24" wide) over perforated corrugated plastic pipe prior to backfilling. Secure hardware cloth with 12" long cane stakes.
- Step 4. Place hardware cloth beneath nest box as detailed. Secure hardware cloth to nest box walls with 1/2" long galvanized steel staples. Install four appropriate sized L-brackets at each corner of nest box to provide support for nest box and hardware cloth. Secure each L-bracket to outside wall of nest box with minimum of four appropriate sized wood screws. L-brackets should extend 3" beyond the bottom of the box. Cut a 26" square of hardware cloth to wrap over L-brackets to secure to box, per cross section. Place 4" of native soil in bottom of nest box on top of hardware cloth.
- Step 5. Cut 8" diameter hole in center of nest box lid and 8" diameter hole in bottom of 5 gallon plastic bucket. Secure bucket to lid with appropriate sized wood screws. Install top lip of bucket level with finish grade of mound - adjust depth of wood nest box as necessary. Place hardware cloth over nest box lid. Overlap lid minimum 4" all sides.
- Step 6. Place 2nd 5 gallon plastic bucket inside 1st bucket. Fill bucket with native soil to 3" from top. Install rocks (3" to 6" diameter) in top of bucket. Integral color of all 5 gallon plastic buckets shall blend with surroundings, as approved by the City of San Diego.



HARDWARE CLOTH BENEATH NEST BOX

CROSS SECTION

FIGURE 9
Artificial Burrowing Owl Burrow Plan

3.2.7 Burrowing Owl Exclusion

If burrowing owls are found on the site during the pre-construction surveys, any potentially impacted burrowing owl individuals must be relocated out of the impact area using passive or active methodologies approved by the Wildlife Agencies. Burrow exclusion is a method of passive relocation that precludes owls from re-entering burrows that they have exited. The method outlined below includes an approach recommended by the SDZ ICR and requires installing one-way doors at all burrow entrances to evict owls from burrows that may be impacted during construction and encourage them to move into the nearby artificial burrows. Burrowing owl exclusion would take place after the installation of the artificial burrows and outside of burrowing owl breeding season (February 1 to August 31). The following guidelines conform to the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

Prior to exclusion, all potential burrows would be scoped and exclusionary, one-way doors installed. Exclusion should take place during the early morning or late afternoon hours when owls are typically active outside of their burrows. Exclusionary doors would be left in place for three or more days and burrows should be scope twice daily during the early morning or late afternoon hours after exclusionary door installation to ensure that owls have vacated the burrows. Once it has been determined through scoping and monitoring that owls are no longer occupying the burrow, the burrow would be collapsed using heavy equipment or hand tools.

For this mitigation project, it is anticipated that active burrowing owl relocation will not be required if project activities are timed appropriately. If active burrowing owl relocation is required, these activities will be determined through discussion with the City PWD Biologist.

3.3 Site Preparation Activities

Required site preparation activities include barrier installation, weed dethatching, irrigation system installation, and a grow-kill cycle. Site preparation activities would occur prior to or concurrent with the start of the construction of Beyer Park. Site preparation activities should occur in order listed in the following sections, although seasonal variability should be taken into consideration, the contractor's best professional judgment should be applied, and some activities may be conducted concurrently.

3.3.1 Dethatching

Prior to mound creation and outside of the burrowing owl breeding season (February 1 through August 30), crews familiar with native and non-native plants would remove the accumulated weedy thatch throughout the site using line trimmers and rakes.

Areas of black mustard and garland daisy within the restoration and enhancement areas, in particular, would be targeted for dethatching as these areas inhibit owl activity due to the tall structure of these species. Cut material would be raked into piles, removed from the

site, and taken to a landfill or put into a green waste dumpster for disposal. Removal of the thatch aides in creating space for mounds, preparing the site for container plant installation and hand seeding, and reducing future weed growth that may inhibit use of the site by burrowing owls.

3.3.2 Irrigation System Installation

A temporary aboveground irrigation system will be installed within areas planned to receive container plants in the disturbed maritime succulent scrub (enhancement areas/trail closure areas) and disturbed areas (restoration areas) at the restoration contractor's discretion and with the approval of the City PWD Biologist. The irrigation system would be field fit to ensure adequate irrigation coverage to all installed container plants. In particular, the beach goldenaster mitigation area will be on a separate station to allow for this area to be irrigated at the specific duration and frequency as required to maintain the species without impacting the establishment of other vegetation as these plants may require longer periods of dry-out between watering events compared to other planted species. If a point of connection to a reliable water source is not available at the time of mitigation implementation, a water truck will be utilized to provide supplemental irrigation to container plants.

3.3.3 Grow-Kill Cycle

After installation of the irrigation system, the stations located within the disturbed areas would run for a period of approximately 30 days. At the end of the 30-day period, all weeds would be sprayed with the appropriate herbicide. Weeds would continue to be treated with herbicide every two weeks until weed germination is no longer observed to ensure adequate suppression of the weed seed bank. This process typically requires three rounds of herbicide treatment.

If an irrigation system is not installed and there is time available within the project schedule, a grow-kill cycle would be performed through one rain season. Weeds would be allowed to germinate from natural rainfall and killed once they reach the appropriate size (less than 6 inches in height and/or prior to setting seed) for herbicide treatment (City of San Diego 2018b). Supplemental water would not be applied. All weeds would be treated before flowering and setting seed.

3.4 Installation Activities

Required installation activities include maritime succulent scrub and beach goldenaster plant and seed installation. Installation activities would occur after site preparation activities are complete, although seasonal variability should be taken into consideration, the contractor's best professional judgment should be applied, and some activities may be conducted concurrently. Planting and seeding will occur in areas shown on Figure 8 as disturbed maritime succulent scrub, disturbed land, trails to be closed, and the beach goldenaster mitigation location.

3.4.1 Plant and Seed Installation

The maritime succulent scrub habitat would be planted after the installation of the owl burrows and after the first significant rain of the rain season. See Table 5 for the seeding and planting schedule. The mitigation site currently supports maritime succulent scrub, disturbed maritime succulent scrub, and disturbed habitats. Plant and seed installation will occur within the disturbed habitat areas, including within trails to closed. The restoration of native plant communities at the site would be based on a principle of re-establishing suitable soil conditions (i.e., mycorrhizal fungi); reintroduction of native shrub and herbaceous species; and native seed banks suitable for western burrowing owl foraging habitat.

Approximately 3.69 acres would be restored from disturbed habitat to maritime succulent scrub suitable for burrowing owl foraging through container plant installation and seeding.

The 2.13 acres of disturbed maritime succulent scrub and 8.30 acres of maritime succulent scrub to be enhanced on-site should not require container plant or seed installation but will be further enhanced by minor weed maintenance. All areas should be maintained as suitable burrowing owl habitat throughout the five-year maintenance and monitoring period, as described in Section 4.0.

The restoration techniques would include installing container stock grown from a local seed source and hand-broadcasting locally collected seed. All seed used for plant propagation would be collected from the vicinity of the mitigation site where feasible and as approved by the City PWD Biologist. All planting will be installed in a way that mimics natural plant distribution. Only lower growing species would be installed within 50 feet of the installed artificial owl burrows (see Figure 8).

The reestablishment of a fully diverse native community would rely on appropriate initial conditions and intensive weed control efforts. The container plant palette and seed mix for the maritime succulent scrub restoration that supports burrowing owl are listed in Tables 6 and 7. All plant material salvaged from the impact area shall be installed within the mitigation site.

The plant palette was designed to mimic the plant composition and structure of the current on-site maritime succulent scrub.

Table 6 Container Stock for the Maritime Succulent Scrub Restoration			
Scientific Name	Common Name	Size	Number per Acre ¹
<i>Agave shawii</i>	Shaw’s agave	Rose-pot	50
<i>Artemisia californica</i> ²	California sagebrush	1-gallon	50
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	Rose-pot	80
<i>Bahiopsis laciniata</i> ²	San Diego sunflower (viguiera)	1-gallon	50
<i>Bergerocactus emoryi</i>	Golden cereus	1-gallon	60
<i>Distichlis spicata</i>	Salt grass	Rose-pot	150
<i>Echinocereus engelmannii</i>	Strawberry hedgehog cactus	1-gallon	60
<i>Eriogonum fasciculatum</i> ²	California buckwheat	1-gallon	70
<i>Euphorbia misera</i> ²	Cliff spurge	1-gallon	40
<i>Opuntia littoralis</i> ²	Coast prickly pear cactus	1-gallon or cuttings	60
<i>Simmondsia chinensis</i> ²	Jojoba	1-gallon	80
TOTAL			750
¹ Approximate number per acre to be adjusted for areas within existing native target vegetation.			
² Not to be installed within 50 feet of artificial owl burrows.			

Table 7 Seed Mix for the Maritime Succulent Scrub Restoration		
Scientific Name	Common Name	Pounds per Acre
<i>Acmispon glaber</i>	Deerweed	1.0
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	1.0
<i>Eriophyllum confertiflorum</i>	Golden yarrow	2.0
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	Beach goldenaster	TBD
<i>Lasthenia californica</i>	California goldfields	4.0
<i>Plantago erecta</i>	Dot seed plantain	4.0
TOTAL		12.0
TBD = to be determined based on seed collection and bulking quantities as discussed in Section 3.3.2.		

3.4.2 Beach Goldenaster Planting and Seed Dispersal

The 30 one-gallon beach goldenaster plants would be installed within the designated area within the maritime succulent scrub habitat. The designated area would be clearly marked with snow fencing to ensure protection of the plants. Fencing would be removed after Year 3 to prevent the establishment of visible boundaries between the beach goldenaster area and the maritime succulent scrub. Maintenance measures for this area will follow those outlined for the maritime succulent scrub but particular care (i.e., additional watering and weeding) may be required to maintain at least 25 individuals at the end of the mitigation (or fewer if this number is adjusted based on the results of the pre-construction survey). Beach goldenaster seed would also be distributed by hand within the designated beach goldenaster area and throughout the mitigation site in the areas identified in Figure 8. Seed would be scheduled for distribution in the fall/winter sometime following the first significant rain event of the season and immediately prior to a forecasted rain event (not more than 48 hours). The area would be lightly raked and the seed dispersed by hand.

3.5 As-Built Reporting

At the completion of implementation, the installation will be approved by the City DSD and PWD Biologist. The installation/maintenance contractor shall submit an as-built report that documents implementation activities and the dates they were completed. The report will include but not be limited to dates of on-site work, location of artificial owl burrows, location of the beach goldenaster designated area, final maritime succulent scrub plant and seed lists and quantities, and modifications to the mitigation site design that occurred through consultation with the Restoration Specialist and City PWD Project Manager. The report may be a brief letter report with photos of the final site design and figures with locations of site elements.

3.6 120-day Plant Establishment Period

The 120-day Plant Establishment Period (PEP) would begin once the implementation activities are approved by the City, likely once all container plants and native seed have been installed. The PEP shall last for 120 calendar days and shall consist of all maintenance activities and methods discussed in Section 4.0. Regular (at least once per week) qualitative monitoring will be conducted to assess native container plant establishment and non-native weed germination and make recommendations for maintenance activities, as needed. At the end of the PEP, any dead container plants would be replaced in kind and the site would be free of non-native weed species. Year 1 would begin after successful completion of the PEP and any required remedial container plant installation has been completed. At the completion of the PEP, the Restoration Specialist will prepare a letter report for submittal to the City to document activities conducted during the PEP and the site progress towards final success criteria.

4.0 Maintenance Plan

Regular maintenance of the mitigation site would be required during the five-year maintenance period to establish native container plants and control non-native weeds and will be conducted throughout the entire mitigation site. The need for weeding is expected to decrease substantially by the end of the maintenance period provided successful habitat restoration has been achieved. Weeding activities would include herbicide application, line trimming, and hand pulling, depending on the species and phenology of the weed encountered and their location within the mitigation site. Maintenance activities would also include watering of planted container stock, re-planting and re-seeding of native species, repair of fencing and signage, and trash removal. Maintenance activities would be performed consistent with the following and per the schedule in Table 8:

- All herbicide and pesticide use will be under the direction of a licensed qualified applicator and will be applied by personnel trained to apply herbicide. All weeding personnel will be educated and experienced to distinguish between native and non-native species to ensure that local native plants are not inadvertently killed.

- Appropriate herbicides will be applied on all areas that have been dethatched. Herbicide will only be applied when wind speed is low and spray nozzles will be of a design to maximize the size of droplets. A wind speed of less than 5 miles per hour is recommended, however, best professional judgment should be exercised when spraying weeds to reduce the potential for drift of herbicide to non-target plants. Application of herbicide will not occur if rain is projected within 24 hours of the scheduled application.
- Weeds will be treated once they reach the appropriate size (less than 6 inches in height and/or prior to setting seed) for herbicide treatment (City of San Diego 2018b).
- A 10-foot buffer will be maintained between concentrations of any sensitive plant species during herbicide application.
- Weeds would only be removed by hand from within the beach goldenaster designated mitigation area.
- A 10-foot-wide weed maintenance buffer from the mitigation site boundary will be established around the mitigation site. The buffer will be maintained for non-native weeds to prevent the encroachment of weeds into the mitigation site.
- Watering of container plants would be conducted via an irrigation system, if installed, or water truck and hoses. Water would be done in a manner to mimic natural rainfall, at a frequency and duration to encourage deep root establishment, and prevent runoff.
- Artificial owl burrows would be checked and maintained annually. Burrows damaged by predators would be repaired immediately if unoccupied or, if occupied, outside the burrowing owl breeding season (February 1–August 30). At the end of each breeding season, the nest boxes and burrow entrances would be checked for debris or damage and necessary maintenance or repairs would be made.
- Replacement of container plants would be conducted, as needed. All dead plants will be replaced during years 1 and 2 after initial plant installation, unless their function has been replaced by natural recruitment.
- All fencing and signs would be checked and repaired as necessary.
- Trash in the mitigation areas would be removed as necessary.
- After completion of the PEP, mitigation areas would be qualitatively monitored once a week by the restoration ecologist for the first two months, once every other week for the next four months, and monthly thereafter during the growing season (December to May). Monitoring will include, but not be limited to, assessment of container plant health, native seed germination, weed presence, and unauthorized trespassing. Monitoring results will be used to determine the timing and frequency of maintenance activities.

- At the completion of the five-year maintenance period and prior to final sign-off, foot paths and access routes that may have developed within the site during maintenance and monitoring would be vertically mulched with brush and prickly pear cactus pads. This is only required in areas where the footpaths may encourage trespassing. If trespassing has not been problematic in these areas, no vertical mulching is required.
- Other site problems such as vehicle damage and erosion would be reported to the City Project Biologist with recommendations for remedial measures.

Table 8
Restoration Maintenance Schedule

Task	Year 1	Year 2	Year 3	Year 4	Year 5
Weed Control (Herbicide Treatment)	Monthly ¹	6 times per year ¹	4 times per year ¹	4 times per year	3 times per year
Watering	As needed	As needed	As needed	--	--
Supplemental Upland Planting/Seeding	Fall/Winter	Fall/Winter	--	--	--
Beach Goldenaster Seeding	Winter	Winter	Winter		
Artificial burrow maintenance	As needed	As needed	As needed	As needed	As needed
Trash Removal	As needed	As needed	As needed	As needed	As needed
Barrier/Sign Maintenance	As needed	As needed	As needed	As needed	As needed
Footpath Vertical Mulching	--	--	--	--	As needed

¹Minimum frequency

5.0 Ecological Performance Standards

The performance standards used to determine successful mitigation will include the achievement of standards for maritime succulent scrub vegetation, beach goldenaster establishment, and suitable western burrowing owl habitat establishment. The achievement of these standards will be measured by native and non-native cover, plant species richness, burrowing owl use, and beach goldenaster presence. The performance standards discussed below have been developed to provide evidence that the restoration of the mitigation site has been successful at mitigating for beach goldenaster impacts and replacing and improving habitat for western burrowing owl breeding and foraging.

The target values for the maritime succulent scrub would ultimately be based on values appropriate to support owl foraging. In addition, the enhanced and restored areas on-site shall blend with the preserved areas on-site. An appropriate reference site will be determined by the Restoration Specialist in coordination with the City PWD Biologist. High quality maritime succulent scrub habitat appropriate for burrowing owl with the same southwestern exposure and soils is located adjacent to the mitigation area and can be used as a reference site.

Performance standards for enhancement areas (see Figure 8) will focus on control of non-native species. The goals will be for the maritime succulent scrub and disturbed maritime succulent scrub within the enhancement area to seamlessly blend together and to provide habitat for western burrowing owl. The performance standards for the restoration areas (see Figure 8) will focus on control of non-native species and obtaining native maritime

succulent scrub cover appropriate for this vegetation community and western burrowing owl.

Each of the specified performance standards will be evaluated following the completion of seasonal field monitoring to determine if the final performance standards have been met and to assess the likelihood that any particular standard will ever be met (taking into account the seasonal conditions). The final assessment of success shall be based on the combined performance over the monitoring period and an analysis of the trends established.

5.1 Maritime Succulent Scrub Restoration Vegetation Performance Standards

The performance standards for the maritime succulent scrub habitat are based on establishing vegetation within the disturbed areas that replicate the open nature of the existing maritime succulent scrub habitat on-site and as compared to an appropriate reference site. In addition, absolute performance standards have been established for container plant survivorship, species richness, and weed abundance. As the maritime succulent scrub habitat will also serve as western burrowing owl foraging habitat, total native coverage should be appropriate to support burrowing owl use of the site. Absolute approximate yearly target values for the performance standards cover and species richness of maritime succulent scrub habitat that provides suitable burrowing owl habitat are presented in Table 9.

Table 9 Vegetation Performance Standards ¹ (percent)				
Year	Native Shrub Species Cover	Native Herbaceous Species Cover	Species Richness ²	Non-native Species Cover
1	10	5	12	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
2	20	10	13	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
3	30	15	14	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
4	40	20	15	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
5	40	20	15	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
Cal-IPC = California Invasive Plant Council ¹ Alternatively quantitative values may be compared to a reference site ² Number of different species				

5.1.1 Plant Survivorship, Vegetation Cover, and Species Richness Performance Standards

In addition to the performance standards included in Table 8, the standards listed below will also be evaluated and applied to the mitigation site. The mitigation site will be compared to an appropriate reference site with the potential to support burrowing owl as approved by the City PWD Biologist. The plant survivorship, vegetation cover, and species richness performance standards are as follows:

- Container plant survival shall be 80 percent of the initial plantings for year 1. After year 1, all dead plants will be replaced unless their function has been replaced by natural recruitment.
- At the end of the five-year monitoring program, the mitigation site will be compared to the reference site. The mitigation site will support 80 percent of the native shrub cover, native herbaceous cover, and native species richness as compared to the same values observed and recorded at the reference site during the same monitoring year.
- At the end of the monitoring program, restored burrowing owl foraging habitat will visibly blend in with the existing maritime succulent scrub habitat on-site and will not contain vegetative cover that precludes owl foraging.

5.1.2 Non-native Species Tolerance Performance Standard

The relative cover of all non-native species within the mitigation site will not exceed an absolute value of 5 percent and no California Invasive Plant Council List High or Moderate rated species will be present at the end of the five-year monitoring period. In addition, no non-native perennial species will be present.

5.2 Enhancement Areas Vegetation Performance Standards

The performance standards for the maritime succulent scrub enhancement areas will focus on the control of non-native species. The relative cover of all non-native species within the mitigation site will not exceed an absolute value of 5 percent and no California Invasive Plant Council List High or Moderate rated species will be present at the end of the five-year monitoring period. In addition, no non-native perennial species will be present (Table 10).

Table 10 Enhancement Areas Vegetation Performance Standards (percent)	
Year	Non-native Species Cover
1	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
2	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
3	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
4	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
5	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
Cal-IPC = California Invasive Plant Council	

5.3 Beach Goldenaster Performance Standards

At the end of the five-year monitoring period, a minimum of 25 beach goldenaster individuals should be present within the mitigation site. This number may be adjusted based on the results of the pre-construction survey. The 25 individuals can be present within the designated beach goldenaster area, individuals that germinated from seed distributed throughout the mitigation site, or from a combination of the two. In addition, during at least two of the monitoring years, a minimum of 25 individuals must have been observed setting seed. At least one of these years must occur outside of the years when supplemental watering is being applied to the plants (i.e., Years 4 or 5).

5.4 Burrowing Owl Performance Standards

At the end of the five-year monitoring period, western burrowing owls should be observed utilizing the mitigation site during two of the five monitoring years during either breeding or non-breeding season. Burrowing owl presence may be confirmed through focused non-protocol burrowing owl surveys or through incidental observations that may occur during routine qualitative and quantitative monitoring.

5.5 Photographic Documentation

A minimum of fifteen permanent photo points will be established within the mitigation site prior to the start of restoration activities. Representative photographs will be taken at the completion of implementation, completion of the PEP, and annually to visually document the progress of vegetation cover development over the monitoring period.

6.0 Monitoring Requirements

A minimum commitment of five years of monitoring of the mitigation site will be completed. Biological monitoring for performance standard goals will include vegetation monitoring, complete flora and fauna inventories, and photographic documentation. The monitoring schedule is presented in Table 11.

Task	Year 1	Year 2	Year 3	Year 4	Year 5
Qualitative Monitoring	Once weekly for first 2 months; Once every other week for months 2–6; Monthly thereafter during the growing season (December-May)	Every other week during the growing season	Monthly during the growing season	Monthly during the growing season	Monthly during the growing season
Beach Goldenaster Monitoring	Once weekly for first 2 months; Once every other week for months 2–6; Monthly thereafter during the growing season (December-May)	Every other week during the growing season	Monthly during the growing season	Monthly during the growing season	Monthly during the growing season
Photograph Documentation	As-needed	Spring	Spring	Spring	Spring
Vegetation Monitoring (Quantitative)	Spring	Spring	Spring	Spring	Spring

¹Time dependent on rainfall.

6.1 Maritime Succulent Scrub Vegetation Monitoring

It is anticipated that maritime succulent scrub habitat would become established within the five-year monitoring period, although full maturation of the community may take longer. Overall native cover (i.e., shrubs, herbaceous species) and species richness would be evaluated for the mitigation site and compared to the same data collected for the reference site. For the enhancement areas, overall non-native cover would be evaluated and compared to the reference site.

The native and non-native vegetation cover in the mitigation and reference sites would be measured using ocular estimates and line-intercept sampling method. Transects should be separated by restoration areas and enhancement areas. The line-intercept method involves the establishment of randomly placed transects to gather data to estimate native vegetation cover (i.e., shrub and herbaceous). Approximately two 10-meter transects will be sampled per acre with a representative number of transects placed in restored and enhanced areas. Plant species and growth form will be noted at every 0.5 meter. Vegetation coverage of the mitigation site should be similar to the reference site at the end of the five-year monitoring

period. Species richness would be determined by lists of all plant species present within the mitigation site.

The presence of non-native weed species would be monitored in the mitigation site. Information collected during qualitative monitoring visits would be used to schedule the maintenance crews to conduct weed maintenance activities. Ocular estimates and transect data would be used to quantify coverage of non-native species and compare to performance standards.

In addition, the mitigation site as a whole should blend together at the end of the monitoring period. The mitigation site should look like one contiguous patch of native vegetation.

6.2 Beach Goldenaster Monitoring

Counts of beach goldenaster individuals would be conducted annually throughout the mitigation site during the blooming period for this species, approximately March through June. The timing of these counts would be adjusted based on seasonal weather patterns and qualitative monitoring of the species phenology for that year. Total individuals at each stage of phenology would be recorded; seedling, vegetative, flowering, seeding. Counts would be separated into individuals observed in the beach goldenaster planting areas and other areas of the mitigation site.

6.3 Burrowing Owl Monitoring

Monitoring for western burrowing owl would be conducted by a biologist familiar with the behavior and natural history of the burrowing owl and consist of four surveys during each monitoring year, three surveys conducted during the non-breeding season (September 1 through January 31) and one conducted during the breeding season (February 1 through August 31) with at least two months between each survey. Surveys would be conducted in the morning or late afternoon when owls are active outside their burrows and timed with weeding activities and beach goldenaster monitoring.

Owl observance shall be marked in the field and approximately locations shall be included in annual reports. In addition, fossorial mammal activity shall be recorded during burrowing owl surveys and a description of their activity would be included in the annual reports.

6.4 Reporting

Annual reports that assess both the attainment of yearly interim and progress toward the final performance standards for the site would be submitted to the City PWD Biologist and Project Manager for dispersal to the appropriate stakeholders by December 1 of each year. The reports would also summarize the mitigation project's compliance with all applicable mitigation measures and permit conditions. A list of wildlife species observed using the mitigation site would be prepared and included in the annual reports. Species lists would be

compiled annually. A final monitoring report would be prepared and submitted to Wildlife Agencies for use in the notification of completion and final acceptance of the mitigation effort.

7.0 Long-term Management

The mitigation site mostly lies within the City MSCP's MHPA. After the successful restoration of maritime succulent scrub and beach goldenaster habitat suitable for western burrowing owl foraging and nesting, the site will be managed pursuant to the guidelines of the City MSCP. The site will be preserved in perpetuity as part of the City MSCP Program. Prior to the issuance of any construction permits or beginning any construction-related activity on-site, the City would provide the location of mitigation lands to the satisfaction of MSCP and the Wildlife Agencies.

The MSCP provides the requirements of the long-term management of the mitigation site with respect to ownership, long-term maintenance requirements (i.e., planting, weed control, barriers-fencing, lighting, drainage, signage-public information and education, trash removal), funding, prohibitions, corrective measures for unforeseen circumstances, monitoring, and responsible parties (i.e., City of San Diego).

In addition, long-term maintenance and monitoring of the approved mitigation land shall be conducted in accordance with the MSCP program by the City Parks and Recreation department. Funding for maintenance would occur through the operating budget for the management of Park and Recreation Open Space lands.

8.0 Adaptive Management Plan

An adaptive management approach would be implemented for the mitigation site in the event that the areas of the site are not attaining the desired habitat values and functions. Adaptive management is defined, for the purposes of this mitigation project, as a flexible, iterative approach to the long-term management of biological resources that is directed over time by the results of ongoing monitoring activities and direct observation of environmental stressors that are producing adverse results within the mitigation site. Effects of any catastrophic events that affect the mitigation would receive prompt and appropriate corrective actions.

Adaptive management measures to be implemented would include the utilization of qualitative data gathered in the field throughout the five-year monitoring period to assess the health and vigor of newly established habitat within the mitigation site. Following an event that causes damage to all or part of the mitigation sites, this data will be used in part to drive management considerations for the repair of the damaged areas. Achieving the key goals of the mitigation program and establishing self-sustaining native habitats will be the focus of all adaptive management decisions. Adaptive measures may include owl burrow repair, remedial plant installation, collection and dispersal of beach goldenaster seed, re-seeding of native shrubs and annuals, additional weed control efforts, and others deemed

appropriate through consultation with the City and Wildlife Agencies. Plant and seed installation may occur within the disturbed maritime succulent scrub areas as a measure to deter non-native cover and/or fill in bare areas as determined by the Restoration Specialist with approval of the PWD Project Manager.

If an interim performance standard is not met for any of the criteria in any year, or if the final performance standards are not met, the City will prepare an analysis of the cause(s) of failure and, if deemed necessary by the Wildlife Agencies, propose remedial actions for approval. If the site has not met a performance standard during the initial five-year period, the maintenance and monitoring obligations will continue until the Agencies deem the restoration successful or contingency measures are implemented. Restoration will not be deemed successful until at least two years after any contingency measures are implemented, as determined by the Wildlife Agencies.

9.0 Notification of Completion

If the final success criteria have been met at the end of the five-year monitoring program, notification of these events would be provided with the fifth-year report. If the final success criteria have not been met by the end of the five-year monitoring program, the fifth-year report would discuss the possible reasons and recommendations for remedial measures to cause the site to meet the criteria. If the mitigation site has not met the performance standards, the City's maintenance and monitoring obligations will continue, until the City Mitigation Monitoring Coordination (MMC) and PWD deem the mitigation program as successful or contingency measures must be implemented (see Section 8.0, Adaptive Management Plan).

Following achievement of the final success criteria and receipt of the final annual report to the City MMC and PWD, the City MMC will provide written approval of the completion of the mitigation effort.

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An Employee-Owned Company

September 15, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Least Bell's Vireo Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of the results of the 2017 focused presence/absence survey for the federally and state endangered least Bell's vireo (*Vireo bellii pusillus*; vireo) conducted for the City of San Diego's Beyer Park Development Project (project). The survey methods, area, and results are discussed in detail below. Although vireo were detected within the project survey area, nesting activity was not confirmed on-site.

The project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; U.S. Geological Survey 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071. The surrounding 300-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, and 63828017; as well as the entirety of 66613005 and 66613008.

The project site is situated within the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan boundary. An aerial view of the project site is shown on Figure 3.

The project site includes 44 acres with approximately 12.6 acres considered usable for the proposed recreational park. The proposed park may include lighted multi-purpose sports fields, a skate park, a lighted basketball court, children's play areas, a comfort station/concession building, picnic facilities including picnic shelter, viewpoints/overlooks and interpretive signage, bicycle paths and racks, nature trails, parking areas, walkways, security lighting, and landscaping. The project is currently in the conceptual design and preliminary environmental review phase.

SURVEY METHODS

Prior to initiating the focused surveys, RECON Environmental, Inc. (RECON) biologists Brenna Ogg and JR Sundberg conducted a biological constraints survey of the project site in June 2016. Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for vireo within the project site and surrounding 300-foot buffer was identified. During the focused survey visits, species composition, height, and density of the vegetation within the suitable habitat areas were further assessed for their potential to support vireo.

RECON biologists Brenna Ogg and Diana Saucedo and Busby Biological Services, Inc. (BBS) biologists Darin Busby and Garrett Huffman conducted eight survey visits to 0.4 acre of habitat considered suitable for

vireo (see Figure 3) within the project site. No suitable habitat for vireo was mapped within the 300-foot buffer surrounding the project site. In accordance with USFWS survey guidelines for this species (USFWS 2001), the biologists conducted each survey between dawn and 11:00 a.m. and avoided periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather conditions. A total of 5 hours and 55 minutes of field effort was devoted to the survey. The surveying biologist(s) compiled lists of wildlife species detected and recorded the location of any observed sensitive wildlife species on a one-inch-equals-150-foot aerial map or using a hand-held global positioning system unit. The survey visit numbers, dates, personnel, times, and weather conditions are provided in Table 1. As shown in Table 1, weather conditions were fair, and air temperatures were mild during all survey visits and are not expected to have reduced the likelihood of detection of the species.

Survey Number	Date	Surveyor	Times	Acres Surveyed per Hour	Weather Conditions
1	4/13/2017	G. Huffman	06:00–07:30	0.3	50–53°F, 40-100% cloud cover, wind 2–6 mph
2	4/27/2017	B. Ogg	06:15–07:00	0.5	60–61°F, 100% cloud cover, wind 0–2 mph
3	5/11/2017	D. Saucedo	08:45–09:00	1.6	63°F, 10% cloud cover, wind 0–1 mph
4	5/23/2017	D. Busby	06:00–06:45	0.5	62–64°F, 100% cloud cover, wind 0–2 mph
5	6/8/2017	B. Ogg	09:10–10:00	0.5	68–69°F, 100% clearing to 15% cloud cover (marine layer), wind 0–4 mph
6	6/22/2017	B. Ogg	09:50–10:30	0.6	73–75°F, 90% clearing to 40% cloud cover (marine layer), wind 0–6 mph
7	7/6/2017	B. Ogg	08:50–09:20	0.8	76–77°F, clear sky, wind 0–5 mph
8	7/18/2017	B. Ogg	08:15–08:55	0.6	74–77°F, 90% clearing to 30% cloud cover (marine layer), wind 0–4 mph

^oF = degrees Fahrenheit; % = percent; mph = miles per hour.

SURVEY AREA

The undeveloped northern and eastern portions of the project site and surrounding 300-foot buffer are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the survey area. The southern and western portions transition into multiple terraces with a steep manufactured slope and graded field (previous school site) along the western edge. A large portion of the vegetation within the project site has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation communities/land cover types that occur within the project site and surrounding 300-foot buffer include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, disturbed maritime succulent scrub, mule fat scrub, non-native grassland, disturbed land, and urban/developed land. Vegetation communities and land cover types are characterized in accordance with Oberbauer et al. (2008) and the City of San Diego Biology Guidelines (City of San Diego 2012).

The survey area for vireo totals approximately 0.4 acre and includes all potentially suitable vireo habitat within the project site and surrounding 300-foot buffer (see Figure 3). Habitat considered suitable for vireo includes the mule fat scrub and a small patch of disturbed Diegan coastal sage scrub. This vegetation is described below.

The mule fat scrub occurs within the western and lower portion of Moody Canyon within the project site. The vegetation is dominated by mule fat (*Baccharis salicifolia*; Photograph 1) with two willow trees at the western edge, adjacent to a dirt path (Photograph 2). The vegetation is moderately dense with the mule fat reaching approximately 15 feet in height and the taller of the two willow trees reaching approximately 25 feet in height.

The disturbed Diegan coastal sage scrub that was included in the vireo survey occurs in a swale at the northwestern edge of the project boundary and shows sign of previous and ongoing disturbance from unauthorized pedestrian activity and dumping. This portion of the disturbed Diegan coastal sage scrub comprises a dense patch of the invasive plant species tamarisk (*Tamarix ramosissima*), which reaches approximately 20 feet in height (Photograph 3).

SURVEY RESULTS

Least Bell's Vireo Detections

One vireo was observed during the fourth survey visit on May 23, 2017, and one incidental vireo detection was recorded during an earlier, separate biological survey conducted by Mr. Huffman on March 29, 2017. The point location shown on Figure 3 within the 300-foot buffer represents the March detection, and the point location within the project boundary represents the May detection. On March 29, 2017, one individual vireo was detected by vocalization only and was mapped in a section of Moody Canyon that lies just outside and upstream of the northern limit of the project boundary, and supports upland vegetation. On May 23, 2017, an individual male was detected, singing frequently, traveling throughout the mule fat scrub in a lower portion of Moody Canyon, and observed carrying food while traveling to a castor bean (*Ricinus communis*) plant within the canyon. Although the carrying of food suggests the possible presence of an active nest, no female vireo or vireo nest was detected during this visit. In addition, no vireo were detected during any of the other seven focused survey visits, or during any of the other biological survey visits conducted by RECON and BBS during the 2017 season.

Data for the vireo occurrences were submitted to the California Natural Diversity Database on September 15, 2017 via email.

Least Bell's Vireo Predator Detections

The following wildlife species that are considered predators of vireo were detected during focused or other biological surveys conducted on-site: coyote (*Canis latrans*), Cooper's hawk (*Accipiter cooperii*), greater roadrunner (*Geococcyx californianus*), California scrub-jay (*Aphelocoma californica*), and American crow (*Corvus brachyrhynchos hesperis*) (Brown 1993, USFWS 1998). No brown-headed cowbirds (*Molothrus ater*), known brood parasites, were detected on site. Coyote was only detected by vocalization and sign such as tracks and scat. None were directly observed during focused vireo surveys. Cooper's hawk was only observed during one of the focused survey visits. California scrub-jays were frequently detected on-site, and American crows were frequently observed flying overhead. A complete list of avian species detected during the focused vireo surveys is provided in Table 2.

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
ODONTOPHORIDAE	NEW WORLD QUAIL	
<i>Callipepla californica californica</i>	California quail	O, V
ARDEIDAE	HERONS & BITTERNS	
<i>Ardea herodias</i>	great blue heron	O (flyover)
ACCIPITRIDAE	HAWKS, KITES, & EAGLES	
<i>Accipiter cooperii</i>	Cooper's hawk	O
<i>Buteo jamaicensis</i>	red-tailed hawk	O, V
<i>Buteo lineatus elegans</i>	red-shouldered hawk	O, V
<i>Circus cyaneus hudsonius</i>	northern harrier	O
FALCONIDAE	FALCONS & CARACARAS	
<i>Falco sparverius sparverius</i>	American kestrel	O
COLUMBIDAE	PIGEONS & DOVES	
<i>Columba livia</i>	rock dove (I)	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	O, V
<i>Zenaida macroura marginella</i>	mourning dove	O, V
CUCULIDAE	CUCKOOS & ROADRUNNERS	
<i>Geococcyx californianus</i>	greater roadrunner	O
CAPRIMULGIDAE	GOATSUCKERS	
<i>Chordeiles acutipennis texensis</i>	lesser nighthawk	O
APODIDAE	SWIFTS	
<i>Aeronautes saxatalis</i>	white-throated swift	O, V
TROCHILIDAE	HUMMINGBIRDS	
<i>Calypte anna</i>	Anna's hummingbird	O, V
<i>Calypte costae</i>	Costa's hummingbird	O, V
<i>Selasphorus rufus</i>	rufous hummingbird	O, V
<i>Selasphorus sasin</i>	Allen's hummingbird	O, V
PICIDAE	WOODPECKERS & SAPSUCKERS	
<i>Picoides nuttallii</i>	Nuttall's woodpecker	V
TYRANNIDAE	TYRANT FLYCATCHERS	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	O, V
<i>Sayornis saya</i>	Say's phoebe	O, V
<i>Tyrannus verticalis</i>	western kingbird	O
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	O, V
VIREONIDAE	VIREOS	
<i>Vireo bellii pusillus</i>	least Bell's vireo	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES	
<i>Aphelocoma californica</i>	California scrub-jay	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	O, V
<i>Corvus corax clarionensis</i>	common raven	O, V
ALAUDIDAE	LARKS	
<i>Eremophila alpestris actia</i>	California horned lark	O
HIRUNDINIDAE	SWALLOWS	
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	O, V
AEGITHALIDAE	BUSHTIT	
<i>Psaltriparus minimus melanurus</i>	bushtit	O, V
TROGLODYTIDAE	WRENS	
<i>Thryomanes bewickii</i>	Bewick's wren	O, V
SYLVIIDAE	GNATCATCHERS	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	O, V
TIMALIIDAE	BABLERS	
<i>Chamaea fasciata henshawi</i>	wrentit	O, V

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
MIMIDAE	MOCKINGBIRDS & THRASHERS	
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	O, V
STURNIDAE	STARLINGS & MYNAS	
<i>Sturnus vulgaris</i>	European starling (I)	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS	
<i>Phainopepla nitens lepida</i>	phainopepla	V
PARULIDAE	WOOD WARBLERS	
<i>Setophaga [=Dendroica] petechia</i>	yellow warbler	O, V
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	V
<i>Cardellina [=Wilsonia] pusilla</i>	Wilson's warbler	O, V
EMBERIZIDAE	EMBERIZIDS	
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	V
<i>Melospiza melodia</i>	song sparrow	O, V
<i>Melospiza [=Pipilo] crissalis</i>	California towhee	O, V
<i>Pipilo maculatus</i>	spotted towhee	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	O, V
CARDINALIDAE	CARDINALS & GROSBILLS	
<i>Passerina amoena</i>	lazuli bunting	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES	
<i>Icterus cucullatus nelsoni</i>	hooded oriole	O, V
FRINGILLIDAE	FINCHES	
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	O, V, N
Nomenclature from American Ornithologists' Union 2015 and Unitt 2004. (I) = Introduced species Evidence of Occurrence O = Observed V = Vocalization N = Nest		

Other Sensitive Avian Species Observations

The following six additional sensitive avian species were detected within or adjacent to the survey area during focused coastal California gnatcatcher surveys: Cooper's hawk (California Department of Fish and Wildlife [CDFW] Watch List [WL]), northern harrier (*Circus cyaneus*; CDFW Species of Special Concern [SSC]), California horned lark (*Eremophila alpestris actia*; CDFW WL), coastal California gnatcatcher (*Poliophtila californica californica*; federally threatened, CDFW SSC), yellow warbler (*Setophaga [=Dendroica] petechia*; CDFW SSC), and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; CDFW WL). Focused surveys for coastal California gnatcatcher were completed for this project in 2017, with a report provided under separate cover. In addition, a biological technical report will be prepared for this project following completion of 2017 biological surveys. Therefore, all other sensitive species observations will be addressed in the associated survey reports and/or biological technical report. Data for these additional sensitive species occurrences were or will be submitted to the California Natural Diversity Database concurrent with completion of the focused survey reports or biological technical report.

DISCUSSION OF SURVEY RESULTS

Least Bell's vireo was detected on two occasions within the mule fat scrub in Moody Canyon (northern portion of the project site), and at a minimum, appears to be using this habitat during migration. Although the mule fat scrub and the tamarisk-dominated patch of disturbed Diegan coastal sage scrub may provide suitable breeding habitat for this species, no on-site breeding or nesting was confirmed during the 2017 focused surveys.

The March detection coincides with the typical arrival time of vireo to their breeding grounds in southern California (USFWS 1998; Unitt 2004), indicating this individual could have been passing through during migration to its established territory or in search of a new territory.

Least Bell's vireo males tend to be vocal. Therefore, the lack of detection between March and May could indicate that the May detection was from an unpaired mature male still looking to establish a territory or dispersal of an early-season fledgling. Although fledglings generally remain within or in close proximity to their natal territory for most of the season, immatures more than 30 days out of the nest may move over wide areas (Brown 1993). The initial dispersal distance of a juvenile vireo from its natal site has at least been documented at 1.6 kilometers (approximately 1 mile) by the time a second brood has fledged (USFWS 1998, Gray and Greaves 1984 as cited in Brown 1993). Furthermore, fledglings have been known to produce adult-like songs (Brown 1993). A section of the Tijuana River that has been known to support breeding vireo since at least 1978 (CDFW 2017), which comes within two miles of the project site, may be a source of dispersing juveniles.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. Please contact me at bogg@reconenvironmental.com with any questions regarding this survey.

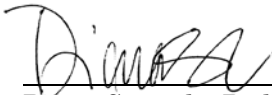
Sincerely,



Brenna Ogg, Senior Biologist
CDFW Scientific Collecting Permit SC-9997

9/15/2017

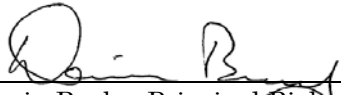
Date



Diana Saucedo, Biologist
CDFW Scientific Collecting Permit SC-006138

9/15/2017

Date



Darin Busby, Principal Biologist
Principal Biologist
CDFW Scientific Collecting Permit SC-006243

9/15/2017

Date



Garrett Huffman, Biologist
CDFW Scientific Collecting Permit SC-12948

9/15/2017

Date

BAO:jg

cc: Darren Genova, City of San Diego
Juan Baligad, City of San Diego
Carly Gagen-Cheaney, City of San Diego
Esther Burkett, California Department of Fish and Wildlife

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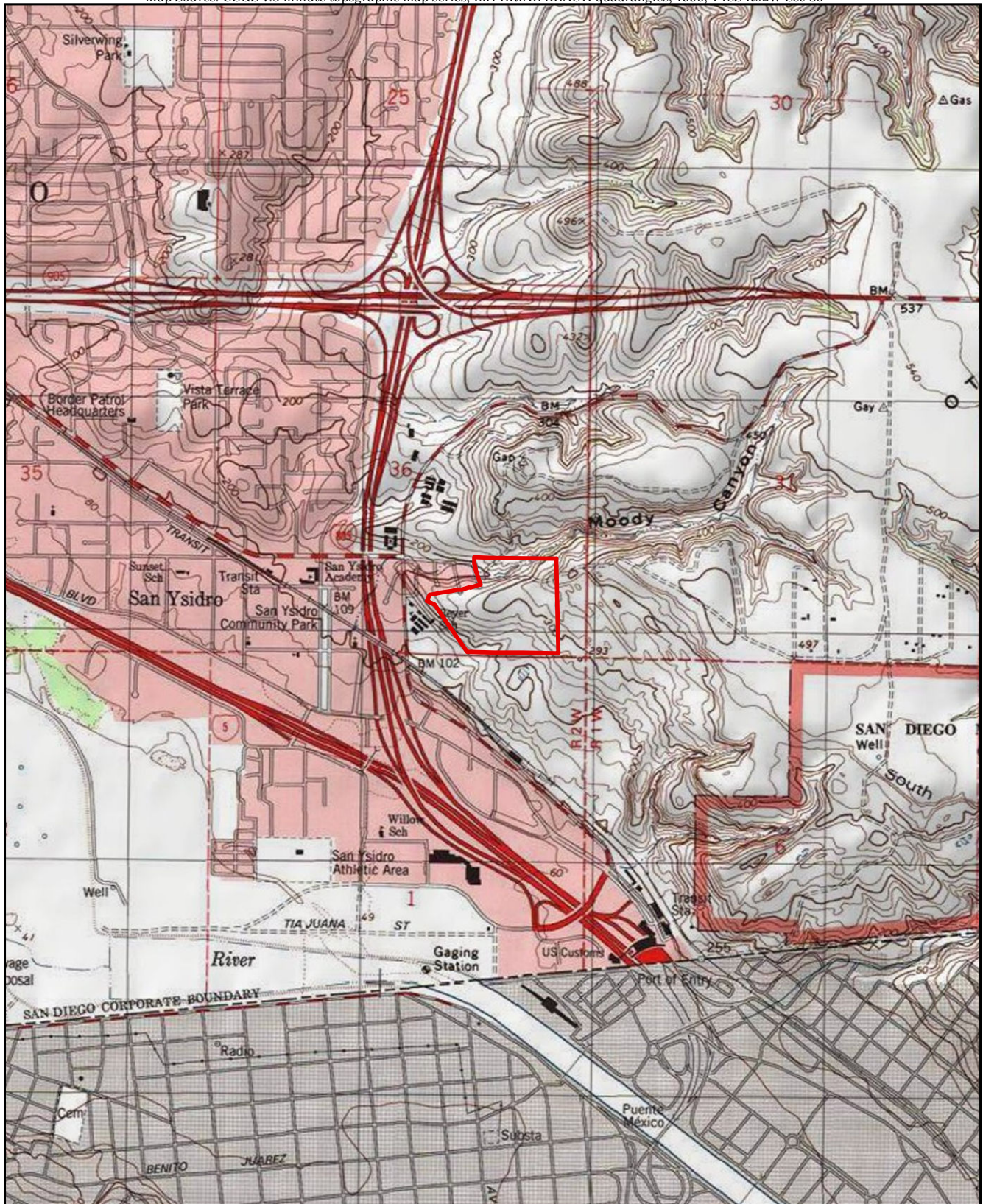
U.S. Geological Survey (USGS)

- 1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Location

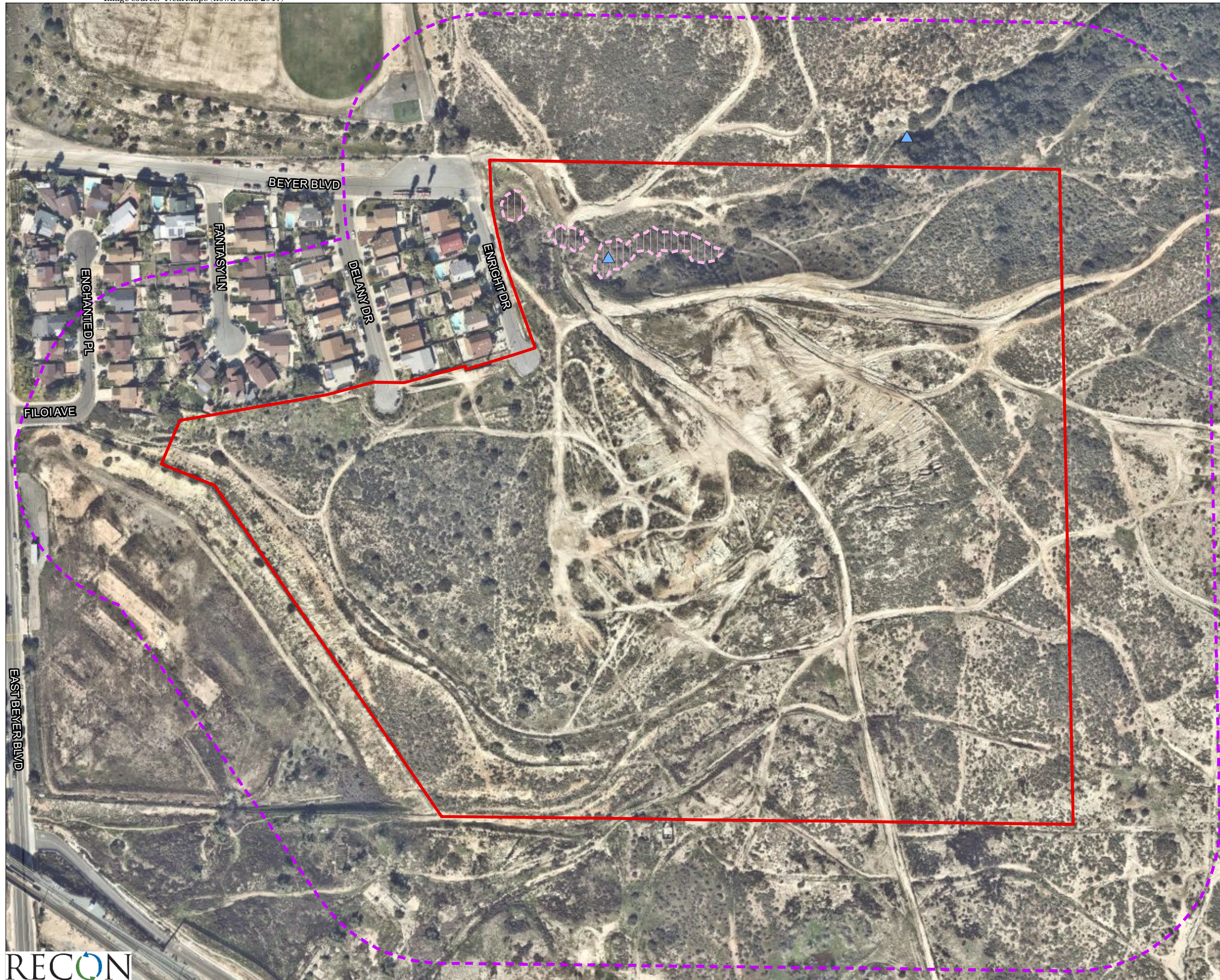
FIGURE 1
Regional Location







 Project Boundary

FIGURE 2

Project Location on USGS Map



-  Project Boundary
-  300-ft Buffer
-  Least Bell's Vireo Survey Area
-  Least Bell's Vireo Observation

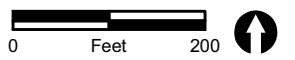


FIGURE 3
Least Bell's Vireo
2017 Survey Area and Results



PHOTOGRAPH 1
Mule Fat Scrub along Bottom of Moody Canyon, Facing South.
Taken June 22, 2017



PHOTOGRAPH 2
Mule Fat Scrub along Bottom of Moody Canyon, Facing Southwest.
Taken June 22, 2017



PHOTOGRAPH 3
Tamarisk-dominated Disturbed Diegan Coastal Sage Scrub within
Swale at West End of Moody Canyon, Facing West.
Taken June 22, 2017.



An Employee-Owned Company

June 7, 2017

Ms. Stacey Love
Recovery Permits Coordinator
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project, San Diego, California (RECON Number 8359)

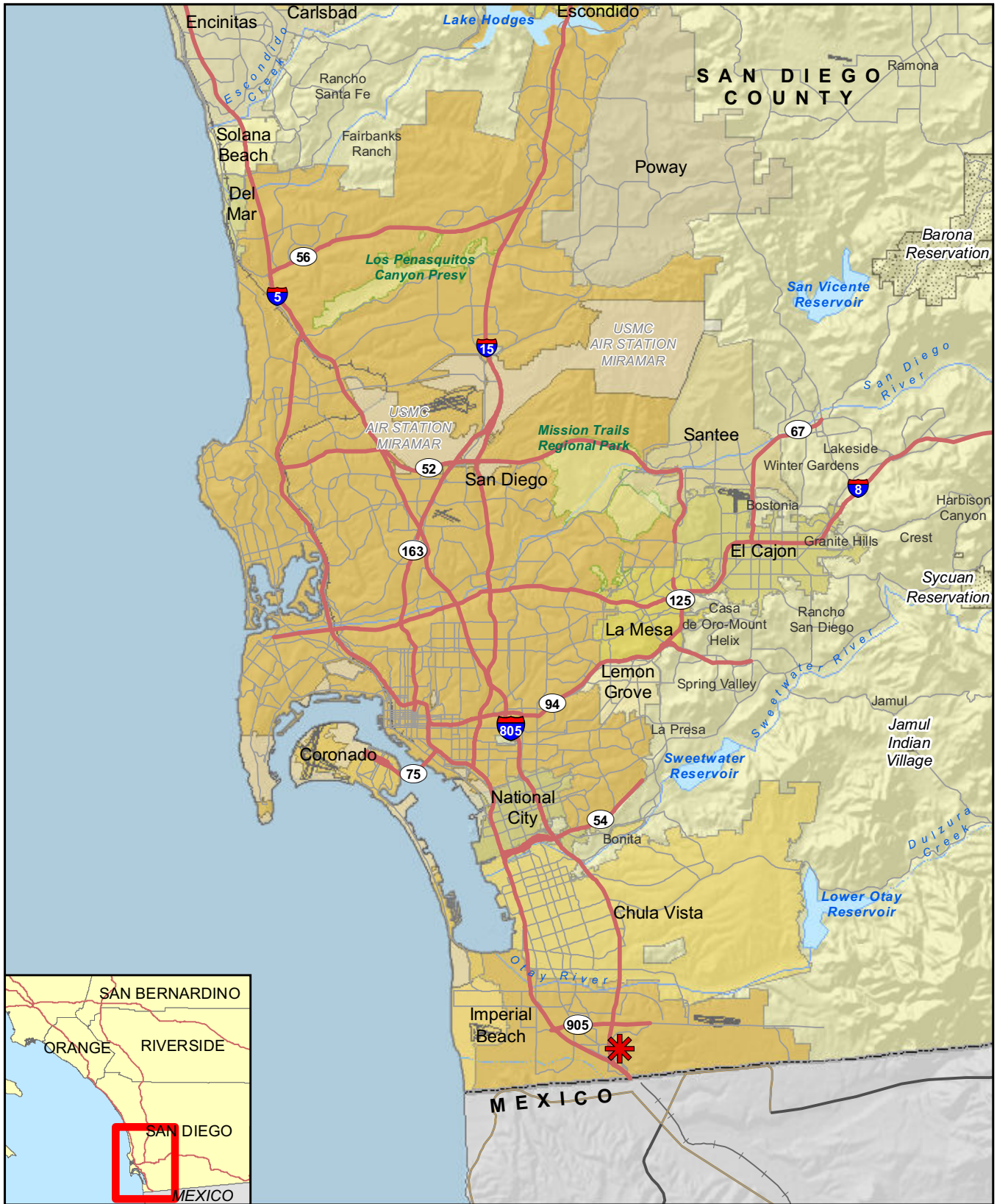
Dear Ms. Love:

This letter summarizes the results of 2016–2017 wet season surveys for listed fairy shrimp species for the Beyer Park Development Project. This City of San Diego project is located in the community of San Ysidro in the City of San Diego, California (Figures 1, 2, 3, and 4). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, on the U.S. Geological Survey (USGS) 7.5-minute topographical maps, Imperial Beach, California quadrangle (see Figure 2; USGS 1996). The project site comprises the entirety of Assessor's Parcel Numbers 63817018, 63817019, and 63807071 (see "project boundary" on Figure 4). While less than half of the combined total area of these parcels is proposed for development as part of this project, the entire parcels (43.86 acres) were surveyed for ponded depressions. A total of 17 ponded depressions were observed within the project boundary and were included in the wet season fairy shrimp surveys (Figure 5).

Existing Conditions

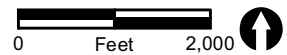
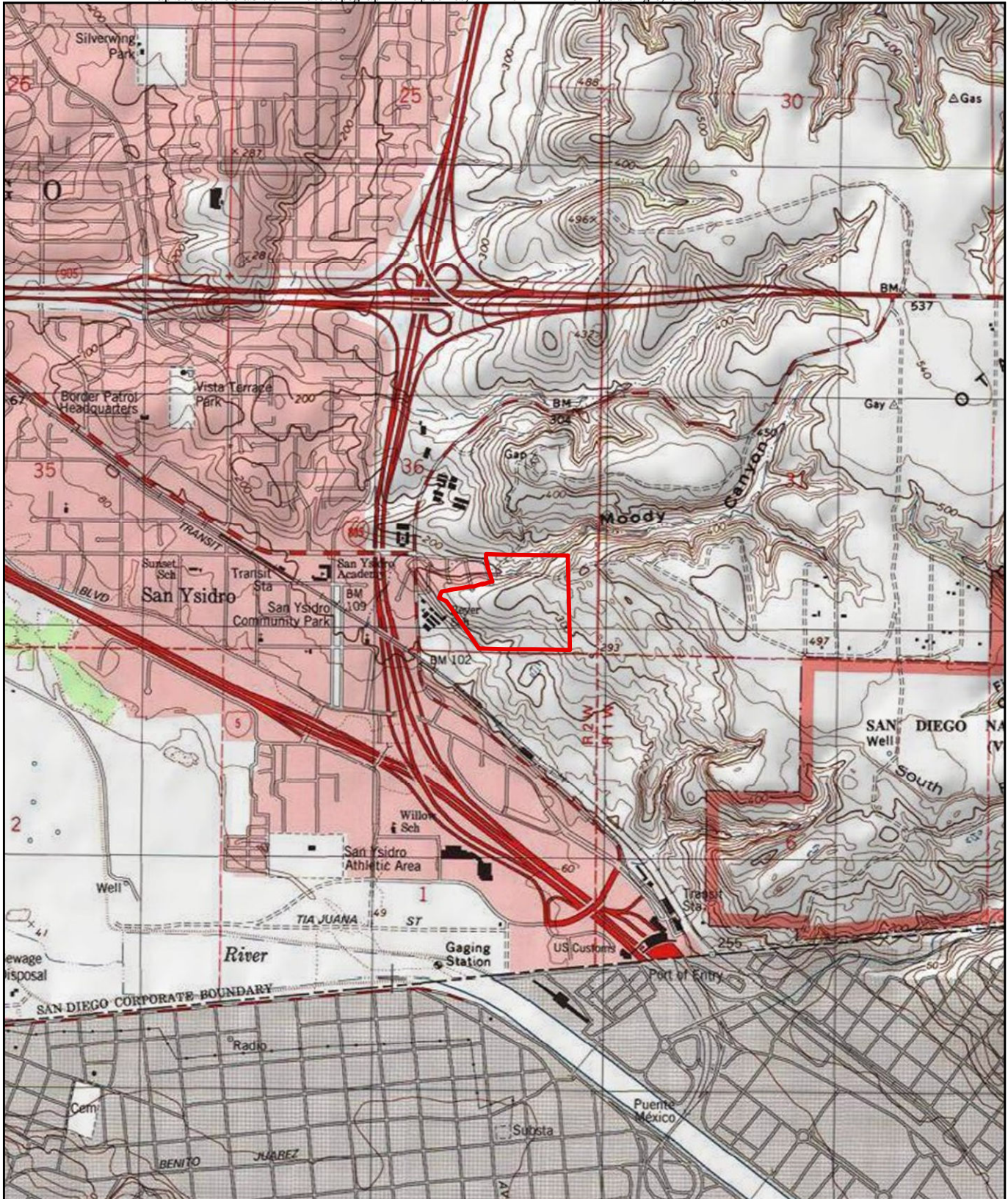
The Beyer Park Development Project is located on undeveloped City park land, southeast of the eastern terminus of Beyer Boulevard. The project is located on the western end of the Otay Mesa terrace. The northern and eastern portions of the project site are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the project site. The southern and western portions transition into multiple terraces with a steep manufactured slope along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation occurring within the immediate vicinity of the surveyed ponded depressions consists of disturbed Diegan coastal sage scrub and disturbed land, with ponded depressions 2 through 12 and 15 through 17 occurring within tire tracks. Ponded depression 1 is an artificial ditch within disturbed Diegan coastal sage scrub, which occurs between an old dirt road bed and the top of a manufactured slope. Ponded depressions 13 and 14 occur within disturbed land and a pedestrian path. Scattered plant species occurring in and/or immediately adjacent to the ponded depressions include broom baccharis (*Baccharis sarothroides*), curly dock (*Rumex crispus*), and San Diego bur-sage (*Ambrosia chenopodiifolia*).



***** Project Location

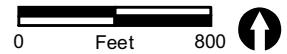
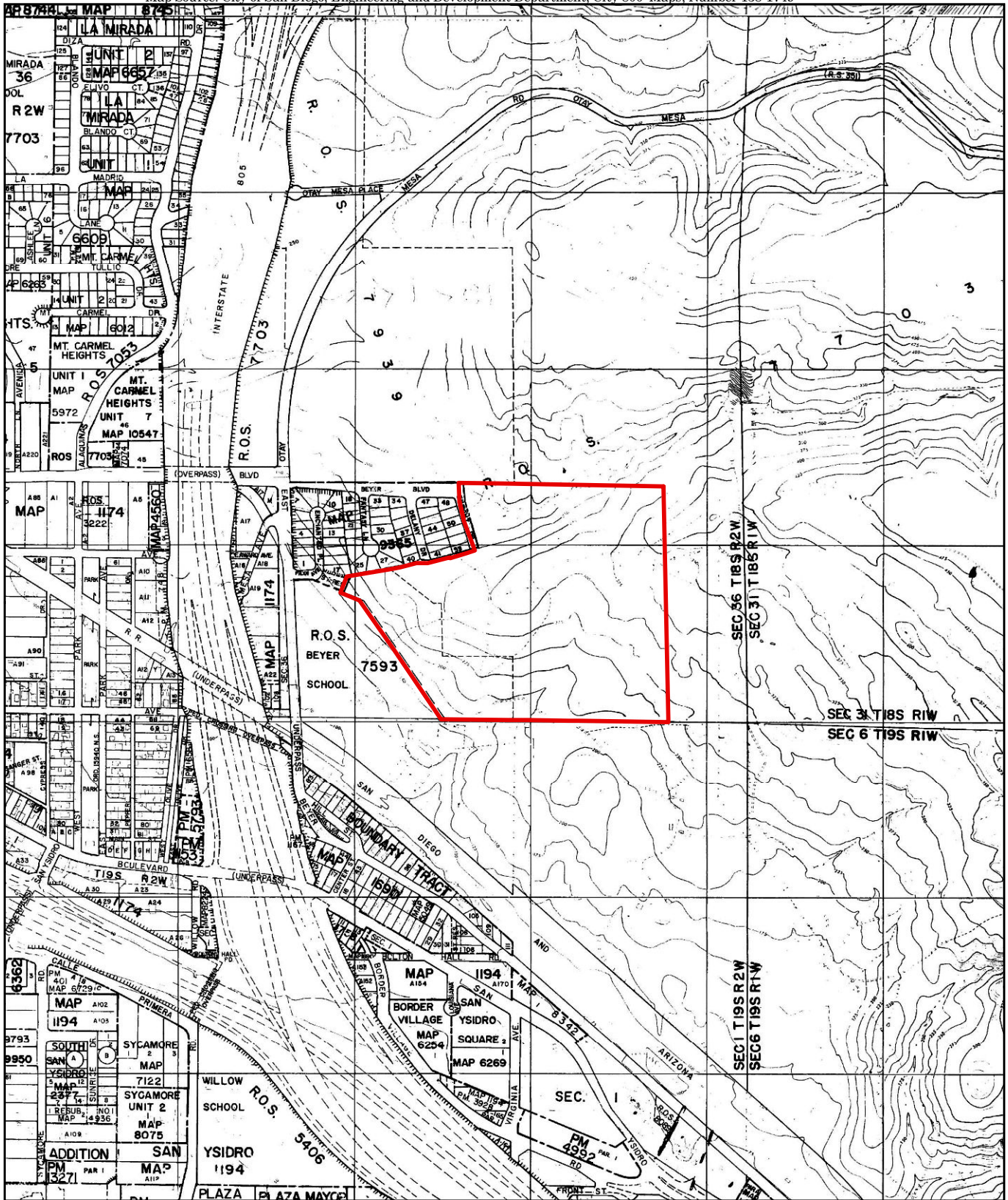
FIGURE 1
Regional Location



 Project Boundary

FIGURE 2

Project Location on USGS Map




 Project Boundary

FIGURE 3

Project Location on City 800' Map



 Project Boundary

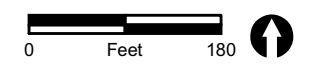


FIGURE 4
Project Location on Aerial Photograph



- Project Boundary
- Ponded Depressions



FIGURE 5
Location of Ponded Depressions

2016–2017 Season Rainfall

Total rainfall during the 2016–2017 wet season was above average throughout San Diego County (National Weather Service 2017a). As of May 9, 2017, the weather station at Brown Field Station, the closest available station, reported a season-to-date (October 1, 2016–May 9, 2017) total of 14.69 inches of rainfall (National Weather Service 2017b), whereas normal (i.e., 1981–2010 average) rainfall for the same time period is 12.37 inches (National Climatic Data Center 2017). A summary of rainfall totals by rain event for Brown Field Station is provided in Table 1 below.

Rain Event Date(s)	Rainfall (inches)
10/24/2016	Trace
10/30/2016–10/31/2016	0.01
11/20/2016–11/21/2016	0.51
11/26/2016–11/28/2016	0.44
12/1/2016	0.01
12/15/2016–12/16/2016	0.98
12/20/2016–12/24/2016	2.19
12/30/2016–1/2/2017	1.02
1/5/2017	0.19
1/9/2017	0.06
1/11/2017–1/14/2017	1.17
1/18/2017–1/24/2017	2.52
2/6/2017–2/7/2017	0.19
2/11/2017	0.03
2/17/2017–2/19/2017	1.62
2/22/2017	Trace
2/26/2017–2/28/2017	2.34
3/5/2017	0.01
3/21/2017–3/23/2017	0.08
3/25/2017–3/26/2017	Trace
5/6/2017–5/9/2017	1.32
Total	14.69
SOURCE: National Weather Service 2017b	

Survey Methods

Fourteen site visits were conducted by RECON biologist Kayo Valenti (permit number TE-797665) or Busby Biological Services, Inc. biologists Erik LaCoste (permit number TE-115373-3.2) or Darin Busby (permit number TE-115373-3), between December 29, 2016 and May 11, 2017 (Table 2). Surveys were initiated following receipt of notice to proceed from the City of San Diego on December 20, 2016, and authorization from U.S. Fish and Wildlife Service (USFWS) on December 22, 2016. Following this latter date, in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2015), each visit took place within one week following a substantial rain event and continued on a weekly basis until the features were dry. During each wet season survey conducted, sampling for vernal pool branchiopods occurred at depressions that had held water for more than 7 days. However, with USFWS’s approval, once the presence of a listed vernal pool branchiopod species was confirmed, sampling of that feature was temporarily suspended until the duration of ponding reached 48 days or more. The final two visits were conducted on March 29, 2017 by Erik LaCoste and on May 11, 2017 by RECON biologist Brian Parker to check the depressions for ponding following the last two rain events of the season.

Table 2 2016–2017 Survey Dates, Personnel, Times, and Conditions for the Beyer Park Development Project				
Date	Personnel	Time	Weather Conditions	Ponding Notes
12/29/2016	Kayo Valenti	09:00–11:30	69–78°F air temperature, 0–5 percent cloud cover, 2–8 mile-per-hour winds	1, 3, 4, and 5 ponded
1/5/2017	Kayo Valenti	09:30 – 12:40	58–59°F air temperature, 100 percent cloud cover and raining, 0–6 mile-per-hour winds	1, 3, 4, 5, 6, 7, 8, and 9 ponded
1/12/2017	Kayo Valenti	11:00–12:25	60–61°F air temperature, 100 percent cloud cover, 2–10 mile-per-hour winds	3, 5, 8, 9, 10, 11, and 12 ponded
1/19/2017	Erik LaCoste	13:25–15:00	61–63°F air temperature, 15–30 percent cloud cover, 1–4 mile-per-hour winds	1, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 ponded
1/26/2017	Erik LaCoste	08:30–11:30	62°F air temperature, 0 percent cloud cover, 0–2 mile-per-hour winds	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, and 17 ponded
2/2/2017	Erik LaCoste	09:00–10:30	64–66°F air temperature, 10–20 percent cloud cover, 1–4 mile-per-hour winds	1, 3, 4, and 8 ponded
2/9/2017	Erik LaCoste	09:15–10:00	69–70°F air temperature, 10 percent cloud cover, 1–4 mile-per-hour winds	3 ponded
2/16/2017	Darin Busby	12:10–13:45	64°F air temperature, 30–80 percent cloud cover, 3–5 mile-per-hour winds	No ponding
2/23/2017	Erik LaCoste	08:30–10:00	60°F air temperature, 25 percent cloud cover, 2–4 mile-per-hour winds	1, 3, 5, 8, and 9 ponded
3/2/2017	Erik LaCoste	12:15–14:00	70–72°F air temperature, no cloud cover, 3–6 mile-per-hour winds	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 16, and 17 ponded
3/9/2017	Erik LaCoste	10:30–11:00	70–72°F air temperature, 5 percent cloud cover, 1–5 mile-per-hour winds	1, 3, 5, and 8 ponded
3/15/2017	Erik LaCoste	08:15–09:30	68–74°F air temperature, 10 percent cloud cover, 0–2 mile-per-hour winds	No ponding
3/29/2017	Erik LaCoste	N/C	N/C	No ponding
5/11/2017	Brian Parker	N/C	N/C	No ponding

N/C = Not collected; °F = degrees Fahrenheit

Survey Results

Hydrology

During the 2016–2017 wet season surveys, all ponded depressions observed within the project were mapped with a sub-meter-accurate global positioning system unit once the depression was observed to be ponded (see Figure 5). All ponded depressions were mapped by January 26, 2017. Depression 3 dried once but was inundated for the longest duration during the wet season surveys, for a minimum of 42 days. Depressions 5 and 8 were inundated for a minimum of 28 days; depression 9 for a minimum of 21 days; depressions 1, 4, 10, 11, and 12 for a minimum of 14 days; and depressions 6 and 7 for a minimum of 7 days. A total of two ponding periods were observed for depressions 2, 16, and 17, while depressions 13, 14, and 15 only experienced one period of ponding. All mapped depressions held water for a minimum period of 7 days. As of March 15, 2017, all depressions were observed to have been dry for more than 7 days. Photographs of all ponded depressions, including two general landscape views of the site, are provided as Attachment 1.

Photographs taken on May 23, 2017, show some of the previously ponded depressions in a dry state, as the photographs were taken after the wet season.

Fairy Shrimp and Other Aquatic Wildlife Species Observed

One federally endangered vernal pool branchiopod species – San Diego fairy shrimp – was observed during the 2016–2017 wet season in one of the 17 ponded depressions within the project boundary. No other aquatic wildlife species were observed in any of the ponded depressions. Mature male and gravid female San Diego fairy shrimp were observed in ponded depression 1 on January 5, 2017, with the total number of individuals present estimated in the 10s. During this survey the maximum water depth for this feature was measured at 8 centimeters, and water temperature was 56 degrees Fahrenheit. Three males and one female voucher were collected and will be accessioned and hand-delivered to the Natural History Museum of Los Angeles County. USFWS was notified of the occurrence, and on January 11, 2017 approval was obtained to temporarily suspend surveys at ponded depression 1 until the feature held water for at least 48 days (Attachment 2). This amount of time would allow for detection of Riverside fairy shrimp (*Streptocephalus woottoni*) if present. Ponded depression 1 did not hold water for 48 consecutive days; therefore, further surveys were not conducted at this depression.

A summary of the wet season survey results is provided in Table 3 below. Field notes are provided as Attachment 3. Data for the San Diego fairy shrimp occurrence were submitted to the California Natural Diversity Database via email on April 20, 2017.

Ponded Depression	Description	Maximum Observed Depth (centimeters)	Water Temperature (degrees Fahrenheit)	Survey Results
1	Artificial ditch within disturbed Diegan coastal sage scrub	12.25	56–57	San Diego fairy shrimp observed
2	Disturbed land with tire tracks in bare ground	10	48–83	No vernal pool branchiopods observed
3	Disturbed land with tire tracks	13	55–75	No vernal pool branchiopods observed
4	Disturbed land with tire tracks in bare ground	20	54–69	No vernal pool branchiopods observed
5	Disturbed land with tire tracks in bare ground	15	53–75	No vernal pool branchiopods observed
6	Disturbed land with tire tracks in bare ground	12	53–78	No vernal pool branchiopods observed
7	Disturbed land with tire tracks in bare ground	12	53–78	No vernal pool branchiopods observed
8	Disturbed land with tire tracks in bare ground	15	53–76	No vernal pool branchiopods observed
9	Disturbed land with tire tracks in bare ground	10	56–74	No vernal pool branchiopods observed
10	Disturbed land with tire tracks in bare ground	6	61–71	No vernal pool branchiopods observed
11	Disturbed land with tire tracks in bare ground	10	56–74	No vernal pool branchiopods observed
12	Disturbed land with tire tracks in bare ground	7	57	No vernal pool branchiopods observed
13	Disturbed land with foot traffic	10	53	No vernal pool branchiopods observed
14	Disturbed land with foot traffic	12	51	No vernal pool branchiopods observed
15	Disturbed land with tire tracks in bare ground	6	65	No vernal pool branchiopods observed
16	Disturbed land with tire tracks in bare ground	8	58–61	No vernal pool branchiopods observed
17	Disturbed land with tire tracks in bare ground	8	56–64	No vernal pool branchiopods observed

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If you have any questions concerning the contents of this letter, please do not hesitate to contact me by phone at (619) 308-9333, extension 112, or by e-mail at kvalenti@reconenvironmental.com.

Sincerely,



Kayo Valenti
Biologist
USFWS Permit TE-797665

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

KOV:eab

Attachment 1: Photographs
Attachment 2: USFWS Authorization for Revised Survey Methods
Attachment 3: Field Notes

References Cited

National Climatic Data Center

2017 1981 to 2010 Annual Climate Normals: Campo, Oceanside Airport, Ramona Airport, Rancho Bernardo, and San Diego Brown Field Stations. Retrieved from <https://www.ncdc.noaa.gov/cdo-web/datatools/normal>.

National Weather Service

2017a Season-to-Date Precipitation for Selected Stations: San Diego Lindbergh Field Station.

Retrieved from

http://www.wrh.noaa.gov/sgx/display_text.php?product=LAXWRKPCP&title=Seasonal%20Rainfall

.

2017b Preliminary Monthly Climate Data for San Diego Brown Field Station. Retrieved from <http://w2.weather.gov/climate/index.php?wfo=sgx> on May 30, 2017.

U.S. Fish and Wildlife Service (USFWS)

2015 Survey Guidelines for the Listed Large Branchiopods. May 31.

U.S. Geological Survey (USGS)

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.

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I certify that the information in this survey report and attached exhibit fully and accurately represents my work.



April 17, 2017

Kayo Valenti

Date

Permit Number TE-797665

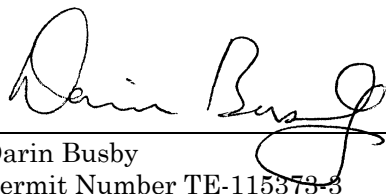


April 17, 2017

Erik LaCoste

Date

Permit Number TE-115373-3.2



April 17, 2017

Darin Busby

Date

Permit Number TE-115373-3

ATTACHMENTS

ATTACHMENT 1

Photographs



PHOTOGRAPH 1
Ponded Depression 1,
Facing North-northwest, Taken on December 29, 2016



PHOTOGRAPH 2
Ponded Depression 2,
Facing West, Taken on December 29, 2016



PHOTOGRAPH 3
Poned Depression 3,
Facing East, Taken on December 29, 2016



PHOTOGRAPH 4
Poned Depression 4,
Facing East, Taken on December 29, 2016



PHOTOGRAPH 5
Ponded Depression 5,
Facing West, Taken on December 29, 2016



PHOTOGRAPH 6
Ponded Depression 6,
Facing Northwest, Taken on May 23, 2017



PHOTOGRAPH 7
Ponded Depression 7,
Facing Northeast, Taken on January 9, 2017



PHOTOGRAPH 8
Ponded Depression 8,
Facing Southwest, Taken on January 9, 2017



PHOTOGRAPH 9
Ponded Depression 9,
Facing South, Taken on May 23, 2017



PHOTOGRAPH 10
Ponded Depression 10,
Facing Northeast, Taken on January 9, 2017



PHOTOGRAPH 11
Ponded Depression 11,
Facing South, Taken on May 23, 2017



PHOTOGRAPH 12
Ponded Depression 12,
Facing South, Taken on May 23, 2017



PHOTOGRAPH 13
Ponded Depression 13,
Facing Northeast, Taken on May 23, 2017



PHOTOGRAPH 14
Ponded Depression 14,
Facing South, Taken on May 23, 2017



PHOTOGRAPH 15
Ponded Depression 15,
Facing West, Taken on May 23, 2017



PHOTOGRAPH 16
Ponded Depression 16,
Facing Southwest, Taken on May 23, 2017



PHOTOGRAPH 17
Ponded Depression 17,
Facing South, Taken on May 23, 2017



PHOTOGRAPH 18
General Site Landscape,
Facing East, Taken on December 29, 2016



PHOTOGRAPH 19
General Site Landscape,
Facing West, Taken on December 29, 2016

ATTACHMENT 2

USFWS Authorization for Revised Survey Methods

From: Zoutendyk, David <david_zoutendyk@fws.gov>
Sent: Wednesday, January 11, 2017 10:42 AM
To: Brenna Ogg
Cc: stacey_love@fws.gov; susan_wynn@fws.gov; patrick_gower@fws.gov;
doreen_stadtlander@fws.gov; Kayo Valenti
Subject: Re: Notification of San Diego Fairy Shrimp Presence - Beyer Park (RECON #8359)

Brenna,

We are ok with your proposal to temporarily cease sampling, monitor the duration of ponding at this feature, and reinitiate sampling only if the duration of ponding reaches 48 or more days.

Have you found any more ponding on site? thx

David

David A. Zoutendyk
Division Chief
U.S. Fish and Wildlife Service
2177 Salk Avenue Carlsbad,
CA 92008 (760) 431-
9440x222 (P) (760) 431-
5901 (F)
David.Zoutendyk@fws.gov

On Wed, Jan 11, 2017 at 10:17 AM, Brenna Ogg <bogg@reconenvironmental.com> wrote:

Good morning,

I am just following up on my previous email and request.

Please let us know if we have your approval to either cease the current wet season survey or implement revised survey methods for the one depression in which we have identified San Diego fairy shrimp (see email below).

Thank you,

Brenna

From: Brenna Ogg
Sent: Friday, January 06, 2017 3:14 PM
To: 'stacey_love@fws.gov'
Cc: Eichar, Gretchen (GEichar@saniego.gov); Genova, Darren (DGenova@saniego.gov); Kayo Valenti
Subject: Notification of San Diego Fairy Shrimp Presence (RECON #8359)

Good afternoon,

This is to notify you that we have confirmed presence of San Diego fairy shrimp (*Branchinecta sandiegonensis*) at a previously undocumented site – the western of the two depressions mapped in the attached pre-survey notification. Three male and one female vouchers have been collected.

At this time, we would like to request to cease surveys for this particular feature. Alternatively, at a minimum, we would like to request revised survey methods for this feature. Specifically, we could temporarily cease sampling, monitor the duration of ponding at this feature, and reinitiate sampling only if the duration of ponding reaches 48 or more days. Although based on the current water depth we do not expect Riverside fairy shrimp (*Streptocephalus woottoni*) to occur at this feature, this would ensure we have sampled at a time when that species has had sufficient time to reach maturity.

Please let us know whether we have your approval to cease the wet season survey or implement revised methods for this feature. Our next survey is scheduled for January 12, 2017.

If there is an alternate contact at USFWS that I need to notify, please let me know. The survey guidelines do not list an email address for this notification.

Thank you,

Brenna A. Ogg
RECON Environmental, Inc.
P 619-308-9333 ext. 118
F 619-308-9334

From: Stacey Higgins
Sent: Thursday, December 22, 2016 3:38 PM
To: 'stacey_love@fws.gov'; 'DGenova@saniego.gov'; 'GEichar@saniego.gov'
Cc: Brenna Ogg
Subject: Pre-Survey Notification of Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project – Request for Waiver of 15-day Notification (RECON Number 8359)

Per Brenna's request, attached is a PDF of the above-referenced letter. Please contact Brenna if you have any comments or questions.

Stacey Higgins
Senior Production Specialist

RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101
P (619) 308-9333 x127
F (619) 308-9334

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ATTACHMENT 3

Field Notes

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: *Beyer Park Development* **County:** *San Diego* **Quad:** *Imperial Beach* **Township:** *18S* **Range:** *02 West* **Section:** *36*

SURVEYOR / Permit Number: *Kayo Valenti / TE 797665*

Date: *12/29/16* **Time:** *9:00 AM* **Weather Conditions:** *0% cloud; 2-8 mph, 69° / END: 11:30 AM; 78°; 2-8 mph, 5% cloud*

Feature ID #	UTM (Northing, Easting, Datum) <i>WGS 84</i>	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
<i>1 (West Pool)</i>	<i>3602015.87, 11S 496408.82</i>	<i>69°</i>	<i>57°</i>	<i>6</i>	<i>12.25</i>	<i>mapped Extent w/ GPS</i>											<i>0</i>	<i>Clear water, silty bottom w/ plan in + Annot Pool</i>	
<i>2 (East Pool)</i>	<i>3602174.56, 11S 496817.59</i>	<i>74°</i>	<i>—</i>	<i>Saturated</i>													<i>TT</i>		
<i>3</i>	<i>3602075.06, 11S 496540.25</i>	<i>74°</i>	<i>59°</i>	<i>2</i>	<i>4.75</i>	<i>mapped Extent</i>											<i>TT</i>	<i>Murky water surrounded by Bacch scrub</i>	
<i>4</i>	<i>3602080.53, 11S 496568.80</i>	<i>76°</i>	<i>64°</i>	<i>2</i>	<i>4.0</i>	<i>mapped</i>											<i>TT</i>	<i>Clear water LOAM soils</i>	
<i>5</i>	<i>3602083.41, 11S 496578.52</i>	<i>78°</i>	<i>62°</i>	<i>3</i>	<i>5.0</i>	<i>mapped</i>											<i>TT</i>	<i>Murky water Loam soils</i>	

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Photos taken & labeled

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Beyer Park development **County:** San Diego **Quad:** Imperial Beach **Township:** 185 **Range:** 07W **Section:** 10

SURVEYOR / Permit Number: Kayo Valenti (IF-792665)

Date: 1/5/17 **Time:** 9:30am **Weather Conditions:** 100% cloudy; 58°; 2-km/h / 12:40pm; 59°F; 100% cloud; 0-2mph; Raining

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present (3)	Est. Max. (3)	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
1	See Survey	58	56°	4	8	7x1.5	7x2.5	BRSA										D Mar Disturbed. Clear water w. Poney & Bicchari
2	#1	58	NC	Saturated	0cm													Voucher 4589
3		58	57	6	8	6x2	6x4											spring tails
4		58	NC	1.5	2.5	3.5x1.5	4x2											clear water. No Poney or ab
5		58	56°	5	7	3x1.5	3x3											Murky water Spring tails
6	360210542 11S 496559.69	58	56°	4	6.5	3x1.2	3x1.8											Murky water Spring tails, Dog track
7	3602100.36 11S 496552.08	58	56°	2	5	1x1.8	2.7x1.2											clear water, silt bottom spring tails
8	3602092.99 11S 496538.33	59	56°	2	5	1.8x1	1.8x1.5											Murky water Spring tails
9	3602081.88 11S 496522.57	59	56°	5	7.5	2.4x1.5	2.4x2.1											Murky water Spring tails

285
2000
3-1-17
↓

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Photos taken & labeled

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Beyer Park Development **County:** San Diego **Quad:** Imperial Beach **Township:** 185 **Range:** 62W **Section:** 36

SURVEYOR / Permit Number: Kay Okrenti / TE-797665

Date: 1/12/17 **Time:** 11:00 AM **Weather Conditions:** 60°, 2-10 mph, 100% cloud **END:** 12:25 PM; 61°, 2-8 mph; 100% cloud

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information	
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae				
1	See previous survey ↓	60	NC	—	0cm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
2		60°	NC	0cm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
3		60°	61°	4.0	6.5	5.6m ²	2.4 x 3.6	None	—	—	—	—	—	—	—	—	—	—	TT/D	Springtails clear water
4		60°	NC	0cm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5		60°	60°	3	6.5	3.7m ²	2.4 x 3.0	None	—	—	—	—	—	—	—	—	—	—	TT	Springtails clear water
6		60°	NC	0cm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7		60°	NC	0cm	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8		60°	61°	2cm	4cm	1.2x1.8	1.2x3.0	None	—	—	—	—	—	—	—	—	—	—	TT	Springtails present clear water
9		60°	62°	4	6	3.7m ²	1.5x2.4	None	—	—	—	—	—	—	—	—	—	—	TT	Turbid water Springtails
10		3602066.06 115 496522.85	60°	61°	2	3	1.4m ²	1x1.8	None	—	—	—	—	—	—	—	—	—	TT	clear water Springtails
11		3602081.29 115 496530.79	60	NC	1	2.5	0.3x1.5	0.3x1.5	NC	—	—	—	—	—	—	—	—	—	TT	clear water 15 min ponding
12		3602082.46 115 496527.88	60	NC	2	2.5	0.6x0.6	0.6x0.6	NC	—	—	—	—	—	—	—	—	—	TT	Turbid water 15 min ponding

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Lindieriella occidentalis*, BRLI = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = fire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

SPS noted client ↓

On Jan 9, 2017 Feature # 1, 2, 4 were not ponded
 Feature #10 was mapped on Jan 9, 2017
 23
 mapped on Jan 9, 2017

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: BEVERLY PARK DEV County: SANDIEGO Quad: Imperial Beach Township: 185 Range: 62W Section: 36

EYOR / Permit Number: ERIK LACOSTE TE-115373-3.2

1/19/2017 Time: 1:25 PM Weather Conditions: 63 F 1-2 MPH 30% Hazy Clouds / ^{END} 3:00 PM 61 F 2-4 15% clouds

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
2		63	DRY														→ D, TT	Dry
6		63	69	2.5 cm	See Previous	32	See Previous	NO									→ D, T, TT	Mirky water
7		63	68	3.0 cm	See Previous	6.4	See Previous	NO									→ D, T	Mirky water
8		63	67	3.5 cm	See Previous	8.6	See Previous	NO									→ D, T	Mirky water
9		63	67	4.5 cm	"	6.0	"	NO									→ D, TT	Mirky water
12		63	-	0.5 cm	"	0.2	"	NO									→ D, TT	Mirky water
11		63	66	2.0 cm	"	3.6	"	NO									→ D, TT	Mirky water
5		63	63	4.5 cm	"	15.0	"	NO									→ D, TT	Mirky water
3		63	63	3.0 cm	"	20.0	"	NO									→ D, TT, T	Mirky water
4		62	66	3.5 cm	"	27.5	"	NO									→ D, TT	Mirky water
10		61	66	1.5 cm	"	3.0	"	NO									→ D, TT	Mirky water
1																	→	STILL PONDED

Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g. LC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahl*).
 Habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 Cattle, H = horses, S = sheep; AB = Algal blooms present.
 Grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: Beyer Park Dev. County: San Diego Quad: Imperial Beach Township: 185 Range: 62W Section: 36

WEYOR / Permit Number: ERIK LACoste TE-115373-3.2

Date: 1/26/17 Time: 0830 Weather Conditions: 82, D-1 MPH 0% U / END 1130 1-2 MPH 0% clouds.

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
2		62	48	2.0 cm	16.0	9x1 9.0	15x2 30.0	DNS									→ TT D	NEW INNAUDATION - DNS.
13	see Trimble	62	53	2.5 cm	10.0	1x4 4.0	8.0	DNS									→ D, Foot Traffic	NEW FEATURE
14	see Trimble	63	51	2.5 cm	12.0	2.0	6.0	DNS									→ D, Foot Traffic	NEW FEATURE.
6		64	53	4.0 cm	12.0	4x2 8.0	9.0	NO									→ D, TT	NO LIFE
7		64	53	2.5 cm	12.0	6x4 24.0	6x5 30.0	NO									→ D, TT	NO LIFE
8		64	53	4.0 cm	13.0	3x2 6.0	7.0	NO									→ D, TT	NO LIFE.
11		64	56	3.0	8.0	2x2 4.0	4.0	NO									→ D, TT	NO LIFE.
12		64	57	3.0	7.0	0.5x1 0.5	0.5	NO									→ D, TT	NO LIFE
9		64	57	3.5	9.0	3x4 12.0	14.0	NO									→ D, TT	NO LIFE.
5		64	53	5.0	12.0	5x3 15.0	15.0	NO									→ DT	SOME KIND OF WORM white, 1.00cm long.
3		64	55	2.5	8.0	6x8 48.0	40.0	NO									→ DT	NO LIFE
4		64	54	6.5 cm	20.0	19x4 76.0	86.0	NO									→ D, TT	NO LIFE
10		65	61	2.0	6.0	2x5 10.0	12.0	NO									→ D, TT.	NO LIFE Tardigrade (water bears)
15	see Trimble	65	65	1.5	6.0	0.0x0.5 1.0	5.0	DNS									→ D, TT	

Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g. LC = *Lindleriella occidentalis*, BRLI = *Branchinecta lindahli*).
 at conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 attle, H = horses, S = sheep; AB = Algal blooms present.
 a grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Feature 13 - new ponded area.
 Feature 14 - new ponded area - 23
 Feature 15 - new ponded area

DNS = DID NOT SURVEY

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: Beyer Park Dev County: _____ Quad: _____ Township: _____ Range: _____ Section: _____

BYOR / Permit Number: Eric LaCoste TB-115373-3.2

1/26/17 Time: _____ Weather Conditions: _____

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
<u>16</u>	<u>See Trimste</u>	<u>66</u>	<u>50</u>	<u>4.0</u>	<u>8.0</u>	<u>10x3 30</u>	<u>12.5x4 40</u>	<u>DNS</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>D, TT</u>	<u>New Feature</u>
<u>17</u>	<u>See Trimste</u>	<u>66</u>	<u>56</u>	<u>4.5</u>	<u>8.0</u>	<u>20x4 80</u>	<u>90</u>	<u>DNS</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>D, TT</u>	<u>New Feature</u>

Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g. LC = *Lindleriella occidentalis*, BRLI = *Branchinecta lindahli*).
 Habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 Disturbance: Cattle, H = horses, S = sheep; AB = Algal blooms present.
 Grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

16, 17 = New Features -

DNS = DID NOT SAMPLE.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: BEYER PARK DEV County: S.D. Quad: IMPERIAL Beach Township: 185 Range: 62W Section: 36
 WETSEASON / Permit Number: ERIK LACOSTE TB-115373-3.2
 Date: 2/2/17 Time: 0900 Weather Conditions: 64F/1-2mph/20% clouds | 10:30 66°F 2-4 10% clouds

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
2	Dry.	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	Dry-
13	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	UD	Dry
14	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	UD	Dry
6	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT, T	MUD only
7	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	MUD only
8	-	64	56F	1.25 cm	13	12.25 0.5	7.0	—	—	—	—	—	—	—	—	—	D, TT	VERY MURKY NO LIFE
11	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	Dry
12	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	Dry
9	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	MUD only
5	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	MUD only
3	-	64	56F	3.0	8.0	4x2 2.0	40.0	—	—	—	—	—	—	—	—	—	D, TT, T	Very murky, NO LIFE
4	-	65	57F	2.5	20	9x2.5 22.5	85.0	—	—	—	—	—	—	—	—	—	D, TT	murky, NO LIFE
10	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	MUD only
15	Dry	64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	D, TT	

Use abbreviations for all in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LC = *Lindleriella occidentalis*, BRLI = *Branchinecta lindahl*).

at conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed; H = horses, S = sheep; AB = Algal blooms present.

g = grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: Bayer Park Dev County: _____ Quad: _____ Township: _____ Range: _____ Section: _____

WEYOR / Permit Number: _____

2/2/17 Time: _____ Weather Conditions: _____

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
16	Dry	65																> D, TT	MUD
17	Dry	65																> D, TT	MUD
1	still very INUNDATED																		

Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (JC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*).
 at conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 attle, H = horses, S = sheep; AB = Algal blooms present.
 e grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: *Beyer Park Dev* County: *SD* Quad: *Imperial Beach* Township: *185* Range: *62W* Section: *36*

WEYOR / Permit Number: *ERIK LACOSTE TB-115373-3.2*

Date: *2/9/17* Time: *9:15* Weather Conditions: *69F 2-4 10% 1000 AM, 70F 1-2 10% clouds.*

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
<i>2</i>	<i>Dry</i>																	<i>D, TT</i>	<i>Dry.</i>
<i>13</i>	<i> </i>																		
<i>14</i>	<i> </i>																		
<i>6</i>	<i> </i>																		
<i>7</i>	<i> </i>																		
<i>8</i>	<i> </i>																		
<i>11</i>	<i> </i>																		
<i>12</i>	<i> </i>																		
<i>9</i>	<i> </i>																		
<i>5</i>	<i> </i>																		
<i>3</i>		<i>69F</i>	<i>66F</i>	<i>2.5</i>	<i>7.0</i>	<i>3 x 0.25</i>	<i>520</i>	<i>0.25</i>	<i>200</i>	<i>NO</i>								<i>D, TT</i>	<i>Tardigrades - water bears!</i>
<i>4</i>	<i> </i>																		
<i>10</i>	<i> </i>																		
<i>15</i>	<i> </i>																		

All in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (C = *Lindleriella occidentalis*, BRL = *Branchinecta lindahli*).
 at conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 atle, H = horses, S = sheep; AB = Algal blooms present.
 grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: Bayou Park Dev. County: _____ Quad: _____ Township: _____ Range: _____ Section: _____

WEYOR / Permit Number: Erik Lacoste

2/9/17 Time: _____ Weather Conditions: _____

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
<u>16</u>	<u>DR4</u>																		
<u>17</u>	<u>"</u>																		
<u>1</u>	<u>DR1</u>																		<u>Dry for first time since DECEMBER.</u>

All in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g. LC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*).
 at conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed, G = grazed, UG = ungrazed
 cattle, H = horses, S = sheep; AB = Algal blooms present.
 grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods																		
Site or Project Name: <u>Beyer Park</u>			County: <u>S.D.</u>		Quad: <u>Imperial Beach</u>			Township: <u>185</u>		Range: <u>62 W</u>		Section: <u>36</u>						
SURVEYOR / Permit Number: <u>Darin Busby (FE 115373-3)</u>																		
Date: <u>2/16/17</u>		Time: <u>12:10</u>		Weather Conditions: <u>64F, 3→5mph, 30% clouds, 0 precip / end: 13:45, 64F, 80% clouds, 0 precip</u>														
Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
1		64	N/A	N/A	see previous	N/A	see previous	N/A										→ Muddy, no ponding. No evidence of shrimp
2																		DRY
3																		Muddy, no ponding. No evidence of shrimp
4																		DRY
5																		DRY
6																		DRY
7																		DRY
8																		DRY
9																		DRY
10																		DRY
11																		DRY
12																		DRY
13																		DRY
14																		DRY

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*).
 For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
 (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

* CAGN vocalizing: 32.55809, -117.03615

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Beyer Park **County:** S.D. **Quad:** Imperial Beach **Township:** 18S **Range:** 62W **Section:** 36

SURVEYOR / Permit Number: Darin Busby (TE 115373-3)

Date: 2/16/17 **Time:** **Weather Conditions:**

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information	
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae				
15		64	N/A	N/A	see previous	N/A	see previous	N/A												DRY
16		↓	↓	↓	↓	↓	↓	↓												Muddy, no ponding. No evidence of shrimp
17		↓	↓	↓	↓	↓	↓	↓												" "

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: BOYAR PARK DEU County: SD. Quad: IMPERIAL Beach Township: 185 Range: 62W Section: 36
 WEYOR / Permit Number: Erik LaCoste TO-115373-3.2
 Date: 2/23/17 Time: 0830 Am Weather Conditions: Stand 60F 2-4 mph 25% cloud

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
2		60	DRY	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	MOIST WET SOIL - No standing water
13			MUD	—	—	—	—	—	—	—	—	—	—	—	—	—	→	moist soil only
14			MUD	—	—	—	—	—	—	—	—	—	—	—	—	—	→	moist soil only
6			MUD	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	moist soil only
7			MUD	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	moist soil only
8		61	59	2.0cm	4.5	1.0m ²	2.0m ²	—	—	—	—	—	—	—	—	—	→ D,TT	Recent fill, small
11			MUD	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	moist mud
12			DRY	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	DRY
9		61	58	1.0cm	2.0cm	2.0m ²	10m ²	—	—	—	—	—	—	—	—	—	→ D,TT	very muddy water recently driven through.
5		61	58	3.0cm	9.0cm	2.0m ²	16m ²	—	—	—	—	—	—	—	—	—	→ D,TT	murky -
3		61	55	4.0cm	13.0cm	12m ²	20m ²	—	—	—	—	—	—	—	—	—	→ D,TT	clear water
4			DRY	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	DRY
10			MUD	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	MUD
15			DRY	—	—	—	—	—	—	—	—	—	—	—	—	—	→ D,TT	DRY

Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (C = *Lindleriella occidentalis*, BRLI = *Branchinecta lindahli*).
 at conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 atle, H = horses, S = sheep; AB = Algal blooms present.
 a grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service – Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Project Name: Beyer Park DEU County: _____ Quad: _____ Township: _____ Range: _____ Section: _____
 WETSEASON / Permit Number: _____

Date: 2/23/17 Time: _____ Weather Conditions: _____

Core ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information	
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae				
14			MUD	—	—	—	—										→	DTT		
17			MUD	—	—	—	—										→	DTT		
1		60	56	5 cm	10 cm	60 m ²	100 m ²	—									→		FILED AGAIN RECENTLY - ON 2/17, 2/18, 2/19	

Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g. LC = *Linderiella occidentalis*, BRL = *Branchinecta lindahlji*).
 Habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed; with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed
 (e.g. H = horses, S = sheep; AB = Algal blooms present.
 Grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service - Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: ROYAL PARK DEV County: SD. Quad: IMPERIAL BEACH Township: 185 Range: 62W Section: 36

SURVEYOR / Permit Number: ERIK LACOSTE TB-115373-3.2

Date: 3/2/17 Time: 1215 Weather Conditions: 70F 3-6MPH 0% 2:00 72F 3-6MPH 0%

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
2		70	83	1.0 cm	10 ⁺ cm	1.0 [#] m	30 [#] m											→ D, TT	heavy mud disturbance.
13	Dry																		muddy only
14	Dry																		muddy oak
6		71	78	2.5 cm	10 ⁺ cm	6 [#] m	9 [#] m											→ D, TT	very murky.
7		71	78	3.5 cm	8 cm	7 [#] m	30 [#] m											→ D, TT	very murky
8		71	74	4.5 cm	15 cm	2 [#] m	7 [#] m											→ D, TT	Very murky
11		71	74	2.5 cm	10 cm	0.25 [#] m	4 [#] m											→ D, TT	Very murky
12	Dry																		Dry.
9		71	74	2.5 cm	10 cm	6 [#] m	14 [#] m											→ D, TT	Very murky
5		71	70	4.5 cm	15 cm	6 [#] m	15 [#] m											→ D, TT	Very murky.
3		71	73	3.0 cm	6 cm	10 [#] m	40 [#] m											→ D, TT	murky
4		71	69	4.0 cm	15 cm	20 [#] m	85 [#] m											→ D, TT	Very murky.
10		72	71	1.0 cm	4 cm	1 [#] m	12 [#] m											→ D, TT	Semi Clear.
15	Dry																		MUD

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Lindleriella occidentalis*, BRLL = *Branchinecta lindahli*).

For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.

(Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service - Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Beyer Park County: _____ Quad: _____ Township: _____ Range: _____ Section: _____

SURVEYOR / Permit Number: _____

Date: 3/2/17 Time: _____ Weather Conditions: _____

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information				
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae				Diptera Chironomidae			
16		71	61	1.0	5.0	15 [#] _m	40 [#] _m											shaded \rightarrow	D, TT	Clear water.		
17		71	64	2.5cm	7.0	25 [#] _m	90 [#] _m											\rightarrow	D, TT	Always murky.		
1	Still holding	water.																		holding water		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLL = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Appendix 1. U.S. Fish and Wildlife Service - Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Boyer Park Dev County: S.D Quad: Imperial Beach Township: 105 Range: 62W Section: 36
 SURVEYOR / Permit Number: Eric Lacoste ASSISTED BY Andrew Kort (BBS)
 Date: 3/9/17 Time: 1030 Weather Conditions: 70F, 3-5 mph, 5% clouds. | 1100 ~~72F~~ 1-2 5%

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects				Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae	Diptera Chironomidae			
8		70	76	2.0cm	NO. CHANGE NO. CHANGE	0.25m	NO CHANGE										→	D, TT	Water lens.
5		70	75	2.0cm	25cm	1.0m	NO CHANGE										→	D, TT	NO TT, DEEPER MAX
3		70	75	3.5cm	NO CHANGE	1.5m	NO CHANGE										→	D, TT	Algae, mosquito larvae
1	still holding water.																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*). For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present. (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.

Dry Basins: ~~1~~ 2, 4, 6, 7, 9, 10, 11, 12, 13, 14, 15

Appendix 1. U.S. Fish and Wildlife Service - Data Sheet for Wet Season Surveys For Listed Large Branchiopods

Site or Project Name: Bay Park Dev County: S.D. Quad: Imperial Beach Township: 85 Range: 62W Section: 36

SURVEYOR / Permit Number: PAK LaCoste FB-115373-3.2

Date: 3/15/17 Time: 8:15 Weather Conditions: 68F, 0-1 mph, 10% clouds ^{END} 0930 74F 1-2 10% clouds

Feature ID #	UTM (Northing, Easting, Datum)	Temp (°C)		Depth (cm)		Surface Area (m x m)		Crustaceans					Insects			Platyhelminths (flatworms)	Habitat Condition	Notes / Voucher information
		Air	Water	Average	Est. Max.	Present	Est. Max.	Anostracans	Notostracans	Copepods	Ostracods	Cladocera	Coleoptera	Hemiptera	Diptera Culicidae			
<u>All Basins</u>																		
<u>Dry</u>																		
<u>Basin 1 - Dry</u>																		

Notes: Fill in abbreviated names of Anostracans and Notostracans, for all others indicate presence with a check mark. Anostracan and Notostracan Abbreviations: Use first two letters of genus and species name (e.g., LIOC = *Linderiella occidentalis*, BRLI = *Branchinecta lindahli*).
 For habitat conditions use two letter abbreviation as follows: NP = Natural Pool, CP = Constructed Pool; UD = undisturbed, D = disturbed: with TT = tire tracks, T = trash, P = plowed; G = grazed, UG = ungrazed by: C = cattle, H = horses, S = sheep; AB = Algal blooms present.
 (Estimate grazing regime by height of grasses and forbs and density of hoof prints) LG = light grazing, MG = moderate grazing, HG = heavy grazing.



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October 25, 2017

Ms. Stacey Love
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Dry Season Fairy Shrimp Survey for the Beyer Park Development Project in the City of San Diego, California (RECON Number 8359)

Dear Ms. Love:

This letter is to provide you with the results of the dry season survey for fairy shrimp conducted in 2017 in 16 depressions located within the Beyer Park Development Project parcels (Assessor's Parcel Numbers 63817018, 63817019, and 63807071). The survey area is located in the communities of San Ysidro and Otay Mesa, in undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego, California (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Background

U.S. Fish and Wildlife Service (USFWS) protocol wet season surveys for listed vernal pool branchiopod species, including federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*), were conducted during the 2016–2017 wet season for a total of 17 ponded depressions that were observed within the 44-acre project boundary shown on Figure 2. Detailed methods and results of the wet season surveys can be found in the Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project (RECON 2017). In summary, survey methods were conducted in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2015). During the course of the 2016–2017 wet season protocol surveys, one federally endangered vernal pool branchiopod species—San Diego fairy shrimp—was observed in one of the 17 ponded depressions within the project boundary. No other aquatic wildlife species were observed in any of the ponded depressions. As the presence of San Diego fairy shrimp was confirmed in ponded depression 1 during wet season surveys and Riverside fairy shrimp is not expected to occur due to insufficient duration of ponding, USFWS approved exclusion of ponded depression 1 from dry season sampling (Attachment 1).

Existing Conditions

The Beyer Park Development Project is located on undeveloped City park land, southeast of the eastern terminus of Beyer Boulevard. The project is located on the western end of the Otay Mesa terrace. The northern and eastern portions of the project site are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the project site. The southern and western portions transition into multiple terraces with a steep manufactured slope along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation occurring within the immediate vicinity of the surveyed depressions consists of disturbed Diegan coastal sage scrub and disturbed land, with depressions 2 through 12 and 15 through 17 occurring within tire tracks. Depression 1 is an artificial ditch within disturbed Diegan coastal sage scrub, which occurs between an old dirt road bed and the top of a manufactured slope. Depressions 13 and 14 occur within

disturbed land and a pedestrian path. Scattered plant species occurring in and/or immediately adjacent to the depressions include broom baccharis (*Baccharis sarothroides*), curly dock (*Rumex crispus*), and San Diego bur-sage (*Ambrosia chenopodiifolia*). See Figure 2 for locations of the surveyed depressions, each of which ponded during the 2016–2017 wet season. Photographs of the depressions can be found in the Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project (RECON 2017).

Methods

Soil samples for the dry season survey were collected by RECON biologist Kayo Valenti (TE-797665-9) on August 7, 2017, with the assistance of RECON biologists Andrew Smisek, J.R. Sundberg, and Mandy Weston, each under supervision. The survey was conducted between 8:45 a.m. and 10:30 a.m., with air temperatures between 70 and 74 degrees Fahrenheit, 0- to 4-mile-per-hour winds, and 100 clearing to 20 percent cloud cover. The 16 depressions were sampled in accordance with the current USFWS *Survey Guidelines for the Large Listed Branchiopods* (USFWS 2015). As mentioned above, depression 1 was excluded from the dry season survey (see Attachment 1). The approximate size of each depression sampled, number of samples collected per depression, and total approximate volume of soil collected per depression is presented in Table 1. Equipment used during sampling was disinfected between depression complexes or isolated depressions. No more than 10 percent of the sampled feature’s surface area was disturbed. Therefore, at depressions that were 2.1 square meters in size or smaller, only one sample was collected from the deepest spot of the depression. At depressions that included multiple sample collections, the sampled locations were scattered to achieve a variety of locations within the depression, and included at least one sample from the deepest spot.

Depression Number	Depression Size (Square Meters)	Number of Samples Collected	Total Approximate Volume Collected (Milliliters)
2	1	1*	50
3	7.9	10	1000
4	8.5	10	1000
5	3.2	4	400
6	3.7	5	500
7	2.1	1*	50
8	1.1	1*	50
9	1.8	1*	50
10	3.4	4	400
11	0.9	1*	50
12	<0.9	1*	50
13	2.1	1*	50
14	<2.1	1*	50
15	5	7	700
16	21.3	10	1000
17	59.5	25	<2,500
*Where only 1 sample was required, collection was made in the deepest spot of the depression.			

Soil samples were shipped to ECORP Consulting, Inc. (ECORP; permit number TE-012973-11) for analysis. The methods used for processing and analyzing the samples are summarized in the attached memorandum dated October 10, 2017 (Attachment 2).

Ms. Stacey Love
Page 3
October 25, 2017

Results

No eggs of large branchiopod species were found in any of the 16 sampled depressions (i.e., depressions 2 through 17). The only invertebrate taxa observed in the soil samples included flatworms (*Turbellaria* sp.), water mites (*Hydracarina* sp.), roundworms (*Nematoda* sp.), and springtails (*Collembola* sp.). The memorandum from ECORP detailing these results is included as Attachment 2.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. If you have any questions, please contact me at 619-308-9333 ext. 112.

Sincerely,



Kayo Valenti
Biologist
USFWS Permit TE-797665-9

Attachments

cc: Darren Genova, City of San Diego
Juan Baligad, City of San Diego
Carly Gagen-Cheaney, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

References Cited

RECON Environmental, Inc. (RECON)

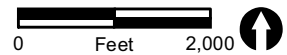
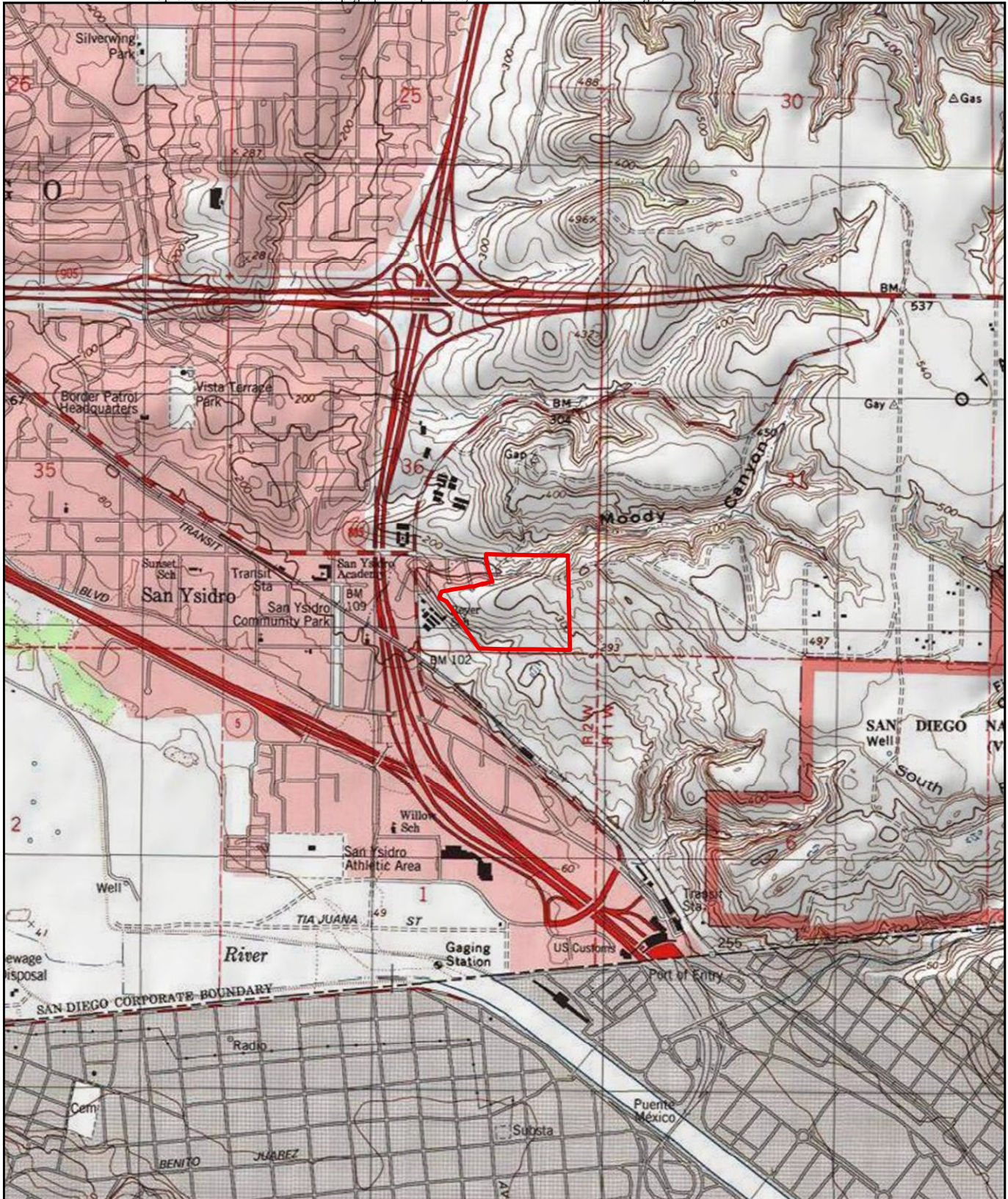
2017 Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project. June 7.

U.S. Fish and Wildlife Service (USFWS)

2015 Survey Guidelines for the Listed Large Branchiopods. May 31.

U.S. Geological Survey (USGS)

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Boundary

FIGURE 1

Project Location on USGS Map





-  Project Boundary
-  Ponded Depressions



FIGURE 2
Location of Ponded Depressions

ATTACHMENTS

ATTACHMENT 1



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July 17, 2017

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a dry season survey for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. With your authorization, we propose to conduct the survey on August 7, 2017.

Although the project site does not include any previously known vernal pool complexes, a total of 17 ponded depressions were observed and surveyed for fairy shrimp within the project boundary during the 2016–2017 wet season (RECON 2017). One federally endangered vernal pool branchiopod species—San Diego fairy shrimp—was observed during the 2016–2017 wet season surveys within ponded depression 1 (see Figure 2). During the 2016–2017 wet season, the longest continuous inundation period observed for ponded depression 1 was approximately 14 days, which was not long enough to allow for detection of Riverside fairy shrimp, if present. As the total rainfall recorded during the 2016–2017 wet season was above average in the vicinity of the project site and throughout San Diego County, the inundation periods observed in 2016–2017 are likely to represent longer durations than are typically experienced on site. As the observed ponding in an above-average rainfall year was not sufficient to support Riverside fairy shrimp, it is unlikely that this ponded depression provides a favorable environment for this species. As the presence of San Diego Fairy shrimp has been confirmed in ponded depression 1 during wet season surveys and Riverside fairy shrimp is not expected to occur, we propose that ponded depression 1 be excluded from dry season sampling. The remaining 16 ponded depressions will be sampled in accordance with the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015). The dry season survey will be conducted by Kayo Valenti (TE-797665-9). Other biologists under supervision may include Andrew Smisek and Mandy Weston.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: The areas to be surveyed comprise 16 depressions (ponded depression 2 through 17) observed during wet season fairy shrimp surveys (RECON 2017; see Figure 2).

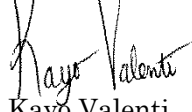
Assessor's Parcel Numbers (APN): The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
July 17, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days after completion of the analysis of dry season soil samples.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x112, or by e-mail at kvalenti@reconenvironmental.com.

Sincerely,



Kayo Valenti
Biologist
TE-797665-9

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

References Cited

RECON Environmental, Inc. (RECON)

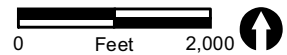
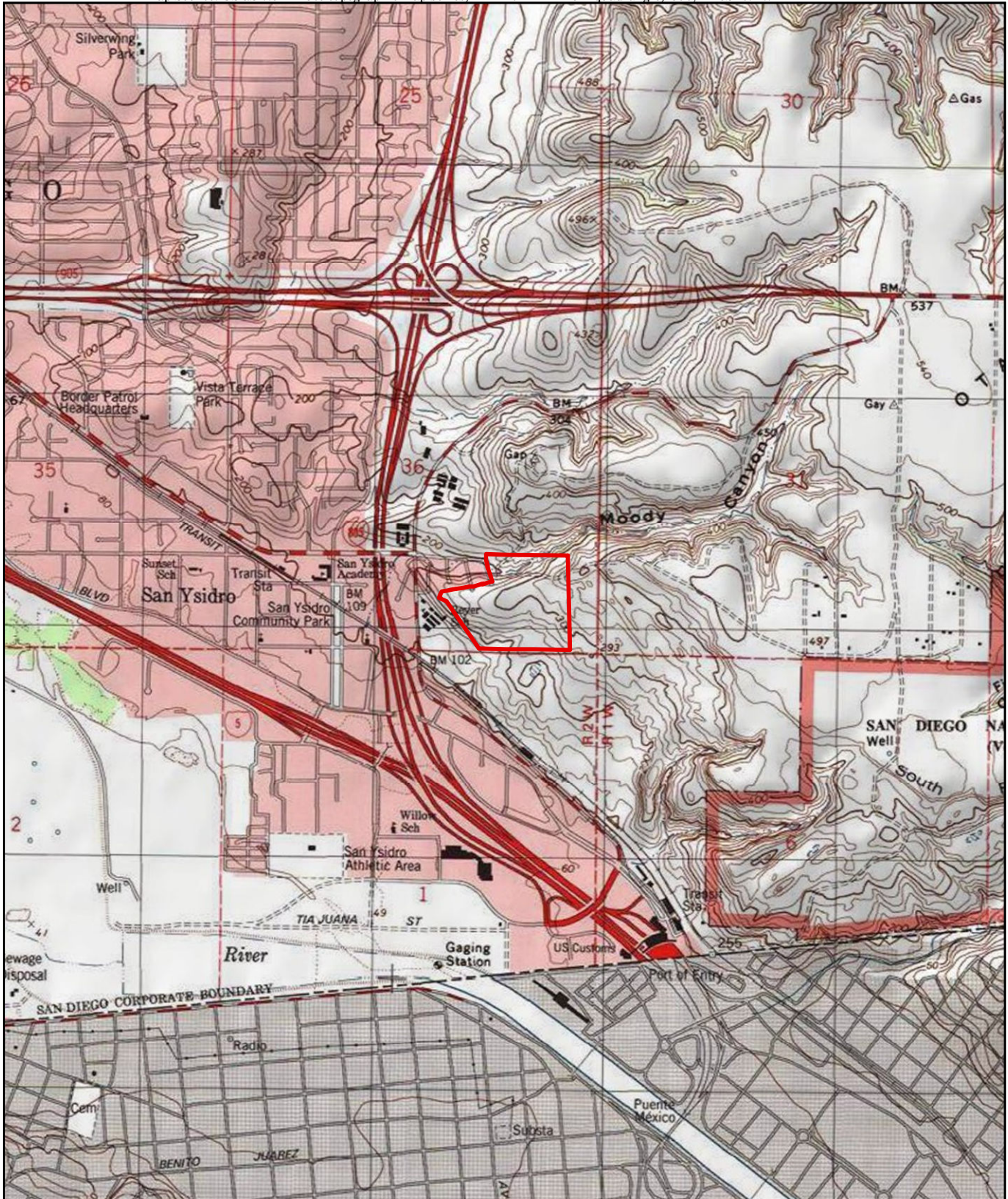
2017 Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project. June 7.

U.S. Fish and Wildlife Service

2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Boundary

FIGURE 1

Project Location on USGS Map





-  Project Boundary
-  Ponded Depressions



FIGURE 2
Location of Ponded Depressions

Brenna Ogg

From: Jennifer Gutierrez
Sent: Tuesday, July 18, 2017 8:02 AM
To: Kayo Valenti; Brenna Ogg
Subject: FW: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Please see below.

From: Gower, Patrick [mailto:patrick_gower@fws.gov]
Sent: Tuesday, July 18, 2017 8:01 AM
To: Jennifer Gutierrez
Cc: Zoutendyk, David; Stacey Love
Subject: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Thank you for the notification. Please consider this email our approval for you to commence dry season surveys for listed large branchiopods at this location using proposed methods described in the notification.

Please send your survey report (hard copy at minimum) to Stacey Love.

Patrick Gower

Fish and Wildlife Biologist
Carlsbad Fish and Wildlife Office
(760) 431-9440 ext 352

ATTACHMENT 2

MEMORANDUM

TO: Ms. Brenna Ogg, Senior Biologist, RECON Environmental, Inc.

FROM: Mr. Peter Balfour, Vice President, ECORP Consulting, Inc.

DATE: October 10, 2017

RE: Beyer Park; San Diego, California - Dry Season Survey Analysis Results- Report (2017)

At the request of RECON Environmental, Inc. (RECON), ECORP Consulting, Inc. analyzed soil samples as part of an assessment-level dry season survey for federally-listed large branchiopod species at the Beyer Park Development Project, located in San Diego, California. RECON and ECORP received authorization to collect dry season soil samples via emails from the U.S. Fish and Wildlife Service (USFWS) dated July 18, 2017 (RECON Number 8359) and September 5, 2017 (Attachment A). The purpose of the investigation was to determine the presence of eggs of large branchiopod species (fairy shrimp) listed as threatened or endangered under the federal Endangered Species Act (ESA) (e.g., San Diego fairy shrimp [*Branchinecta sandiegoensis*] and Riverside fairy shrimp [*Streptocephalus woottoni*]). The soils were collected and analyzed under the authority of USFWS Recovery Permit No. TE-797665-9 (Kayo Valenti) and TE-012973-11 (ECORP), respectively.

METHODS

Soil samples were processed following methods outlined in the Guidelines (USFWS 2015). In ECORP's laboratory, a brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The soil material collected from each aquatic feature was placed into the brine solution, and worked by hand to break down soil structure. The organic material rising to the top of the brine solution was poured onto either a 710- or 600-micron-diameter pore-size sieve stacked atop a 150-micron-diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The organic material retained from the 150-micron-diameter pore-size sieve was then rinsed gently with lukewarm tap water, and then removed and thinly distributed into plastic petri dishes.

Under the supervision of permitted biologist Peter Balfour, all sieved fractions were microscopically inspected for the presence of large branchiopod eggs. Evidence of other aquatic invertebrates encountered was also noted on the lab data sheet.

RESULTS

ECORP processed soil samples from a total of 16 aquatic features. No large branchiopods eggs were found. Other invertebrate taxa observed in the soil samples included micro-Turbellaria, Hydracarina, Nematoda, and Collembola. A data sheet is attached as Attachment B.

If you have any questions, please let me know. Thank you.

"We certify that the information in this survey report and attached exhibits fully and accurately represents our work."



10 October 2017

Peter Balfour

Date



10 October 2017

Daniel Wong

Date

REFERENCES

U.S. Fish and Wildlife Service (USFWS). 2015. Survey guidelines for the listed large branchiopods. 24 pp. Dated: 31 May 2015.

LIST OF ATTACHMENTS

Attachment A – U.S. Fish and Wildlife Service Authorization

Attachment B – Dry Season Data Sheet

ATTACHMENT A

U.S. Fish and Wildlife Service Authorization

Laura Hesse

From: Peter Balfour
Sent: Wednesday, September 20, 2017 10:07 AM
To: Daniel Wong
Subject: FW: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Follow Up Flag: Follow up
Flag Status: Flagged

Peter Balfour

Vice President



Ph: 916-782-9100 ♦ Fax: 916-782-9134

From: Love, Stacey [mailto:stacey_love@fws.gov]
Sent: Tuesday, September 05, 2017 10:40 AM
To: Brenna Ogg
Cc: patrick_gower@fws.gov; david_zoutendyk@fws.gov; Kayo Valenti; Peter Balfour
Subject: Re: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Hi Brenna,

Thank you. I have confirmed that ECORP is authorized to conduct these activities and consider this to be their notification. To clarify regarding our approval, we only require it for the sampling in the field.

Regards,
Stacey

On Tue, Sep 5, 2017 at 9:55 AM, Brenna Ogg <bogg@reconenvironmental.com> wrote:

Good morning,

We are just following up on our dry season collections for Beyer Park. We have transferred the samples to ECORP (permit number TE O12973-11) for lab analysis. Samples will be returned to us when the lab analysis is complete.

Please confirm receipt of this email and authorization to proceed.

Thank you,

Brenna A. Ogg

Senior Biologist
RECON Environmental, Inc.

1927 Fifth Avenue, San Diego, CA 92101
P 619-308-9333 ext. 118
F 619-308-9334

C 619-301-7137

From: Jennifer Gutierrez
Sent: Tuesday, July 18, 2017 8:02 AM
To: Kayo Valenti; Brenna Ogg
Subject: FW: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Please see below.

From: Gower, Patrick [mailto:patrick_gower@fws.gov]
Sent: Tuesday, July 18, 2017 8:01 AM
To: Jennifer Gutierrez
Cc: Zoutendyk, David; Stacey Love
Subject: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Thank you for the notification. Please consider this email our approval for you to commence dry season surveys for listed large branchiopods at this location using proposed methods described in the notification.

Please send your survey report (hard copy at minimum) to Stacey Love.

Patrick Gower

Fish and Wildlife Biologist

Carlsbad Fish and Wildlife Office

(760) 431-9440 ext 352

--

Stacey Love

Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
(incl. Palm Springs suboffice)

U.S. Fish and Wildlife Service

2177 Salk Avenue, Ste. 250

Carlsbad, CA 92008

(760) 431-9440 x 263

stacey_love@fws.gov

[CFWO Recovery Permits web page](#)

Permittees: Please include your permit number in all correspondence and reporting, thank you.

ATTACHMENT B

Dry Season Data Sheet

Vernal Pool Branchiopod Dry Season Data Sheet

Project Name: Bayes Park

Permitted Biologist: Peter Balfour

Project Number:

Pool No.	Sample Processing Personnel	Date Collected	Date Viewed	Insect Exo-Skeletons	Micro-Turbellaria Live/Cysts	Cladocera Ephyppia	Ostracods Live/Carapaces	Copepods Live	Large Branchiopod Eggs				Hydracarina Live	Nematoda	Collembola
									<i>Branchinecta</i> sp.	<i>Lepidurus packardii</i>	<i>Linderiella occidentalis</i>	<i>Eulimnadia diversa</i>			
Pool-2	Wong	8/7/2017	9/21/17	X											X
Pool-3				X											X
Pool-4				X											X
Pool-5				X											X
Pool-6				X											X
Pool-7				X											X
Pool-8				X											X
Pool-9				X											X
Pool-10				X											X
Pool-11				X											X
Pool-12				X											X
Pool-13				X											X
Pool-14				X	X										X
Pool-15				X									X		X
Pool-16				X									X		X
Pool-17				X									X		X

Note: Large branchiopod egg abundance denoted as follows: L = low abundance, estimate of 1-10 eggs/sampled feature; M = medium abundance, estimate of 11-50 eggs/sampled feature; H = high abundance, estimate of more than 50 eggs/sampled feature.



An Employee-Owned Company

July 17, 2017

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a dry season survey for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. With your authorization, we propose to conduct the survey on August 7, 2017.

Although the project site does not include any previously known vernal pool complexes, a total of 17 ponded depressions were observed and surveyed for fairy shrimp within the project boundary during the 2016–2017 wet season (RECON 2017). One federally endangered vernal pool branchiopod species—San Diego fairy shrimp—was observed during the 2016–2017 wet season surveys within ponded depression 1 (see Figure 2). During the 2016–2017 wet season, the longest continuous inundation period observed for ponded depression 1 was approximately 14 days, which was not long enough to allow for detection of Riverside fairy shrimp, if present. As the total rainfall recorded during the 2016–2017 wet season was above average in the vicinity of the project site and throughout San Diego County, the inundation periods observed in 2016–2017 are likely to represent longer durations than are typically experienced on site. As the observed ponding in an above-average rainfall year was not sufficient to support Riverside fairy shrimp, it is unlikely that this ponded depression provides a favorable environment for this species. As the presence of San Diego Fairy shrimp has been confirmed in ponded depression 1 during wet season surveys and Riverside fairy shrimp is not expected to occur, we propose that ponded depression 1 be excluded from dry season sampling. The remaining 16 ponded depressions will be sampled in accordance with the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015). The dry season survey will be conducted by Kayo Valenti (TE-797665-9). Other biologists under supervision may include Andrew Smisek and Mandy Weston.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: The areas to be surveyed comprise 16 depressions (ponded depression 2 through 17) observed during wet season fairy shrimp surveys (RECON 2017; see Figure 2).

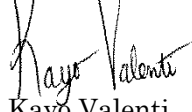
Assessor's Parcel Numbers (APN): The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
July 17, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days after completion of the analysis of dry season soil samples.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x112, or by e-mail at kvalenti@reconenvironmental.com.

Sincerely,



Kayo Valenti
Biologist
TE-797665-9

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

References Cited

RECON Environmental, Inc. (RECON)

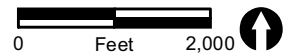
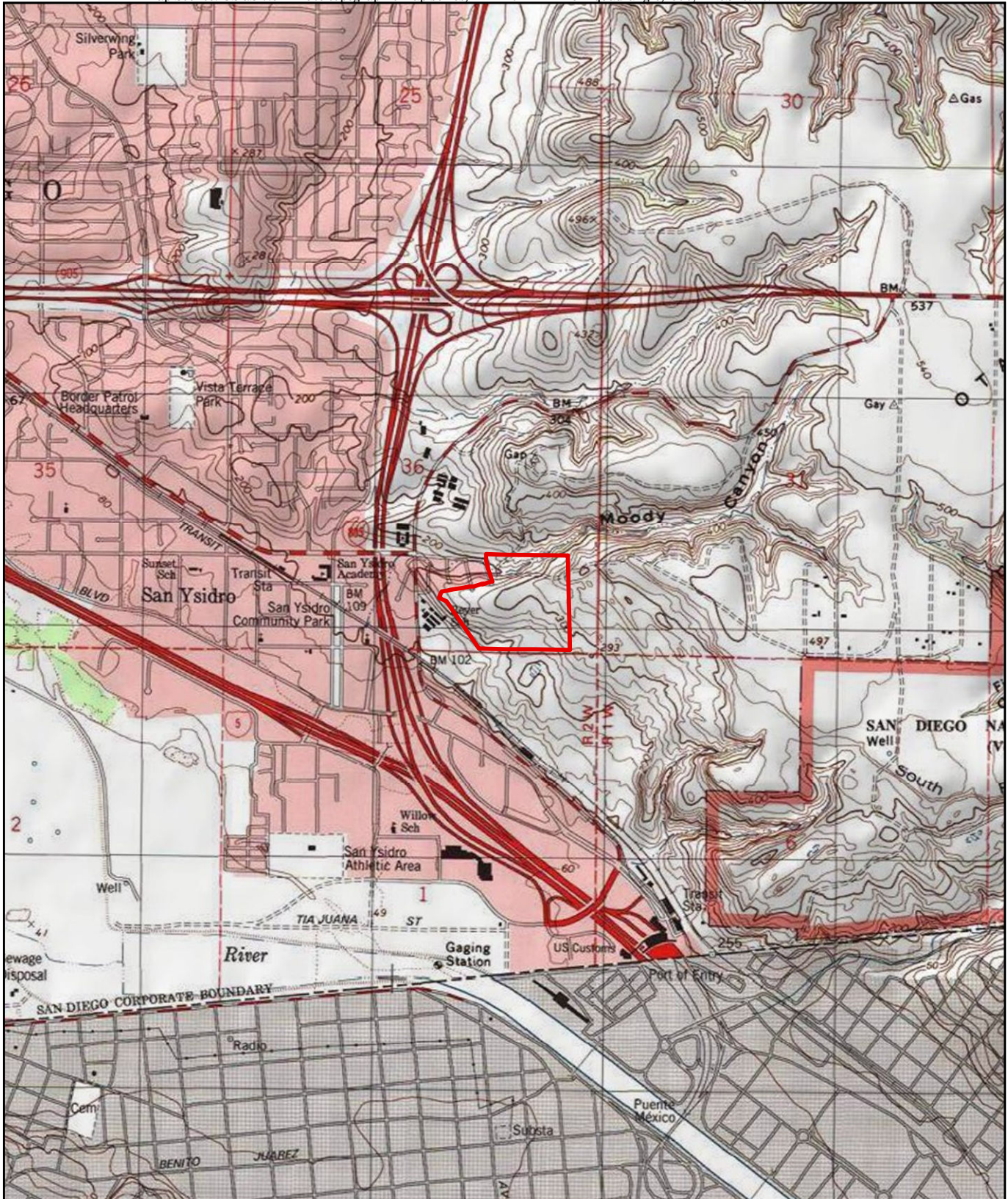
2017 Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project. June 7.

U.S. Fish and Wildlife Service

2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Boundary

FIGURE 1

Project Location on USGS Map





-  Project Boundary
-  Ponded Depressions



FIGURE 2
Location of Ponded Depressions



**Biological Resources Report for the
Beyer Park Development Project,
San Diego, California
WBS# S-00752.02.02**

Prepared for
Mr. Darren Genova
City of San Diego
Public Works - Engineering
525 B Street, Suite 750, MS 908A
San Diego, CA 92101

Prepared by
RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101
P 619.308.9333

RECON Number 8359/8359.1
November 26, 2019

A handwritten signature in black ink, appearing to read "Wendy Loeffler".

Wendy Loeffler
Environmental Project Director, Biology

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ATTACHMENTS

- 1: Plant Species Observed
- 2: Wildlife Species Observed
- 3: Sensitive Plant Species Observed or with the Potential to Occur
- 4: Sensitive Wildlife Species Occurring or with the Potential to Occur

Acronyms and Abbreviations

ACOE	U.S. Army Corps of Engineers
ADD	Administrator Deputy Director
APN	Assessor's Parcel Number
BBS	Busby Biological Services
BCME	Biological Construction Mitigation/Monitoring Exhibit
BLA	Boundary Line Adjustment
BMPs	Best Management Practices
Cal-IPC	California Invasive Plant Council
CD	construction document
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
City	City of San Diego
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CSVR	Consultant Site Visit Record
CWA	Clean Water Act
dB(A)	A-weighted decibels
ESA	Endangered Species Act
ESL	Environmentally Sensitive Lands
GPS	Global Positioning System
LDC	Land Development Code
LUAG	Land Use Adjacency Guidelines
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MSCP	Multiple Species Conservation Program
OHV	off-highway vehicle
RWQCB	Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
SDNHM	San Diego Natural History Museum
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VPHCP	City of San Diego Vernal Pool Habitat Conservation Plan

Management Summary

The City of San Diego (City) proposes the Beyer Park Development Project (project), which entails development and operation of a new community park with turf sports fields, picnic/gathering spaces, trails, a children's play area, a skate park, a fitness area, a half basketball court, a dog park, a comfort station, and other associated amenities and facilities. The project is located on three City-owned parcels (i.e., project parcels), southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego.

The following eight vegetation communities or land cover types were mapped within the project parcels and surrounding 100-foot buffer: mule fat scrub, maritime succulent scrub, disturbed maritime succulent scrub, Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, disturbed land, ornamental plantings, and urban/developed. The project would result in direct impacts to 11.47 acres of sensitive vegetation communities, including 0.91 acre of maritime succulent scrub (Tier I), 4.86 acres of disturbed maritime succulent scrub (Tier I), 1.41 acres of Diegan coastal sage scrub (Tier II), and 4.29 acres of disturbed Diegan coastal sage scrub (Tier II). These impacts would be mitigated through enhancement of 10.42 of maritime succulent scrub and disturbed maritime succulent scrub and restoration of 3.70 acres of disturbed land in the eastern project parcel, which includes both Multi-Habitat Planning Area (MHPA) and non-MHPA lands. A total of 13.55 acres of occupied western burrowing owl habitat will be directly impacted and will require mitigation at the same ratios as required for impacts to the underlying sensitive vegetation communities.

Thirteen sensitive plant species were observed within the project parcels. The project would directly impact the following eight sensitive plant species: San Diego barrel cactus (*Ferocactus viridescens*), beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*), south coast saltscale (*Atriplex pacifica*), San Diego bur-sage (*Ambrosia chenopodiifolia*), Palmer's grapplehook (*Harpagonella palmeri*), California box-thorn (*Lycium californicum*), small-flowered microseris (*Microseris douglasii* var. *platycarpha*), and San Diego County viguiera (*Bahiopsis laciniata*). Direct impacts to beach goldenaster would be considered significant and would be mitigated through restoration of beach goldenaster within the project parcels. Indirect impacts to the sensitive plant species would be minimized and/or avoided by implementation of MHPA land use adjacency guidelines and would not be significant.

Thirteen sensitive wildlife species were observed within or adjacent to the project parcels, and four additional sensitive wildlife species were identified as having a high or moderate potential to occur. The project would result in significant direct impacts to western burrowing owl. Direct impacts to western burrowing owl and its habitat would be mitigated through preparation and/or implementation of a habitat restoration plan to preserve occupied habitat which will include a burrowing owl mitigation plan, a burrow exclusion plan, pre-construction surveys, grading restrictions, and construction monitoring. Indirect construction-related impacts to San Diego fairy shrimp would be avoided through implementation of avoidance measures and minimization measures in compliance with the

City's Vernal Pool Habitat Conservation Plan. These measures would reduce the level of impact to less than significant.

Indirect noise impacts to least Bell's vireo, California coastal gnatcatcher, and coastal cactus wren would be mitigated through implementation of noise attenuation measures and/or noise monitoring, if construction occurs during the nesting season.

Within the project parcels, jurisdictional wetlands and waters were delineated in Moody Canyon and a small depression near the western edge of the project parcels. These include 0.07 acre of U.S. Army Corps of Engineers non-wetland waters of the U.S./California Department of Fish and Wildlife (CDFW) streambed/Regional Water Quality Control Board (RWQCB) unvegetated streambed in Moody Canyon, 0.36 acre of CDFW riparian habitat/City Wetlands in Moody Canyon, and 0.02 acre of RWQCB isolated waters within the small depression. No direct impacts to jurisdictional wetlands or waters are proposed as part of the project.

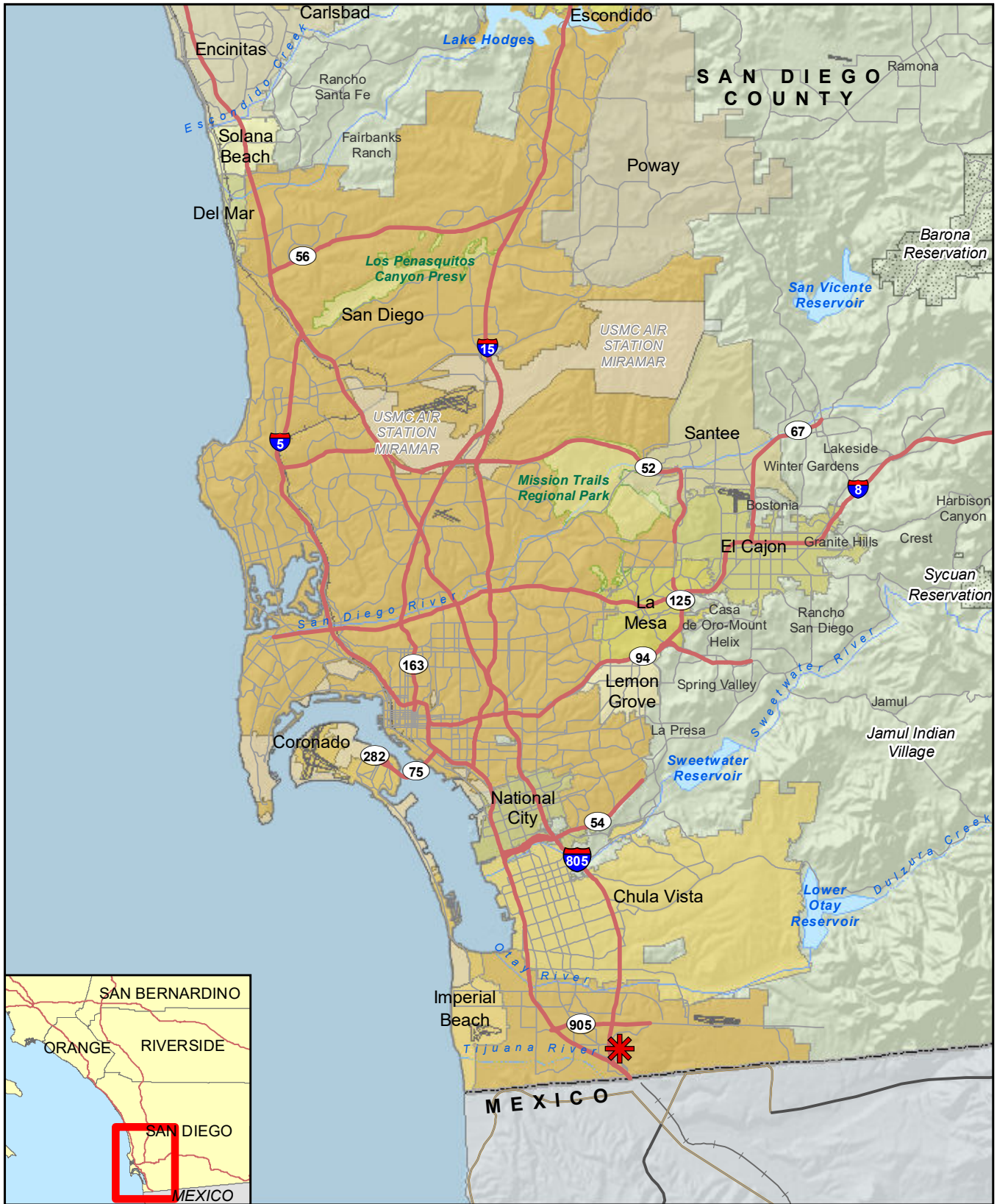
The project has been designed in conformance with the MHPA Land Use Adjacency Guidelines pertaining to drainage, lighting, noise, invasive plants, and grading/land development, as described in Section 1.4.3 of the City's MSCP Subarea Plan.

1.0 Introduction

The purpose of this biological resources report is to (1) document the existing biological conditions within the project survey area; (2) evaluate the survey area and the vicinity for the potential to support sensitive biological resources, including Environmentally Sensitive Lands (ESL); (3) provide an impact analysis based on the potential impacts associated with the proposed project; and (4) provide a discussion of potential avoidance, minimization, and mitigation measures that may be required to reduce potential impacts to sensitive biological resources to below a level of significance.

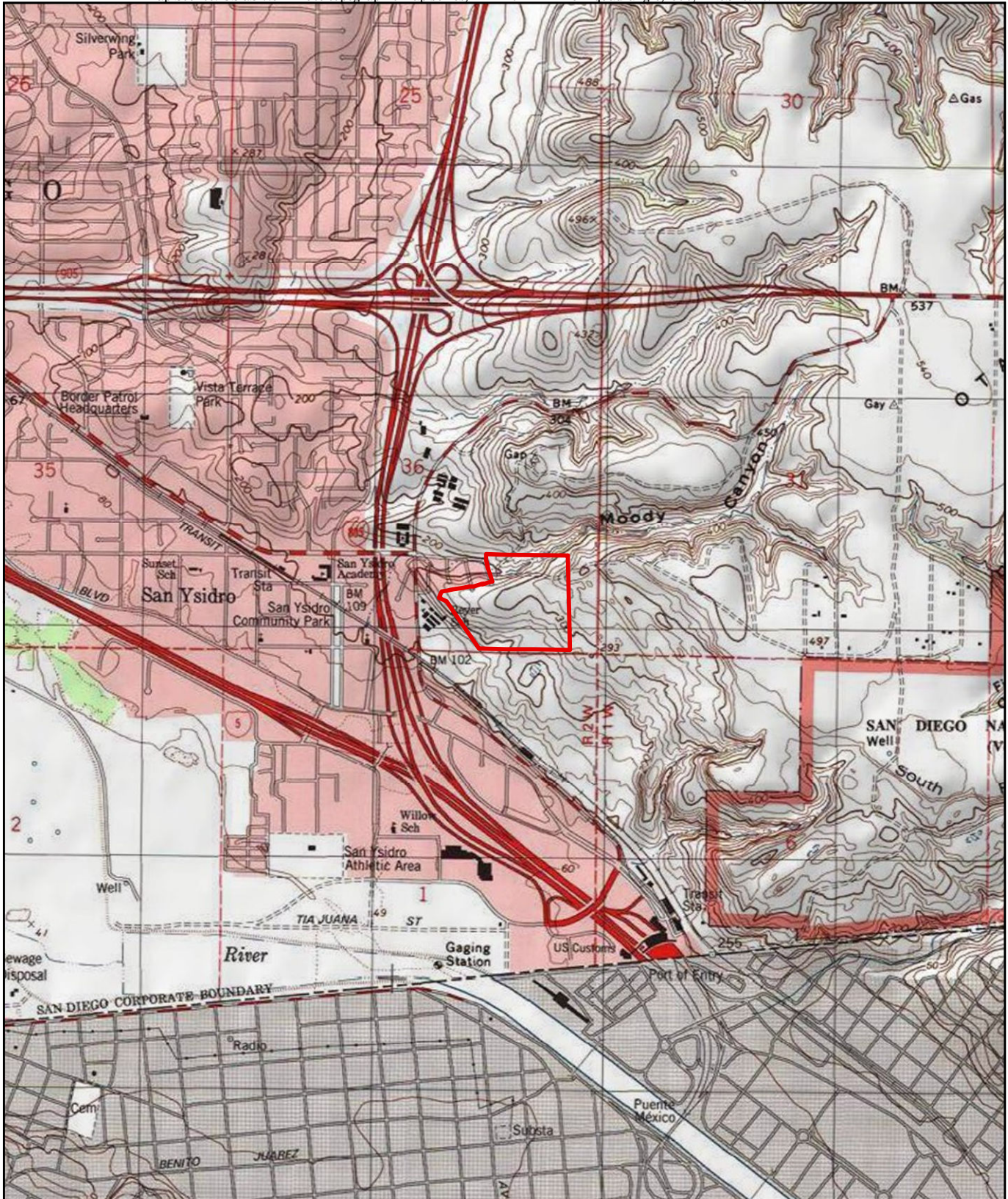
1.1 Project Location

The project site is located on undeveloped City of San Diego (City) park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro, city of San Diego (Figures 1–3). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey (USGS) 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; USGS 1996). The project site is situated on three parcels, Assessor's Parcel Numbers (APNs) 6381701800, 6381701900, and 6380707100, referred to hereafter as the "project parcels," which total 43.9 acres (Figure 4). Excluding developed areas, the surrounding 500-foot (approximate 150-meter) buffer, which accounts for all biological survey areas used for this report, includes portions of APNs 63807068, 63807074, 64506110, 66701001, 66613009, 66613007, 66613028, 63817014, and 63828017; as well as the entirety of APNs 66613006, 66613005, 66613004, and 66613008 (see Figure 4). An aerial view of the project parcels is also provided on Figure 4.



***** Project Location

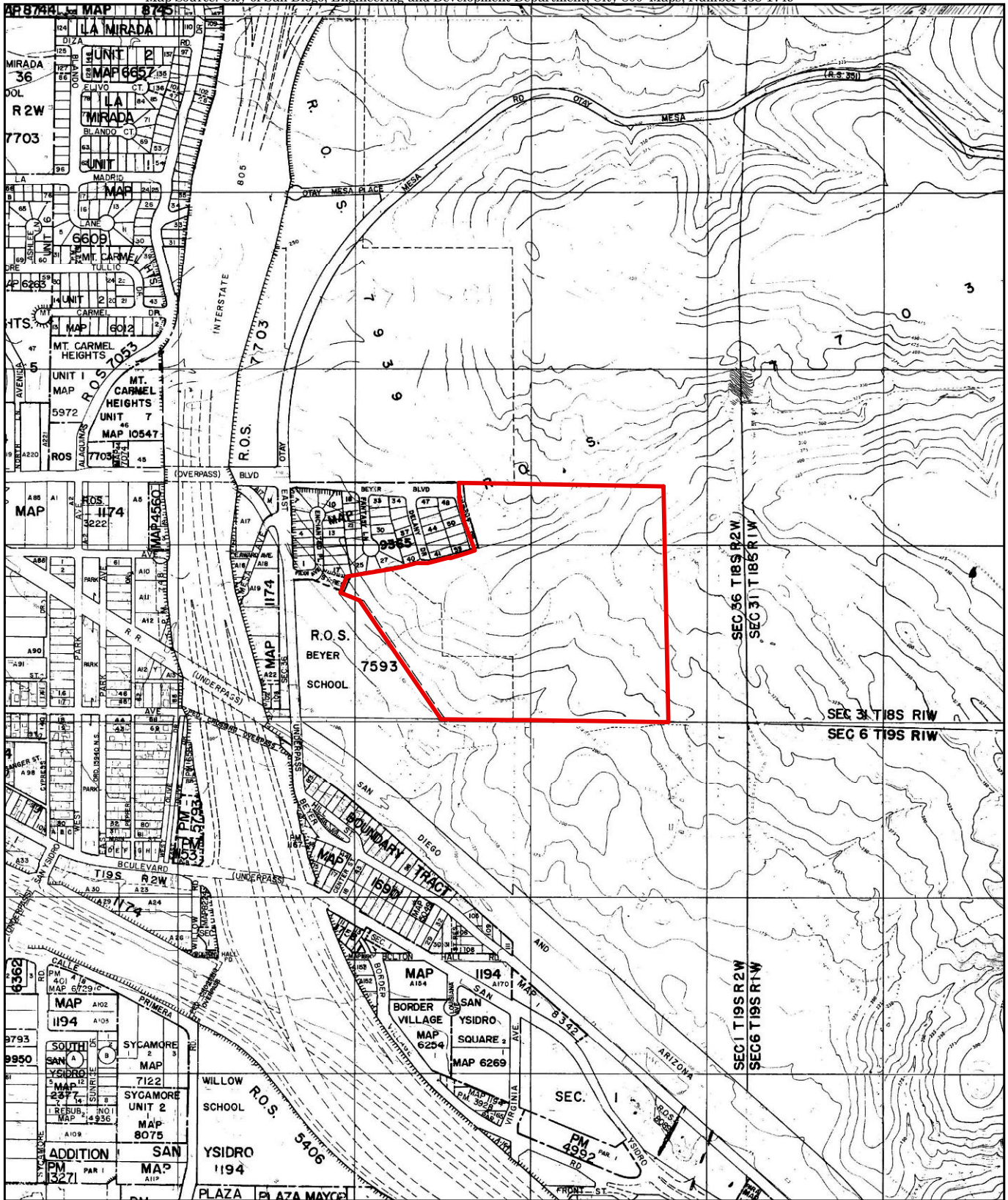
FIGURE 1
Regional Location



 Project Parcels Boundary

FIGURE 2

Project Location on USGS Map













 Project Parcels Boundary

FIGURE 3

Project Location on City 800' Map





-  Project Parcels Boundary
-  Project Impact Area
-  MSCP Habitrak Lands
-  100-foot Survey Buffer
-  300-foot Survey Buffer
-  500-foot (approximate 150-meter) Survey Buffer
-  Parcels
-  City of San Diego MHPA
-  County Preserve

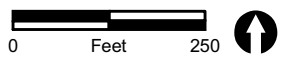


FIGURE 4
Project Location and MSCP
Preserve Area on Aerial Photograph

The project parcels are situated within the City's Multiple Species Conservation Program (MSCP) Subarea Plan boundary. Portions of the eastern project parcel are located within the City's Multi-Habitat Planning Area (MHPA) boundary (see Figure 4).

1.2 Project Description

The project proposes to construct a community park, approximately 15 acres in size, in the community of San Ysidro. The park will consist of lighted turf sports fields, picnic/gathering spaces, concrete walkways, trails, and landscaped areas, along with a children's play area, skate park, fitness area, half basketball court, dog park, comfort station, storage building, parking, and biofiltration Best Management Practices (BMPs), i.e., planted storm water treatment basins and underground detention system (Figure 5). The park will be open to the public 24 hours a day with the exception of the skate park, which will be closed by locked gate between dusk and dawn. Access to the project site will be from Beyer Boulevard via Enright Drive and Delany Drive, which are existing cul-de-sacs. The parking lot will intersect the existing southern end of Delany Drive and a new extended cul-de-sac at the south end of Enright Drive. The east side of Enright Drive will be improved with a new sidewalk, fencing, and landscaping.

Overall, the park will include a mix of surfaces including concrete, pavement, permeable pavers, decomposed granite, and planted areas. The dog park, located at the southern end of the park, will be part decomposed granite and part permeable pavers. Concrete will be used for the skate park and central walkways. Trails will be constructed with a decomposed granite trailbed. Landscaped areas (except the turf sports fields) and storm water treatment basins will be planted with a mix of native and non-invasive ornamental species, with only native plantings where the park transitions into the surrounding natural vegetation.

The storm water treatment basins will have four discharge points along the perimeter of the park. The storm water treatment basins west of the dog park will outfall to the south. The basins in the northeastern portion of the park will outfall to the north, just south of Moody Canyon. The basin at the west edge of the turf field will outfall to the west, and the basin in the northwest portion of the park will tie into an existing concrete brow ditch along the northwestern edge of the park.

Fencing will be installed around the majority of the park perimeter and within the park to demarcate use areas. Five-foot-high chain-link fencing will also be installed around the skate park perimeter. Ten-foot-high chain-link fence will be installed around the north, south, and west sides of the turf sports fields, and three-and-one-half-foot-high fencing will be installed around the dog park. Three-foot-high lodge-pole fencing will be installed along trails, and two connections to existing trails, which are consistent with the trail alignments identified in the Otay Mesa Community Plan, will be provided.

Directed and/or shielded lighting will be installed at the sports fields, along concrete walkways, and at the parking lots. The skate park will not be lighted.

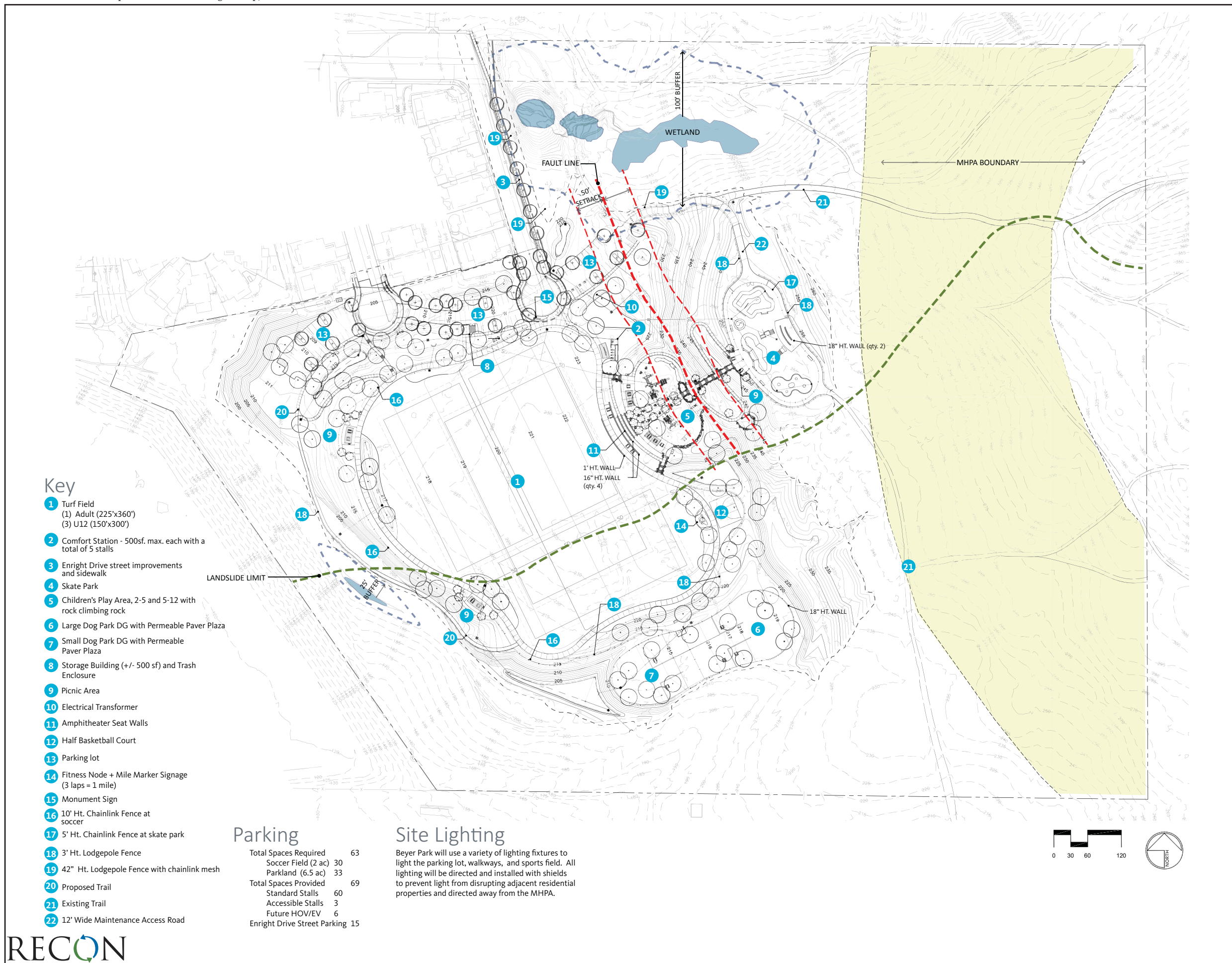


FIGURE 5

Draft Site Plan for Beyer Park

The estimated duration of construction is two years. Construction equipment will likely include but not be limited to the following: grader, dozer, two excavators, two backhoes, two scrapers, pickup trucks, generators, and power and manual hand tools.

This project proposes on-site mitigation within and adjacent to the MHPA that occurs within the project parcels; on-site mitigation is discussed in detail in Section 6.0 of this report.

2.0 Methods and Survey Limitations

Biological resource data for the project was obtained from a combination of literature review, general biological survey (i.e., biological constraints survey), and focused biological surveys. Focused surveys were conducted for the following resources/species: rare plants, fairy shrimp, Quino checkerspot butterfly (*Euphydryas editha quino*; Quino), coastal California gnatcatcher (*Polioptila californica californica*), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), least Bell's vireo (*Vireo bellii pusillus*), western burrowing owl (*Athene cunicularia hypugaea*), and jurisdictional wetland/waters (Table 1). The literature review and survey methods are discussed further below.

The biological surveys were conducted at appropriate times of year to detect presence/absence of target species. However, surveys were limited by temporal factors, as all surveys were conducted during the day. Nocturnal animals were only detected by sign such as tracks, scat, and/or burrows.

Zoological nomenclature for birds is in accordance with the American Ornithologists' Union Checklist (2015) and Unitt (2004); for mammals with Baker et al. (2003); for amphibians and reptiles with Crother et al. (2012); and for invertebrates with San Diego Natural History Museum (SDNHM; 2002), Evans (2007), and Eriksen and Belk 1999. Floral nomenclature for common plants follows Baldwin (2012) as updated by the Jepson Online Interchange (University of California 2017) and for sensitive plants the California Native Plant Society online database (CNPS 2017). If a plant's common name was not provided in these resources, common names were obtained from Rebman and Simpson (2014), or the U.S. Department of Agriculture (USDA) maintained database (USDA 2013) or the Sunset Western Garden Book (Brenzel 2001) for ornamental/horticultural plants.

2.1 Literature Review

RECON conducted an analysis of existing sensitive species data recorded within one mile of the project site. This analysis included searches of the California Natural Diversity Database (CNDDDB; California Department of Fish and Wildlife [CDFW] 2017a), the All Species Occurrences Database (U.S. Fish and Wildlife Service [USFWS] 2017), and SanBIOS (County of San Diego 2017). Additional maps, imagery, and databases reviewed included U.S. Geological Survey topographic maps (USGS 1997), soils survey maps (San Diego Association of Governments [SANDAG] 1995, USDA 2017), online aerial satellite imagery (Google Earth 2018), the Consortium of California Herbaria (2018), and the Amphibian and Reptile Atlas of Peninsular California (SDNHM 2017).

Table 1 Biological Survey Schedule Summary		
Date	Survey Type and Number	Surveyor(s)
6/13/2016	Biological Constraints	B. Ogg, JR Sundberg
12/29/2016	FS Wet 1	K. Valenti
1/5/2017	FS Wet 2	K. Valenti
1/9/2017	Wetland/Waters Delineation	JR Sundberg
1/12/2017	FS Wet 3	K. Valenti
1/19/2017	FS Wet 4	E. LaCoste
1/26/2017	FS Wet 5	E. LaCoste
2/2/2017	FS Wet 6	E. LaCoste
2/9/2017	FS Wet 7	E. LaCoste
	QCB Site Assessment	B. Ogg
2/16/2017	FS Wet 8	D. Busby
2/21/2017	QCB 1	B. Parker
2/23/2017	FS Wet 9	E. LaCoste
3/1/2017	QCB 2	B. Parker
3/2/2017	FS Wet 10	E. LaCoste
3/6/2017, 3/9/2017	BUOW Habitat Assessment	E. LaCoste, D. Busby, A. Kort
3/9/2017	QCB 3	B. Parker, D. Saucedo
	FS Wet 11	E. LaCoste
3/14/2017	QCB 4	B. Parker
3/15/2017	FS Wet 12	E. LaCoste
3/21/2017	QCB 5	B. Parker, D. Saucedo
3/28/2017	QCB 6	D. Saucedo, A. Fromer
3/29/2017	FS Wet 13 (hydrology check only)	E. LaCoste
	CACW Habitat Assessment	E. LaCoste, G. Huffman
	BUOW 1	E. LaCoste, G. Huffman
4/4/2017	QCB 7	D. Saucedo, A. Fromer
4/5/2017	CAGN 1	B. Ogg, D. Saucedo
	CACW 1	B. Ogg, D. Saucedo
4/6/2017	Rare Plants 1	A. Smisek, JR Sundberg
4/11/2017	QCB 8	B. Parker, D. Saucedo
4/13/2017	CACW 2	E. LaCoste
	LBVI 1	G. Huffman
4/18/2017	QCB 9	B. Parker
4/24/2017	QCB 10	B. Parker, D. Saucedo
4/27/2017	CAGN 2	B. Ogg, D. Saucedo
	CACW 3	B. Ogg, D. Saucedo
	LBVI 2	B. Ogg
5/1/2017	QCB 11	B. Parker, D. Saucedo
5/4/2017	BUOW 2	B. Ogg, D. Saucedo
5/10/2017	Rare Plants 2	A. Smisek, JR Sundberg
5/11/2017	FS Wet 14 (hydrology check only)	B. Parker
	QCB 12	B. Parker, D. Saucedo
	LBVI 3	D. Saucedo
5/23/2017	CAGN 3	B. Ogg, D. Busby, K. Valenti
	LBVI 4	D. Busby
5/30/2017	Rare Plants 3	A. Smisek, JR Sundberg
6/8/2017	LBVI 5	B. Ogg
	BUOW 3	B. Ogg, K. Valenti
6/22/2017	LBVI 6	B. Ogg
7/6/2017	LBVI 7	B. Ogg
	BUOW 4	B. Ogg, S. Vargas
7/18/2017	LBVI 8	B. Ogg
8/7/2017	FS Dry	K. Valenti, A. Smisek, JR Sundberg, M. Weston

Date	Survey Type and Number	Surveyor(s)
5/15/19	Update BUOW habitat assessment and relocate beach goldenaster*	W. Loeffler, M. Olson, K. Clark, M. Mazon, S. Paver, D. Genova
6/18/19	Beach goldenaster reconnaissance	R. West
FS = fairy shrimp; QCB = Quino checkerspot butterfly; BUOW = western burrowing owl; CACW = coastal cactus wren; CAGN = coastal California gnatcatcher; LBVI = least Bell's vireo. *Site conditions were verified as unchanged except that beach goldenaster populations could not be relocated.		

RECON also conducted a review of existing literature relevant to the biological resources known from the vicinity of the project site. Site-specific literature reviewed included, but was not limited to, the following:

- Biological Constraints Analysis for the Beyer Athletic Field Proposed Project Area (Tierra Environmental Services 2007);
- Biological Technical Report for the Beyer Hills Project (RECON 2001); and
- Year 5 Annual Report for Dennery Canyon Vernal Pool, Coastal Sage Scrub, and Mule Fat Scrub Restoration and Preservation Plan (RECON 2005).

Additional species not found during the records search were assessed if the range for that species extended into the project site and habitat conditions within the project site were potentially suitable for that species. Determination of the potential occurrence for sensitive species was based upon known ranges and habitat preferences for the species (Jennings and Hayes 1994; Unitt 2004; CDFW 2017a; California Native Plant Society [CNPS] 2017; Reiser 2001; Tremor et al. 2017; Western Bat Working Group 2017; Harvey et al. 2011).

2.2 Biological Constraints Study

Biological surveys began with a biological constraints study to inventory plant and wildlife species, map vegetation, document potential jurisdictional wetland/water features, assess the suitability of habitat for special-status species identified as having potential to occur based on the literature review discussed above, and provide biological constraints for preliminary project design. The survey area for this constraints study was defined as all land within the project parcels and the surrounding 100-foot buffer, which total 58.2 acres.

RECON biologists Brenna Ogg and JR Sundberg conducted the biological constraints survey on June 13, 2016 between 08:00 and 12:30. Weather conditions during the survey consisted of 100 percent cloud cover clearing to five percent, calm to 13-mile-per-hour winds, and air temperatures between 68 and 78 degrees Fahrenheit. Ms. Ogg and Mr. Sundberg conducted the biological survey on foot, mapped vegetation communities and land cover types on a 1 inch equals 150 feet scale aerial photograph (flown July 2016) of the survey area, with the aid of a sub-meter-accurate global positioning system (GPS) unit.

Dominant plant species within each vegetation community were noted, and sensitive plant species, wildlife species, and potentially jurisdictional wetland/water locations were

hand-mapped or recorded using GPS. Vegetation community classifications follow Holland (1986) as modified by Oberbauer et al. (2008). However, in this report, “disturbed habitat” as defined by Oberbauer is classified as “disturbed land” for consistency with the Biology Guidelines (City of San Diego 2012). Digital photographs of representative areas were taken during the reconnaissance survey.

2.3 Rare Plants Survey

Prior to scheduling the focused rare plant surveys, an analysis of the rare plant species with potential to occur within the project parcels was done as part of the literature review described above.

RECON biologists Andrew Smisek and JR Sundberg conducted a total of three rare plant surveys within the 43.9-acre project parcels in spring/summer 2017 (see Table 1). Surveys were conducted between 09:00 and 16:30, and an approximate total of 17 hours was devoted to these surveys. The known blooming periods for potentially occurring species were taken into account when scheduling the focused rare plant surveys so that the detectability of these species was maximized. Additionally, timing was adjusted to account for the observed phenology of target species, such as Otay tarplant (*Deinandra conjugens*), which was provided by biologists conducting other focused biological surveys on site during spring and summer of 2017.

The survey area for the focused rare plant surveys was limited to the project parcels. The project parcels were traversed on foot during the surveys, with a focus on different portions of the site during each survey depending on the blooming status of the rare plant species present. Some portions of the site, such as the southwestern corner, contained steep slopes and dense vegetation, which slightly decreased the ability to detect small, inconspicuous species in those areas. Surveyors recorded the location of all rare plant species when encountered via a combination of hand-mapping on an aerial map and using a sub-meter accurate handheld Trimble® GeoXH unit. In addition, a species list of all plants observed was compiled during the course of the survey.

On May 15, 2019, RECON staff, Wendy Loeffler and Meagan Olson, Kevin Clark from the San Diego Natural History Museum, and Maya Mazon, Sean Paver, and Darren Genova, from the City of San Diego met on-site to discuss project mitigation, and included an attempt to re-locate individuals of beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*). In addition, RECON staff Ryan West conducted a follow-up reconnaissance of the beach goldenaster locations on June 18, 2019 to inform discussions regarding mitigation and seed collection.

2.4 Fairy Shrimp Surveys

Although the project parcels neither support nor are adjacent to any known vernal pool complexes, areas showing sign of ponding were observed during the biological constraints survey. Therefore, focused fairy shrimp surveys were recommended.

A total of 17 ponded depressions were surveyed by RECON biologist Kayo Valenti and Busby Biological Services, Inc. (BBS) biologists Erik LaCoste and Darin Busby between December 29, 2016 and May 11, 2017 (see Table 1). Following survey authorization from the City and USFWS, in accordance with the USFWS Survey Guidelines for the Listed Large Branchiopods (USFWS 2015), each visit took place within one week following a substantial rain event and continued on a weekly basis until the features were dry. During each wet season survey conducted, sampling for vernal pool branchiopods occurred at depressions that had held water for more than 7 days. However, with USFWS's approval, once the presence of a listed vernal pool branchiopod species was confirmed, sampling of that feature was temporarily suspended until the duration of ponding reached 48 days or more in order to allow for development and detection of the other potentially occurring listed fairy shrimp species, Riverside fairy shrimp (*Streptocephalus woottoni*), if present. Complete survey methods are provided in *Post-survey Report for 2016-2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project, San Diego, California* (RECON 2017a).

Soil samples for the dry season survey were collected by RECON biologist Kayo Valenti on August 7, 2017, with the assistance of RECON biologists Andrew Smisek, JR Sundberg, and Mandy Weston, each under supervision. Sixteen of the 17 depressions were sampled in accordance with the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015). With USFWS authorization, one depression with positive listed vernal pool branchiopod observation was excluded from the dry season survey. Equipment used during sampling was disinfected between depression complexes or isolated depressions. No more than 10 percent of the sampled feature's surface area was disturbed. Soil samples were shipped to ECORP Consulting, Inc. for analysis. Complete survey methods are provided in *Results of the 2017 Dry Season Fairy Shrimp Survey for the Beyer Park Development Project in the City of San Diego, California* (RECON 2017b).

2.5 Quino Checkerspot Butterfly Survey

The project site is within Quino Survey Area as designated by the USFWS survey guidelines (USFWS 2014). Therefore, RECON biologist Brenna Ogg conducted a site assessment within the project parcels and surrounding 100-foot buffer on February 9, 2017, to identify suitable Quino checkerspot butterfly survey areas, as defined in the USFWS survey guidelines and the recovery plan (USFWS 2014 and 2003, respectively). Suitable Quino survey areas and populations of larval host plants were mapped in the field, using either a sub-meter accuracy GPS unit or by hand on a one-inch-equals-200-feet color aerial photograph of the site flown in July 2016.

Presence/absence adult flight season surveys for Quino were conducted in accordance the Quino Checkerspot Butterfly Survey Guidelines (USFWS 2014) by RECON biologists Brian Parker, Alex Fromer, and Diana Saucedo. Weekly surveys were conducted starting the third week of February 2017. As no Quino were observed, surveys continued weekly until the end of the season, which is defined as the second Saturday in May (see Table 1).

At the start of the survey period, right-of-entry had not been provided for any off-site properties. On March 3, 2017 (prior to Survey 3), right-of-entry was provided for the County of San Diego's Furby–North Preserve parcel; however, right-of-entry was not granted for any other adjacent parcels, which are all private property. Thus, for Surveys 1 and 2, the survey area consisted of 43.5 acres of suitable Quino habitat within the 44-acre project site, and thereafter, the survey area increased to 48.6 acres of suitable habitat within the project site and surrounding 100-foot buffer to the north and east. All potentially suitable Quino habitat was surveyed while walking at a slow pace, and all butterfly species and blooming plant species were noted during each visit. Complete survey methods are provided in *Results of the 2017 Quino Checkerspot Butterfly Presence/Absence Survey for the Beyer Park Development Project* (RECON 2017c).

2.6 Coastal California Gnatcatcher Survey

Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for coastal California gnatcatcher within the project parcels and a surrounding 300-foot buffer was identified. During the focused survey visits, species composition, height, and density of the vegetation communities within the suitable habitat areas were further assessed for their potential to support the species.

RECON biologists Brenna Ogg and Diana Saucedo and BBS biologist Darin Busby conducted three survey visits to 52.4 acres of habitat considered suitable for coastal California gnatcatcher within the project parcels and a surrounding 300-foot buffer (see Table 1). RECON biologist Kayo Valenti assisted under supervision during one of the survey visits. In accordance with USFWS protocol survey guidelines for this species (USFWS 1997a), the surveying biologists walked all accessible portions of suitable habitat and periodically used taped gnatcatcher vocalizations in an attempt to elicit initial calls. However, the areas within the 300-foot buffer south and west of the project parcels could not be directly accessed; therefore, these areas were surveyed by using binoculars and listening from the edge of the project parcels. An approximate total of 24.5 hours of field effort was devoted to the survey. The surveying biologists compiled lists of wildlife species detected and recorded the location of any observed sensitive wildlife species on a one-inch-equals-150-feet aerial map or using a hand-held global positioning system unit.

Per the protocol survey guidelines (USFWS 1997a), three survey visits were conducted for coastal California gnatcatcher. Because the project area is within the City MSCP Subarea Plan boundary, the survey area is considered part of an active Natural Community Conservation Planning area. The three surveys were conducted a minimum of seven days apart. Complete survey methods are provided in *Results of the 2017 Coastal California Gnatcatcher Presence/Absence Survey for the Beyer Park Development Project* (RECON 2017d).

2.7 Coastal Cactus Wren Surveys

Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for coastal cactus wren within the project parcels and

surrounding 300-foot buffer was identified. On March 29, 2017, between the hours of 09:45 and 10:30, BBS biologists Erik LaCoste and Garrett Huffman further evaluated and mapped this potentially suitable cactus wren habitat. Each stand of suitable habitat was characterized using the “Classification of Cactus Resources” section from the San Diego County Coastal Cactus Wren Volunteer Training Manual (Coastal Cactus Wren Network 2012) as a guide, as well as personal knowledge and experience with the species. In accordance with the manual, the suitable habitat was categorized in one of four ways:

- Cactus Scrub Type 1: highest quality, greater than 1 contiguous acre with greater than 20 percent cactus coverage, generally greater than 1 meter tall;
- Cactus Scrub Type 2: cactus scrub greater than 1 acre with well-developed cactus patches but contains less than 1 contiguous acre of cactus with greater than 20 percent cactus coverage, generally greater than 1 meter tall;
- Cactus Scrub Type 3: cactus scrub that covers less than 1 acre and includes at least 1 cactus plant greater than 1 meter tall; or
- Cactus Scrub Type 4: cactus scrub that covers less than 1 acre and no cactus plant greater than 1 meter tall.

Cactus scrub was further characterized by the presence or absence of cholla and the maturity of the cholla on site, as follows:

- Cholla Type 1: high quality, at least one cholla cluster is fully developed, standing greater than 1.3 meters tall, in good health with extensive branching;
- Cholla Type 2: medium quality, at least one plant or cluster greater than 1 meter tall, with branching capable of holding a nest; or
- Cholla Type 3: poor quality, cholla plant greater than 1 meter tall, but no plant or cluster appears to have branching extensive enough to hold a nest.

RECON biologists Brenna Ogg and Diana Saucedo and BBS biologist Erik LaCoste conducted three survey visits to 7.1 acres of habitat considered suitable for coastal cactus wren within the project parcels and a surrounding 300-foot buffer based on the habitat assessment described above (see Table 1). In accordance with the “Methods for Surveying for Cactus Wren Presence or Absence” (Coastal Cactus Wren Network 2012), the surveying biologists conducted surveys between March 1 and June 30, during morning hours, and in fair weather. Surveys were conducted on April 5, 13, and 27, 2017, between 06:00 and 12:00 and with air temperatures between 50 and 70 degrees Fahrenheit, wind speeds between 0 and 6 miles per hour, and cloud cover between 0 and 100 percent. Only one short period of light drizzle occurred during the latter portion of the third survey.

The biologists walked all accessible portions of suitable nesting habitat, at a minimum, walking the perimeter of each stand of habitat. The biologists searched for cactus wrens and their nests, spending at least 10 minutes at each stand of suitable habitat and “pish”ing in an attempt to elicit responses. An approximate total of 3.2 hours of field effort was devoted to the survey. The surveying biologists compiled lists of wildlife species

detected and recorded the location of any observed sensitive wildlife species and cactus wren nests on a one-inch-equals-150-foot aerial map or using a hand-held GPS unit.

2.8 Least Bell's Vireo Survey

Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for least Bell's vireo was identified within the project parcels and surrounding 300-foot buffer. The habitat assessment was further refined during the focused survey visits, based on species composition, height, and density of the vegetation within the suitable habitat areas.

RECON biologists Brenna Ogg and Diana Saucedo and BBS biologists Darin Busby and Garrett Huffman conducted eight survey visits to 0.4 acre of habitat considered suitable for vireo within the project parcels (see Table 1). No suitable habitat for vireo was mapped within a 300-foot buffer surrounding the project parcels. In accordance with USFWS survey guidelines for this species (USFWS 2001), the biologists conducted each survey between dawn and 11:00 and avoided periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather conditions. A total of 5 hours and 55 minutes of field effort was devoted to the survey. The surveying biologists compiled lists of wildlife species detected and recorded the location of any observed sensitive wildlife species on a one-inch-equals-150-foot aerial map or using a hand-held GPS unit. Complete survey methods are provided in *Results of the 2017 Least Bell's Vireo Presence/Absence Survey for the Beyer Park Development Project* (RECON 2017e).

2.9 Burrowing Owl Surveys

Using vegetation mapping completed as part of the constraints study and aerial imagery, 127.4 acres of potentially suitable habitat for burrowing owl within the project parcels and surrounding 150-meter buffer was identified. BBS biologists Erik LaCoste, Darin Busby, and Andrew Kort conducted a focused burrowing owl habitat assessment on March 6 and 9, 2017 (see Table 1; BBS 2017).

Based on the habitat assessment results, RECON biologists Brenna Ogg, Diana Saucedo, Kayo Valenti, and Sonya Vargas, and BBS biologists Erik LaCoste and Garrett Huffman conducted four survey visits to 68.9 acres of habitat considered suitable for burrowing owl within the habitat assessment area (see Table 1). In accordance with CDFW breeding season survey guidelines for this species (CDFW 2012), each survey was conducted between morning civil twilight and 10:00, and the surveying biologists walked line transects within all accessible portions of suitable habitat, stopping at the start of each transect and approximately every 100 meters to scan the survey area with binoculars. Transects were typically spaced approximately 15 to 20 meters apart, as much of the suitable habitat areas support open and low-growing vegetation, allowing for good visibility. Transect spacing was narrowed in areas of denser and/or taller vegetation.

Direct access was only available to 37.6 acres of the survey area, which included the project parcels and one adjacent parcel, APN 63807074, in the 150-meter buffer. Therefore, all

remaining areas within the 150-meter buffer were surveyed only by using binoculars from the outside boundaries of the project parcels. Topography and low-lying vegetation allowed for good visibility and survey coverage in the western 150-meter buffer. However, due to the presence of dense stands of garland daisy (*Glebionis coronaria*), visibility in some of the buffer area in the southeast portion of the survey area was partially obstructed.

An approximate total of 30 hours and 25 minutes of field effort was devoted to the breeding season surveys. The surveying biologists recorded any burrowing owl and other sensitive wildlife species observations, active owl burrows, and potentially suitable burrows and compiled lists of wildlife species detected. Locations of sensitive species were recorded on a one-inch-equals-150-feet aerial map or using a hand-held GPS unit. Complete survey methods are provided in *Results of the 2017 Burrowing Owl Breeding Season Surveys for the Beyer Park Development Project* (RECON 2017f).

On May 15, 2019, RECON staff, Wendy Loeffler and Meagan Olson, Kevin Clark from the San Diego Natural History Museum, and Maya Mazon, Sean Paver, and Darren Genova, from the City of San Diego met on-site to discuss project mitigation, beach goldenaster relocation, and habitat suitability for burrowing owl within the proposed mitigation area. This included an updated survey to verify the boundaries of the burrowing owl suitable habitat. The location of the beach goldenaster could not be relocated, otherwise, it was confirmed that site conditions had not changed from previous surveys.

2.10 Jurisdictional Wetland/Waters Survey

A routine jurisdictional wetland/waters delineation, following the guidelines set forth by the U.S. Army Corps of Engineers (ACOE; 1987, 2008), was performed to gather field data at potential jurisdictional waters in the survey area. The survey area is defined as the project parcels (APNs 63817018, 63817019, and 63807071) and surrounding 100-foot buffer, which total 58.2 acres. RECON biologist J.R. Sundberg conducted the routine delineation fieldwork on January 9, 2017 (see Table 1). Prior to conducting the delineation, aerial photographs and USGS topographic maps of the site were examined. Once on-site, the potential federal, state, and City jurisdictional areas were examined to determine the presence and extent of any jurisdictional waters. Complete survey methods are provided in *Jurisdictional Waters/Wetland Delineation Report for the Beyer Park Development Project, San Diego, California* (RECON 2017g).

3.0 Survey Results/Existing Conditions

This section describes the existing physical and biological conditions of the project parcels and surrounding area. This includes a summary of land use, topographical features, soils, and hydrological features observed during biological surveys conducted between June 13, 2016, and August 7, 2017.

3.1 Physical Characteristics

3.1.1 Existing Land Use

The project parcels consist of undeveloped City park land, with residential development immediately adjacent to the northwest, a graded but currently undeveloped field (i.e., previous school site) to the west, and undeveloped land to the north, south, and east. A large portion of the vegetation within the project parcels has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle [OHV] use, pedestrian traffic, transient camps, radio controlled [RC] car running and course building).

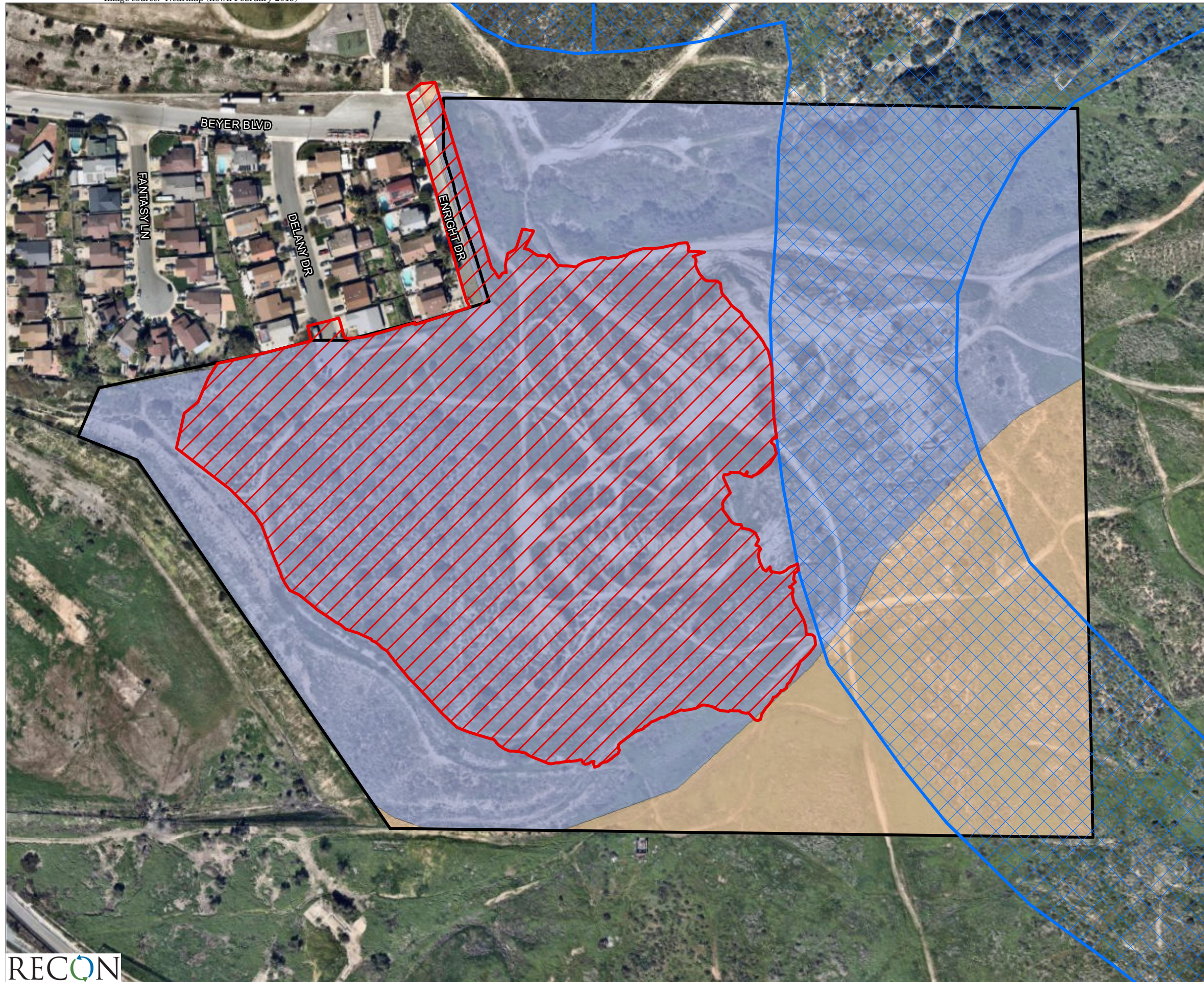
3.1.2 Topography and Soils






Elevations within the project parcels range from 120 feet above mean sea level in a drainage in the northwestern portion of the northern parcel to 396 feet above mean sea level on a hill in the eastern portion of the survey area. The northern and eastern portions of the project parcels are characterized by two large hills, separated by Moody Canyon, which runs east-west through the northern portion of the northern parcel. The steep north-, south-, and west-facing slopes associated with these hills transition in the south and west into multiple terraces, with a steep manufactured slope along the western edge.

Two soil types occur within the project parcels: Olivenhain cobbly loam, 9 to 30 percent slopes (ohE), in the southeastern corner and Olivenhain cobbly loam, 30 to 50 percent slopes (ohF) in the majority of the site (Figure 6; USDA 2017). Olivenhain cobbly loam soils formed in ancient cobbly and gravelly alluvium and are located on marine terraces and mesas. The topsoil is typically well-drained cobbly loam with a very cobbly clay subsoil. Low slopes tend to form mima mounds on the surface, whereas steeper areas are easily eroded and tend to form gullies and cut banks. Olivenhain cobbly loam soils are on the hydric soil list with potential wetlands forming in depressions (Natural Resource Conservation Service 2015).

3.1.3 Hydrology

The project parcels are located near the northern extent of the Tijuana River watershed. Moody Canyon, which contains an unnamed tributary of the Tijuana River, occurs in the northern project parcel. Within this area, the tributary exists as a natural bottom channel and exits the survey area through a three-foot-diameter culvert. It then flows approximately one half-mile southwest through storm water channels into the Tijuana River. The Tijuana River flows approximately five miles westward before emptying into the Pacific Ocean, a Traditional Navigable Waterway.



-  Project Parcels Boundary
-  Project Impact Area
-  City of San Diego MHPA
- Soil Classification**
-  Olivenhain cobbly loam, 9-30 % slopes
-  Olivenhain cobbly loam, 30-50 % slopes

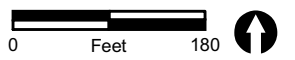


FIGURE 6
Project Location on Soils Map

Although the terraces on either side of the ephemeral stream channel in Moody Canyon may flood during peak flow, water does not likely reside long enough to develop hydric soils or primary hydrologic indicators. Hydrology indicators commonly observed in the areas along the ephemeral stream channel of the unnamed tributary included riverine sediment deposits and riverine drift deposits. Despite the wetland/waters delineation survey’s being conducted after significant rainfall, primary hydrologic indicators such as saturation or surface water were not observed. Rainfall at Brown Field (approximately three miles east) was 217 percent above the normal of 1.92 inches during December 2016, with 4.17 inches observed (NWS 2017).

One small depression was observed within disturbed coastal sage scrub near the western edge of the project parcels. This area is dominated by broom baccharis (*Baccharis sarothroides*; facultative upland [FACU] species), mule fat (*Baccharis salicifolia*; facultative [FAC] species), and curly dock (*Rumex crispus*; FAC). This area is problematic as recent years of drought may have shifted the vegetation to a more upland species composition. Recent inundation and scour has also affected the herbaceous plant stratum, eliminating the smaller species.

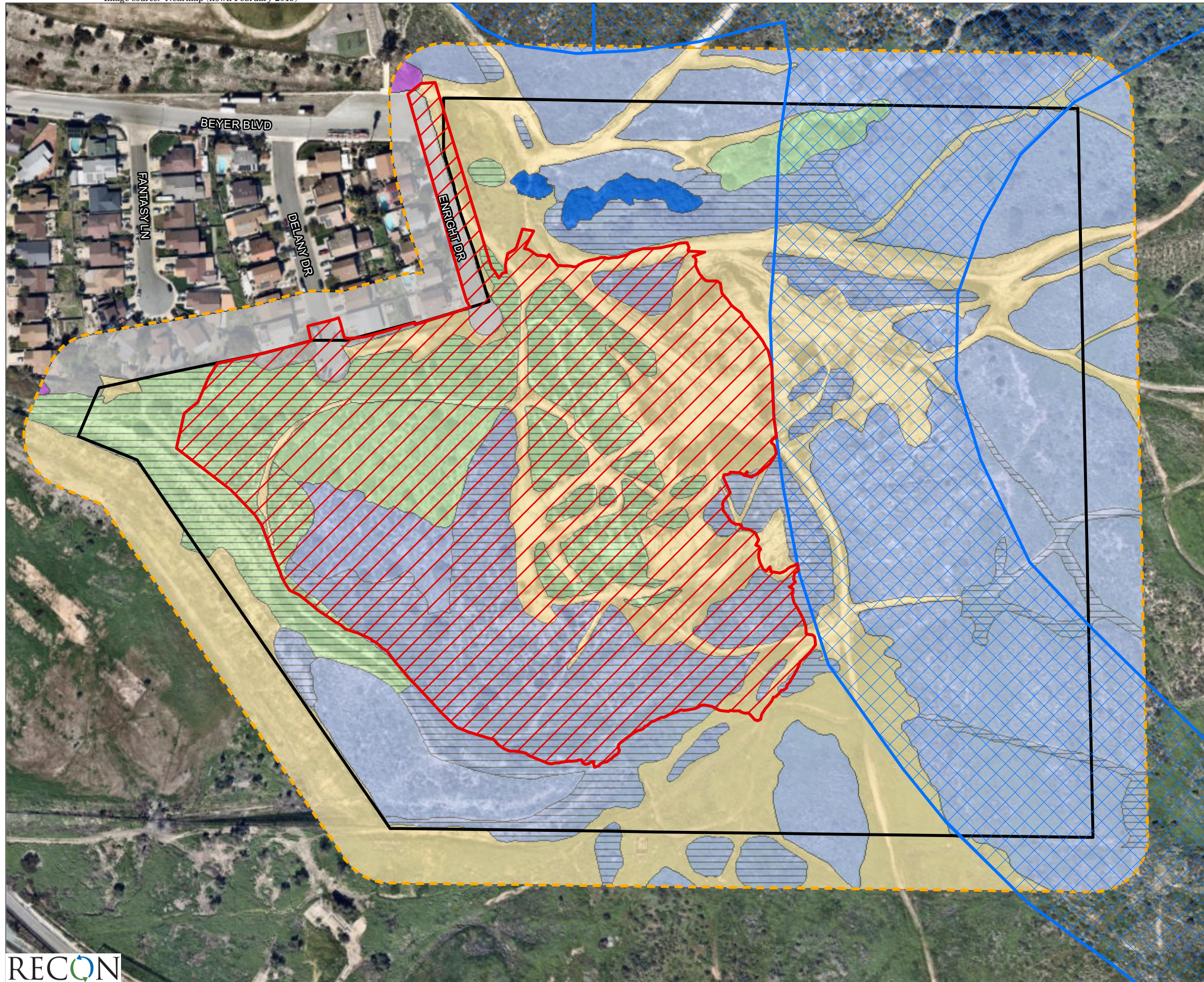
3.2 Biological Resources













3.2.1 Botanical Resources

The following eight vegetation communities or land cover types were mapped within the survey area (i.e., project parcels and surrounding 100-foot buffer): mule fat scrub, maritime succulent scrub, disturbed maritime succulent scrub, Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, disturbed land, ornamental plantings, and urban/developed (Figure 7a). These vegetation communities and land cover types, along with their corresponding City Tier, Holland/Oberbauer code, and acreage within the project parcels, are summarized in Table 2 below. A brief description of each community is also provided below.

Community or Type (Holland Code as modified by Oberbauer)	City of San Diego Tier	Survey Area (Acres)*.**		
		Inside MHPA†	Outside MHPA†	Total
Mule fat scrub (63310)	N/A - wetland	–	0.32	0.32
Maritime succulent scrub (32400)	I	9.68	9.98	19.67
Disturbed maritime succulent scrub (32400)	I	1.75	8.16	9.90
Diegan coastal sage scrub (32510)	II	0.32	1.62	1.94
Disturbed Diegan coastal sage scrub (32510)	II	–	6.15	6.15
Disturbed land (11300)	IV	3.15	14.39	17.53
Ornamental plantings (11000)	IV	–	0.06	0.06
Urban/developed land (12000)	N/A	–	2.66	2.66
Total		14.90	43.33	58.23

N/A = not applicable; MHPA = Multi-Habitat Planning Area
 *Survey area includes the project parcels and surrounding 100-feet.
 **Discrepancies in totals are due to rounding.
 †Prior to changes proposed as part of MHPA Boundary Line Adjustment.



-  Project Parcels Boundary
-  Project Impact Area
-  City of San Diego MHPA
-  100-foot Survey Buffer
- Vegetation Communities/Land Cover Types**
-  Mule Fat Scrub
-  Maritime Succulent Scrub
-  Disturbed Maritime Succulent Scrub
-  Disturbed Diegan Coastal Sage Scrub
-  Diegan Coastal Sage Scrub
-  Disturbed Land
-  Ornamental
-  Urban/Developed

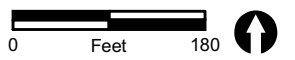


FIGURE 7a
Existing Biological Resources -
Vegetation Communities/Land
Cover Types

A total of 161 plant species was observed within the project parcels and surrounding 100-foot buffer, with 106 species (66 percent) considered native and the remaining 55 species (34 percent) considered non-native and/or naturalized into the area. Dominant plant species are discussed by vegetation community below, and a complete list of plant species detected is included as Attachment 1.

3.2.1.1 Mule Fat Scrub

Mule fat scrub occurs within the western and lower portion of Moody Canyon within the northern project parcel. The vegetation is dominated by mule fat with two willow trees at the western edge, adjacent to a dirt path (Photographs 1 and 2). The vegetation is moderately dense with the mule fat reaching approximately 15 feet in height and the taller of the two willow trees reaching approximately 25 feet in height.

3.2.1.2 Maritime Succulent Scrub

Maritime succulent scrub is the dominant vegetation community within the project parcels and surrounding 100-foot buffer. In the northwestern portion of the project parcels, the maritime succulent scrub is dominated by coast cholla (*Cylindropuntia prolifera*) with waterjacket (*Lycium andersonii*), California box-thorn (*L. californicum*), cliff spurge (*Euphorbia misera*), and jojoba (*Simmondsia chinensis*) occurring as common species (see Photographs 1 and 3). The combined vegetative cover of cactus and shrub species is at or above 75 percent, and typical shrub height is between two and four feet. Throughout the remainder of the maritime succulent scrub in the survey area, the coast cholla occurs in scattered patches; common shrub species include San Diego bur-sage (*Ambrosia chenopodiifolia*), jojoba, cliff spurge, coast prickly pear (*Opuntia littoralis*), California buckwheat (*Eriogonum fasciculatum*), San Diego viguiera (*Bahiopsis laciniata*), California sagebrush (*Artemisia californica*), and fish-hook cactus (*Mammillaria dioica*) (Photographs 4–6).

3.2.1.3 Disturbed Maritime Succulent Scrub

The disturbed maritime succulent scrub occurs throughout the project parcels and surrounding 100-foot buffer in areas that have been subjected to human-caused disturbance and non-native plant species invasion (see Photograph 6). The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia, fountain grass (*Pennisetum setaceum*), garland daisy, and non-native grasses. These areas are also fragmented and contain evidence of anthropogenic impacts, through the presence of unauthorized trails used by pedestrians and vehicles.



PHOTOGRAPH 1

Maritime Succulent Scrub (Foreground), Mule Fat Scrub (Center), and Disturbed Maritime Succulent Scrub (Background) in Northern Portion of the Project Parcels, Facing South, Taken June 13, 2016



PHOTOGRAPH 2

Maritime Succulent Scrub (Foreground), Mule Fat Scrub (Center), and Disturbed and Developed Land (Background) in Northern Portion of the Project Parcels, Facing Southwest, Taken June 22, 2017



PHOTOGRAPH 3

Maritime Succulent Scrub in the Northern Portion of the Survey Area,
Facing North, Taken February 9, 2017



PHOTOGRAPH 4

Maritime Succulent Scrub in the Eastern Portion of the Survey Area,
Facing North, Taken April 6, 2017



PHOTOGRAPH 5
Maritime Succulent Scrub in the Southwestern Portion of the Survey Area, Facing West, Taken June 13, 2016



PHOTOGRAPH 6
Disturbed Maritime Succulent Scrub (Foreground) and Maritime Succulent Scrub in the West-Central Portion of the Project Parcels, Facing West, Taken December 29, 2016

3.2.1.4 Diegan Coastal Sage Scrub

Diegan coastal sage scrub is present in the western portion of the project parcels and in a small portion of Moody Canyon in the northern portion of the project parcels and surrounding 100-foot buffer. In the western stands, the Diegan coastal sage scrub comprises a mix of California buckwheat, California sagebrush, broom baccharis, and laurel sumac (*Malosma laurina*) (Photographs 7 and 8). Vegetation cover is generally above 70 percent, and typical shrub height is between two and four feet with the occasional taller laurel sumac and broom baccharis. The Diegan coastal sage scrub that occurs along Moody Canyon in the northern portion of the survey area is taller, denser, and dominated by lemonade berry (*Rhus integrifolia*).

3.2.1.5 Disturbed Diegan Coastal Sage Scrub

Disturbed Diegan coastal sage scrub occurs along the manufactured slope at the western edge of the project parcels and surrounding 100-foot buffer, in a swale at the northwestern edge of the project parcels, and in other scattered areas that show sign of previous human-caused soil disturbance and ongoing disturbance from unauthorized pedestrian activity, OHV activity, and dumping (Photograph 9). The species composition is similar to that of the undisturbed stands of Diegan coastal sage scrub. However, the overall vegetation density and height are lower, and/or there is a greater occurrence of non-native plant species including acacia (*Acacia* sp.), saltcedar (*Tamarix ramosissima*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and non-native grasses.

3.2.1.6 Disturbed Land

Disturbed land within the project parcels consists of a complex of dirt roads (Photographs 10 and 11) and unauthorized pedestrian and off-road vehicle trails traversing the site, as well as a series of open areas characterized by exotic vegetation. Disturbed land within the surrounding 100-foot buffer also includes the manufactured slope and previously graded field associated with the former site of Beyer Elementary School. The vegetated portions of disturbed land are dominated primarily by garland daisy (Photograph 12) and Russian thistle (*Salsola tragus*), with scattered non-native grasses. A large saltcedar is present in a terminal depression at the west end of Moody Canyon in the western portion of the northern project parcel.

3.2.1.7 Ornamental Plantings

Ornamental plantings occur in the northwestern corner of the 100-foot buffer surrounding the project parcels. The vegetation comprises planted eucalyptus (*Eucalyptus* spp.) trees adjacent to Beyer Boulevard and appears to be associated with the San Ysidro Middle School site development.

3.2.1.8 Urban/Developed Land

Urban/developed land occurs along the northwestern edge of the project parcels and includes paved streets adjacent to residential development (see Photograph 2).



PHOTOGRAPH 7
Diegan Coastal Sage Scrub in the Western Portion of the Project
Parcels, Facing Northwest, Taken May 10, 2017



PHOTOGRAPH 8
Diegan Coastal Sage Scrub in the Western Portion of the Project
Parcels, Facing North, Taken April 6, 2017



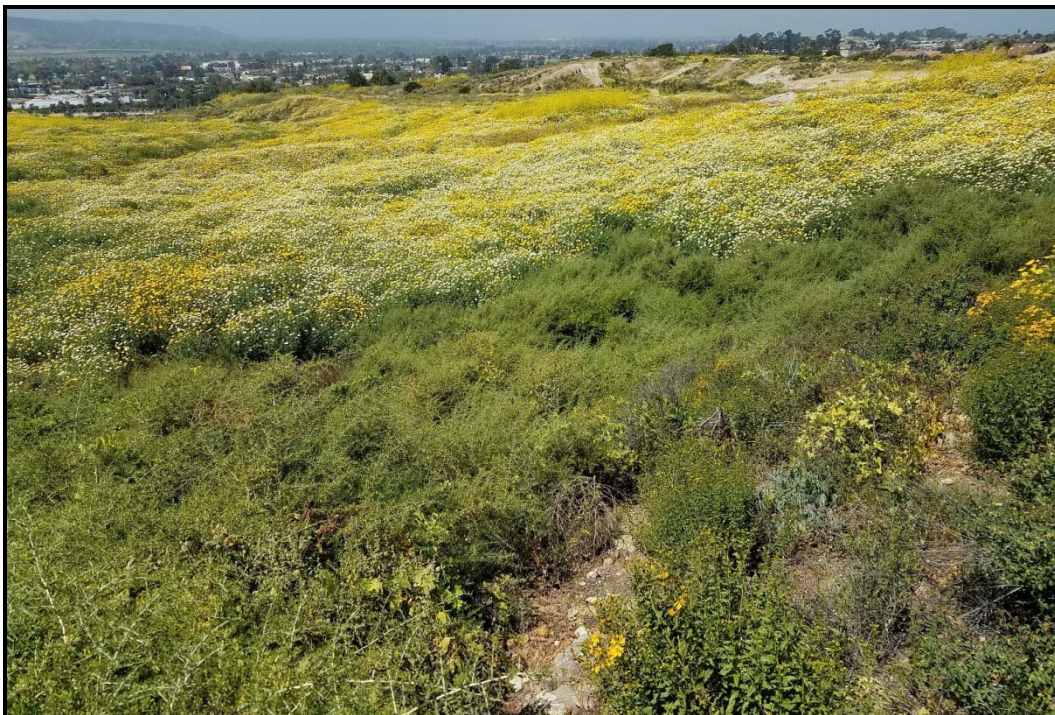
PHOTOGRAPH 9
Pockets of Disturbed Diegan Coastal Sage Scrub within the Central Survey Area, Facing East, Taken December 29, 2016



PHOTOGRAPH 10
Disturbed Land within the Central Survey Area, Facing Northeast, Taken January 9, 2017



PHOTOGRAPH 11
Disturbed Land within the Central Survey Area, Facing West,
Taken January 9, 2017



PHOTOGRAPH 12
Maritime Succulent Scrub (Foreground) and Disturbed Land
(Background) within the Southern Survey Area, Facing Southwest,
Taken April 6, 2017

3.2.2 Zoological Resources

A total of 109 animal species were detected within the project parcels and surrounding areas, including 38 invertebrates, four reptiles, 60 birds, and seven mammals. The common animal species observed on site are summarized below. A complete list of animal species detected during general and focused biological surveys conducted in 2016 and 2017 is included as Attachment 2. Sensitive animal species observed are discussed in Section 3.3.4.

3.2.2.1 Invertebrates

Invertebrate species common to urban, scrub, grassland, and riparian communities are expected to be the most common species within the project parcels. A total of 38 invertebrate species were recorded during the 2016 and 2017 biological surveys. These include, but are not limited to, common insects such as Argentine ant (*Linepithema humile*), mosquito (*Culex* sp.), darkling beetle (not identified to species), tarantula hawk (*Pepsis* sp.), and cicada (*Hadoa* sp.); one arachnid, California trapdoor spider (*Bothriocyrtum californicum*); 30 butterfly or moth species, most common of which were cabbage white (*Pieris rapae*), Pacific Sara orangetip (*Anthocharis sara sara*), and funereal duskywing (*Erynnis funeralis*); and one aquatic crustacean, San Diego fairy shrimp (*Branchinecta sandiegonensis*). As San Diego fairy shrimp is a sensitive species, it is discussed further in Section 3.3.4 below.

3.2.2.2 Amphibians and Reptiles

Reptile species observed during the 2016 and 2017 biological surveys are typical of urban areas and native scrub habitats in San Diego. The following four species were observed: western fence lizard (*Sceloporus occidentalis*), common side-blotched lizard (*Uta stansburiana*), and Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*), and southern Pacific rattlesnake (*Crotalus oreganus helleri*). No amphibians were detected during field surveys. As Belding's orange-throated whiptail is a sensitive species, it is discussed further in Section 3.3.4 below.

3.2.2.3 Birds

Many avian species detected during the 2016 and 2017 biological surveys are typical of urban areas, native scrub habitat, open grassland and/or fields, or riparian habitat. A total of 60 avian species were detected. The most commonly observed species within the project parcels include Anna's hummingbird (*Calypte anna*), house finch (*Haemorhous mexicanus frontalis*), California towhee (*Melospiza crissalis*), northern mockingbird (*Mimus polyglottos polyglottos*), mourning dove (*Zenaidura macroura marginella*), Cassin's kingbird (*Tyrannus vociferans vociferans*), California scrub-jay (*Aphelocoma californica*), bushtit (*Psaltriparus minimus melanurus*), Bewick's wren (*Thryomanes bewickii*), coastal California gnatcatcher, and lesser goldfinch (*Spinus psaltria hesperophilus*). As coastal California gnatcatcher is a sensitive species, it is discussed further in Section 3.3.4 below.

3.2.2.4 Mammals

The mammal species detected during the 2016 and 2017 biological surveys are typical of urban-wildland interface areas, native scrub habitat, and/or open grassland and/or fields. The following seven mammal species were detected during the 2016 and 2017 biological surveys: desert cottontail (*Sylvilagus audubonii*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), California ground squirrel (*Spermophilus beecheyi*), kangaroo rat (*Dipodomys* sp.), woodrat (*Neotoma* sp.), coyote (*Canis latrans*), and bobcat (*Lynx rufus*). As San Diego black-tailed jackrabbit is a sensitive species, it is discussed further in Section 3.3.4 below.

3.3 Sensitive Biological Resources

3.3.1 Regulatory Setting

3.3.1.1 Regulatory Framework

Various federal, state, and/or local regulations or policies apply to biological resources on or adjacent to the project parcels and are summarized below. Compliance with all state and federal laws, including the Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (CFGC), is anticipated.

a. Federal Regulations

The Rivers and Harbors Act of 1899 and the Clean Water Act (CWA) regulate project activities within non-marine navigable waters and/or waters of the U.S. The discharge of any pollutant from a point source into navigable waters is illegal unless a permit under the CWA's provisions is acquired. Permitting for projects that include both permanent and temporary dredging and filling in wetlands and waters of the U.S. is overseen by the ACOE under Section 404 of the CWA. Projects can be permitted on an individual basis or be covered by one of several approved nationwide or regional general permits.

The federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered 'take' under the ESA. Section 9(a) of the ESA defines 'take' as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." The ESA is administered by the USFWS.

The MBTA (16 United States Code 703 et seq.) is a federal statute that implements treaties with several countries on the conservation and protection of migratory birds. The number of bird species covered by the MBTA is extensive and is listed at 50 Code of Federal Regulations (CFR) 10.13. The regulatory definition of "migratory bird" is broad, and includes any mutation or hybrid of a listed species and any part, egg, or nest of such birds (50 CFR 10.12). The MBTA, which is enforced by USFWS, makes it unlawful "by any means or in any manner, to pursue, hunt, take, capture, [or] kill" any migratory bird, or attempt

such actions, except as permitted by regulation. The take, possession, import, export, transport, sale, purchase, barter, or offering of these activities is prohibited, except under a valid permit or as permitted in the implementing regulations (50 CFR 21.11). Pursuant to U.S. Department of the Interior Memorandum M-37050, the federal Migratory Bird Treaty Act is no longer interpreted to cover incidental take of migratory birds (U.S. Department of the Interior 2017). Therefore, impacts that are incidental to implementation of an otherwise lawful project would not be considered significant.

b. State Regulations

The California Environmental Quality Act (CEQA) requires an environmental review for projects with potentially adverse impacts on the environment. Adverse environmental impacts are typically mitigated in accordance with state laws and regulations.

The California ESA is similar to the federal ESA in that it provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction.

Section 3503 of the CFGC states that it is “unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto,” and Section 3503.5 states that it is “unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird” unless authorized (State of California 1991).

The CFGC (Sections 1600 through 1603) regulates project activities within wetlands and riparian habitats. The CDFW can issue a Streambed Alteration Agreement for projects affecting riparian and wetland habitats.

Project activities that fill or dredge within wetland waters of the U.S. and waters of the U.S. as well as wetland waters of the state and waters of the state, including isolated waters such as vernal pools and other waters showing lack of connectivity to a Traditional Navigable Waters, require a Water Quality Certification by the California Regional Water Quality Control Board (RWQCB) under Section 401 of the CWA and Section 13000 et seq. of the California Water Code under the Porter-Cologne Water Quality Control Act.

c. Local Regulations

One of the primary objectives of the City’s MSCP Subarea Plan is to identify and maintain a preserve system, which allows for animals and plants to exist at both the local and regional levels. The MSCP has identified large blocks of native habitat having the ability to support a diversity of plant and animal life known as “core biological resource areas.” “Linkages” between these core areas provide for wildlife movement. These lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity of the San Diego region. Input from responsible agencies and other interested participants resulted in creation of the City’s MHPA. The MHPA is the area within which the permanent MSCP preserve would be assembled and managed for its biological resources.

The City's Biology Guidelines (2012) were formulated to aid in the implementation and interpretation of the ESL Regulations, San Diego Land Development Code (LDC), Chapter 14, Division 1, Section 143.0101. Section III of the Guidelines (Biological Impact Analysis and Mitigation Procedures) also serves as standards for the determination of impacts and mitigation under CEQA. The ESL defines sensitive biological resources as those lands included within the MHPA as identified in the City's MSCP Subarea Plan (City of San Diego 1997), and other lands outside of the MHPA that contain wetlands; vegetation communities classifiable as Tier I (rare uplands), II (uncommon uplands), IIIA (common uplands) or IIIB (common uplands); habitat for rare, endangered, or threatened species; or narrow endemic species.

The City of San Diego Vernal Pool Habitat Conservation Plan (VPHCP; City of San Diego 2017) provides a regulatory framework to protect, enhance, and restore vernal pool resources in specific areas within the City's jurisdiction, while improving and streamlining the environmental permitting process for impacts to threatened and endangered species associated with vernal pools. The VPHCP is a conservation plan for vernal pools and seven threatened and endangered species that do not have federal coverage under the City's MSCP Subarea Plan, including five plant and two crustacean species. The VPHCP expands the City's existing MHPA established in the MSCP Subarea Plan to conserve additional lands with vernal pools that are occupied with the vernal pool covered species. Implementation of the VPHCP occurs through permanent protection of existing City-owned land for the conservation of vernal pools, conservation of private lands through the development entitlement process, the permanent management and monitoring of these lands, and annual reporting to the Wildlife Agencies that accounts for all take authorized, conservation achieved, and compliance and effectiveness monitoring. While the City Biology Guidelines generally require the presence of a vernal pool indicator plant species for a depression to be considered a "vernal pool," the VPHCP applies to human-made seasonally flooded depressions if they contain one or more VPHCP covered plant or wildlife species (City of San Diego 2017).

3.3.1.2 Sensitivity Criteria

Sensitive vegetation communities are vegetation assemblages, associations, or subassociations that have cumulative losses throughout the region, have relatively limited distribution, support or potentially support sensitive species, have particular value to other wildlife, or have a combination of these characteristics. Typically, sensitive vegetation communities are considered sensitive whether or not they have been disturbed. Sensitive vegetation communities are regulated by various local, state, and federal resource agencies. For purposes of this report, sensitive vegetation communities include all wetland communities and upland communities identified as Tier I, II, IIIA, or IIIB by the City (2012).

In accordance with the ESL Regulations, lands within the MHPA and habitat for sensitive species will also be considered sensitive biological resources.

For purposes of this report and in accordance with the City Guidelines for Conducting Biology Surveys (City of San Diego 2002), plant and wildlife species will be considered

sensitive if they are: (1) listed by state or federal agencies as rare, threatened, or endangered or are proposed for listing; (2) designated by the City as a narrow endemic species (City of San Diego 1997, 2012); (3) covered species under the MSCP or VPHCP; (4) given a California Rare Plant Rank (CRPR) 1B (considered endangered throughout its range), 2 (considered endangered in California but more common elsewhere), 3 (more information about the plant's distribution and rarity needed), or 4 (plants of limited distribution) in the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (2017); (5) considered rare, endangered, or threatened by CDFW (2017b–e); or (6) identified by another recognized conservation or scientific group as being depleted, potentially depleted, declining, rare, critical, endemic, endangered, or threatened.

3.3.2 Sensitive Vegetation Communities

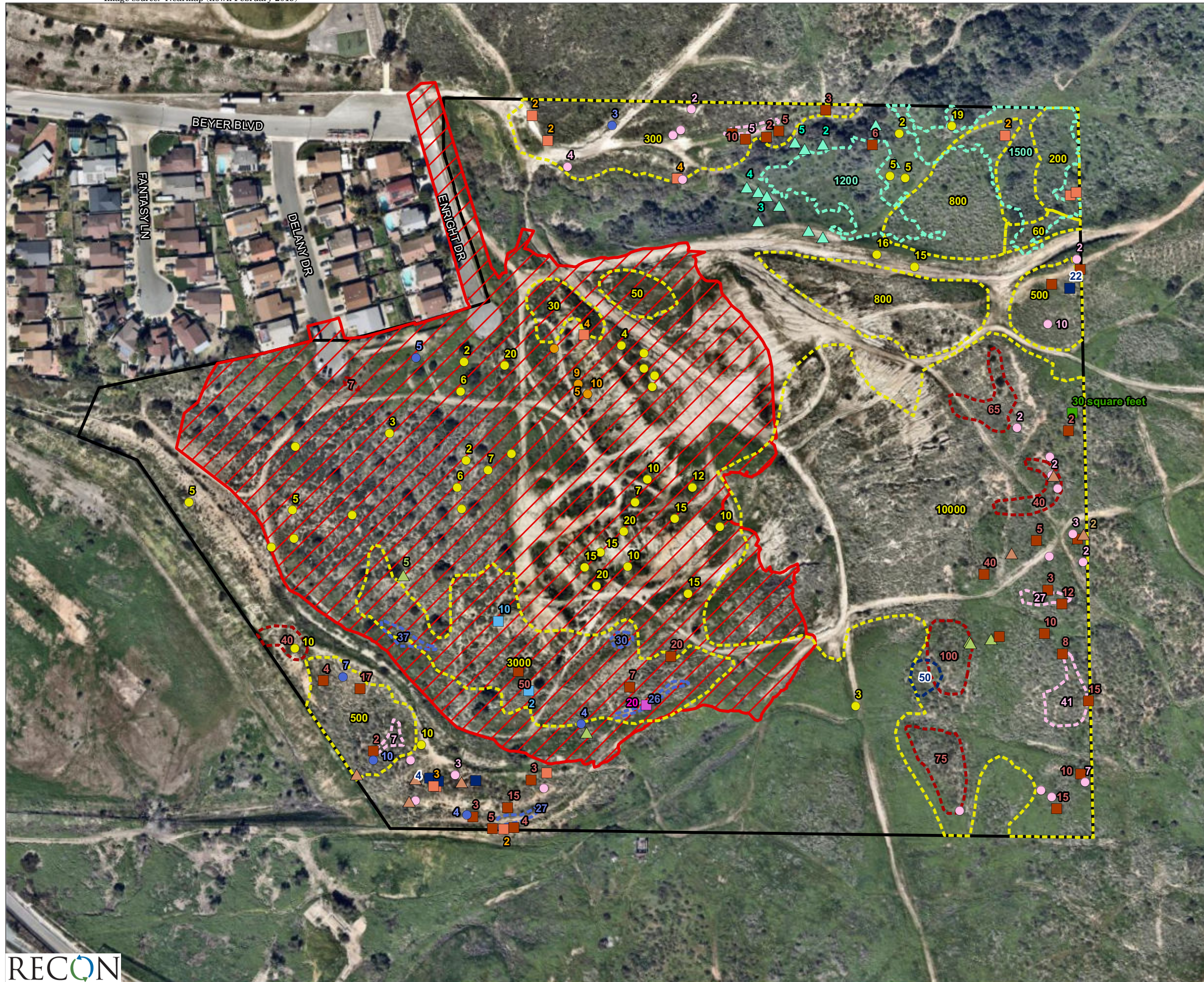
Pursuant to the City's Biology Guidelines, five sensitive vegetation communities occur within the project parcels. Mule fat scrub is considered a wetland habitat (i.e., riparian scrub). Maritime succulent scrub and disturbed maritime succulent scrub are considered Tier 1 (rare uplands) habitats, and Diegan coastal sage scrub and disturbed Diegan coastal sage scrub are considered Tier II (uncommon uplands) habitats. These are described in detail in Section 3.2.1.

3.3.3 Sensitive Plant Species

The following 13 sensitive plant species were observed during the focused rare plant surveys and other biological surveys conducted in 2016 and 2017 for this project: San Diego bur-sage (*Ambrosia chenopodiifolia*), south coast saltscale (*Atriplex pacifica*), San Diego County viguiera (*Bahiopsis laciniata*), seaside cistanthe (*Cistanthe maritima*), snake cholla (*Cylindropuntia californica* var. *californica*), Otay tarplant, cliff spurge, San Diego barrel cactus (*Ferocactus viridescens*), Palmer's grapplinghook (*Harpagonella palmeri*), beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*), California box-thorn (*Lycium californicum*), small-flowered microseris (*Microseris douglasii* var. *platycarpha*), and ashy spike-moss (*Selaginella cinerascens*) (Figure 7b; Table 3). One of these species, Otay tarplant, is listed as federally-threatened, state-endangered, and a narrow endemic species under the MSCP. A second species, snake cholla, is also an MSCP covered narrow endemic species, and a third species, San Diego barrel cactus, is an MSCP covered species. The remaining 10 sensitive plant species are not federally or state listed, nor are they covered by the MSCP. However, they have a CRPR assigned by CNPS. The status and rank of each sensitive plant species observed and the estimated number of individuals within the project parcels are presented in Table 3. Descriptions of the sensitive plant species observed are provided below.

Attachment 3 summarizes these species and the other potentially occurring sensitive plant species that were assessed based on species locations records, habitat suitability, and soil preferences. No additional species have been identified as having a moderate or high potential to occur within the project parcels; although some additional sensitive plant species have a low potential to occur in the survey area.

Table 3					
Sensitive Plant Species Observed within the Project Parcels					
Scientific Name	Common Name	Federal/ State Listing	CRPR	MSCP	Estimated Number of Individuals
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	-/-	2B.1	-	16,500
<i>Atriplex pacifica</i>	south coast saltscare	-/-	1B.2	-	153
<i>Bahioopsis laciniata</i>	San Diego County viguiera	-/-	4.3	-	600
<i>Cistanthe maritima</i>	seaside cistanthe	-/-	4.2	-	78
<i>Cylindropuntia californica</i> var. <i>californica</i>	snake cholla	-/-	1B.1	NE, MSCP	8
<i>Deinandra conjugens</i>	Otay tarplant	FT/CE	1B.1	NE, MSCP	2,700
<i>Euphorbia misera</i>	cliff spurge	-/-	2B.2	-	129
<i>Ferocactus viridescens</i>	San Diego barrel cactus	-/-	2B.1	MSCP	9
<i>Harpagonella palmeri</i>	Palmer's grapplinghook	-/-	4.2	-	12
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	beach goldenaster	-/-	1B.1	-	25
<i>Lycium californicum</i>	California box-thorn	-/-	4.2	-	23
<i>Microseris douglasii</i> var. <i>platycarpa</i>	small-flowered microseris	-/-	4.2	-	20
<i>Selaginella cinerascens</i>	ashy spike-moss	-/-	4.1	-	30 square feet
STATUS CODES					
FT = Federally listed threatened					
CE = State listed endangered					
MSCP = Multiple Species Conservation Program covered species					
NE = City of San Diego MSCP Narrow Endemic species					
California Rare Plant Ranks (CRPR)					
1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.					
2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.					
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.					
Threat Ranks					
0.1 = Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)					
0.2 = Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)					
0.3 = Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)					



Project Parcels Boundary
 Project Impact Area

Sensitive Plant Species Observations

MSCP Covered Species

- Otay tarplant
- Snake cholla
- San Diego barrel cactus

Not MSCP Covered Species

- Beach goldenaster
- South coast saltscale
- San Diego bur-sage
- Cliff spurge
- Ashy spike-moss
- Small-flowered microseris
- California box-thorn
- Palmer's grapplinghook
- Seaside cistanthe
- San Diego County viguiera

Count of Individuals

Note: Each point represents one individual unless otherwise noted.

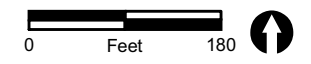


FIGURE 7b
Existing Biological Resources - Sensitive Plant Species

3.3.3.1 Sensitive Plant Species Observed

a. San Diego Bur-sage

San Diego bur-sage is a CRPR 2B.1 species (CNPS 2017). This perennial shrub in the sunflower family (Asteraceae) has hairy grayish leaves and flowers from April to June. Its range is restricted to extreme southern San Diego County, near Otay Mesa, and northern Baja California, Mexico. It is generally found in dry, fairly open, Diegan coastal sage scrub below 600 feet elevation, where it often grows in association with low-growing California sagebrush and black sage (*Salvia mellifera*). It has been found on Olivenhain cobbly loam soil and is declining in the United States with the development of western Otay Mesa (Reiser 2001).

San Diego bur-sage occurs throughout most of the project parcels. It occurs as the dominant plant species within much of the maritime succulent scrub and is scattered within the Diegan coastal sage scrub. This species also occasionally occurs within disturbed areas, such as roads and trails on-site. An estimate of 16,500 San Diego bur-sage individuals occur within the project parcels. Due to the abundance of this species on-site, this population total was calculated by estimating the density of individuals in each observed stand and extrapolating using the acreage of each stand of vegetation.

b. South Coast Saltscale

South coast saltscale is a CRPR 1B.2 species (CNPS 2017). It is a prostrate annual herb in the goosefoot family (Chenopodiaceae) that forms tangled masses up to three feet in diameter and produces inconspicuous flowers between March and October. This species is distributed along the coast from Los Angeles south to Baja California and on the Channel Islands, with disjunct populations in Arizona and Sonora, Mexico (CNPS 2017). It is found below 300 feet elevation, in coastal bluff scrub, coastal dunes, and coastal scrub; it can also occur in alkaline playas in the desert (CNPS 2017). In San Diego County, it typically grows in dry, often mildly disturbed sites in open Diegan coastal sage scrub; host soils include Linne clay loam and Huerhuero-urban land (Reiser 2001). Many populations are imperiled by foot traffic and/or development (Reiser 2001).

South coast saltscale occurs mostly toward the southern portion of the project parcels with one occurrence of three individuals occurring in the northern portion of the site. On-site, this species occurs in groups within previously disturbed areas such as old roads and areas that appear to be subjected to ongoing erosion. These areas are mapped as maritime succulent scrub and disturbed habitat. A total of 153 individuals were mapped within the project parcels. This total was calculated by counting all individuals found while traversing the project parcels during each rare plant survey. Additional individuals may occur within the project parcels, as this is a somewhat inconspicuous species. However, this total of 153 individuals likely closely represents the population within the project parcels.

c. San Diego County Viguiera

San Diego County viguiera is a CRPR 4.2 species (CNPS 2017). This shrub in the sunflower family (Asteraceae) has shiny, resinous leaves and showy yellow flowers that bloom from February to August (University of California 2017; Munz 1974). Its range extends from Sonora and Baja California, Mexico northward into San Diego and Orange County (CNPS 2017), although the population in Orange County may not be native (Reiser 2001). In San Diego County it is rare north of Highway 78, becoming increasingly common to the south, until it is the dominant shrub in coastal sage scrub in non-coastal southern San Diego County (Reiser 2001). San Diego County viguiera occurs on dry, shrubby slopes in Diegan coastal sage scrub and chaparral habitats between 200 and 2,500 feet elevation. Overall, this species is in decline due to development. However, there are many areas containing substantial populations (Reiser 2001).

San Diego viguiera occurs in many areas of the project parcels. The species occurs both as scattered individuals and in groups within maritime succulent scrub and Diegan coastal sage scrub. Central portions of the site that appear to undergo a high amount of disturbance were not found to contain this species. Approximately 600 individuals were mapped within the project parcels. This population total was calculated by counting individuals where they occurred in small numbers and estimating the number of individuals where they occurred in large groups. For large groups, the number of individuals was calculated by estimating the density within an area and extrapolating using the area of each group. This population estimate likely closely represents the population of this species within the project parcels.

d. Seaside Cistanthe

Seaside cistanthe is a CRPR 4.2 species (CNPS 2017). This low, spreading, succulent annual herb in the purslane family (Portulacaceae) flowers from March through May (Munz 1974). Its range extends along the coast from Santa Barbara County southward into Baja California and onto the Channel Islands (CNPS 2017). It is typically found on sandy bluffs and openings in coastal sage scrub flats near the beach. It has been mapped on Gaviota fine sandy loam and Terrace Escarpment soils (Reiser 2001). Seaside cistanthe is severely declining in mainland southern California, and is approaching extirpation in San Diego County and Orange County. The decline of this species is attributed primarily to loss of habitat via residential coastal development (Reiser 2001).

Seaside cistanthe occurs in groups in three areas of the project parcels within maritime succulent scrub. On-site, groups of this species generally occur on undisturbed south-facing slopes. A total of 78 individuals were mapped within the project parcels. This total was calculated by counting all individuals found while traversing the project parcels during each survey and should be an accurate representation of the population within the project parcels.

e. Snake Cholla

Snake cholla is a CRPR 1B.1 species (CNPS 2017) and is a covered species and narrow endemic species under the MSCP Subarea Plan (City of San Diego 1997). It is generally a prostrate cactus (Cactaceae family) that may grow up to 9 feet and blooms with yellow or green-yellow flowers in April and May. This variety grows only in southern San Diego County and Baja California, with the northernmost known location in Florida Canyon in Balboa Park (Reiser 2001). Snake cholla occurs in coastal sage scrub and chaparral habitats between 100 and 500 feet elevation (CNPS 2017), most often on dry hillsides. It is associated with Huerhuero loam, Gaviota fine sandy loam, and Redding cobbly loam soils (Reiser 2001). Snake cholla is substantially declining in San Diego County and imperiled by development (Reiser 2001).

A total of 8 individual snake cholla plants was mapped in the southern and eastern portions of the project parcels within undisturbed maritime succulent scrub. However, additional individuals may occur within the undisturbed maritime succulent scrub, where the high density of cactus species and/or the steepness of the slopes did not allow for 100 percent visual coverage during surveys.

f. Otay Tarplant

Otay tarplant is listed as a California endangered species and a federally threatened species (CDFW 2017b and c). It is a CRPR 1B.1 species (CNPS 2017) and is a covered species and narrow endemic species under the City's MCSP Subarea Plan (City of San Diego 1997). This small, aromatic annual herb in the sunflower family (Asteraceae) produces mostly solitary yellow flower heads in May and June (Munz 1974). It ranges from southwestern San Diego County into Baja California, in open coastal sage scrub and grassland habitats below 1,000 feet (CNPS 2017). It typically occurs in herbaceous plant communities on slopes and mesas with expansive clay soils, and may occur in non-native grasslands and fallow agricultural fields where clay soils are present (Reiser 2001). Otay tarplant is considered to be declining. Residential and commercial development and highway construction have led to this decline (Reiser 2001).

Otay tarplant occurs in the northern portion of the project parcels on a north-facing slope in areas mapped as maritime succulent scrub and Diegan coastal sage scrub. These areas contain more annual plant cover, including non-native grasses and forbs, compared to other areas of maritime succulent scrub and Diegan coastal sage scrub on-site. Here, Otay tarplant appears to be more concentrated in areas that have previously been disturbed, such as lightly used trails and a previously graded road. Areas that specifically contain a high density of black mustard (*Brassica nigra*) have very few Otay tarplant individuals. Approximately 2,700 individuals were mapped within the project parcels. This population total was calculated by counting individuals where they occurred in small numbers and by estimating the number of individuals where they occurred in large groups. For large groups, the number of individuals was calculated by estimating the density within an area and extrapolating using the area of each group. This population estimate should be an accurate representation of the population of this species within the project parcels.

However, as the expression of this annual species is influenced by rainfall and weather conditions, the population size within the project parcels may fluctuate year to year.

g. Cliff Spurge

Cliff spurge is a CRPR 2B.2 species (CNPS 2017). Cliff spurge is a spiny, low-growing shrub in the spurge family (Euphorbiaceae) that grows to about three feet tall and may flower from December to August. It is found along the coast from Orange County south to Baja California and in the Channel Islands, with a disjunct population in the Sonoran desert near the community of Whitewater, Riverside County. It typically occurs in coastal bluff scrub or maritime succulent scrub below 1,700 feet (CNPS 2017). The largest populations in San Diego County are found on Point Loma and Otay Mesa, with occurrences as far north as Carlsbad (Reiser 2001). Soil series associated with this species include Olivenhain cobbly loam and Gaviota fine sandy loam (Reiser 2001). Cliff spurge is declining with the development of the Otay Mesa (Reiser 2001).

Cliff spurge occurs in the southern, eastern, and northern portions of the project parcels within maritime succulent scrub. It was observed occurring in higher numbers on south-facing slopes and areas with little disturbance. However, some individuals within the northern portion of the site occur along existing dirt roads. A total of 129 individuals was mapped within the project parcels. All individuals observed during the surveys were recorded and counted. However, additional individuals may occur within the undisturbed maritime succulent scrub, where the high density of cactus species and/or the steepness of the slopes did not allow for 100 percent visual coverage during surveys.

h. San Diego Barrel Cactus

San Diego barrel cactus is a CRPR 2B.1 species (CNPS 2017) and is a covered species under the City's MSCP Subarea Plan (City of San Diego 1997). This globular succulent in the cactus family (Cactaceae) usually grows up to eight inches tall, with some individuals growing to 18 inches, and flowers in May and June (Baldwin et al. 2012). It is found only in coastal San Diego County and Baja California, Mexico. Although found as far north as Oceanside coastally and Poway inland, the largest populations of San Diego barrel cactus occur in Otay Mesa, Otay Valley, Point Loma, and Marine Corps Air Station Miramar (Reiser 2001). This species generally occurs in sandy, rocky or dry hills of coastal sage scrub, grassland, chaparral, and vernal pool habitats below 500 feet elevation (University of California 2017, Munz 1974). It is typically found in soil types such as San Miguel-Exchequer rocky silt loams and Redding gravelly loams and is associated with species such as variegated dudleya (*Dudleya variegata*), foothill needle grass (*Stipa lepida*), and California sagebrush (Reiser 2001). It is the only barrel cactus found in coastal areas. San Diego cactus is threatened by urbanization, off-road vehicles, and collecting (Baldwin et al. 2012).

San Diego cactus occurs grouped in three different areas within the southern half of the project parcels, all mapped as maritime succulent scrub. The locales where this species occurs show sign of very little soil disturbance. A total of 9 individuals was mapped within the project parcels. However, additional individuals may occur within the undisturbed

maritime succulent scrub, where the high density of cactus species and/or the steepness of the slopes did not allow for 100 percent visual coverage during surveys.

i. Palmer's Grapplinghook

Palmer's grapplinghook is a CRPR 4.2 species (CNPS 2017). This small herbaceous annual in the borage family (Boraginaceae) flowers from March to May, then produces spiny nutlets that look like tiny grapplinghooks. Palmer's grapplinghook is found in Los Angeles, Orange, Riverside, and San Diego Counties, and Santa Catalina Island in California; Arizona; and Baja California and Sonora, Mexico (CNPS 2017). It may be found in grasslands, coastal sage scrub, and chaparral habitats below 3,100 feet (CNPS 2017); but in San Diego, it is typically found in open grassy slopes or open coastal sage scrub habitat on clay soils. As of 2001, the largest known population in San Diego County was on Table Mountain near Jacumba, with smaller populations scattered near the coast (Reiser 2001). This inconspicuous plant can most reliably be identified in late spring or early summer, when its distinctive fruit can be observed. Palmer's grapplinghook populations are in decline in southern California, likely due to urban development and agricultural discing (Reiser 2001).

A total of 12 Palmer's grapplinghook was observed in the south-central portion of the project parcels in an area mapped as maritime succulent scrub. Ten individuals were found grouped together in an area that supported mostly undisturbed soil crusts, and two individuals were observed nearby in a similarly undisturbed area. As most individuals observed had begun to desiccate by the time of the first rare plant survey on April 6, 2017, the number of individuals observed may be an underrepresentation of the population within the project parcels. In addition, as the expression of this annual species is influenced by rainfall and weather conditions, the population size within the project parcels may fluctuate year to year.

j. Beach Goldenaster

Beach goldenaster is a CRPR 1B.1 species (CNPS 2017). This herbaceous perennial in the sunflower family (Asteraceae) grows from 7 to 50 inches in height and ranges from decumbent to erect in habit (Baldwin et al. 2012). It is found along the coast mostly in San Diego County and Baja California below 200 feet with a presumed extant population occurring in Los Angeles County (CNPS 2017). This species is found on coastal dunes and in sandy locales of coastal sage scrub and in Del Mar has soils mapped as Terrace Escarpment (Reiser 2001). San Diego County populations of beach goldenaster are nearly extirpated due to developmental impacts to habitat immediately adjacent to southland beaches (Reiser 2001).

Beach goldenaster was found in a central portion of the project parcels within especially sandy locales. This area is mapped as disturbed Diegan coastal sage scrub and occurs between a number of trails. The sandy, loose soil here is likely a result of both human disturbance and erosion of a nearby slope. A total of 25 individuals was mapped within the project parcels. This total was calculated by counting all individuals found while traversing

the project parcels during each survey and should be an accurate representation of the population within the project parcels.

During the May 15 and June 18, 2019 site visits, only one beach goldenaster individual was relocated.

k. California Box-thorn

California box-thorn is a CRPR 4.2 species (CNPS 2017). This shrub in the nightshade family (Solanaceae) has stiff, spiny branches, small fleshy leaves, and white, purple-tinged flowers that bloom from March to July (Munz 1974). California box-thorn is distributed coastally, on the Channel Islands and from Los Angeles County south to Baja California, Mexico (Munz 1974; University of California 2017). The general habitat for this species is coastal bluff scrub and coastal sage scrub below 500 feet elevation; in San Diego County it occupies a band in upper coastal salt marshes and on bluffs (Reiser 2001). California box-thorn is severely declining with coastal development in San Diego County (Reiser 2001).

California box-thorn occurs in northern and southern portions of the project parcels in areas mapped as maritime succulent scrub. Individuals were generally scattered among more dominant species of this habitat, such as San Diego bur-sage. A total of 23 individuals was mapped within the survey area. All individuals observed during the surveys were recorded. However, additional individuals may occur within the undisturbed maritime succulent scrub, where the high density of cactus species and/or the steepness of the slopes did not allow for 100 percent visual coverage during surveys.

l. Small-flowered Microseris

Small-flowered microseris is a CRPR 4.2 species (CNPS 2017). This annual herb in the sunflower family (Asteraceae) grows from one to ten inches tall and produces yellow or white flowers in March and April. A subspecies of the more widespread Douglas' microseris (*M. douglasii*), small-flowered microseris is only found in Los Angeles, Orange, Riverside, and San Diego counties and the southern Channel Islands and into Baja California (CNPS 2017). Small-flowered microseris occur in grasslands, cismontane woodland, coastal scrub, and vernal pool habitats (CNPS 2017); more specifically, in San Diego County it typically occurs on clay lenses among native bunchgrasses, on the edge of vernal pools, or in openings in sage scrub (Reiser 2001). This species is presumed to be severely declining in southern California owing to urban development (Reiser 2001).

Small-flowered microseris was observed in one location within the project parcels in an area mapped as disturbed maritime succulent scrub. Approximately 20 individuals were recorded within the project parcels. Where this species was detected, it is generally flat and appeared to have been previously graded and/or used as a road, resulting in decreased vegetation cover. Similar conditions occur in other portions of the survey area, but no other occurrences of this species were detected. This species was detected during the survey on April 6, 2017, and had mostly set seed and begun to desiccate by this date. Therefore, there is a potential for low numbers of this species to have gone undetected in other areas of the project parcels.

m. Ashy Spike-moss

Ashy spike-moss is a CRPR 4.1 species (CNPS 2017). This plant is a perennial, rhizomatous herb composed of a loose tangle of prostrate runners pale green in color and aging tan to white. This species is distributed mostly in San Diego County and northern Baja California below 1,800 feet in elevation (Baldwin et al. 2012). It is found at many sites in San Diego County, primarily south of Highway 78, on the periphery of the city of San Diego, and in the Marine Corps Air Station (MCAS) Miramar, where it can be the dominant ground cover (Reiser 2001). It occurs in sunny spots or under shrubs within chaparral and coastal sage scrub (Baldwin et al. 2012; CNPS 2017), and on many soil types (Reiser 2001). This species is a good indicator of site degradation, as it rarely inhabits disturbed soils. Ashy spike-moss is substantially declining due to urban expansion along the coast. However, it can be found in abundance in protected areas (Reiser 2001).

Ashy spike-moss was detected in the east-central portion of the site in undisturbed areas between shrubs within maritime succulent scrub. It occurred as many small mats in close proximity to each other and thus recorded as a single point. The number of individuals of this species is difficult to count without disturbing and likely destroying the individuals. Therefore, the square footage of this mat-forming species was recorded. Approximately 30 square feet of ashy spike-moss were mapped within the project parcels.

3.3.4 Sensitive Wildlife Species

The following 13 sensitive wildlife species were observed during the general and focused biological surveys conducted in 2016 and 2017 for this project: San Diego fairy shrimp, Belding's orange-throated whiptail, Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus hudsonius*), prairie falcon (*Falco mexicanus*), western burrowing owl, least Bell's vireo, California horned lark (*Eremophila alpestris actia*), coastal cactus wren, coastal California gnatcatcher, yellow warbler (*Setophaga petechia*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and San Diego black-tailed jackrabbit (Figure 7c). Three of these species, San Diego fairy shrimp, least Bell's vireo, and coastal California gnatcatcher, are federally listed as threatened or endangered. Cooper's hawk, prairie falcon, and California horned lark, southern California rufous-crowned sparrow are CDFW watch list species. Belding's orange-throated whiptail, northern harrier, western burrowing owl, coastal cactus wren, yellow warbler, and San Diego black-tailed jackrabbit are CDFW species of special concern. All but five species—San Diego fairy shrimp, prairie falcon, California horned lark, yellow warbler, and San Diego black-tailed jackrabbit—are covered by the MSCP. San Diego fairy shrimp is a covered species under the VPHCP.

Based on an assessment of species location records and habitat suitability, the following four additional sensitive wildlife species were identified as having a high or moderate potential to occur: Baja California coachwhip (*Coluber fuliginosus*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), San Diego desert woodrat (*Neotoma lepida intermedia*), and southern mule deer (*Odocoileus hemionus fuliginata*). Descriptions of the observed and potentially occurring sensitive wildlife species are provided below and in Attachment 4.



- Project Parcels Boundary
- Project Impact Area
- Wildlife Survey Buffers**
- 100-foot Survey Buffer
- 300-foot Survey Buffer
- 500-foot (approximate 150-meter) Buffer
- Sensitive Wildlife Species Observations**
- MSCP Covered**
- ◻ Belding's Orange-throated Whiptail
- ▲ Coastal Cactus Wren
- ◻ Coastal Cactus Wren Nest
- ▲ Least Bell's Vireo
- ▲ Northern Harrier
- ▲ Western Burrowing Owl
- ◻ Burrowing Owl with Active Burrow
- ◻ Suitable Burrow for Western Burrowing Owl
- ▲ Southern California Rufous-crowned Sparrow
- ▲ Coastal California Gnatcatcher
- ◻ Coastal California Gnatcatcher Nest
- Gnatcatcher Observed Use Area
- VPHCP Covered**
- San Diego Fairy Shrimp
- Watershed for San Diego Fairy Shrimp
- Shrimp Occupied Depression
- Not MSCP or VPHCP Covered**
- ◊ San Diego Black-tailed Jackrabbit
- ▲ Yellow Warbler

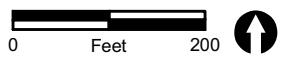


FIGURE 7c
Existing Biological Resources - Sensitive Animal Species

However, the following three observed sensitive species are only addressed in Attachment 4, as none of these species is expected to breed or roost or nest on-site: California gull (*Larus californicus*), Virginia's warbler (*Oreothlypis virginiae*), and great blue heron (*Ardea herodias*).

3.3.4.1 Sensitive Wildlife Species Observed

a. San Diego Fairy Shrimp

San Diego fairy shrimp is federally listed as endangered and is a covered species under the VPHCP (CDFW 2017d and e, City 2002). This fairy shrimp occurs in limited populations in Santa Barbara and Orange Counties and in San Diego County from San Marcos and Ramona south to Otay Mesa and into northwestern Baja California, Mexico, at Valle de Las Palmas (USFWS 1997b). The majority of San Diego fairy shrimp populations are located San Diego County. San Diego fairy shrimp are restricted to vernal pools and prefer cool water temperatures. This species can also be found in ditches and road ruts that are located in degraded vernal pool habitat. Fairy shrimp remain dormant in cysts until pools fill during the rainy season. Nauplii emerge from cysts and develop into adults sometime between mid-December and early May (Eriksen and Belk 1999). Development takes between 10 to 20 days and is dependent on water temperature. Primary threats to this species are habitat destruction and fragmentation, alterations of wetland hydrology, off-road vehicle activity, and grazing (USFWS 1997b).

As discussed in the wet season fairy shrimp survey report (RECON 2017a), San Diego fairy shrimp was observed on January 5, 2017, in only one of the 17 depressions observed holding water within the project parcels during the 2016-2017 wet season. Mature male and gravid female San Diego fairy shrimp were observed, with the total number of individuals present estimated in the 10s. The depression containing these individuals is an artificial ditch within disturbed Diegan coastal sage scrub, which occurs between an old dirt road bed and the top of a manufactured slope.

The remaining 16 depressions that were negative for fairy shrimp during the 2016-2017 wet season were subsequently surveyed for San Diego fairy shrimp using dry season survey protocol (RECON 2017b). As no San Diego fairy shrimp were detected in these 16 depressions, this species not expected to occur in any other areas of the project parcels.

b. Belding's Orange-throated Whiptail

Belding's orange-throated whiptail is a CDFW species of special concern and an MSCP covered species (CDFW 2017d; City of San Diego 1997). This species ranges from the coast to the Peninsular mountain ranges from Orange and southwestern San Bernardino counties to the tip of Baja California, Mexico (Stebbins 2003). It occurs in a variety of habitats and is most common in sandy areas of low, open sage scrub or chaparral, particularly where there is California buckwheat, sage (*Salvia* spp.), or chamise (*Adenostoma fasciculatum*; Lemm 2006). This species feeds primarily on the western subterranean termite (*Reticulitermes hesperus*) (Bostic 1966). It is active during spring and

summer, but is largely dormant during the fall and winter, when temperatures drop (Jennings and Hayes 1994). Breeding occurs from May through July. The decline of this species is attributed to habitat loss and fragmentation (McGurty 1980).

Belding's orange-throated whiptail was observed on multiple survey days in the northern and western portions of the project parcels. Adults and juveniles were observed, typically foraging in open areas of the maritime succulent scrub and disturbed Diegan coastal sage scrub. The maritime succulent scrub and Diegan coastal sage scrub (undisturbed and disturbed) throughout the project parcels provide suitable habitat for this species.

c. Cooper's Hawk

The Cooper's hawk is a CDFW watch list species (nesting) and an MSCP covered species (CDFW 2017d, City 1997). The Cooper's hawk's year-round range extends throughout most of the U.S. Its wintering range extends south to Central America, and its breeding range extends north to southern Canada (Rosenfeld and Bielefeldt 1993). Breeding birds are widespread over San Diego County's coastal slope and most abundant in lowland and foothill canyons and in urban areas. It is a common breeder in both oak and willow riparian woodlands and urban environments, with eucalyptus trees used nearly as often as oaks (Unitt 2004). Additionally, this species has been known to nest within planted trees including pine, redwood, and avocado (Unitt 2004). Breeding occurs from March to June, and nests are typically located high in the tree but under the canopy. This hawk forages primarily on medium-sized birds but is also known to eat small mammals such as chipmunks and other rodents (Rosenfeld and Bielefeldt 1993). Although urbanization and loss of habitat have contributed to the decline of this species, the Cooper's hawk acclimation to city living over the last 20 years has generously increased their numbers (Unitt 2004).

Cooper's hawk was only observed during one of the focused least Bell's vireo survey visits. This species may forage within the project parcels, as potentially suitable nest sites (e.g., mature eucalyptus trees and other ornamental tree species) are available in the development immediately northwest of the project parcels. However, this species is not expected to nest within the project parcels due to the lack of mature trees for nest sites.

d. Northern Harrier

The northern harrier is a CDFW species of special concern (nesting) and an MSCP covered species (CDFW 2017d; City of San Diego 1997). In San Diego County, the northern harrier is found year-round but is more abundant and widespread as a winter visitor than a breeding bird (Unitt 2004). Wintering birds, as well as breeding birds, are numerous in the coastal lowlands, whereas at higher elevations—such as near Lake Henshaw and Lake Cuyamaca—this species' presence is scarce. The northern harrier commonly nests on the ground in dense vegetation along the edge of marshes, grasslands, in fields, or in areas of sparse shrubs (MacWhirter and Bildstein 1996). This species' breeding habitat is characterized by tall, dense vegetation, which provides the needed concealment for their nests (Dechant et al. 2003; Unitt 2004). The largest concentration of breeding in San Diego County is within the Tijuana River Valley and estuary (Unitt 2004). Northern harriers also

rely on grasslands for foraging grounds, as well as agricultural fields, and coastal marshes (MacWhirter and Bildstein 1996). The harrier's numbers vary greatly with rainfall, which controls the abundance of their prey. The largest threat to breeding harriers is loss of breeding and foraging habitats due to urbanization, human disturbance, and agricultural practices (Shuford and Gardali 2008).

A pair of northern harriers and individual northern harriers (likely part of the pair) were observed repeatedly flying over the project parcels, foraging, and occasionally perching atop some small dirt mounds and along the dirt roads within the central and northern portions of the project parcels. Although northern harriers were repeat visitors, no sign of nesting was observed on-site. Within the project parcels, the areas of disturbed land that are dominated by garland daisy (mostly in the southeastern section of the parcels) may provide suitable dense vegetation to serve as nesting habitat for this species. All undeveloped portions of the project parcels provide suitable foraging habitat for this species.

e. Prairie Falcon

Prairie falcon is a CDFW watch list species (CDFW 2017d). The prairie falcon is a permanent resident within the inland areas of San Diego County, which include Borrego Valley and locations such as Warner, Santa Ysabel, Santa Maria Valley, and Otay Mesa, where large grasslands occur. This species' primary foraging habitat includes open perennial and annual grasslands, savannahs, rangeland, agricultural fields, and desert scrub areas (Unitt 2004). Ground squirrels (*Spermophilus* spp.) make up the bulk of the prairie falcon's diet, but they will also prey on small birds such as horned lark (*Eremophila alpestris*) and western meadowlark (*Sturnella neglecta*), especially during the winter (Steenhof 2013). This species nests directly on cliff ledges or bluffs, without building a nest, and occasionally in rock crevices that are near suitable foraging habitat. However, they are also known to reuse old raven or eagle nests. The prairie falcon will forage as far away as 20 to 25 miles from their nesting site in the Anza-Borrego Desert, where the density of prey can be low (Unitt 2004). This species tends to stay inland, with the Tijuana River Valley being the only coastal location where it is known to occur regularly (Unitt 2004). Threats to prairie falcon populations in San Diego County include human disturbance near nest sites and the loss of foraging habitat (Unitt 2004). Urbanization of foraging habitats within the desert badlands has resulted from agricultural encroachment, livestock-grazing, energy development activities, off-road vehicle use, and military training (Steenhof 2013).

Prairie falcon was only observed twice during all biological surveys conducted by RECON and BBS for this project. Each observation consisted of a fly-over. The project parcels provide suitable foraging habitat and abundant prey items (i.e., California ground squirrels). However, this species is not anticipated to nest within the project parcels due to the lack of suitable cliff ledges or bluffs. Only the tall eucalyptus or other ornamental tree species within the adjacent development have the potential to provide marginally suitable nesting habitat, as prairie falcon have been known to reuse stick nests of hawks or ravens (Unitt 2004).

f. Western Burrowing Owl

Western burrowing owl is a CDFW species of special concern and an MSCP covered species (CDFW 2017d, City 1997). Western burrowing owl is primarily restricted to the western United States and Mexico. A year-round resident in San Diego County, breeding western burrowing owls remain in only five primary areas in San Diego County including Otay Mesa, Imperial Beach, North Island Naval Air Station, Warner Valley, and Borrego Valley (Unitt 2004). Habitat for the western burrowing owl includes dry, open, short-grass areas with level to gentle topography and well-drained soils (CDFW 2012). These areas are also often associated with burrowing mammals (Haug et al. 1993). The burrowing owl is diurnal and perches during daylight at the entrance to its burrow or on low posts. Nesting occurs from March through August. Burrowing owls form a pair-bond for more than one year and exhibit high site fidelity, reusing the same burrow year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Western burrowing owls are opportunistic feeders, consuming a diet that includes arthropods, small mammals, and birds, and occasionally amphibians and reptiles (Haug et al. 1993). Urbanization has greatly reduced the amount of suitable habitat for this species, thereby leading to the decline in the San Diego population (Lincher and Bloom 2007). Other contributions to the decline of this species include the poisoning of squirrels and prairie dogs, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

As described in the burrowing owl breeding season survey report (RECON 2017f), one burrowing owl observation was recorded within the project parcels during focused breeding season surveys conducted between March 29 and July 6, 2017. During the first survey (March 29), one adult burrowing owl was observed using a burrow within the east-central portion of the project parcels. The owl was flushed during the survey, and a pellet was observed near the entrance of the burrow, indicating the burrow was occupied (see Figure 7c). Additionally, a single adult burrowing owl was observed incidentally in the same general area during two of the quino checkerspot butterfly surveys conducted by RECON on March 9 and April 4, 2017 (see Figure 7c). No additional owl observations were made during the remaining focused surveys or incidentally during other surveys conducted on-site. The area in the immediate vicinity of the burrowing owl observations consists of a gentle southwest-facing slope with bare soil that has eroded over time and formed many shallow to deep rills and cuts. This area lies at the edge of the central portion of the project parcels and supports a mix of open disturbed land, disturbed maritime succulent scrub, and Diegan coastal sage scrub. It has been subjected to ongoing human disturbance, such as OHV use, remote-controlled car use and course building, and pedestrian activity. Specifically, the area immediately adjacent to the observed burrow location contains a remote-controlled car course with small wooden bridges, pin flags, and sign of ongoing use.

These burrowing owl observations suggest that the central portion of the survey area is being used by a minimum of one burrowing owl as wintering habitat. The last burrowing owl observation on-site was early in the breeding season, April 4, and no burrowing owl observations were made during the remainder of the focused surveys. There was no sign of breeding burrowing owl observed on-site. This apparent use of the site correlates well with

the observed changes in vegetation throughout the seasons. Although the central portion of the survey area maintains open habitat conditions throughout the year, the dominance of garland daisy in the disturbed land in the southeastern portion of the survey area causes substantial seasonal changes in the habitat's structure. Areas dominated by garland daisy can be functionally similar to short-grass vegetation when the garland daisy plants have died back and deteriorated, typically from late summer through winter. However, these areas quickly change to dense, tall vegetation as new garland daisy plants sprout and reach full maturity, typically during spring and early summer. Especially in years with average or above-average rainfall, this may result in a decrease in suitability of the habitat for foraging burrowing owl during much of the breeding season.

g. Least Bell's Vireo

Least Bell's vireo is federally and state listed as endangered and an MSCP covered species (CDFW 2017d and e; City of San Diego 1997). Its historical breeding range once extended from northwestern Baja California, Mexico, to interior northern California, as far north as the city of Red Bluff in Tehama County, California (Franzreb 1989). The species is associated with riparian habitats, including cottonwood–willow woodlands and forests, oak woodlands, and mule fat scrub, and requires dense canopy for foraging and a dense understory for nesting (Unitt 2004; USFWS 1998). Least Bell's vireos migrate to San Diego County arriving at the breeding grounds in mid-March and remain until September or October. Populations are concentrated in the coastal lowlands of the county and are scattered within the foothills (Unitt 2004). Populations of least Bell's vireo have declined drastically due to extensive loss of riparian habitat from urban development, including flood control and damming, introduction of non-native invasive plant species such as giant reed (*Arundo donax*) and saltcedar, and nest parasitism by brown-headed cowbird (*Molothrus ater*) (USFWS 2009). The population has increased as a result of extensive brown-headed cowbird trapping programs and restoration of riparian woodland habitat (Unitt 2004).

As discussed in the least Bell's vireo survey report (RECON 2017e), one vireo was observed within the project parcels during a protocol survey visit on May 23, 2017, and one incidental vireo detection was recorded during an earlier, separate biological survey on March 29, 2017. The point location shown on Figure 7c within the 300-foot buffer represents the March detection, and the point location within the project parcels represents the May detection. No vireo were detected during any of the other seven focused survey visits, or during any of the other biological survey visits conducted by RECON and BBS during the 2017 season.

At a minimum, least Bell's vireo appears to be using the mule fat scrub in Moody Canyon (northern portion of the project parcels) during migration. Although the mule fat scrub and the tamarisk-dominated patch of disturbed Diegan coastal sage scrub may provide suitable breeding habitat for this species, no on-site breeding or nesting was confirmed during the 2017 focused surveys. The March detection coincides with the typical arrival time of vireo to their breeding grounds in southern California (USFWS 1998; Unitt 2004), indicating this

individual could have been passing through during migration to its established territory or in search of a new territory.

Least Bell's vireo males tend to be vocal. Therefore, the lack of detection between March and May could indicate that the May detection was from an unpaired mature male still looking to establish a territory or dispersal of an early-season fledgling. Although fledglings generally remain within or in close proximity to their natal territory for most of the season, immatures more than 30 days out of the nest may move over wide areas (Brown 1993). The initial dispersal distance of a juvenile vireo from its natal site has at least been documented at 1.6 kilometers (approximately 1 mile) by the time a second brood has fledged (USFWS 1998; Gray and Greaves 1984 as cited in Brown 1993). Furthermore, fledglings have been known to produce adult-like songs (Brown 1993). A section of the Tijuana River that has been known to support breeding vireo since at least 1978 (CDFW 2017a), which comes within two miles of the project parcels, may be a source of dispersing juveniles.

h. California Horned Lark

California horned lark is a CDFW watch list species (CDFW 2017d). This coastal subspecies' year-round range is fragmented in San Diego County and includes the coastal strand, arid grasslands, and sandy desert floors in Anza-Borrego Desert (Unitt 2004). Plowed fields, graded lands, and other disturbed areas attract the California horned lark. One of these habitats is the coastal strand that encompasses salt flats around lagoons and fills in Mission and San Diego bays. The coastal mesas and inland valleys, such as Warner Valley, also provide pockets of sparsely vegetated habitats suitable for this species. Substantial numbers are also found in the upper basin of Lake Cuyamaca and Santa Maria Valley (Ramona grasslands). California horned larks are typically not found in chaparral (Unitt 2004; Zeiner et al. 1988-1990). Breeding occurs during the months of March through July with peak activity occurring in May, and nests are made on the ground. California horned larks forage by walking on the ground and consume a diet of spiders, insects, snails, buds, berries, and seeds from grasses, weeds, and forbs (Zeiner et al. 1988-1990). Horned larks usually forage in flocks except during nesting. Decline of this species is attributed to general loss of habitat, urbanization, and habitat fragmentation (Unitt 2004).

California horned lark was observed only once during biological surveys conducted in 2016 and 2017, on April 13, 2017. Although no nesting activity was observed, the open areas of disturbed land within the central portion of the project parcels provide suitable nesting habitat for this species. However, the suitability of this habitat may be negatively affected by the frequent pedestrian and off-road vehicle activity.

i. Coastal Cactus Wren

Coastal cactus wren is a CDFW species of concern and an MSCP covered species (CDFW 2017d, City 1997). This subspecies ranges from southern Orange County through San Diego County into extreme northwestern Baja California (Hamilton et al. 2011). Shuford and Gardali (2008) summarize that in San Diego County the coastal cactus wren is concentrated in four core regions: southern Camp Pendleton/Fallbrook Naval Weapons

Station, Lake Hodges/San Pasqual, Lake Jennings, and Sweetwater/Otay (extending from Dictionary Hill on the north to Otay Mesa on the south, from Euclid Avenue on the west to Upper and Lower Otay Lakes on the east). However, the Lake Jennings area suffered in the 2003 Cedar Fire destroying most of the occupied habitat. Year-round residents, coastal cactus wrens inhabit coastal sage and maritime succulent scrub containing thickets of coastal cholla and two species of prickly pear, coast prickly pear and chaparral prickly pear (*Opuntia oricola*) (Rea and Weaver 1990). Coastal cactus wrens build their nests in the cacti at a height of approximately three feet (Solek and Szijj 2004), and males often build multiple nests throughout the year to be used for roosting by adults and fledglings, and nesting for subsequent broods (Unitt 2004). This species is considered a shrubby skulker, foraging for insects primarily on open areas on the ground or low in the vegetation. In high temperatures, the coastal cactus wren prefers to forage under the canopy of shrubs (Solek and Szijj 2004). The primary cause for the decline of this species is degradation and loss of breeding habitat to urbanization. Human-caused disturbance, such as increased fire frequency and intensity, is also problematic for this species. Cactus wren require cacti at least 3 feet in height for nesting, and cactus recovery after a fire can be slow (Solek and Szijj 2004).

Coastal cactus wren was observed on April 5 and 13, 2017, in cactus-dominated maritime succulent scrub in the survey buffer north of the project parcels during the first and second focused survey visits for this species and was again incidentally observed in the same general area on May 23, 2017. On April 5, one coastal cactus wren was observed pulling nesting material from an old nest, carrying the material north to another cactus, vocalizing quietly, and foraging in low within the vegetation. On April 13, an individual coastal cactus wren was observed in very close proximity to the previous observation, but no nest was detected. On May 23, coastal cactus wren was again observed traveling within the same stand of maritime succulent scrub. On this visit, a possible coastal cactus wren nest was observed within a mature coast cholla, approximately 200 feet northwest of the first observation location.

The coastal cactus wren observations described above took place in the most extensive stand of cactus-dominated maritime succulent scrub habitat that occurs in the project parcels and 300-foot survey buffer. Habitat in this area can be classified as high quality cactus scrub (i.e., Cactus Scrub Type 1 and Cholla Type 1 [Coastal Cactus Wren Network 2012]). This area is dominated by coast cholla, with many individuals greater than 1.3 meters tall. Cholla in this area appears to occupy at least 50 percent of the total shrub cover. Other representative plant species in this patch include jojoba and San Diego bur-sage.

The remaining patches of cactus-dominated maritime succulent scrub in other portions of the project parcels and 300-foot survey buffer, can be classified as lower quality cactus scrub (i.e., Cactus Scrub Type 3 or Type 4, and Cholla Type 2 or 3 [Coastal Cactus Wren Network 2012]), as these areas have small cactus scrub patches less than an acre in size, with few individual coast cholla or snake cholla that are widely spaced in each patch. The cholla in each of these areas comprises less than 20 percent of the total scrub cover. Other representative plant species in these patches include jojoba, San Diego bur-sage, California

buckwheat, cliff spurge, and coast prickly pear. Each of these areas would have a low potential for cactus wren occupancy. However, because the project area and buffer are in close proximity to the large expanse of high quality cactus scrub habitat in the northern area of the project and buffer area, each of these areas has potential to support the species.

j. Coastal California Gnatcatcher

Coastal California gnatcatcher is federally listed as threatened, a CDFW species of special concern, and an MSCP covered species (CDFW 2017d and e; City of San Diego 1997). Coastal California gnatcatcher is a non-migratory, resident species found on the coastal slopes of southern California ranging from Ventura County southward through Los Angeles, Orange, Riverside, and San Diego counties into Baja California, Mexico (Atwood and Bontrager 2001; USFWS 2010). In San Diego County the eastern limits of the coastal scrub vegetation communities used by the gnatcatcher are largely bound by mountainous areas and colder winters (Unitt 2004). Coastal California gnatcatchers typically occur in or near mature coastal sage scrub habitat (Atwood and Bontrager 2001). This vegetation generally comprises low (less than three feet in height) shrub and sub-shrub species. Gnatcatchers defend breeding territories ranging in size from two to 14 acres (USFWS 2010). This species' ideal host shrub for nesting is California sagebrush, but it is also found nesting in California buckwheat, common encelia (*Encelia californica*), and broom baccharis (Unitt 2004). Other habitats used by coastal California gnatcatcher include chaparral, grassland, and riparian scrub; disturbed habitats are used where they occur adjacent to sage scrub (Atwood and Bontrager 2001). The primary cause of decline in the coastal California gnatcatcher population is habitat loss and degradation from urban and agricultural development, wildfires, and grazing. Gnatcatcher populations in areas near agriculture or livestock may also be more susceptible to brood parasitism (Atwood and Bontrager 2001).

As discussed in the coastal California gnatcatcher survey report (RECON 2017d), a minimum of six and maximum of 11 breeding pairs of coastal California gnatcatcher is estimated to occupy the survey area. The majority of the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub within the survey area is considered suitable breeding habitat for gnatcatcher. The only exception is some portions of the disturbed Diegan coastal sage scrub in the westernmost portion of the survey area, as the shrub density and height are lower than are typically preferred for nesting by this species. The entirety of the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub, as well as the disturbed land and mule fat scrub, also provide suitable foraging habitat and habitat for dispersal of juveniles.

k. Yellow Warbler

Yellow warbler is a CDFW species of special concern (CDFW 2017d). Yellow warblers commonly breed in San Diego County and are considered to be a rare winter visitor (Unitt 2004). This species is an obligate riparian species, nesting and foraging almost exclusively in mature riparian corridors on the coastal slopes and within the desert in San Felipe

Valley (Unitt 2004). Shuford and Gardali (2008) describe yellow warblers as showing a high degree of site fidelity, with 60 to 64.5 percent of males and 32 to 44 percent of females returning to their previous year's territory. They are often observed in riparian habitat where surface water is evident, although it is not necessary. Nesting occurs from April through early August (Unitt 2004), and nests are typically three to five feet from the ground (Lowther et al. 1999). This species is declining due to the loss of riparian habitat and as a result of nest parasitism by brown-headed cowbirds (Unitt 2004; Zeiner et al. 2005).

One yellow warbler was observed traveling through the northern portion of the project parcels on May 23, 2017. This individual was first detected, singing, in one of the willow trees in the mule fat scrub; it then quickly flew off site to a small group of eucalyptus trees just outside the northwest corner of the project parcels. This species was not detected during any other general or focused biological survey conducted by RECON or BBS during 2016 and 2017. Therefore, yellow warbler is only expected to use the mule fat scrub within the project parcels during migration or dispersal. The project parcels do not contain mature riparian woodland or forest to provide suitable nesting habitat for this species.

l. Southern California Rufous-crowned Sparrow

Southern California rufous-crowned sparrow is a CDFW watch list species and an MSCP covered species (CDFW 2017d; City of San Diego 1997). This subspecies of rufous-crowned sparrow is a San Diego County resident which ranges throughout southern California from Los Angeles County to Baja California, Mexico (Collins 1999). Southern California rufous-crowned sparrows are found in sage scrub, broken or burned chaparral habitats, and grasslands with scattered shrubs. The species exhibits a strong preference for moderate to steep, south-facing, dry, rocky slopes with a 50 percent cover of low shrubs (Unitt 2004; Collins 1999). Breeding occurs from March through June, and pair-bonds are formed that may last year-round (Collins 1999). Loss of habitat due to urbanization and habitat fragmentation has decreased the amount of suitable habitat for southern California rufous-crowned sparrows (Unitt 2004).

Southern California rufous-crowned sparrow was detected during multiple surveys in 2016 and 2017. Each detection was within maritime succulent scrub near the eastern edge of the project parcels. The open stands of Diegan coastal sage scrub and maritime succulent scrub on south-facing slopes in the western, southern, and eastern portions of the project parcels provide potentially suitable nesting habitat for this species. Due to the repeated detection of this species and presence of suitable habitat, this species may nest within the eastern portion of the project parcels.

m. San Diego Black-tailed Jackrabbit

San Diego black-tailed jackrabbit is CDFW species of special concern (CDFW 2017d). It ranges from near Mount Pinos (at the Kern-Ventura county line) southward and west of the Peninsular Range into Baja California, Mexico (Hall 1981). This species can be found throughout southern California, with the exception of high-altitude mountains. It occupies

open or semi-open habitats, such as coastal sage scrub and open chaparral areas. Forested and thick, closed-canopy chaparral regions are not suitable (Bond 1977; Tremor et al. 2017). San Diego black-tailed jackrabbit breeds throughout the year, with the greatest number of births occurring from April through May. This species is strictly herbivorous, preferring habitat with ample forage such as grasses and forbs. Declines in San Diego black-tailed jackrabbit populations are due to a decline in and fragmentation of suitable habitat as a result of urban development, shooting, and depredations of dogs (Tremor et al. 2017).

San Diego black-tailed jackrabbit was frequently observed in the eastern portion of the project parcels, and observed in the southwestern portion of the project parcels on one occasion. The detections typically consisted of individuals foraging or flushing from the vegetation, although one group of three was observed foraging and traveling together at the eastern edge of the project parcels on June 8, 2017. The entirety of the project parcels provides suitable habitat for this species, as the majority of the habitat is open or patchy in density and connected to a large expanse of undeveloped land to the east.

3.3.4.2 Sensitive Wildlife Species with Moderate to High Potential to Occur

a. Baja California Coachwhip

Baja California coachwhip is a CDFW species of special concern (CDFW 2017d). The range of this species extends throughout most of Baja California, Mexico and north into southwestern San Diego County (Stebbins 2003). Records of this species have been recorded only as far north as approximately 7 miles of the U.S.–Mexico International Border (Fisher and Case 1997). Within its range, this fast-moving diurnal snake may be found in many types of arid lands, such as desert, grassland, scrubland, woodland, and farmland. As with other coachwhip species, mating is generally thought to occur in April and May with eggs being laid in June and July (Zeiner et al. 1998). Its diet includes small mammals, birds, bird eggs, lizards, snakes, amphibians, and carrion (Zeiner et al. 1998). A potential threat to this species is being struck by vehicles due to the tendency of this snake to eat road-killed carrion.

Although only one 1941 CNDDDB record of this species exists from Otay Mesa (CDFW 2017a), this species was observed in 2017 within one mile northeast of the project parcels (SDNHM 2017). This species has a high potential to occur within the project parcels due to the proximity of a recent reported occurrence and the presence of potentially suitable scrub and grassy areas. However, based on the lack of detection during 2017 biological surveys, this species likely occurs in low numbers if present within the project parcels.

b. Northwestern San Diego Pocket Mouse

Northwestern San Diego pocket mouse is a CDFW species of special concern (CDFW 2017d). It ranges from Los Angeles County and extreme southern San Bernardino County southward into west-central Baja California, Mexico (Hall 1981). In San Diego County, northwestern San Diego pocket mouse is known from Del Mar, Dulzura, Jacumba, Lake

Hodges, Pala, San Diego, and San Marcos (Bond 1977). Habitat for this species is most often sparse or disturbed coastal sage scrub or grasslands with sandy soils. Breeding occurs from March to May. The northwestern San Diego pocket mouse diet consists of seeds from forbs, shrubs, and grasses (Brylski 1983). Threats to this species include degradation of habitat and loss of habitat from development.

This species has been observed previously within two miles northeast of the project parcels (RECON 2005). Coastal sage scrub on site may provide suitable habitat; however, frequent disturbance within the project parcels may reduce habitat value for this species. Therefore, this species has a moderate potential to occur within the project parcels.

c. San Diego Desert Woodrat

The San Diego desert woodrat is a CDFW species of special concern (CDFW 2017d). Although this species has been reclassified as *Neotoma bryanti intermedia*, a species distinct from *N. lepida* (Patton et al. 2007 in Tremor et al. 2017), terminology used in this report remains consistent with the CDFW Special Animals List. Its range extends through coastal areas from the San Francisco Bay well into Baja California, inland to the desert slopes of the Transverse and Peninsular ranges (Tremor et al. 2017). The San Diego desert woodrat occurs in a variety of habitats including coastal sage scrub, chaparral, pinyon-juniper woodland, and desert scrub with a preference for rock outcrops (Bond 1977, Tremor et al. 2017). The middens (nests) of this species are small and typically found in yuccas, at the base of shrubs and cacti, or in talus or rock outcrops (Tremor et al. 2017). Middens can be occupied by multiple generations and have been documented as old as 200 to 400 years of age. The breeding season for the San Diego desert woodrat is from October to May. Their diet consists of a variety of plant species and many parts of the plant including buds, fruits, seeds, bark, leaves, and young shoots (Brylski 1983). Threats to this species include habitat degradation and loss of habitat.

This species has been observed previously within two miles northeast of the project parcels (RECON 2005), and a woodrat midden was observed within the project parcels during the 2016 and 2017 biological surveys. Although the project parcels lack large rock outcrops preferred by this species for midden sites, the parcels provide suitable scrub habitat with cactus stands. Therefore, this species has a moderate potential to occur within the project parcels.

d. Southern Mule Deer

Southern mule deer is an MSCP covered species (City of San Diego 1997). Southern mule deer are presently widespread throughout undeveloped portions of San Diego County, ranging from Marine Corps Base Camp Pendleton to the Laguna Mountains, Sweetwater River, and Otay Lakes at elevations of 400 to 3,600 feet (Bleich and Holl 1982). Resident and migratory populations are present throughout California. This species requires relatively large, undisturbed tracts of chaparral, coastal sage scrub, and mixed grassland/shrub habitats. Breeding usually occurs between November and February, with the fawning period between June and August. The diet of the southern mule deer consists of forbs, grasses, and nuts. Although the species is not threatened with extinction within its

range, urbanization and habitat fragmentation could result in local extirpation without appropriate conservation measures.

The project site is located at the western end of a large swath of suitable habitat. Frequent human disturbance may reduce habitat value, but this species has a moderate potential to occasionally use the project site for foraging.

3.3.4.3 Sensitive Wildlife Species with Low Potential to Occur

Additional sensitive wildlife species that have a low potential or are not expected to occur within the project parcels are addressed in Attachment 4. One of these species, the federally endangered Quino checkerspot butterfly, is also addressed below to summarize focused surveys that were conducted for the species.

a. Quino Checkerspot Butterfly

Quino checkerspot butterfly is federally listed as endangered (USFWS 1997c). The Quino checkerspot butterfly's historic range includes the coastal plain and inland valleys of southern California from the Santa Monica Mountains south to northern Baja California, Mexico. Currently, the species is known from southern San Diego County and southwestern Riverside County. Quino checkerspot butterflies occur at several locations from Otay Mesa and Jacumba in southern San Diego County to Oak Grove on the northeast slopes of Cleveland National Forest, as well as near Murrieta and Temecula and eastward to Hemet and Anza in Riverside County (Faulkner and Klein 2012; USFWS 1997c). The distribution of Quino checkerspot butterflies is primarily defined by the distribution of its principal larval host plant, dot-seed plantain (*Plantago erecta*). However, female Quino checkerspot butterflies have also been observed depositing eggs on woolly plantain (*P. patagonica*), white snapdragon (*Antirrhinum coulterianum*), thread-leaved bird's beak (*Cordylanthus rigidus*), purple owl's clover (*Castilleja exserta*), and Chinese houses (*Collinsia heterophylla*) (Faulkner and Klein 2012, USFWS 2009a). Food sources for this butterfly vary from low-growing annuals including popcorn flowers (*Plagiobothrys* and *Cryptantha* sp.), lomatium (*Lomatium* sp.), goldenstar (*Bloomeria* sp.), yarrow (*Achillea millefolium*), fiddleneck (*Amsinckia* sp.), goldfields (*Lasthenia* sp.), gilia (*Gilia* sp.), and onion (*Allium* sp.) to perennial shrubs such as California buckwheat and sugar bush (*Rhus ovata*). The adult flight period typically occurs between March and May, although adults have been known to emerge as early as January and as late as April, depending on elevation, winter rains, and temperatures (Faulkner and Klein 2012). The primary threats to this species include habitat loss and habitat type conversion, resulting from urban and agricultural development. Non-native plant invasion, off-road-vehicle use, nitrogen deposition from internal combustion engines, grazing and fire management practices, and introduced exotic invertebrates (i.e., earwigs and pillbugs) also threaten this species.

As discussed in the Quino checkerspot butterfly survey report (RECON 2017c), suitable habitat for Quino checkerspot butterfly was mapped within the project parcels. However, no Quino checkerspot butterflies were observed within the project parcels during the 2017 presence/absence surveys. Although not currently occupying the site, this species has a low potential to occur within the project parcels in the future due to the presence of suitable habitat. One larval host plant species, dot-seed plantain, was observed in patches ranging

in size from approximately 50 to over 1,000 individuals throughout the project parcels and surrounding 100-foot buffer. Most of these patches were located within maritime succulent scrub on the hills in the central and eastern portion of the survey area; however, three small patches were found in disturbed Diegan coastal sage scrub in the western portion of the survey area. Generally, the dot-seed plantain was found in openings in scrub habitats, in areas with moderate native wildflower cover. Despite the many signs of disturbance, the survey area supports a substantial number of potential nectar sources, including known nectar sources such as *Allium*, *Amsinckia*, *Cryptantha*, *Dichelostemma*, *Eriogonum*, *Lasthenia*, *Linanthus*, and *Plagiobothrys* species.






3.3.5 Wildlife Movement Corridors

The project parcels occur at the western edge of a large expanse of undeveloped land on Otay Mesa. Therefore, the project parcels provide for local movement of terrestrial wildlife among stands of habitat to the north, east, and south. However, with urban residential development, commercial development, Interstate 805, and Interstate 5 interrupting any direct connection to the Tijuana River valley to the west, the project parcels do not function as a true wildlife movement corridor. The project parcels contribute to stepping-stone connections for avian and other winged species, as is evident by observations of migratory bird species such as least Bell's vireo and yellow warbler along Moody Canyon, and contributes to available habitat for terrestrial animals. However, the project parcels do not serve as a regional connection for large terrestrial wildlife.

3.3.6 Jurisdictional Wetlands and Waters

As discussed in the jurisdictional waters/wetland delineation report (RECON 2017g), jurisdictional wetlands and waters within the project parcels and surrounding 100-foot buffer are restricted to Moody Canyon and the small depression near the western edge of the project parcels. As shown in Table 4 below and on Figure 8a, a total of 0.07 acre of non-wetland waters of the U.S. was delineated within Moody Canyon. The CDFW jurisdictional area consists of 0.07 acre of streambed and 0.36 acre of riparian habitat, totaling 0.43 acre, within Moody Canyon (Figure 8b). RWQCB jurisdiction totals 0.09 acre including 0.07 acre of unvegetated streambed in Moody Canyon and 0.02 acre of isolated wetland within the small depression (see Figure 8b). The City wetlands include 0.36 acre of vegetated riparian habitat within Moody Canyon (Figure 8c).



-  Project Parcels Boundary
-  Project Impact Area
-  100-foot Survey Buffer
-  ACOE Non-wetland Waters of the U.S. (0.07 ac, 954 ft)
-  Sample Point

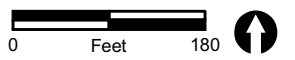









FIGURE 8a
Jurisdictional Waters -
ACOE Waters of the U.S.



-  Project Parcels Boundary
-  Project Impact Area
-  100-foot Survey Buffer
-  CDFW Riparian Only (0.36 ac)
-  CDFW and RWQCB Streambed (0.07 ac)
-  RWQCB Isolated Waters (0.02 ac)
-  Sample Point

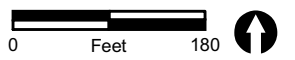


FIGURE 8b
Jurisdictional Waters - CDFW and
RWQCB Waters of the State



- Project Parcels Boundary
- Project Impact Area
- 100-foot Survey Buffer
- City of San Diego Wetland (0.36 ac)
- Sample Point
- 100-foot Wetlands Avoidance Buffer

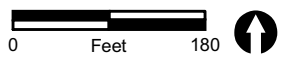


FIGURE 8c
Jurisdictional Waters -
City of San Diego Wetlands

Table 4 Existing Jurisdictional Areas within the Project Parcels and Surrounding 100-foot Buffer	
Jurisdictional Areas	Total (acres)
ACOE Jurisdictional Areas	
Non-wetland Waters of the U.S.	0.07
ACOE Total Jurisdiction (404)	0.07
CDFW	
Streambed	0.07
Riparian Habitat ²	0.36
CDFW Total Jurisdictional Areas (1602)¹	0.43
RWQCB	
Streambed	0.07
State Wetlands (Isolated)	0.02
RWQCB Total Jurisdictional Areas (401)¹	0.09
City of San Diego Wetlands	0.36
¹ CDFW/RWQCB area of jurisdiction includes all ACOE jurisdictional waters.	
² Streambed area not included in the riparian habitat, so that no area is counted twice for the same jurisdiction.	

In accordance with the City Biology Guidelines (2012), seasonally flooded depressions that are human-made and lack any vernal pool indicator plant species are typically not considered vernal pools by the City. However, these depressions may contain wildlife, such as San Diego fairy shrimp, associated with vernal pools, and the proximity of source populations can allow very ephemeral features such as road ruts to have this indicator in wet years. The small depression mentioned above in the western portion of the project parcels was shown to support San Diego fairy shrimp, but no vernal pool indicator plant species were observed. The vegetation was considered problematic due to recent years of drought, was dominated by facultative species, and would at best be considered marginally hydrophytic. The remaining 16 depressions that ponded during the 2016-2017 wet season generally lacked vegetation of any kind and did not contain wildlife associated with vernal pools. In addition, no natural vernal pool complexes were observed within the project parcels. Therefore, these depressions are not considered vernal pools in accordance with the City’s Biology Guidelines (2012).

4.0 MSCP Consistency Analysis

This section discusses project consistency with Sections 1.2.1, 1.4.2, and 1.4.3 of the City’s MSCP Subarea Plan (City of San Diego 1997).

4.1 Southern Area Multi-Habitat Planning Area Guidelines

MHPA guidelines for the Southern Area (i.e., Otay Mesa and Otay River Valley) of the City’s MSCP Subarea Plan Boundary are provided in Section 1.2.1 of the City’s MSCP

Subarea Plan. Each guideline that is relevant to the location and type of project being proposed is listed below, followed by an analysis of the project's consistency with that guideline.

- 1. Maintain and/or provide trail access for Border Patrol use around the rim of canyons, where feasible. Motorized off-road vehicle use in the MHPA should be prohibited except by Border Patrol, MHPA (Preserve) managers, or emergency vehicles.**

The project proposes no change in the footprint of the main existing trails that fall within the MHPA on the project parcels, with the exception of the closure of a few smaller trails within the habitat restoration area, and introduces no new access points for off-road vehicle use in the MHPA. Therefore, the project is consistent with this guideline.

4.2 General Planning Policies and Design Guidelines

General planning policies and design guidelines for projects within or adjacent to the MHPA are provided in Section 1.4.2 of the City's MSCP Subarea Plan. Each guideline that is relevant to the location and type of project being proposed is listed below, followed by an analysis of the project's consistency with that guideline.

4.2.1 Fencing, Lighting, and Signage

- 1. Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent land uses compatible with the MHPA. For example, use... natural rocks/boulders or split rail fencing to direct public access to appropriate locations, and chain link to provide added protection of certain sensitive species or habitats (e.g., vernal pools).**

The majority of the project boundary will be delineated with three-foot-high lodge-pole fencing. Select areas adjacent to the MHPA will have higher or reinforced fencing to deter access into the MHPA. The skate park, which is the closest park component to the MHPA, will have a five-foot-high chain-link fence. The maintenance road south of the off-site wetland will have a 3.5-foot-tall lodge-pole fence with chain-link mesh. Educational signage will be installed along the edges of the park to emphasize the importance of using established trails. It is anticipated that trespass into the MHPA for off-leash dog use may be an issue with the increased use of the area as a park; therefore, a dog park has been included in the park design to discourage trespass into the MHPA. In addition, the park design also includes trails within the park which will feature education signage about the adjacent sensitive resources to deter trespass.

2. Lighting shall be designed to avoid intrusion into the MHPA and effects on wildlife.

Lighting adjacent to the MHPA will be directed away/shielded from the MHPA and be subject to City Outdoor Lighting Regulations per LDC Section 142.0740. As no lighting will be installed for the skate park, the closest lighting source to the MHPA will be at the sports field. The lighting design for the sports field is designed to only light the field and will be shielded to prevent overspill. In addition, the sports field is more than 600 feet from the MHPA boundary with a 40-foot elevation change, which will facilitate dissipation and reduction of light overspill. A lighting study will be prepared during the construction plan phase to ensure that lighting will not have significant adverse effects on sensitive resources within the MHPA.

3. Signage will be limited to access and litter control and educational purposes.

The project signage will be limited to access, litter control, and educational purposes. The following signs are examples of the types of signage that are included in the project:

- Information signs where on-site trails connect with approved existing off-site trails.
- Information signs prohibiting trespass into habitat restoration areas.
- Educational signage along the edges of the park to emphasize the importance of using established trails for maintaining sensitive resources.
- Educational signage about the adjacent sensitive resources.

4.2.2 Materials Storage

1. Prohibit storage of materials (e.g. hazardous or toxic, chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any area that may impact the MHPA, especially do to potential leakage.

Within the project impact area (i.e., park boundary), the project would incorporate measures to reduce impacts caused by the application and/or drainage of chemicals or project generated by-products such as pesticides, herbicides, and other substances that are potentially toxic or could impact native habitats/flora/fauna (including water) into the MHPA. BMPs will be implemented during construction to prevent construction-related toxins (i.e., vehicle fluids, concrete wash water) from leaving the immediate project impact area. While pesticides and herbicides may be used within the park boundary, the irrigation systems associated with landscaped areas and turf fields will be designed to be low volume, to be temporary when possible, and to prevent runoff. Any incidental irrigation runoff or storm water runoff would be detained and treated on-site via storm water treatment basins before being released outside the park boundary. No storm water treatment basins outfall upstream of or directly into the MHPA and will be directed away from the vernal depression as directed in the VPHCP.

4.3 Multi-Habitat Planning Area Land Use Adjacency Guidelines

Projects that impact or potentially impact land within the MHPA are required to address Land Use Adjacency Guidelines (LUAG) as described in Section 1.4.3 of the City MSCP Subarea Plan (City of San Diego 1997). These Land Use Adjacency Guidelines are designed to minimize direct and indirect impacts within the MHPA associated with drainage, toxics, lighting, noise, barriers, invasive, brush management, and grading/land development. Each guideline is summarized below, along with a discussion of the project's conformance with each guideline, corresponding project design features, and whether additional measures are required to ensure conformance.

4.3.1 Drainage

All new and proposed parking lots and developed areas in and adjacent to the preserve must not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystem processes within the MHPA.

The project has been designed in conformance with this guideline. BMPs will be implemented during construction to prevent off-site runoff or sedimentation. The irrigation systems will be designed to be low volume, to be temporary when possible (i.e., within revegetation areas), and to prevent runoff. All runoff would be detained and treated on-site via storm water treatment basins with energy dissipaters before being released outside the park boundary. No storm water treatment basins outfall upstream of or directly into the MHPA.

4.3.2 Toxics

Land uses, such as recreation, urban landscaping, and agriculture, that use chemicals or generate by-products, such as manure, that are potentially toxic or impactful to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by application or drainage of such materials into the MHPA.

Within the project impact area (i.e., park boundary), the project would incorporate measures to reduce impacts caused by the application and/or drainage of chemicals or project-generated by-products such as pesticides, herbicides, and other substances that are potentially toxic or could impact native habitats/flora/fauna (including water) into the MHPA. BMPs will be implemented during construction to prevent construction-related toxins (i.e., vehicle fluids, concrete wash water) from leaving the immediate project impact area. While pesticides and herbicides may be used within the park boundary, the irrigation systems associated with landscaped areas and turf fields will be designed to be low volume, to be temporary when possible, and to prevent runoff. Any incidental irrigation runoff or storm water runoff would be detained and treated on-site through biofiltration via storm water treatment basins before being released outside the park boundary. No storm water treatment basins outfall upstream of or directly into the MHPA. Pet waste collection

dispensers and trash cans have been incorporated into the park design to deter accumulation of pet waste.

4.3.3 Lighting

Lighting of all developed areas within and adjacent to the MHPA should be directed away from the MHPA. Where necessary, development should provide adequate shielding with non-invasive plant materials (preferably native), berming, and/or other methods to protect the MHPA and sensitive species from night lighting.

The project has been designed in conformance with this guideline. No night-time lighting is proposed during construction, and night-time lighting for park operations would be shielded and/or directed to avoid or minimize spillage into adjacent habitat areas. The proposed topography of the park, the existing topography of the undeveloped project parcels, and the proposed landscaping, will provide additional shielding between the areas anticipated to have the brightest and tallest lighting fixtures (i.e., the turf fields) and the MHPA. No lighting is proposed in the skate park, which is the closest active use area to the MHPA within the park boundary. A light study will be prepared during the construction plan phase to ensure light overspill is minimized.

4.3.4 Noise

Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and other uses that may introduce noises that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.

A noise study was conducted to ensure park operations would not result in excessive noise entering the MHPA (GEPermit 2019). The noise study was based on the worst-case scenario modeled 60 A-weighted decibels dB(A) one-hour equivalent noise level (L_{eq}) noise contour. A receiver placed at the edge of the MHPA east of the skate park, was modelled at 59.8 dB(A), thus the noise study determined that park operations noise would not exceed 60 dB(A) within the MHPA.

Based on the noise modelled provided by GEPermit (2019), RECON modeled the worst-case-scenario 60 dB(A) L_{eq} noise contours for park construction, which shows the 60 dB(A) L_{eq} noise contour extending into the MHPA. The potential impact from construction noise to sensitive species within the MHPA is discussed in Section 5.3 and recommended measures for reducing the level of this impact are discussed in Section 6.0.

4.3.5 Barriers

New development within or adjacent to the MHPA may be required to provide barriers (e.g., non-invasive vegetation, rocks/boulders, fences, walls, and/or signage) along the MHPA boundaries to direct public access to appropriate locations and reduce domestic animal predation. Access to the MHPA, if any, should be directed to minimize impacts and reduce impacts associated with domestic pet predation.

The majority of the project boundary will be delineated by the installation of three-foot-high lodge-pole fencing. In select areas that are adjacent to sensitive resources, taller and more reinforced fencing will be installed. A five-foot-high chain-link fence will be installed at the skate park, which is the park feature closest to the MHPA. A 3.5-foot-tall lodge-pole fence with chain-link mesh will be installed along the 12-foot-wide maintenance road that is located south of the off-site wetland. Trespass into the MHPA will be deterred by the use of signage to direct the public to the authorized trails, prohibit access into habitat restoration areas, and educate the public about adjacent sensitive resources. An on-site dog park has been included to encourage the public to utilize this park asset instead of trespass into the MHPA, which is anticipated to minimize impacts associated with domestic pet predation.

4.3.6 Invasive Plants

No invasive plant species shall be introduced into areas adjacent to the MHPA.

The project has been designed in conformance with this guideline. The planting palette for project landscaping on the perimeter slopes will not include any invasive plant species that are identified on the California Invasive Plant Council (Cal-IPC) Invasive Plant Inventory Database (Cal-IPC 2018) or in Section 1.3 of the City's Landscape Standards (City of San Diego 2009). The turf fields include two species—Bermuda grass (*Cynodon dactylon*) and rye (*Lolium* sp.)—that are listed as posing a “moderate” threat to California's natural areas by Cal-IPC. However, the location of these species is buffered from the MHPA by accent plantings and slopes/perimeter landscapes, which comprise mostly native species and native cultivars and lack invasive species, as well as the natural undeveloped slopes that occur east of the park boundary.

4.3.7 Brush Management

New development located adjacent to the MHPA must be set back to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA. Zone 2 may be located in the MHPA except where narrow wildlife corridors require it to be located outside the MHPA. Vegetation clearing shall be done consistent with City standards and shall avoid/minimize impacts to covered species to the maximum extent possible.

This guideline does not apply to the project, as no habitable structures are proposed.

4.3.8 Grading/Land Development

Manufactured slopes associated with site development shall be included with the development footprint for projects within or adjacent to the MHPA.

The project has been designed in conformance with this guideline. All grading and manufactured slopes are included in the project impact area and are, therefore, included in the impacts assessment in this report.

5.0 Project Impact Analysis

The project proposes direct impacts to 16.73 acres within the project parcels and 0.43 acre just outside the project parcels along Enright Drive and Delany Drive as a result of park construction. Indirect impacts may also occur as a result of park construction and operations. The following sections analyze the direct, indirect, and cumulative impacts to sensitive biological resources that may result from this project.

5.1 Impacts to Sensitive Vegetation Communities

The project has potential to impact five sensitive vegetation communities and occupied burrowing owl habitat occurring within the project parcels. These potential direct, indirect, and cumulative impacts are discussed in this section.

5.1.1 Direct Impacts to Sensitive Vegetation Communities

5.1.1.1 Direct Impacts to Tier I and Tier II Communities

The proposed project would result in direct impacts to 11.47 acres of sensitive vegetation communities, comprising 0.91 acre of maritime succulent scrub (Tier I), 4.86 acres of disturbed maritime succulent scrub (Tier I), 1.41 acres of Diegan coastal sage scrub (Tier II), and 4.29 acres of disturbed Diegan coastal sage scrub (Tier II) (Table 5; see Figure 7a).

Impacts to Tier I and Tier II communities would be considered significant and require mitigation. Impacts to disturbed land, ornamental plantings, and urban/developed land are not considered significant and would not require mitigation.

Table 5
Direct Project Impacts to Vegetation Communities/Land Cover Types

Community or Type (Holland Code as modified by Oberbauer)	City of San Diego Tier	Direct Impacts in Acres Outside MHPA
Mule fat scrub (63310)	N/A - wetland	–
Maritime succulent scrub (32400)	I	0.91
Disturbed maritime succulent scrub (32400)	I	4.86
Diegan coastal sage scrub (32510)	II	1.41
Disturbed Diegan coastal sage scrub (32510)	II	4.29
Disturbed land (11300)	IV	5.05
Ornamental plantings (11000)	IV	–
Urban/developed land (12000)	N/A	0.64
Total Direct Project Impact		17.16
N/A = not applicable		

5.1.1.2 Direct Impacts to Occupied Burrowing Owl Habitat

Occupied burrowing owl habitat is also considered a sensitive biological resource under ESL as it “supports plant or animal species which have been listed or proposed for listing by the federal or state government as rare, endangered, or threatened (“listed species”)” according to the City’s Biology Guidelines. A total of 13.55 acres of occupied habitat will be directly impacted by the project and will require mitigation.

5.1.2 Indirect Impacts to Sensitive Vegetation Communities

Park operation may also result in indirect impacts to the Tier I and Tier II communities listed above through existing trail access. Measures outlined for compliance with the MHPA LUAG (see Section 4.3) will minimize and/or avoid impacts; therefore, impacts would be less than significant.

5.1.3 Cumulative Impacts to Sensitive Vegetation Communities

The MSCP was designed to compensate for the regional loss of biological resources throughout the region. Projects that conform with the MSCP as specified by the Subarea Plan, and implementing ordinances, (i.e. Biology Guidelines and ESL Regulations) are not expected to result in a significant cumulative impact to vegetation communities identified as Tier I through IV. Therefore, with implementation of habitat-based mitigation required by the City Biology Guidelines (2012), no cumulative impacts to Tier I or II vegetation communities are anticipated to occur.

Impacts to occupied burrowing owl habitat are anticipated in the MSCP Subarea Plan, which specifies habitat preservation and in some cases habitat enhancement to ensure that there is no significant cumulative impact. Therefore, with implementation of mitigation

measures required by the MSCP Subarea Plan, no cumulative impacts to occupied burrowing owl habitat are anticipated to occur.

5.2 Impacts to Sensitive Plant Species

The project has potential to impact to 13 sensitive plant species occurring within the project parcels. These potential direct, indirect, and cumulative impacts are discussed for each species in this section.

5.2.1 Direct Impacts to Sensitive Plant Species

The project would result in direct impacts to eight sensitive plant species. No federally listed, state listed, or narrow endemic plant species would be directly impacted. The direct project impact area includes the full project construction footprint and areas proposed for hardscape, trails, turf, and planted areas (including native and ornamental vegetation).

The estimated total number of impacted plants for each species is provided in Table 6. Where observed population size was estimated using area and density (in place of exact point counts), the number of impacted individuals was estimated by calculating the percent of the polygon (i.e. area) impacted and multiplying that percentage by the total number of individuals represented by that polygon. The project impact area in relation to the sensitive plant species locations is shown on Figure 7b. Impacts to each species are discussed further below.

Scientific Name	Common Name	Sensitivity Listing(s)	Sensitive Plant Species Individuals		
			Directly Impacted by Project	Observed in Project Parcels	Percent of Population Impacted*
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	2B.1	3,940	16,500	24%
<i>Atriplex pacifica</i>	south coast saltscale	1B.2	102	153	67%
<i>Bahiopsis laciniata</i>	San Diego County viguiera	4.3	84	600	14%
<i>Cistanthe maritima</i>	seaside cistanthe	4.2	–	78	–
<i>Cylindropuntia californica</i> var. <i>californica</i>	snake cholla	1B.1, NE, MSCP	–	8	–
<i>Deinandra conjugens</i>	Otay tarplant	FT, CE, 1B.1, NE, MSCP	–	2,700	–
<i>Euphorbia misera</i>	cliff spurge	2B.2	–	129	–
<i>Ferocactus viridescens</i>	San Diego barrel cactus	2B.1, MSCP	6	9	67%
<i>Harpagonella palmeri</i>	Palmer’s grapplinghook	4.2	12	12	100%
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	beach goldenaster	1B.1	25	25	100%
<i>Lycium californicum</i>	California box-thorn	4.2	4	23	17%
<i>Microseris douglasii</i> var. <i>platycarpa</i>	small-flowered microseris	4.2	20	20	100%
<i>Selaginella cinerascens</i>	ashy spike-moss	4.1	–	30 square feet	–

Note: See Table 3 for Status Codes, California Rare Plant Ranks, and Threat Ranks definitions.
 * Percent of population = number directly impacted divided by number within project parcels

5.2.1.1 Direct Impacts to MSCP Covered Plant Species

One MSCP covered plant species, San Diego barrel cactus, would be directly impacted by the proposed project. The other two MSCP covered plant species, Otay tarplant and snake cholla, that were observed within the project parcels occur outside the project impact area and are not anticipated to be directly impacted by the project.

a. Direct Impacts to San Diego Barrel Cactus

Approximately 67 percent (six of nine individuals) of the population of San Diego barrel cactus mapped within the project parcels would be directly impacted by the proposed project. This percentage of the population impacted likely represents a maximum, as the lack of 100 percent visual coverage during focused surveys may have prevented detection of additional individuals in suitable habitat areas within the project parcels and outside the project footprint. The nine individual San Diego barrel cacti mapped within the project parcels are a small subset of the larger population of this species that remains extant in Otay Mesa. While the population of this species in Otay Mesa has been declining over the years (Reiser 2001; CDFW 2017a), impacts to the relatively small on-site population is not expected to threaten the regional long-term survival of this species. In addition, salvage of San Diego barrel cactus individuals within the project footprint is recommended as part of the on-site restoration efforts. Therefore, the proposed impacts would be considered less than significant and require no mitigation.

5.2.1.2 Direct Impacts to Sensitive Non-Covered Plant Species

The following seven sensitive species not covered by the MSCP or VPHCP and would be directly impacted by the proposed project:

- beach goldenaster,
- south coast saltscale,
- San Diego bur-sage,
- Palmer's grapplinghook,
- California box-thorn,
- small-flowered microseris, and
- San Diego County viguiera.

The remaining species, cliff spurge, ashy spike-moss, and seaside cistanthe, that were observed within the project parcels but outside the project impact area are not anticipated to be directly impacted by the project.

a. Direct Impacts to Beach Goldenaster

One hundred percent of the 25 beach goldenaster individuals mapped within the project parcels would be directly impacted by the project. CNPS identifies beach goldenaster as rare, threatened, or endangered in California and elsewhere; eligible for state listing; and seriously threatened in California. A few occurrences of this species have been reported

along the Tijuana River Valley west of Interstate 805 (CDFW 2017a, SDNHM 2018, Consortium of California Herbaria 2018). However, no other populations of beach goldenaster have been reported east of Interstate 805 on Otay Mesa (CDFW 2017a; SDNHM 2018). This species' known range is limited to coastal habitat in southern California, and Reiser (2001) recommends protection of all San Diego County populations due to its nearly being extirpated in this county. As the proposed project would remove an apparently isolated population of a species that has a limited range and appears to be in substantial decline, the impact would potentially threaten the local and regional long-term survival of the species and, therefore, be considered significant and require mitigation.

b. Direct Impacts to South Coast Saltscale

Approximately 67 percent of the 153 south coast saltscale individuals mapped within the project parcels would be directly impacted by the project. CNPS identifies south coast saltscale as rare, threatened, or endangered in California and elsewhere; eligible for state listing; and moderately threatened in California. Two other presumed extant populations of this species have been reported to CNDDDB within one mile of the project parcels on Otay Mesa, with one occurrence on an adjacent County of San Diego preserve. The proposed project would not impact the entire population within the project parcels, and the species is known from multiple locations in Otay Mesa. Therefore, the project impacts are not likely to threaten the regional long-term survival of this species, would be considered less than significant, and would require no mitigation.

c. Direct Impacts to San Diego Bur-sage

Approximately 24 percent of the estimated 16,500 San Diego bur-sage individuals mapped within the project parcels would be directly impacted by the project. CNPS identifies this species as rare, threatened, or endangered in California but more common elsewhere; eligible for state listing; and seriously threatened in California. Multiple presumed extant San Diego bur-sage populations have been reported to CNDDDB within one mile of the project parcels on Otay Mesa, where it is often reported in large numbers or as "common" (CDFW 2017a; SDNHM 2018). San Diego bur-sage is also a common species within the project parcels. Therefore, the impact to an approximate quarter of the population within the project impacts is not likely to threaten the regional long-term survival of this species, would be considered less than significant, and would require no mitigation.

d. Direct Impacts to Palmer's Grapplinghook, California Box-thorn, and Small-flowered Microseris

One hundred percent of the Palmer's grapplinghook population, 17 percent of the 23 California box-thorn individuals, and 100 percent of the small-flowered microseris population within the project parcels would be directly impacted by the project. CNPS identifies these species as watch-list species of limited distribution that are moderately threatened in California. No other populations of Palmer's grapplinghook have been reported to SDNHM within one mile of the project parcels in Otay Mesa, but this species is known to occur on eastern and upper Otay Mesa and is generally widespread throughout

coastal and cismontane San Diego County (SDNHM 2018, Reiser 2001). California box-thorn is listed as present alongside multiple sensitive species occurrences in the CNDDDB records within one mile of the project parcels in Otay Mesa. No other populations of small-flowered microseris have been reported to SDNHM within one mile of the project parcels in Otay Mesa, but this species has been reported on Otay Mesa and has a somewhat widespread distribution throughout coastal and cismontane San Diego County (SDNHM 2018, Reiser 2001). The impacts to Palmer's grapplinghook, California box-thorn, and small-flowered microseris are not expected to threaten the regional long-term survival of these species. Therefore, the proposed impacts would be less than significant and require no mitigation.

e. Direct Impacts to San Diego County *Viguiera*

Approximately 14 percent of the estimated 600 San Diego County *viguiera* individuals mapped within the project parcels would be directly impacted by the project. CNPS considers this species to be a watch-list species of limited distribution that is not very threatened in California. Multiple occurrences of this species have been reported on western Otay Mesa, and it occurs as a somewhat common species within the project parcels (SDNHM 2018). This species is still found at hundreds of locations throughout San Diego County (Reiser 2001, SDNHM 2018). As this species remains a wide-ranging species in San Diego County and often occurs as a common and abundant species where found, the proposed impacts are not anticipated to threaten the regional long-term survival of the species. Therefore, project impacts would be considered less than significant and require no mitigation.

5.2.2 Indirect Impacts to Sensitive Plant Species

Potential indirect impacts to the 13 sensitive plant species that occur within the project parcels are discussed in this section.

5.2.2.1 Indirect Impacts to MSCP Covered Plant Species

Project construction is not anticipated to result in a significant indirect impact to the MSCP covered plant species, Otay tarplant, snake cholla, and San Diego barrel cactus, which occur outside the project impact area within the project parcels.

Within the project site, adherence to construction BMPs (e.g., dust control, use of erosion control devices) is anticipated to prevent indirect impacts from generation and deposition of dust during construction activities. Park operation may result in indirect impacts to the three MSCP covered plant species listed above. By increasing visitation to the project site via creation of a community park and providing a formalized connection to existing, unauthorized trails outside the park boundary, the project has potential to result in an increase in pedestrian activity on and adjacent to existing paths, thereby increasing the potential for trampling and/or collection of the species and soil compaction where the species occur. However, project design components included to comply with MHPA LUAG will minimize and/or prevent indirect impacts from off-trail trespass, including fencing and

signage protecting habitat restoration and sensitive resource/open space areas and directing foot traffic to authorized trails. Therefore, indirect impacts to MSCP covered plant species would be considered less than significant and would not require mitigation.

5.2.2.2 Indirect Impacts to Sensitive Non-Covered Plant Species

Project construction is not anticipated to result in a significant indirect impact to the following seven sensitive plant species that are not covered by the MSCP or VPHCP and occur within the project parcels, outside the project impact area:

- San Diego bur-sage,
- south coast saltscale,
- San Diego County viguiera,
- seaside cistanthe,
- cliff spurge,
- California box-thorn, and
- ashy spike-moss.

Within the project site, adherence to BMPs (e.g., dust control, use of erosion control devices) is anticipated to prevent indirect impacts from generation and deposition of dust during construction activities.

Park operation may result in indirect impacts to the seven non-covered plant species listed above. By increasing visitation to the project site via creation of a community park and providing a formalized connection to existing, unauthorized trails outside the park boundary, the project has potential to result in an increase in pedestrian activity on and adjacent to existing paths, thereby increasing the potential for trampling and/or collection of the species and soil compaction where the species occur. However, project design components included to comply with MHPA LUAG will minimize and/or prevent indirect impacts from off-trail trespass, including fencing and signage protecting habitat restoration and sensitive resource/open space areas and directing foot traffic to authorized trails. Therefore, indirect impacts to non-covered plant species would be considered less than significant and would not require mitigation.

5.2.3 Cumulative Impacts to Sensitive Plant Species

The project's conformance with the MSCP is expected to prevent any cumulative impacts to MSCP covered plant species, which include San Diego barrel cactus, snake cholla, and Otay tarplant.

Adherence to the MSCP does not directly address cumulative impacts to non-MSCP covered species. However, as discussed above, the anticipated direct and indirect impacts to most of the sensitive species observed on site are less than significant and not expected to threaten survival of the local or regional populations. Therefore, no significant cumulative impact is anticipated to the following species: San Diego bur-sage, south coast saltscale, San Diego

County viguiera, seaside cistanthe, cliff spurge, Palmer's grapplinghook, California box-thorn, small-flowered microseris, and ashy spike-moss.

As significant direct impacts are anticipated to occur to beach goldenaster, the impacts would also contribute to a cumulatively significant impact to this species. Mitigation would be required to reduce the impact to a level of less than significant.

5.3 Impacts to Sensitive Wildlife Species

The project has potential to impact to 17 sensitive wildlife species occurring within the project parcels. These potential direct, indirect, and cumulative impacts are discussed for each species in this section.

5.3.1 Direct Impacts to Sensitive Wildlife Species

Potential direct impacts to sensitive wildlife species that occur or have a moderate to high potential to occur within the project impact area are discussed in this section. Direct impacts would result from incidental mortality and habitat removal within the project construction footprint, including areas proposed for hardscape, trails, turf, and planted areas (including native and non-native vegetation). The project impact area in relation to the observed sensitive wildlife species locations is shown on Figure 7c.

5.3.1.1 Direct Impacts to MSCP Covered Wildlife Species

The following MSCP covered wildlife species would potentially be directly impacted by the proposed project:

- Belding's orange-throated whiptail,
- Northern harrier,
- Western burrowing owl,
- Coastal cactus wren,
- Coastal California gnatcatcher,
- Southern California rufous-crowned sparrow, and
- Southern mule deer.

Each species is discussed in detail below. No direct impacts are anticipated to occur to Cooper's hawk or least Bell's vireo, as no removal of suitable habitat for these species is proposed as part of the project, and no suitable nesting habitat for Cooper's hawk occurs within the MHPA within 300 feet of the project site.

a. Direct Impacts to Belding's Orange-throated Whiptail

Belding's orange-throated whiptail was recorded within and adjacent to the project impact area. Therefore, the project has potential to result in direct impacts to this species through incidental mortality during construction activities (e.g., vehicle strike) and removal of approximately 11 acres of suitable habitat for this species. However, the suitable habitat

within the project impact area comprises a small fraction of the habitat available to this species both at a local level (on Otay Mesa) and on a regional scale. In addition, this species is considered adequately covered by the MSCP with habitat conserved in the MHPA. Therefore, potential direct impacts to this species would be considered less than significant, and no species-specific mitigation would be required.

b. Direct Impacts to Northern Harrier

Northern harrier was observed foraging over the project impact area and utilizing open areas at the edge of or adjacent to the project impact area. Although no nesting was observed within the project impact area during 2017 surveys, this species has potential to nest within the very southern edge of the project impact area, where seasonally dense stands of garland daisy may provide sufficient cover for a nest site. As there are no direct impacts proposed to potential nesting habitat within the MHPA and since standard avoidance and minimization measures will be implemented, there are no anticipated direct impacts to this species.

c. Direct Impacts to Western Burrowing Owl

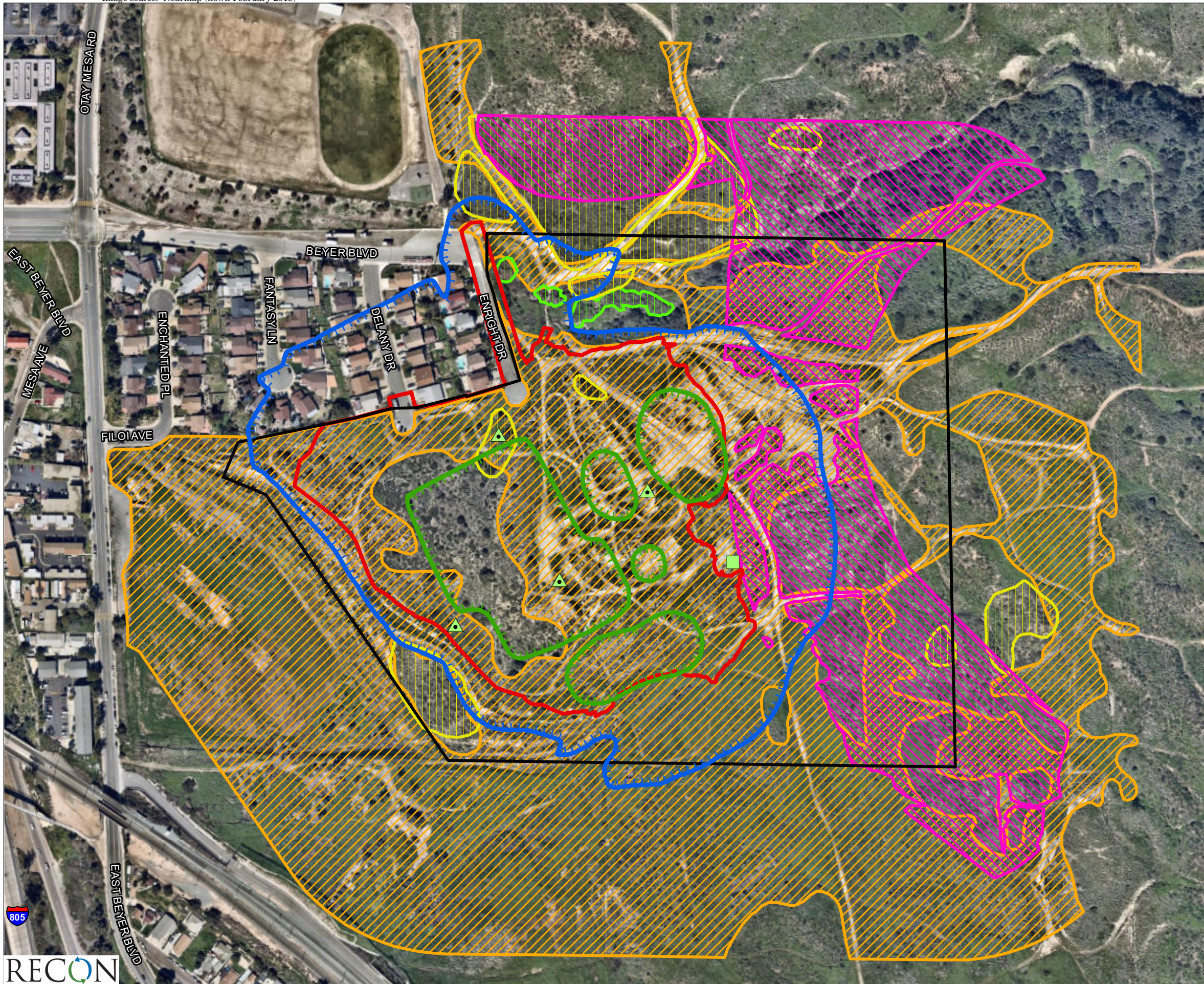
Based on 2017 breeding season surveys, suitable habitat within the project parcels and project impact area is considered occupied by western burrowing owl. An approximate total of 13.55 acres of occupied western burrowing owl habitat and at least four potentially suitable burrows would be directly impacted by the project (Figure 9). Direct removal of the one burrow documented as occupied outside the project impact area is not proposed. However, the project impact area comes within 25 to 50 feet south and west of the occupied burrow location and would result in a substantial change in topography of the site. This is expected to decrease the suitability of the burrow site for the species. These direct impacts to western burrowing owl occupied habitat, potential burrows, and occupied burrow would be considered significant and require mitigation.

d. Direct Impacts to Coastal Cactus Wren

This species was not detected on-site during the 2017 surveys. However, since this species was observed outside of the project boundary and low- and moderate-quality habitat is present this species has potential to be present on-site. Standard avoidance and minimization measures will be implemented; therefore, there are no anticipated direct impacts to this species.

e. Direct Impacts to Coastal California Gnatcatcher

The project impact area is occupied; although this species is adequately covered under the MSCP Subarea Plan and there are no restrictions to impacts to occupied habitat outside of the MHPA.



- Project Parcels Boundary
- Project Impact Area
- Western Burrowing Owl Suitable Habitat
- Suitable Burrow for Western Burrowing Owl
- Burrowing Owl with Active Burrow
- Coastal Cactus Wren Suitable Habitat
- Least Bell's Vireo Suitable Habitat
- Suitable Coastal California Gnatcatcher Habitat within MHPA
- Modeled 60 dB(A) Leq Noise Contours**
- Park Operations
- Park Construction

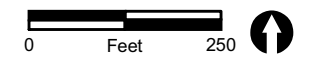


FIGURE 9
Project Location and Modeled Noise Contours in Relation to Suitable Habitat

f. Direct Impacts to Southern California Rufous-crowned Sparrow

The project impact area would directly impact suitable foraging and nesting habitat for southern California rufous-crowned sparrow; however, the most suitable habitat within the project parcels is being avoided by the project. This is a covered species under the MSCP Subarea Plan and any impacts to individuals would not be expected to reduce the population of this species regionally to a level less than self-sustaining. This would be considered less than significant and require no species-specific mitigation measures.

g. Direct Impacts to Southern Mule Deer

Based on 2017 survey results, the project impact area has potential to support southern mule deer. As individuals of this species are mobile as juveniles and adults, direct impacts to individuals during construction activities (i.e., clearing, grubbing, grading) are unlikely as biological monitoring will be occurring during construction and adherence to BMPs (e.g., covering of open trenches or holes) during construction will be required which is anticipated to avoid wildlife entrapment. In addition, the project would not limit any established habitat linkages and will result in an increase in habitat quality in the adjacent MHPA through restoration. Therefore, the impacts would be considered less than significant and require no species-specific mitigation measures.

5.3.1.2 Direct Impacts to VPHCP Covered Wildlife Species

The project has been designed to avoid direct impacts to the artificial ditch that supports San Diego fairy shrimp and the immediate surrounding watershed in the western portion of the project parcels (see Figure 7c). Therefore, no direct impacts are anticipated to occur to San Diego fairy shrimp, as no direct removal of habitat occupied by this species is proposed as part of the project.

5.3.1.3 Direct Impacts to Sensitive Non-Covered Wildlife Species

The following sensitive wildlife species not covered by the MSCP or VPHCP may be directly impacted by the proposed project:

- Baja California coachwhip,
- Prairie falcon,
- California horned lark,
- San Diego black-tailed jackrabbit,
- Northwestern San Diego pocket mouse, and
- San Diego desert woodrat.

Each species is discussed in detail below. No direct impacts are anticipated to occur to yellow warbler, as no removal of suitable habitat for this species is proposed as part of the project.

a. Direct Impacts to Baja California Coachwhip

Baja California coachwhip has potential to occur in the project impact area. Therefore, the project has potential to result in direct impacts to this species through incidental mortality during construction activities (e.g., vehicle/equipment strike) and removal of approximately 11 acres of suitable habitat. However, based on the lack of observations of this species during 2017 biological surveys, if this species is present within the project impact area, it likely occurs in low numbers. In addition, the suitable habitat within the project impact area comprises a small fraction of the habitat available to this species both at a local level (on Otay Mesa) and on a regional scale, and preservation of habitat within the eastern project parcel would help offset impacts to this species. Therefore, direct impacts to this species would be considered less than significant, and no species-specific mitigation would be required.

b. Direct Impacts to Prairie Falcon

Prairie falcon was observed flying over the project parcels but is not anticipated to nest within the project impact area. Therefore, direct impacts would result from removal of approximately 13 acres of suitable, open foraging habitat. However, the suitable habitat within the project impact area comprises a small fraction of the habitat available to this species both at a local level (on Otay Mesa) and on a regional scale, and preservation of habitat within the eastern project parcel would help offset impacts to this species. The proposed reduction in foraging habitat would be considered less than significant, and no species-specific mitigation would be required.

c. Direct Impacts to California Horned Lark

As the project impact area provides suitable nesting and foraging habitat for California horned lark, the project has potential to result in direct impacts to active nests if construction activities (i.e., clearing, grubbing, grading) occur during this species' nesting season of March 15 to July 31 (Unitt 2004). Direct impacts would also result from removal of available foraging and nesting habitat, which is largely restricted to the disturbed land and disturbed stands of native vegetation in the central portion of the project parcels. However, not all suitable habitat will be removed as part of the project. Therefore, avoidance measures would be required to prevent direct impacts to active nests, but the direct impacts to foraging habitat and suitable nesting habitat would be considered less than significant and require no species-specific mitigation measures.

d. Direct Impacts to San Diego Black-tailed Jackrabbit

Based on 2017 survey results, the project impact area is known to support San Diego black-tailed jackrabbit. As individuals of this species are mobile as juveniles and adults, direct impacts to individuals during construction activities (i.e., clearing, grubbing, grading) is unlikely. The project would reduce the acreage of available habitat for this species; however, it is not anticipated to adversely affect wildlife movement or connectivity between

adjacent expanses of suitable habitat. Therefore, the impacts would be considered less than significant and require no species-specific mitigation measures.

e. Direct Impacts to Northwestern San Diego Pocket Mouse and San Diego Desert Woodrat

Northwestern San Diego pocket mouse and San Diego desert woodrat have potential to occur in the project impact area. Therefore, the project has potential to result in direct impacts to these species through incidental mortality during construction activities including clearing, grubbing, and grading. Direct impacts would also result from removal of approximately 17 acres of suitable habitat. However, the suitable habitat within the project impact area comprises a small fraction of the habitat available to these species both at a local level (on Otay Mesa) and on a regional scale, and preservation of habitat within the eastern project parcel would help offset impacts to this species. As these are wide-ranging species in San Diego County, direct impacts to these species would be considered less than significant. No species-specific mitigation would be required.

5.3.2 Indirect Impacts to Sensitive Wildlife Species

Potential indirect impacts to the 17 sensitive wildlife species that occur or have a moderate to high potential to occur within the project parcels are discussed in this section.

5.3.2.1 Indirect Impacts to MSCP Covered Wildlife Species

The project has the potential to indirectly impact the following MSCP covered wildlife species:

- Belding's orange-throated whiptail,
- Cooper's hawk,
- Northern harrier,
- Western burrowing owl,
- Least Bell's vireo,
- Coastal cactus wren,
- Coastal California gnatcatcher,
- Southern California rufous-crowned sparrow, and
- Southern mule deer.

No night-time lighting is proposed during construction, and night-time lighting for park operations would be shielded and/or directed to avoid or minimize spillage into adjacent habitat areas, in compliance with MHPA LUAG. As the project is proposed adjacent to development, the project would result in an increase in night-time lighting in an area that is already subjected to some level of edge effects from night-time lighting. The proposed topography of the park, the existing topography of the undeveloped project parcels, and the proposed landscaping, will provide additional shielding between the sports fields and the riparian area where migratory bird species such as least Bell's vireo were observed. Therefore, potential indirect impacts to wildlife species from night-time lighting are anticipated to be less than significant.

a. Indirect Impacts to Belding's Orange-throated Whiptail and Southern Mule Deer

Indirect impacts from construction activities to Belding's orange-throated whiptail and southern mule deer are anticipated to be less than significant with adherence to proper BMPs. Adherence to the MHPA LUAG is anticipated to minimize potential edge effects related to park operation to a level of less than significant.

b. Indirect Impacts to Cooper's Hawk

No indirect noise impacts are anticipated to occur to Cooper's hawk as a result of construction activities and park operation. Within 300 feet of the project impact area, suitable nesting habitat for this species only occurs outside the MHPA within or immediately adjacent to existing developed areas and roads. In accordance with the City's Biology Guidelines (and required conditions of the Incidental Take Authorization to consider the species adequately conserved under the MSCP), a 300-foot impact avoidance area is only required for this species' nesting sites that occur inside the MHPA. Therefore, potential indirect noise impacts to nesting Cooper's hawk would require no avoidance, minimization, or mitigation measures.

c. Indirect Impacts to Northern Harrier

Indirect noise impacts to nesting northern harriers may occur if the species nests within the adjacent MHPA and construction activities are conducted during this species' nesting season of April 1 through July 31 (Unitt 2004) and active nests are identified within a 900-foot impact avoidance area inside the MHPA, in accordance with the City's Biology Guidelines (and required conditions of the Incidental Take Authorization to consider the species adequately conserved under the MSCP). Impacts to active nests within the MHPA and within the projected area that falls within the noise contour that exceeds 60 dB(A) L_{eq} could be considered significant and require mitigation.

d. Indirect Impacts to Western Burrowing Owl

Due to the proximity of the occupied western burrowing owl burrow to the project impact area, indirect noise impacts to western burrowing owl may occur if construction activities are conducted during this species' nesting season of February 1 through August 31. Construction noise modeling shows the occupied burrow location would likely be subjected to noise levels above 60 dB(A) L_{eq} (hourly noise equivalent of 60 dB(A) or less) (see Figure 9). Therefore, potential indirect construction noise impacts to western burrowing owl would require avoidance, minimization, or mitigation measures. Based on noise modeling conducted by GEPermit (2019), the occupied burrow site occurs outside the 60 dB(A) L_{eq} noise contour for park operations. Therefore, no indirect noise impacts are anticipated to occur to the occupied burrow site as a result of park operations.

e. Indirect Impacts to Least Bell's Vireo and Coastal Cactus Wren

Indirect impacts to least Bell's vireo and coastal cactus wren may occur if construction activities are conducted during these species' nesting seasons of March 15 to September 15 and February 15 to August 15, respectively. Based on noise modeling conducted by GEPermit (2019), suitable habitat for both species occurs outside the 60 dB(A) L_{eq} noise contour for park operations. Therefore, park operations would not result in indirect noise impacts to nesting least Bell's vireo or coastal cactus wren (see Figure 9). However, worst-case-scenario construction noise modeling shows that the suitable least Bell's vireo and coastal cactus wren habitats fall partially within the 60 dB(A) L_{eq} noise contour for project construction (see Figure 9). Therefore, indirect construction noise impacts to least Bell's vireo and coastal cactus wren would require avoidance, minimization, or mitigation measures.

f. Indirect Impacts to Coastal California Gnatcatcher

Indirect impacts to coastal California gnatcatcher may result from construction activities based on worst-case-scenario construction noise modeling. Indirect noise impacts to nesting coastal California gnatcatchers may occur if construction activities are conducted during this species' nesting season of March 1 to August 15. Indirect impacts to nesting coastal California gnatcatchers outside the MHPA would require no avoidance, minimization, or mitigation measures. However, indirect noise impacts to nesting coastal California gnatcatchers within the MHPA would require avoidance, minimization, or mitigation measures.

g. Indirect Impacts to Southern California Rufous-crowned Sparrow

Indirect impacts to nesting southern California rufous-crowned sparrow may occur if construction activities are conducted during this species' nesting season of March 15 to July 31 (Unitt 2004). However, the most suitable habitat within the project parcels is located in the eastern portion of the project parcels, where noise impacts from project construction and operations are anticipated to have no substantial effect. Therefore, no species-specific avoidance, minimization, or mitigation measures would be required.

5.3.2.2 Indirect Impacts to VPHCP Covered Wildlife Species

The project has been designed to avoid direct impacts to the immediate watershed of the artificial ditch that supports San Diego fairy shrimp in the western portion of the project parcels (see Figure 7c), and adherence to BMPs during construction is anticipated to avoid indirect impacts from construction-related runoff or sedimentation. The Project design is consistent with the VPHCP in that drainage from the site has been directed away from the San Diego Fairy shrimp habitat and into a storm water filtration basin. To ensure that construction-related impacts are avoided, implementation of avoidance and minimization measures in accordance with the VPHCP would be required.

5.3.2.3 Indirect Impacts to Sensitive Non-Covered Wildlife Species

The project has the potential to indirectly impact the following sensitive wildlife species not covered by the MSCP or VPHCP:

- Baja California coachwhip,
- Prairie falcon,
- California horned lark,
- Yellow warbler,
- San Diego black-tailed jackrabbit,
- northwestern San Diego pocket mouse, and
- San Diego desert woodrat.

No night-time lighting is proposed during construction, and night-time lighting for park operations would be shielded and/or directed to avoid or minimize spillage into adjacent habitat areas. As the project is proposed adjacent to development, the project would result in an increase in night-time lighting in an area that is already subjected to some level of edge effects from night-time lighting. The proposed topography of the park, the existing topography of the undeveloped project parcels, and the proposed landscaping, will provide additional shielding between the sports fields and the riparian area where migratory bird species such as yellow warbler were observed. Therefore, potential indirect impacts to wildlife species from night-time lighting are anticipated to be less than significant. Remaining potential indirect impacts are discussed by species below.

a. Indirect Impacts to Baja California Coachwhip, San Diego Black-tailed Jackrabbit, Northwestern San Diego Pocket Mouse, and San Diego Desert Woodrat

Indirect impacts from construction and operation activities to Baja California coachwhip, San Diego black-tailed jackrabbit, northwestern San Diego pocket mouse, and San Diego desert woodrat are anticipated to be less than significant with adherence to proper BMPs and compliance with MHPA LUAG.

b. Indirect Impacts to Prairie Falcon and Yellow Warbler

No indirect noise impacts are anticipated to occur to nesting prairie falcon or yellow warbler, as these species are not expected to nest within or adjacent to the project parcels. Therefore, no species-specific avoidance, minimization, or mitigation would be required.

c. Indirect Impacts to California Horned Lark

Indirect noise impacts to California horned lark may occur if the species nests adjacent to the project parcels during construction; however, these impacts are not expected to have a substantial effect. This would be a less than significant impact and no species-specific avoidance, minimization, or mitigation measures would be required.

5.3.3 Cumulative Impacts to Sensitive Wildlife Species

5.3.3.1 Cumulative Impacts to MSCP and VPHCP Covered Wildlife Species

The project's conformance with the MHPA LUAG, MSCP, and VPHCP is expected to prevent any cumulative impacts to MSCP and VPHCP covered wildlife species, which include San Diego fairy shrimp, Belding's orange-throated whiptail, Cooper's hawk, northern harrier, western burrowing owl, least Bell's vireo, coastal cactus wren, coastal California gnatcatcher, southern California rufous-crowned sparrow, and southern mule deer.

5.3.3.2 Cumulative Impacts to Sensitive Non-Covered Wildlife Species

Adherence to the MSCP does not directly address cumulative impacts to non-MSCP covered species. However, as discussed above, the anticipated direct and indirect impacts to the sensitive wildlife species observed on-site are less than significant and not expected to threaten survival of the local or regional populations. Therefore, no significant cumulative impact is anticipated to the following species: Baja California coachwhip, prairie falcon, California horned lark, yellow warbler, San Diego black-tailed jackrabbit, northwestern San Diego pocket mouse, and San Diego desert woodrat.

5.4 Impacts to Wildlife Corridors

No significant direct or indirect impacts to wildlife movement are expected to occur from implementation of the proposed project, as the project parcels do not function as a true wildlife movement corridor. MHPA will be maintained in the eastern project parcel, providing continued opportunities for localized movement of wildlife.

5.5 Impacts to Jurisdictional Wetlands and Waters

Jurisdictional wetland/waters within the project parcels are restricted to Moody Canyon and the small depression near the western edge of the project parcels. No direct impacts to these jurisdictional wetlands or waters are anticipated as a result of the project (see Figures 8a–c), and implementation of BMPs during construction is anticipated to avoid indirect impacts from construction-related runoff and/or sedimentation.

The project has been designed to avoid direct impacts to the immediate watershed of the RWQCB isolated waters in the western portion of the project parcels, and the project maintains a 100-foot avoidance buffer around the majority of the CDFW riparian habitat/City wetlands that occur in Moody Canyon in the northern portion of the project parcels (see Figures 8b and 8c). Only a small amount of encroachment into the avoidance

buffer for the Moody Canyon wetlands occurs to the south, where trail improvements and planting are proposed, and to the west, where the existing developed conditions do not allow for a 100-foot buffer. The proposed encroachment into the southern 100-foot avoidance buffer does include grading but mostly comprises areas proposed for native plantings. This would likely improve the conditions of this portion of the buffer, as the current conditions include a mix of disturbed native vegetation and eroding soils. Similarly, although the western encroachment includes minor widening of impermeable surfaces (i.e., addition of a sidewalk adjacent to Enright Drive), the associated proposed plantings would likely improve conditions within this portion of the buffer. Current conditions in this area include disturbed, weedy vegetation, which appears to be regularly clear-cut by adjacent homeowners and, therefore, susceptible to erosion. Runoff will be redirected to permanent BMPs, and native/ornamental vegetation will be planted to prevent erosion. Non-native species will be removed, and a chain-link fence will be installed to deter illegal dumping and trespass. Therefore, the proposed changes are anticipated to maintain or improve the existing functions and values of the wetlands within Moody Canyon.

6.0 Mitigation and Monitoring Recommendations

Potential impacts to biological resources were evaluated through review of the project's consistency with the City's ESL Regulations and Biology Guidelines, as well as the MSCP Subarea Plan and VPHCP. Mitigation is required for project impacts to sensitive biological resources that are considered significant under CEQA (City of San Diego 2011).

Prior to the issuance of any grading permit, the City Manager (or appointed designee) shall verify that the following construction-related project requirements regarding biological resources are shown on the construction plans.

6.1 Mitigation and Monitoring Recommendations for General Biological Resources

As currently designed, the proposed project has the potential to result in significant direct and indirect impacts to sensitive biological resources. The following general City standard mitigation for biological resource protection during construction shall be included in the environmental document:

BIO-1. General Measures Prior to Construction

- A. **Biologist Verification** – The owner/permittee shall provide a letter to the City's Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist), as defined in the City of San Diego's Biological Guidelines (2012), has been retained to implement the project's biological monitoring program. The letter

shall include the names and contact information of all persons involved in the biological monitoring of the project.

- B. **Pre-construction Meeting** – The Qualified Biologist shall attend the pre-construction meeting, discuss the project’s biological monitoring program, and arrange to perform any follow up mitigation measures and reporting including site-specific monitoring, restoration or revegetation, and additional fauna/flora surveys/salvage.
- C. **Biological Documents** – The Qualified Biologist shall submit all required documentation to MMC verifying that any special mitigation reports including but not limited to, maps, plans, surveys, survey timelines, or buffers are completed or scheduled per City Biology Guidelines, MSCP, ESL Ordinance, project permit conditions; CEQA; endangered species acts (ESAs); and/or other local, state or federal requirements.
- D. **Biological Construction Mitigation/Monitoring Exhibit (BCME)** – The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME) which includes the biological documents in C, above. In addition, include: restoration/revegetation plans, plant salvage/relocation requirements (e.g., coastal cactus wren plant salvage, burrowing owl exclusions, etc.), avian or other wildlife surveys/survey schedules (including general avian nesting), timing of surveys, wetland buffers, avian construction avoidance areas/noise buffers/barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Administrator Deputy Director (ADD)/MMC. The BCME shall include a site plan, written and graphic depiction of the project’s biological mitigation/monitoring program, and a schedule. The BCME shall be approved by MMC and referenced in the construction documents.
- E. **Avian Protection Requirements** – To avoid direct impacts to avian species identified as a listed, candidate, sensitive, or special status species in the MSCP, removal of habitat that supports active nests in the proposed area of disturbance should occur outside the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, the Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The applicant shall submit the results of the pre-construction survey to City Development Services Department for review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City’s Biology Guidelines and applicable state and federal law (i.e., appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City’s MMC Section and Qualified Biologist shall verify and approve that

all measures identified in the report or mitigation plan are in place prior to and/or during construction.

- F. **Resource Delineation** – Prior to construction activities, the Qualified Biologist shall supervise the placement of orange construction fencing or equivalent along the limits of disturbance adjacent to sensitive biological habitats and verify compliance with any other project conditions as shown on the BCME. This phase shall include flagging plant specimens and delimiting buffers to protect sensitive biological resources (e.g., habitats/flora & fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.
- G. **Education** – Prior to commencement of construction activities, the Qualified Biologist shall meet with the owner/permittee or designee and the construction crew and conduct an on-site educational session regarding the need to avoid impacts outside of the approved construction area and to protect sensitive flora and fauna (e.g., explain avian and wetland buffers, and clarify acceptable access routes/methods and staging areas).

BIO-2. General Measures During Construction

- A. **Monitoring** – All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for development/staging, or previously disturbed as shown on “Exhibit A” and/or the BCME. The Qualified Biologist shall monitor construction activities as needed to ensure that construction activities do not encroach into biologically sensitive areas, or cause other similar damage, and that the work plan has been amended to accommodate any sensitive species located during the pre-construction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site Visit Record (CSV). The CSV shall be e-mailed to MMC on the 1st day of monitoring, the 1st week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.
- B. **Subsequent Resource Identification** – The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna onsite (e.g., flag plant specimens for avoidance during access). If active nests or other previously unknown sensitive resources are detected, all project activities that directly impact the resource shall be delayed until species specific local, state or federal regulations have been determined and applied by the Qualified Biologist.

BIO-3. Post-construction General Measures

- A. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with City Biology Guidelines, ESL and MSCP, CEQA, and other applicable local, state and federal law. The Qualified Biologist shall submit a final BCME/report to the satisfaction of the City ADD/MMC within 30 days of construction completion.

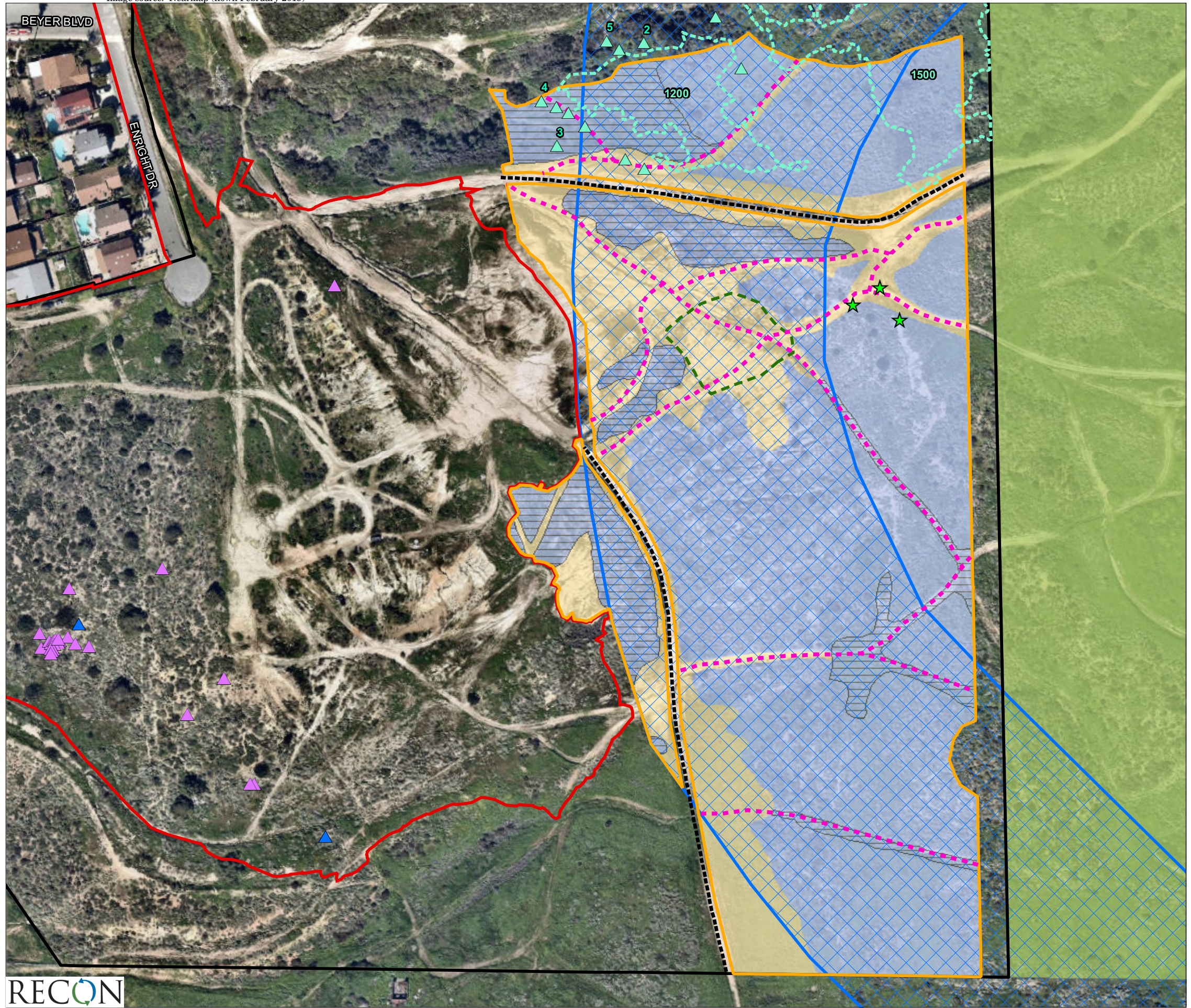
6.2 Mitigation and Monitoring Recommendations for Sensitive Vegetation Communities

Mitigation for impacts to sensitive species will be fulfilled through a combination of habitat preservation, habitat enhancement, and habitat restoration. A 14.12-acre area comprising MHPA lands and adjacent open space lands outside the MHPA has been delineated to meet the mitigation requirements for sensitive vegetation impact. Figure 10 shows the location of the proposed on-site mitigation areas.

The following measures are proposed to fulfill habitat-based mitigation requirements:

BIO-4. Habitat-based Mitigation

A. **On-site Restoration** – To fulfill the project’s mitigation requirements for impacts to Tier I and Tier II vegetation (i.e., maritime succulent scrub, disturbed maritime succulent scrub, Diegan coastal sage scrub, and disturbed Diegan coastal sage scrub), a total of 13.32 acres of mitigation is required. The following mitigation program is proposed: 6.25 acres of maritime succulent scrub and 1.54 acre of disturbed maritime succulent scrub shall be enhanced in the MHPA portion of the eastern project parcel; 2.05 acres of maritime succulent scrub and 0.59 acre of disturbed maritime succulent scrub will be enhanced outside of the MHPA; and a total of 3.70 acres of disturbed lands, both inside and outside the MHPA will be restored to maritime succulent scrub, for a total of 14.12 acres of enhancement and restoration of Tier I vegetation. Table 7 provides a breakdown of mitigation requirements and Table 8 provides a summary. A Mitigation and Restoration Plan detailing the proposed enhancement and restoration has been developed (RECON 2019).



- Mitigation Site
- Project Parcels Boundary
- Beyer Park Development Project
- City of San Diego MHPA
- County Preserve
- Sensitive Plant Species Observations**
- Otay tarplant
- Plants Recommended for Salvage**
- Fish-hook Cactus
- San Diego Barrel Cactus
- Mitigation Design**
- Enhancement**
- Existing Maritime Succulent Scrub Habitat
- Existing Disturbed Maritime Succulent Scrub Habitat
- Restoration**
- Existing Disturbed Land
- Mitigation Details**
- Trails to Remain Open
- Trails to be Closed
- Proposed Artificial Owl Burrow Locations
- Proposed Beach Goldenaster Mitigation Location



FIGURE 10
Proposed Mitigation Design

**Table 7
Direct Impacts to Vegetation and Associated Mitigation**

Vegetation Community by City of San Diego Tier	Direct Impacts to Vegetation Outside MHPA (acres)	Mitigation Ratios		Required Mitigation (acres)		Proposed Enhancement (acres)	Proposed Restoration (acres)	Total Proposed Mitigation (acres)
		Inside the MHPA	Outside the MHPA	Preserved Inside the MHPA	Preserved Outside the MHPA			
Tier I								
Maritime succulent scrub	0.91	1:1		0.91	0	0.91	0	0.91
Disturbed maritime succulent scrub	4.86	1:1		4.86	0	4.86	0	4.86
<i>Subtotal (Tier I)</i>	<i>5.77</i>			<i>5.77</i>	<i>0</i>	<i>5.77</i>	<i>0</i>	<i>5.77</i>
Tier II¹								
Diegan coastal sage scrub	1.41	1:1		1.41	0	1.41 ¹		1.41
Disturbed Diegan coastal sage scrub	4.29	1:1		0.60	5.54	0.60	0	6.14
			1.5:1			2.64	0	
			1.5:1				2.90 ²	
<i>Subtotal (Tier II)</i>	<i>5.70</i>			<i>2.01</i>	<i>5.54</i>	<i>4.65¹</i>	<i>2.90²</i>	<i>7.55</i>
Tier IV								
Disturbed land	5.05	0:1	0:1	0	0	0	0.80	0.80
Ornamental plantings	0	0:1	0:1	0	0	0	0	0
Other Land Cover Types								
Urban/Developed Land	0.64	0:1	0:1	0	0	0	0	0
<i>Subtotal (Tier IV)</i>	<i>5.69</i>			<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Subtotal (All Tiers)</i>	<i>17.16</i>			<i>7.78</i>	<i>5.54</i>	<i>10.42</i>	<i>3.70</i>	<i>0</i>
Total	17.16			13.32		10.42	3.70³	14.12

¹Tier II habitat will be mitigated with Tier I habitat. Due to surrounding MSS habitat it is likely that historically this habitat would have been MSS prior to routine disturbance.

²Restoration of Tier I maritime succulent scrub habitat will be accomplished through conversion of disturbed lands.

³An additional 0.8 acre of disturbed land will be restored in anticipation that some of the edge areas near the trails and roads may not achieve success criteria. Total mitigation will be 14.12 acres.

Mitigation Method	Fulfillment of Vegetation Mitigation (acres)
Restoration ¹	2.90
Enhancement ²	10.42
Additional restoration of disturbed land ³	0.80
Total	14.12
¹ Restoration will consist of converting disturbed lands to Tier I maritime succulent scrub appropriate for burrowing owl foraging and nesting. Restoration and enhancement acreages combined meet the required mitigation for impacts to Tier I and Tier II habitats. ² Enhancement will be focused on improving maritime succulent scrub appropriate for burrowing owl foraging and nesting. Restoration and enhancement acreages combined meet the required mitigation for impacts to Tier I and Tier II habitats. ³ An additional 0.80 acres of disturbed land will be restored in anticipation that some of the edge areas near the trails and roads may not achieve success criteria. Total mitigation will be 14.12 acres.	

This plan also documents the requirements for a 5-year maintenance and monitoring period and includes plant salvage of sensitive succulent species and seeding of beach goldenaster with the ultimate goal of creating habitat suitable for burrowing owl. Currently the maritime succulent scrub within the proposed mitigation area is fragmented and contains evidence of anthropogenic impacts, through the presence of unauthorized trails used by pedestrians and vehicles. The proposed restoration and enhancement activities will remove the fragmentation and effects of the anthropogenic impacts to create one contiguous patch of maritime succulent scrub. It is anticipated that restoration of the disturbed lands to native habitat and enhancement of the disturbed maritime succulent scrub to reduce the extent of non-native invasive plants will increase the habitat quality and resiliency of the maritime succulent scrub. In addition, the County of San Diego preserve area located immediately east of the mitigation site provides connectivity to natural open space further increasing the post-restoration quality.

- B. Preservation of Occupied Burrowing Owl Habitat** – In accordance with the City’s Biology Guidelines, mitigation for impacts to occupied burrowing owl habitat must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management, and enhancement of burrowing owl nesting and foraging requirements.

A Conceptual Burrowing Owl Mitigation Plan is included as a component of the project Mitigation and Restoration Plan and was prepared in accordance with the CDFW 2012 Staff Report or the most recent state and/or federal protocols/guidance for approval by MSCP and the Wildlife Agencies (RECON 2019). A total of 13.55 acres of occupied habitat will be impacted by the project and will require 10.42 acres of mitigation per Table 3 of the Land Development Code Biology Guidelines. The plan includes on-site mitigation for the loss of 10.42 acres of suitable occupied burrowing owl habitat based on the ratios presented for the impacts to the underlying vegetation communities through preservation of occupied habitat within the adjacent maritime succulent scrub. Table 9 presents the breakdown of these mitigation requirements. The quality of preserved suitable occupied burrowing owl habitat must be comparable to or better than

the habitat being impacted, otherwise enhancement of the habitat may be included as an aspect of the mitigation plan. The land to be preserved has been established to be occupied by burrowing owl (RECON 2017f) and supports fossorial mammals. The occupied habitat is maritime succulent scrub which will be enhanced/restored for impacts to vegetation as outlined in section A and the restoration design will ensure that the habitat remains appropriate for western burrowing owl. A map showing the proposed areas for artificial burrow construction can be found in Figure 10. The site will be preserved in perpetuity as part of the City MSCP Program. Prior to the issuance of any construction permits or beginning any construction-related activity on-site, the City shall provide the location of mitigation lands to the satisfaction of MSCP and the Wildlife Agencies.

In addition, long-term maintenance and monitoring of the approved mitigation land shall be conducted in accordance with the MSCP program by the City Parks and Recreation department. Funding for maintenance would occur through the operating budget for the management of Park and Recreation Open Space lands.

Table 9 Required and Proposed Mitigation for Burrowing Owl Impacts					
Vegetation Community by City of San Diego Tier	Direct Impacts to Occupied BUOW Habitat Outside MHPA (acres)	Mitigation Ratio ¹		Required Amount of Occupied Habitat to Fulfill Mitigation (acres) ²	
		Inside the MHPA	Outside the MHPA	Inside the MHPA	Outside the MHPA
Tier I					
Maritime succulent scrub	0.20	1:1	2:1	0.2	0
Disturbed maritime succulent scrub	3.91	1:1	2:1	3.91	0
Tier II					
Diegan coastal sage scrub	0.18	1:1	1.5:1	0.18	0
Disturbed Diegan coastal sage scrub	4.28	1:1	1.5:1	0.6	5.53
Tier IV					
Disturbed land	4.89	0:1	0:1	0	0
Ornamental plantings	0	0:1	0:1	0	0
Other Land Cover Types					
Urban/Developed Land	0.09	0:1	0:1	0	0
TOTAL	13.55			10.42	
¹ Mitigation ratios are consistent with Table 3 of the Land Development Code Biology Guidelines ² 10.42 acres of occupied habitat is required for mitigation. Any areas successfully preserved in excess of the required amount may be utilized by the City for BUOW mitigation.					

6.3 Mitigation and Monitoring Recommendations for Sensitive Plant Species

Recommended measures to avoid, minimize, and/or mitigate significant project impacts to sensitive plant species are provided in this section.

Although the proposed direct impacts to San Diego barrel cactus, south coast saltscale, San Diego bur-sage, San Diego County viguiera, and California box-thorn are less than significant, these species, along with one common species, fish-hook cactus, are recommended for use in the plant palette for the native “Slopes and Perimeter Landscapes” that are proposed within the park boundary (see Figure 5). These native planting areas are included in the project impact area, are not proposed as part of mitigation, but are intended to provide a transition between the developed park and the existing adjacent native vegetation.

The mitigation plan includes provisions for the salvage and translocation of San Diego barrel cactus and fish-hook cactus (see Figure 10) (RECON 2019). As south coast saltscale, San Diego bur-sage, and San Diego County viguiera can be readily grown from seed (Reiser 2001; Ryan West, RECON Native Plants General Manager, pers. comm., August 13, 2018), these species are recommended for inclusion via seed collection from the local area and dispersal and/or propagation. As seed is difficult to collect in substantial quantities from California box-thorn due to competition with birds (Ryan West, personal communication, August 13, 2018), small individuals of this species, if present, are recommended for salvage and translocation.

As direct impacts to beach goldenaster would be considered significant, the following on-site mitigation is recommended to reduce the impact to less than significant:

BIO-5. Beach Goldenaster Restoration – A pre-construction survey will be conducted to determine the number of individuals present at the time of the proposed project. Impacted beach goldenaster individuals will be mitigated in-kind through restoration. The results of this pre-construction survey may inform the number of beach goldenaster to planted. A potential restoration area has been identified based on this species’ preferred habitat conditions within the MHPA (see Figure 10). For restoration of this species, the following steps are recommended: seed collection from the on-site population, bulking of seed in an approved nursery, installation of container plants, hand-seeding within the restoration area during the appropriate time of year, installation of site protection, and implementation of a maintenance and monitoring program. The restoration approach for beach goldenaster is documented in the Mitigation and Restoration Plan (RECON 2019) and will be maintained and monitored for a 60-month period or until success standards are obtained.

6.4 Mitigation and Monitoring Recommendations for Sensitive Wildlife Species

Recommended measures to avoid, minimize, and/or mitigate significant project impacts to sensitive wildlife species are provided in this section.

Adherence to measure BIO-1 above is anticipated to avoid direct impacts to nesting birds (including coastal cactus wren, coastal California gnatcatcher, southern California rufous-crowned sparrow, and California horned lark) in the project impact area.

Compliance with the City's MHPA LUAG will reduce the potential for indirect impacts from edge-effects (e.g., habitat degradation) to sensitive wildlife species including Belding's orange-throated whiptail, Baja California coachwhip, San Diego black-tailed jackrabbit, northwestern San Diego pocket mouse, and San Diego desert woodrat.

Additional species-specific recommended measures to avoid, minimize, or mitigate for potentially significant direct and/or indirect impacts to western burrowing owl, coastal California gnatcatcher, least Bell's vireo, and coastal cactus wren are detailed below.

6.4.1 Mitigation and Monitoring Recommendations for Western Burrowing Owl

The following measures are recommended to mitigate for direct and indirect impacts to burrowing owl:

BIO-6. Burrowing Owl Measures Prior to Permit or Notice to Proceed Issuance

- A. As this project has been determined to be BUOW occupied or to have BUOW occupation potential, the Applicant Department or Permit Holder shall submit evidence to the ADD of Entitlements verifying that a Biologist possessing qualifications pursuant "Staff Report on Burrowing Owl Mitigation, State of California Natural Resources Agency Department of Fish and Game. March 7, 2012 (hereafter referred as CDFG 2012, Staff Report), has been retained to implement a burrowing owl construction impact avoidance program.
- B. The qualified BUOW biologist (or their designated biological representative) shall attend the pre-construction meeting to inform construction personnel about the City's BUOW requirements and subsequent survey schedule.

BIO-7. Burrowing Owl Measures Prior to Construction

- A. The Applicant Department or Permit Holder and Qualified Biologist must ensure that initial pre-construction/take avoidance surveys of the project "site" are completed between 14 and 30 days before initial construction activities, including brushing,

clearing, grubbing, or grading of the project site; regardless of the time of the year. "Site" means the project site and the area within a radius of 300 feet of the project site. The report shall be submitted and approved by the Wildlife Agencies and/or City MSCP staff prior to construction or BUOW eviction(s) and shall include maps of the project site and BUOW locations on aerial photos.

- B. The pre-construction survey shall follow the methods described in CDFG 2012, Staff Report -Appendix D (please note, in 2013, CDFG became California Department of Fish and Wildlife or CDFW).
- C. 24 hours prior to commencement of ground disturbing activities, the Qualified Biologist shall verify results of preconstruction/take avoidance surveys. Verification shall be provided to the City's Mitigation Monitoring and Coordination (MMC) and EPS Section. If results of the preconstruction surveys have changed and BUOW are present in areas not previously identified, immediate notification to the City and WA's shall be provided prior to ground disturbing activities.

BIO-8. Burrowing Owl Measures During Construction

- A. **Post Construction: Best Management Practices shall be employed as BUOWs** are known to use open pipes, culverts, excavated holes, and other burrow-like structures at construction sites. Legally permitted active construction projects which are BUOW occupied and have followed all protocol in this mitigation section, or sites within 300 feet of occupied BUOW areas, should undertake measures to discourage BUOWs from recolonizing previously occupied areas or colonizing new portions of the site. Such measures include, but are not limited to, ensuring that the ends of all pipes and culverts are covered when they are not being worked on, and covering rubble piles, dirt piles, ditches, and berms.
- B. **On-going BUOW Detection** - If BUOWs or active burrows are not detected during the pre-construction surveys, Section "A" below shall be followed. If BUOWs or burrows are detected during the pre-construction surveys, Section "B" shall be followed. **NEITHER THE MSCP SUBAREA PLAN NOR THIS MITIGATION SECTION ALLOWS FOR ANY BUOWs TO BE INJURED OR KILLED OUTSIDE OR WITHIN THE MHPA; in addition, IMPACTS TO BUOWs WITHIN THE MHPA MUST BE AVOIDED.**
 - 1. **Post Survey Follow Up if Burrowing Owls and/or Signs of Active Natural or Artificial Burrows Are Not Detected During the Initial Pre-Construction Survey** - Monitoring the site for new burrows is required using CDFW Staff Report 2012 Appendix D methods for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete (*NOTE - Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule*).
 - a. If no active burrows are found but BUOWs are observed to occasionally (1-3 sightings) use the site for roosting or foraging, they should be allowed to do so with no changes in the construction or construction schedule.

- b. If no active burrows are found but BUOWs are observed during follow up monitoring to repeatedly (4 or more sightings) use the site for roosting or foraging, the City's Mitigation Monitoring and Coordination (MMC) Section and Environmental and Permitting Support Section (EPS) of Public Works shall be notified and any portion of the site where owls have been sites and that has not been graded or otherwise disturbed shall be avoided until further notice.
- c. If a BUOW begins using a burrow on the site at any time after the initial pre-construction survey, procedures described in Section B must be followed.
- d. Any actions other than these require the approval of the City and the Wildlife Agencies.

C. Post Survey Follow Up if Burrowing Owls and/or Active Natural or Artificial Burrows are detected during the Initial Pre-Construction Survey - Monitoring the site for new burrows is required using Appendix D CDFG 2012, Staff Report for the period following the initial pre-construction survey, until construction is scheduled to be complete and is complete (*NOTE - Using a projected completion date (that is amended if needed) will allow development of a monitoring schedule which adheres to the required number of surveys in the detection protocol*).

1. This section (B) applies only to sites (including biologically defined territory) wholly outside of the MHPA – **all direct and indirect impacts to BUOWs within the MHPA SHALL be avoided.**
2. If one or more BUOWs are using any burrows (including pipes, culverts, debris piles *etc.*) on or within 300 feet of the proposed construction area, the City's MMC and EPS Sections shall be contacted. The City's MMC Section shall contact the Wildlife Agencies regarding eviction/collapsing burrows and enlist appropriate City biologist for on-going coordination with the Wildlife Agencies and the qualified consulting BUOW biologist. No construction shall occur within 300 feet of an active burrow without written concurrence from the Wildlife Agencies. This distance may increase or decrease, depending on the burrow's location in relation to the site's topography, and other physical and biological characteristics.
 - a. **Outside the Breeding Season** - If the BUOW is using a burrow on site outside the breeding season (i.e. September 1 – January 31), the BUOW may be evicted after the qualified BUOW biologist has determined via fiber optic camera or other appropriate device, that no eggs, young, or adults are in the burrow and written concurrence from the Wildlife Agencies for eviction is obtained prior to implementation.
 - b. **During Breeding Season** – If a BUOW is using a burrow on-site during the breeding season (February 1–August 31), construction shall not occur within 300 feet of the burrow until the young have fledged and are no longer dependent on the burrow, at which time the BUOWs can be evicted. Eviction requires written concurrence from the Wildlife Agencies prior to implementation.

3. **Survey Reporting During Construction** - Details of construction surveys and evictions (if applicable) carried out shall be immediately (within 5 working days or sooner) reported to the City's MMC and EPS Section and the Wildlife Agencies and must be provided in writing (as by e-mail) and acknowledged to have been received by the required Agencies and DSD Staff member(s).
 - a. Details of the all surveys and actions undertaken on-site with respect to BUOWs (i.e. occupation, eviction, locations etc.) shall be reported to the City's MMC and EPS Section and the Wildlife Agencies within 21 days post-construction and prior to the release of any grading bonds. This report must include summaries off all previous reports for the site; and maps of the project site and BUOW locations on aerial photos.

6.4.2 Mitigation and Monitoring Recommendations for Northern Harrier

If active nests of the northern harrier are detected in the MHPA within 900-feet of the edge of construction during the pre-construction survey (see measure BIO-1), the following mitigation measure would be required to reduce the indirect impact from construction noise to less than significant.

BIO-9. If any active nests of the northern harrier are identified in the MHPA within 900-feet of construction, an impact avoidance buffer is required to be established until the young are independent of the nest. Construction activities are expected to result in noise levels exceeding 60 dB(A) L_{eq} within the adjacent MHPA lands. Prior to the commencement of any construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; OR

At least two weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) L_{eq} within the northern harrier 900-foot nest avoidance area. Concurrent with the commencement of construction activities and the construction of necessary attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) L_{eq} . If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16).

*Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . If not, other measures shall be implemented in consultation with the biologist and the

City Manager, as necessary, to reduce noise levels to below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

6.4.3 Mitigation and Monitoring Recommendations for Coastal California Gnatcatcher

If nesting coastal California gnatcatcher is detected in the MHPA within the 60 dB(A) noise contour (see Figure 9) during the pre-construction survey (see measure BIO-1), the following mitigation measure would be required to reduce the indirect impact from construction noise to less than significant.

BIO-10. Noise Restrictions for Coastal California Gnatcatcher – Between March 1 and August 15, no construction activities shall occur where construction activities would result in noise levels exceeding 60 dB(A) L_{eq} at the edge of gnatcatcher-occupied MHPA habitat. Prior to the commencement of any construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; OR

At least two weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) L_{eq} at the edge of MHPA-habitat occupied by coastal California gnatcatcher. Concurrent with the commencement of construction activities and the construction of necessary attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) L_{eq} . If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16).

*Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

6.4.4 Mitigation and Monitoring Recommendations for Least Bell's Vireo

The following measures are recommended to avoid indirect impacts to least Bell's vireo:

BIO-11. Noise Restrictions for Least Bell's Vireo

- A. Between March 15 and September 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) L_{eq} (hourly noise equivalent of 60 A-weighted decibels [dB(A)] or less) at the edge of occupied least Bell's vireo habitat. Prior to the commencement of any construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; OR
- B. At least two weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) L_{eq} at the edge of habitat occupied by least Bell's vireo. Concurrent with the commencement of construction activities and the construction of necessary attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) L_{eq} . If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (September 16).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

6.4.5 Mitigation and Monitoring Recommendations for Coastal Cactus Wren

If nesting coastal cactus wren is detected within the project impact area during the pre-construction survey (see measure BIO-1), the following mitigation measure would be required to reduce the impact to less than significant.

BIO-12. Coastal Cactus Wren Habitat Restoration – Direct impacts to occupied habitat shall be mitigated at a ratio of 1:1. In accordance with the City's Biology Guidelines, restoration of impacted coastal cactus wren habitat shall include

salvage and transplantation of the following species if present: snake cholla, coast cholla, live-forevers (*Dudleya* spp.), San Diego barrel cactus, fish-hook cactus, coast prickly pear, chaparral prickly pear, chaparral candle (*Hesperoyucca whipplei*), and Mojave yucca (*Yucca schidigera*) to an on-site or off-site restoration site or a receiver site approved by the City.

The following mitigation measure is recommended to avoid indirect impacts to coastal cactus wren:

BIO-13. Noise Restrictions for Coastal Cactus Wren – Between February 15 and August 15, no construction activities shall occur within any portion of the site where construction activities would result in noise levels exceeding 60 dB(A) L_{eq} at the edge of occupied coastal cactus wren habitat. Prior to the commencement of any construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; OR

At least two weeks prior to the commencement of construction activities, under the direction of a Qualified Acoustician, noise attenuation measures (e.g., berms, walls) shall be implemented to ensure that noise levels resulting from construction activities will not exceed 60 dB(A) L_{eq} at the edge of habitat occupied by coastal cactus wren. Concurrent with the commencement of construction activities and the construction of necessary attenuation facilities, noise monitoring* shall be conducted at the edge of the occupied habitat area to ensure that noise levels do not exceed 60 dB(A) L_{eq} . If the noise attenuation techniques implemented are determined to be inadequate by the Qualified Acoustician or Biologist, then the associated construction activities shall cease until such time that adequate noise attenuation is achieved or until the end of the breeding season (August 16).

* Construction noise monitoring shall continue to be monitored at least twice weekly on varying days, or more frequently depending on the construction activity, to verify that noise levels at the edge of occupied habitat are maintained below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . If not, other measures shall be implemented in consultation with the biologist and the City Manager, as necessary, to reduce noise levels to below 60 dB(A) L_{eq} or to the ambient noise level if it already exceeds 60 dB(A) L_{eq} . Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

6.4.6 Mitigation and Monitoring Recommendations for San Diego Fairy Shrimp

The following avoidance and minimization measures are recommended to avoid indirect construction-related and park operations-related impacts to San Diego fairy shrimp consistent with the City's VPHCP Section 5.2.1:

BIO-14. San Diego Fairy Shrimp Measures Prior to Construction

- A. Temporary fencing (with silt barriers) shall be installed along the limits of project impacts (including construction staging areas and access routes) to prevent impacts to San Diego fairy shrimp-occupied habitat and prevent the spread of silt from the construction zone into adjacent habitat. Fencing shall be installed in a manner that does not impact the habitat or watershed to be avoided. Final construction plans shall include photographs that show the fenced limits of impact and all areas of San Diego fairy shrimp habitat to be impacted or avoided. If work inadvertently occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied to the satisfaction of the City. Temporary construction fencing shall be removed upon project completion.

BIO-15. San Diego Fairy Shrimp Measures During Construction

- A. Impacts from fugitive dust that may occur during construction grading shall be avoided and minimized through watering and other appropriate measures.
- B. A qualified monitoring biologist that has been approved by the City shall be on-site during project construction activities to ensure compliance with all mitigation measures identified in the environmental document. The biologist shall be knowledgeable of vernal pool species biology and ecology. The biologist shall perform the following duties:
- Oversee installation of and inspect the fencing and erosion control measures within or upslope of vernal pool restoration and/or preservation areas a minimum of once per week and daily during all rain events to ensure that any breaks in the fence or erosion control measures are repaired immediately.
 - Periodically monitor the work area to ensure that work activities do not generate excessive amounts of dust.
 - Train all contractors and construction personnel on the biological resources associated with this project and ensure that training is implemented by construction personnel. At a minimum, training shall include (1) the purpose for resource protection; (2) a description of the vernal pool species and their habitat(s); (3) the conservation measures that must be implemented during project construction to conserve the vernal pool species, including strictly limiting activities, and vehicles, equipment, and construction materials to the fenced project footprint to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (4) environmentally responsible construction practices as outlined in measures C, D, and E, below; (5) the protocol to resolve conflicts that

may arise at any time during the construction process; and (6) the general provisions of the project's mitigation monitoring and reporting program, the need to adhere to the provisions of the ESA, and the penalties associated with violating the ESA.

- Halt work, if necessary, and confer with the City to ensure the proper implementation of species and habitat protection measures. The biologist shall report any violation to the City within 24 hours of its occurrence.
- Submit regular (e.g., weekly) letter reports to the City during project construction and a final report following completion of construction. The final report shall include as-built construction drawings with an overlay of habitat that was impacted and avoided, photographs of habitat areas that were avoided, and other relevant summary information documenting that authorized impacts were not exceeded and that general compliance with all conservation measures was achieved.

C. The following conditions shall be implemented during project construction:

- Employees shall strictly limit their activities, vehicles, equipment, and construction materials to the fenced project footprint.
- The project site shall be kept as clean of debris as possible. All food-related trash items shall be enclosed in sealed containers and regularly removed from the site.
- Disposal or temporary placement of excess fill, brush, or other debris shall be limited to areas within the fenced project footprint.

D. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas within the fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering the vernal pools or their watersheds, and shall be shown on the construction plans. Fueling of equipment shall take place within existing paved areas greater than 100 feet from the vernal pools or their watersheds. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. A spill kit for each piece of construction equipment shall be on-site and must be used in the event of a spill. "No fueling zones" shall be designated on construction plans.

E. Grading activities immediately adjacent to vernal pools shall be timed to avoid wet weather to minimize potential impacts (e.g., siltation) to the vernal pools unless the area to be graded is at an elevation below the pools. To achieve this goal, grading adjacent to avoided pools shall comply with the following:

- Grading shall occur only when the soil is dry to the touch both at the surface and 1 inch below. A visual check for color differences (i.e., darker soil indicating moisture) in the soil between the surface and 1 inch below indicates whether the soil is dry.
- After a rain of greater than 0.2 inch, grading shall occur only after the soil surface has dried sufficiently as described above, and no sooner than 2 days (48 hours) after the rain event ends.

- To prevent erosion and siltation from storm water runoff due to unexpected rains, best management practices (i.e., silt fences) shall be implemented as needed during grading.
 - If rain occurs during grading, work shall stop and resume only after soils are dry, as described above.
 - Grading shall be done in a manner to prevent runoff from entering preserved vernal pools.
 - If necessary, water spraying shall be conducted at a level sufficient to control fugitive dust but not to cause runoff into vernal pools.
 - If mechanized grading is necessary, grading shall be performed in a manner to minimize soil compaction (i.e., use the smallest type of equipment needed to feasibly accomplish the work).
- F. Permanent protective fencing along any interface with developed areas and/or use other measures approved by the City to deter human and pet entrance into on- or off-site habitat shall be installed. Fencing shall be shown on the development plans and should have no gates (accept to allow access for maintenance and monitoring of the biological conservation easement areas) and be designed to prevent intrusion by pets. Signage for the biological conservation easement area shall be posted and maintained at conspicuous locations. The requirement for fencing and/or other preventative measures shall be included in the project's mitigation program.

BIO-16. Post-construction San Diego Fairy Shrimp Monitoring – The San Diego fairy shrimp population that occurs in the artificial ditch in the western portion of the project parcels shall be monitored on an annual basis for a minimum period of five years. A qualified biologist holding a valid USFWS Section 10(a)(1)(A) Recovery Permit shall conduct wet season surveys in accordance with the current USFWS Survey Guidelines for the Large Listed Branchiopods (dated November 13, 2017 at the time of preparation of this report) with the following amendment: once mature San Diego fairy shrimp have been detected in any one survey period, sampling for the species shall cease; site visits shall continue following the survey schedule identified in the guidelines only to collect hydrological data. Photo-points shall also be established to capture the occupied depression's inlet(s) and outlet(s). At a minimum, photographs will be taken annually at each photo-point.

6.5 Mitigation and Monitoring Recommendations for Jurisdictional Wetlands and Waters

No direct impacts are anticipated to occur to jurisdictional wetlands or waters. Therefore, no mitigation or resource agency permitting would be required.

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ATTACHMENTS

ATTACHMENT 1
Plant Species Observed

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Scientific Name	Common Name	Vegetation Communities	Origin
LYCOPODS			
SELAGINELLACEAE	SPIKE-MOSS FAMILY		
<i>Selaginella cinerascens</i> A.A. Eaton	ashy spike-moss	MSS	N
ANGIOSPERMS: MAGNOLIIDS-PIPERALES			
SAURURACEAE	LIZARD'S TAIL FAMILY		
<i>Anemopsis californica</i> (Nutt.) Hook. & Arn.	yerba mansa	MFS	N
ANGIOSPERMS: MONOCOTS			
AGAVACEAE	AGAVE FAMILY		
<i>Agave americana</i> L.	American century plant	DCSS	I
<i>Chlorogalum parviflorum</i> S. Watson	small-flower soap-plant, amole	MSS	N
<i>Hesperoyucca [=Yucca] whipplei</i> (Torr.) Trel.	chaparral candle	MSS	N
<i>Yucca schidigera</i> Ortgies	Mojave yucca	DL	N
ALLIACEAE	ONION FAMILY		
<i>Allium</i> sp.	onion, garlic	MSS	N
ARECACEAE	PALM FAMILY		
<i>Phoenix canariensis</i> Chabaud	Canary Island palm	DEV	I
<i>Washingtonia robusta</i> H. Wendl.	Mexican fan palm	DEV	I
IRIDACEAE	IRIS FAMILY		
<i>Sisyrinchium bellum</i> S. Watson	western blue-eyed grass	MSS	N
LILIACEAE	LILY FAMILY		
<i>Calochortus splendens</i> Benth.	splendid mariposa lily	MSS	N
POACEAE (GRAMINEAE)	GRASS FAMILY		
<i>Avena barbata</i> Pott ex Link	slender wild oat	MSS	I
<i>Brachypodium distachyon</i> (L.) P. Beauv.	purple falsebrome	DL, MSS	I
<i>Bromus diandrus</i> Roth	ripgut grass	DL	I
<i>Bromus madritensis</i> L. ssp. <i>rubens</i> (L.) Husn.	red brome	DL, MSS	I
<i>Festuca [=Vulpia] myuros</i> L.	rattail sixweeks grass	MSS	I
<i>Festuca perennis</i> (L.) Columbus & J.P. Sm. [= <i>Lolium multiflorum</i> and <i>Lolium perenne</i>]	rye grass	DL	I

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<i>Hordeum murinum</i> L.	wall barley	DL	I
<i>Lamarckia aurea</i> (L.) Moench	golden-top	DL	I
<i>Muhlenbergia microsperma</i> (DC.) Kunth	littleseed muhly	MSS	N
<i>Pennisetum setaceum</i> (Forssk.) Chiov.	crimson fountain grass	MSS	I
<i>Schismus barbatus</i> (L.) Thell.	Mediterranean schismus	MSS	I
<i>Stipa</i> [= <i>Nassella</i>] <i>lepidata</i> Hitchc.	foothill needle grass	MSS	N
<i>Stipa</i> [= <i>Nassella</i>] <i>pulchra</i> Hitchc.	purple needle grass	MSS	N
THEMIDACEAE	BRODIAEA FAMILY		
<i>Bloomeria crocea</i> (Torr.) Coville	common goldenstar	MSS	N
<i>Dichelostemma capitatum</i> (Benth.) Alph. Wood	blue dicks	CSS, DMSS, MSS	N
ANGIOSPERMS: DICOTS			
ADOXACEAE	ADOXA FAMILY		
<i>Sambucus nigra</i> L. ssp. <i>caerulea</i> (Raf.) Bolli [= <i>Sambucus mexicana</i>]	blue elderberry	MFS	N
AIZOACEAE	FIG-MARIGOLD FAMILY		
<i>Mesembryanthemum crystallinum</i> L.	crystalline iceplant	DL	I
<i>Mesembryanthemum nodiflorum</i> L.	slender-leaved iceplant	DL	I
<i>Tetragonia tetragonioides</i> (Pall.) Kuntze	New Zealand spinach	MFS	I
ANACARDIACEAE	SUMAC OR CASHEW FAMILY		
<i>Malosma laurina</i> Nutt. ex Abrams	laurel sumac	MSS	N
<i>Rhus integrifolia</i> (Nutt.) Benth. & Hook. f. ex Rothr.	lemonade berry	MSS, DL	N
<i>Schinus molle</i> L.	Peruvian pepper tree	DL	I
APIACEAE (UMBELLIFERAE)	CARROT FAMILY		
<i>Apiastrum angustifolium</i> Nutt.	mock-parsley	MSS	N
<i>Bowlesia incana</i> Ruiz & Pav.	American bowlesia	MFS	N
<i>Daucus pusillus</i> Michx.	rattlesnake weed	MSS	N
<i>Foeniculum vulgare</i> Mill.	fennel	DL	I
ASTERACEAE	SUNFLOWER FAMILY		
<i>Amblyopappus pusillus</i> Hook. & Arn.	pineapple weed	MSS, DL	N
<i>Ambrosia chenopodiifolia</i> (Benth.) Payne	San Diego bur-sage	DCSS, MSS, DL	N
<i>Ambrosia confertiflora</i> DC.	weak-leaf bur-sage	MFS	N
<i>Artemisia californica</i> Less.	California sagebrush	MSS, DL, MFS	N
<i>Baccharis salicifolia</i> (Ruiz & Pav.) Pers. ssp. <i>salicifolia</i>	mule fat, seep-willow	DCSS, MFS	N

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<i>Baccharis sarothroides</i> A. Gray	broom baccharis	DCSS, MSS, MFS	N
<i>Bahiopsis</i> [= <i>Viguiera</i>] <i>laciniata</i> (A. Gray) E.E. Schilling & Panero	San Diego viguiera, San Diego County viguiera	MSS, DMSS, DCSS, DL	N
<i>Centaurea melitensis</i> L.	totalote, Maltese star-thistle	DL, MSS	I
<i>Chaenactis artemisiifolia</i> (Harv. & A. Gray) A. Gray	white pincushion	DCSS	N
<i>Corethrogyne filaginifolia</i> [= all previously known <i>Lessingia filaginifolia</i> varieties in California] (Hook. & Arn.) Nutt.	California-aster	DL	N
<i>Deinandra</i> [= <i>Hemizonia</i>] <i>conjugens</i> (D.D. Keck) B.G. Baldwin	Otay tarplant	DMSS, MSS, DL	N
<i>Deinandra</i> [= <i>Hemizonia</i>] <i>fasciculata</i> (DC.) Greene	fascicled tarweed	DMSS, MSS	N
<i>Encelia californica</i> Nutt.	California encelia	MSS	N
<i>Eriophyllum confertiflorum</i> (DC.) A. Gray var. <i>confertiflorum</i>	long-stem golden-yarrow	CSS, MSS	N
<i>Glebionis coronaria</i> (L.) Spach [= <i>Chrysanthemum coronarium</i>]	garland, crown daisy	DL, MSS, MFS	I
<i>Hazardia squarrosa</i> (Hook. & Arn.) Greene	saw-toothed goldenbush	CSS	N
<i>Helminthotheca</i> [= <i>Picris</i>] <i>echioides</i> (L.) Holub	bristly ox-tongue	DL	I
<i>Heterotheca grandiflora</i> Nutt.	telegraph weed	MSS	N
<i>Heterotheca</i> [= <i>Chrysopsis</i>] <i>sessiliflora</i> (Nutt.) Shinners ssp. <i>sessiliflora</i>	beach, false goldenaster	DCSS	N
<i>Hypochaeris glabra</i> L.	smooth cat's-ear	MSS	I
<i>Isocoma menziesii</i> (Hook. & Arn.) G.L. Nesom	coastal goldenbush	MSS, DCSS	N
<i>Lactuca serriola</i> L.	prickly lettuce	DL	I
<i>Lasthenia gracilis</i> (DC.) Greene [<i>L. californica</i> Lindley, misapplied in San Diego County]	common goldfields	MSS	N
<i>Logfia</i> [= <i>Filago</i>] <i>gallica</i> (L.) Coss. & Germ.	daggerleaf cottonrose	CSS, DCSS, MSS	I
<i>Microseris douglasii</i> (DC.) Sch. Bip. var. <i>platycarpha</i> (A. Gray) K.L. Chambers	small-flowered microseris	DMSS	N
<i>Oncosiphon piluliferum</i> (L. f.) Källersjö	stinknet, globe chamomile	MSS, DL	I
<i>Pseudognaphalium beneolens</i> [= <i>Gnaphalium canescens</i> ssp. <i>beneolens</i>] (Davidson) Anderb.	fragrant everlasting	MSS, DMSS, DL	N
<i>Pseudognaphalium biolettii</i> Anderb. [= <i>Gnaphalium bicolor</i>]	bicolor cudweed	DCSS, DL	N
<i>Pseudognaphalium</i> [= <i>Gnaphalium</i>] <i>californicum</i> (DC.) Anderb.	California everlasting, green everlasting	MSS	N
<i>Pseudognaphalium canescens</i> [= <i>Gnaphalium canescens</i> ssp. <i>canescens</i>] (DC.) Anderb.	everlasting cudweed	MSS	N

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<i>Pseudognaphalium</i> [=Gnaphalium] <i>luteoalbum</i> (L.) Hilliard & B.L. Burtt	everlasting cudweed	MSS, DL	I
<i>Pseudognaphalium microcephalum</i> [=Gnaphalium <i>canescens</i> ssp. <i>microcephalum</i>] (Nutt.) Anderb.	white everlasting	MSS	N
<i>Sonchus asper</i> (L.) Hill ssp. <i>asper</i>	prickly sow thistle	DL, MFS	I
<i>Sonchus oleraceus</i> L.	common sow thistle	DL	I
<i>Stephanomeria</i> sp.	wreath-plant	MSS	N
<i>Uropappus lindleyi</i> (DC.) Nutt.	silver puffs	MSS	N
BORAGINACEAE	BORAGE FAMILY		
<i>Amsinckia intermedia</i> Fisch. & C. A. Mey.	common fiddleneck	MSS	N
<i>Amsinckia menziesii</i> (Lehm.) A. Nelson & J.F. Macbr.	common fiddleneck, small-flowered fiddleneck, rancher's fireweed	MSS	N
<i>Cryptantha</i> sp.	cryptantha	MFS, CSS, MSS, DL	N
<i>Emmenanthe penduliflora</i> Benth.	whispering bells	CSS	N
<i>Eucrypta chrysanthemifolia</i> (Benth.) Greene	eucrypta	MFS	N
<i>Harpagonella palmeri</i> A. Gray	Palmer's grapplinghook	DMSS, MSS	N
<i>Heliotropium curassavicum</i> L. var. <i>oculatum</i> (A. Heller) I. M. Johnst. ex Tidestr.	seaside heliotrope, alkali heliotrope	MFS	N
<i>Nemophila menziesii</i> Hook. & Arn. var. <i>menziesii</i>	Menzies' baby blue-eyes	MSS	N
<i>Pectocarya</i> sp.	pectocarya	MSS	N
<i>Phacelia cicutaria</i> Greene var. <i>hispida</i> (A. Gray) J.T. Howell	caterpillar phacelia	MSS	N
<i>Phacelia grandiflora</i> (Benth.) A. Gray	giant-flowered phacelia	MSS	N
BRASSICACEAE (CRUCIFERAE)	MUSTARD FAMILY		
<i>Brassica nigra</i> (L.) W.D.J. Koch	black mustard	MSS, DL, MFS	I
<i>Brassica tournefortii</i> Gouan	Sahara mustard	MSS	I
<i>Hirschfeldia incana</i> (L.) Lagr.-Fossat	short-pod mustard	DCSS, DMSS, DL	I
<i>Lepidium nitidum</i> Nutt.	shining peppergrass	DMSS, DL, MSS	N
<i>Sisymbrium irio</i> L.	London rocket	DL	I
CACTACEAE	CACTUS FAMILY		
<i>Cylindropuntia californica</i> (Torr. & A. Gray) F.M. Knuth var. <i>californica</i>	snake cholla	MSS, DL	N
<i>Cylindropuntia</i> [=Opuntia] <i>prolifera</i> (Engelm.) F.M. Knuth	coast cholla	MSS	N

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<i>Ferocactus viridescens</i> (Torr. & A. Gray) Britton & Rose	San Diego barrel cactus, coast barrel cactus	MSS, DMSS	N
<i>Mammillaria dioica</i> K. Brandegee	fish-hook cactus	MSS, DMSS	N
<i>Opuntia littoralis</i> (Engelm.) Cockerell.	coast prickly-pear, shore cactus	MSS	N
CARYOPHYLLACEAE	PINK FAMILY		
<i>Cerastium glomeratum</i> Thuill.	sticky mouse-ear chickweed	MSS	I
<i>Silene gallica</i> L.	small-flower catchfly, windmill pink	DCSS, DL	I
CHENOPODIACEAE	GOOSEFOOT FAMILY		
<i>Atriplex canescens</i> (Pursh) Nutt.	four-wing saltbush, shad-scale	MFS	N
<i>Atriplex pacifica</i> A. Nelson	south coast saltscale, south coast saltbush	MSS	N
<i>Chenopodium murale</i> L.	nettle-leaf goosefoot	DL	I
<i>Salsola tragus</i> L.	Russian thistle, tumbleweed	DL, MSS	I
CLEOMACEAE	SPIDERFLOWER FAMILY		
<i>Peritoma [=Isomeris] arborea</i> (Nutt.) H. H. Iltis	bladderpod	MSS, MFS	N
CONVOLVULACEAE	MORNING-GLORY FAMILY		
<i>Calystegia macrostegia</i> (Greene) Brummitt	morning-glory	MSS	N
CRASSULACEAE	STONECROP FAMILY		
<i>Crassula connata</i> (Ruiz & Pav.) A. Berger	pygmy-weed	MSS, DL	N
<i>Crassula ovata</i> (Mill.) Druce	jade plant	DCSS	I
<i>Dudleya pulverulenta</i> (Nutt.) Britton & Rose	chalk lettuce, chalk dudleya	MSS	N
CUCURBITACEAE	GOURD FAMILY		
<i>Marah macrocarpa</i> (Greene) Greene	wild cucumber	MFS, MSS	N
EUPHORBIACEAE	SPURGE FAMILY		
<i>Euphorbia misera</i> Benth.	cliff spurge	MSS	N
<i>Euphorbia peplus</i> L.	petty spurge	MSS	I
<i>Ricinus communis</i> L.	castor bean	DCSS, DL, MFS	I
FABACEAE (LEGUMINOSAE)	LEGUME FAMILY		
<i>Acacia</i> sp.	acacia	MSS	I
<i>Acmispon glaber</i> (Vogel) Brouillet [= <i>Lotus scoparius</i>]	deerweed, California broom	MSS, CSS	N
<i>Acmispon maritimus</i> (Torr. & A. Gray) D.D. Sokoloff var. <i>maritimus</i> [= <i>Lotus salsuginosus</i> var. <i>salsuginosus</i>]	alkali lotus	MSS	N

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<i>Acmispon micranthus</i> (Torr. & A. Gray) Brouillet [= <i>Lotus hamatus</i>]	grab lotus	MSS	N
<i>Acmispon strigosus</i> (Nutt.) Brouillet [= <i>Lotus strigosus</i>]	bishop's lotus, strigose lotus	MSS	N
<i>Astragalus trichopodus</i> (Nutt.) A. Gray var. <i>lonchus</i> (M.E. Jones) Barneby	ocean locoweed	MSS, DL	N
<i>Lupinus hirsutissimus</i> Benth.	stinging lupine	MSS	N
<i>Lupinus succulentus</i> Douglas ex K. Koch	arroyo lupine	MSS	N
<i>Lupinus truncatus</i> Nutt.	collar lupine	DCSS	N
<i>Medicago polymorpha</i> L.	California burclover	DL	I
<i>Melilotus</i> sp.	sweetclover	MSS	I
<i>Melilotus indicus</i> (L.) All.	sourclover	DL	I
GERANIACEAE	GERANIUM FAMILY		
<i>Erodium botrys</i> (Cav.) Bertol.	long-beak filaree	DL, DCSS	I
<i>Erodium cicutarium</i> (L.) L'Hér. ex Aiton	redstem filaree	MSS	I
LAMIACEAE	MINT FAMILY		
<i>Marrubium vulgare</i> L.	horehound	DL, MFS	I
<i>Salvia columbariae</i> Benth.	chia	MSS	N
MALVACEAE	MALLOW FAMILY		
<i>Malva parviflora</i> L.	cheeseweed, little mallow	DL	I
MONTIACEAE	MONTIA FAMILY		
<i>Calandrinia menziesii</i> [replaced <i>C. ciliata</i>] (Hook.) Torr. & A. Gray	red maids	MSS	N
<i>Cistanthe maritima</i> [= <i>Calandrinia maritima</i>] (Nutt.) Hershk.	seaside cistanthe, seaside calandrinia	MSS	N
<i>Claytonia perfoliata</i> Donn ex Willd.	miner's lettuce	MSS	N
MYRSINACEAE	MYRSINE FAMILY		
<i>Lysimachia</i> [= <i>Anagallis</i>] <i>arvensis</i> (L.) U. Manns & Anderb.	scarlet pimpernel	MSS, MFS	I
NYCTAGINACEAE	FOUR O'CLOCK FAMILY		
<i>Mirabilis laevis</i> [= <i>Mirabilis californica</i>] (Benth.) Curran var. <i>crassifolia</i> (Choisy) Spellenb.	wishbone bush	MSS	N
ONAGRACEAE	EVENING-PRIMROSE FAMILY		
<i>Camissoniopsis</i> [= <i>Camissonia</i>] <i>bistorta</i> (Torr. & A. Gray) W.L. Wagner & Hoch	California sun cup	MSS	N
<i>Clarkia purpurea</i> (Curtis) A. Nelson & J.F. Macbr. ssp. <i>quadrivulnera</i> (Douglas ex Lindl.) H. Lewis & M. Lewis	four-spot	MSS	N

**Attachment 1
Plant Species Observed**

Scientific Name	Common Name	Vegetation Communities	Origin
OXALIDACEAE	OXALIS FAMILY		
<i>Oxalis pes-caprae</i> L.	Bermuda buttercup	DL	I
PAPAVERACEAE	POPPY FAMILY		
<i>Papaver heterophyllum</i> (Benth.) Greene [= <i>Stylomecon heterophylla</i>]	wind poppy	CSS	N
PHYTOLACCACEAE	POKEWEED FAMILY		
<i>Phytolacca americana</i> L.	pokeweed, pokeberry, pigeonberry	DCSS	I
PLANTAGINACEAE	PLANTAIN FAMILY		
<i>Antirrhinum nuttallianum</i> Benth. ex A. DC.	Nuttall's snapdragon	MSS	N
<i>Nuttallanthus texanus</i> (Scheele) D.A. Sutton [= <i>Linaria canadensis</i>]	blue toadflax	CSS	N
<i>Plantago coronopus</i> L.	cut-leaf plantain	DCSS	I
<i>Plantago erecta</i> E. Morris	dot-seed plantain	DMSS, DL, MSS	N
POLEMONIACEAE	PHLOX FAMILY		
<i>Linanthus dianthiflorus</i> (Benth.) Greene	farinose ground pink	MSS	N
POLYGONACEAE	BUCKWHEAT FAMILY		
<i>Eriogonum fasciculatum</i> Benth. var. <i>fasciculatum</i>	coast California buckwheat	MSS, DCSS, DL	N
<i>Rumex crispus</i> L.	curly dock	DCSS	I
RANUNCULACEAE	BUTTERCUP FAMILY		
<i>Clematis pauciflora</i> Nutt.	southern California clematis, few-flowered clematis	MFS	N
<i>Delphinium parryi</i> A. Gray	blue larkspur	MSS, DCSS	N
RESEDACEAE	MIGNONETTE FAMILY		
<i>Oligomeris linifolia</i> (Vahl ex Hornem.) J.F. Macbr.	narrow-leaf oligomeris	MSS	N
RHAMNACEAE	BUCKTHORN FAMILY		
<i>Rhamnus crocea</i> Nutt.	spiny redberry	MSS	N
ROSACEAE	ROSE FAMILY		
<i>Chamaebatia australis</i> (Brandege) Abrams	southern mountain misery	MSS	N
RUBIACEAE	MADDER FAMILY		
<i>Galium aparine</i> L.	goose grass, stickywilly	MFS	N
SALICACEAE	WILLOW FAMILY		
<i>Salix gooddingii</i> C.R. Ball.	Goodding's black willow	MFS	N

**Attachment 1
Plant Species Observed**

Scientific Name	Common Name	Vegetation Communities	Origin
SIMMONDSIACEAE	JOJOBA FAMILY		
<i>Simmondsia chinensis</i> (Link) C.K. Schneid.	jojoba, goatnut	MSS, DL	N
SOLANACEAE	NIGHTSHADE FAMILY		
<i>Datura wrightii</i> Regel	western Jimson weed	DCSS	N
<i>Lycium andersonii</i> A. Gray	waterjacket	MSS	N
<i>Lycium californicum</i> Nutt.	California box-thorn, California lycium	MSS	N
<i>Nicotiana glauca</i> Graham	tree tobacco	DCSS, DL	I
<i>Solanum americanum</i> Mill.	white nightshade	MFS	N
TAMARICACEAE	TAMARISK FAMILY		
<i>Tamarix ramosissima</i> Ledeb.	saltcedar	DCSS, DL, MFS	I
URTICACEAE	NETTLE FAMILY		
<i>Parietaria hespera</i> Hinton var. <i>californica</i> Hinton	California pellitory	MSS, MFS	N
<i>Urtica urens</i> L.	dwarf nettle	MFS	I
VERBENACEAE	VERVAIN FAMILY		
<i>Verbena mentifolia</i> Benth.	mint-leaf vervain	MFS, MSS	N
VITACEAE	GRAPE FAMILY		
<i>Vitis girdiana</i> Munson	desert wild grape	MFS	N
VEGETATION COMMUNITIES	ORIGIN		
CSS = Diegan coastal sage scrub	N = Native to locality		
DCSS = disturbed Diegan coastal sage scrub	I = Introduced species from outside locality		
DEV = urban/developed			
DL = disturbed land			
DMSS= disturbed maritime succulent scrub			
MSS = maritime succulent scrub			
MFS = mule fat scrub			

ATTACHMENT 2
Wildlife Species Observed

**Attachment 2
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
INVERTEBRATES (Nomenclature for fairy shrimp from Eriksen and Belk 1999; for spiders and insects from Evans 2008; for butterflies from San Diego Natural History Museum 2002)			
BRANCHINECTIDAE	FAIRY SHRIMP		
<i>Branchinecta sandiegonensis</i>	San Diego fairy shrimp	DCSS	O
COLLEMBOLA	SPRINGTAILS AND ALLIES		
Not identified to species	springtail	DCSS	O
CULICIDAE	MOSQUITOS		
<i>Culex</i> sp.	mosquito	DCSS	O
FORMICIDAE	ANTS		
<i>Linepithema humile</i>	Argentine ant (I)	DL, DCSS	O
TENEBRIONIDAE	DARKLING BEETLES		
Not identified to species	darkling beetle	MSS	O
CICADIDAE	CICADAS		
<i>Hadoa</i> sp.	cicada	CSS, MSS	O
CTENIZIDAE	TRAPDOOR SPIDERS		
<i>Bothriocyrtum californicum</i>	California trapdoor spider	MSS	B
POMPILIDAE	SPIDER WASPS		
<i>Pepsis</i> sp.	tarantula hawk	MSS	O
HESPERIIDAE	SKIPPERS		
<i>Erynnis funeralis</i>	funereal duskywing	CSS, DL	O
<i>Hylephila phyleus muertovalle</i>	fiery skipper	DL	O
<i>Pyrgus communis</i>	common checkered skipper	DMSS, DL	O
PAPILIONIDAE	PARNASSIANS & SWALLOWTAILS		
<i>Papilio eurymedon</i>	pale swallowtail	MSS, DMSS, DL	O
<i>Papilio zelicaon</i>	anise swallowtail	MSS	O
<i>Papilio cressphontes</i>	giant swallowtail	DL	O
PIERIDAE	WHITES & SULPHURS		
<i>Anthocharis cethura</i>	desert [=Felder's] orangetip	MSS, DMSS	O
<i>Anthocharis sara sara</i>	Pacific Sara orangetip	MSS, DMSS, CSS, DL	O

**Attachment 2
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<i>Colias eurytheme</i>	orange [=alfalfa] sulphur	MSS, DMSS, DL	0
<i>Pontia protodice</i>	checkered [=common] white	DCSS, DL	0
<i>Pontia sisymbrii</i>	spring [=California] white	MSS, DMSS, CSS, DCSS, DL	0
<i>Pieris rapae</i>	cabbage white (I)	MSS, DMSS, CSS, DCSS, DL	0
LYCAENIDAE	BLUES, COPPERS, & HAIRSTREAKS		
<i>Brephidium exile</i>	western pygmy-blue	DCSS, DL	0
<i>Callophrys augustinus</i>	brown elfin	MSS	0
<i>Everes amyntula</i>	western tailed-blue	DMSS, DCSS, DL	0
<i>Glaucopsyche lygdamus australis</i>	southern [=silvery] blue	MSS, DMSS, DL	0
<i>Icaricia acmon acmon</i>	Acmon blue	CSS, DCSS	0
<i>Leptotes marina</i>	marine blue	CSS, DCSS	0
<i>Strymon melinus pudica</i>	gray [=common] hairstreak	MSS, CSS, DCSS	0
RIODINIDAE	METALMARKS		
<i>Apodemia mormo virgulti</i>	Behr's metalmark	MSS, CSS, DCSS,	0
NYMPHALIDAE	BRUSH-FOOTED BUTTERFLIES		
<i>Chlosyne gabbii</i>	Gabb's checkerspot	MSS	0
<i>Coenonympha californica californica</i>	common California ringlet	MSS	0
<i>Danaus plexippus</i>	monarch	DEV, DL	0
<i>Junonia coenia grisea</i>	common buckeye	MSS, DMSS, DL	0
<i>Limenitis lorquini</i>	Lorquin's admiral	MSS	0
<i>Nymphalis antiopa</i>	mourning cloak	MSS, DMSS, MFS	0
<i>Vanessa annabella</i>	west coast lady	MSS, DMSS, DL	0
<i>Vanessa atalanta rubria</i>	red admiral	MSS	0
<i>Vanessa cardui</i>	painted lady	MSS, DMSS	0
SPHINGIDAE	HAWK MOTHS		
<i>Hyles lineta</i>	white-lined sphinx moth	CSS, DCSS, MSS, DMSS	0
REPTILES (Nomenclature from Crother et al. 2012)			
PHRYNOSOMATIDAE	SPINY LIZARDS		
<i>Sceloporus occidentalis</i>	western fence lizard	DCSS, DL	0
<i>Uta stansburiana</i>	common side-blotched lizard	DCSS, DL	0

**Attachment 2
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
TEIIDAE	WHIPTAIL LIZARDS		
<i>Aspidoscelis hyperythra beldingi</i>	Belding's orange-throated whiptail	MSS	O
CROTALIDAE	RATTLESNAKES		
<i>Crotalus oreganus helleri</i>	southern Pacific rattlesnake	MSS	O
BIRDS (Nomenclature from American Ornithologists' Union 2015 and Unitt 2004)			
ODONTOPHORIDAE	NEW WORLD QUAIL		
<i>Callipepla californica californica</i>	California quail	MSS	O, V
ARDEIDAE	HERONS & BITTERNS		
<i>Ardea herodias</i>	great blue heron	F	O
ACCIPITRIDAE	HAWKS, KITES, & EAGLES		
<i>Accipiter cooperii</i>	Cooper's hawk	F, DEV	O
<i>Buteo jamaicensis</i>	red-tailed hawk	F	O
<i>Buteo lineatus elegans</i>	red-shouldered hawk	DEV	V
<i>Circus cyaneus hudsonius</i>	northern harrier	F, DMSS	O
FALCONIDAE	FALCONS & CARACARAS		
<i>Falco mexicanus</i>	prairie falcon	F	O
<i>Falco sparverius sparverius</i>	American kestrel	DCSS	O
CHARADRIIDAE	LAPWINGS & PLOVERS		
<i>Charadrius vociferus vociferus</i>	killdeer	DCSS, DMSS, DL	V
LARIDAE	GULLS, TERNS, & SKIMMERS		
<i>Larus californicus</i>	California gull	F	O
COLUMBIDAE	PIGEONS & DOVES		
<i>Columba livia</i>	rock dove (I)	DEV	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	DEV	O, V
<i>Zenaida macroura marginella</i>	mourning dove	CSS, DCSS, MSS, DMSS	O, V
CUCULIDAE	CUCKOOS & ROADRUNNERS		
<i>Geococcyx californianus</i>	greater roadrunner	MSS	O
STRIGIDAE	TYPICAL OWLS		
<i>Athene cunicularia hypugaea</i>	western burrowing owl	DL, DMSS	O, B

**Attachment 2
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
CAPRIMULGIDAE	GOATSUCKERS		
<i>Chordeiles acutipennis texensis</i>	lesser nighthawk	DCSS	O
APODIDAE	SWIFTS		
<i>Aeronautes saxatalis</i>	white-throated swift	F	V
TROCHILIDAE	HUMMINGBIRDS		
<i>Calypte anna</i>	Anna's hummingbird	CSS, DCSS, MSS, DMSS, DL, DEV	O, V
<i>Calypte costae</i>	Costa's hummingbird	DMSS	O, V
<i>Selasphorus rufus</i>	rufous hummingbird	DCSS, DL	O, V
<i>Selasphorus sasin</i>	Allen's hummingbird	MFS, DL	O, V
PICIDAE	WOODPECKERS & SAPSUCKERS		
<i>Picoides nuttallii</i>	Nuttall's woodpecker	MFS, DEV	V
TYRANNIDAE	TYRANT FLYCATCHERS		
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	MSS	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	MSS, DMSS	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	DEV	O, V
<i>Sayornis saya</i>	Say's phoebe	DCSS	O, V
<i>Tyrannus verticalis</i>	western kingbird	DMSS	O
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	DEV	V
VIREONIDAE	VIREOS		
<i>Vireo bellii pusillus</i>	least Bell's vireo	MFS	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES		
<i>Aphelocoma californica</i>	California scrub-jay	DCSS, DEV	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	F, DEV, DCSS	O, V
<i>Corvus corax clarionensis</i>	common raven	F	O
ALAUDIDAE	LARKS		
<i>Eremophila alpestris actia</i>	California horned lark	DL	O
HIRUNDINIDAE	SWALLOWS		
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	F	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	F	O, V

**Attachment 2
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
AEGITHALIDAE	BUSHTIT		
<i>Psaltriparus minimus melanurus</i>	bushtit	CSS, MSS	O, V
TROGLODYTIDAE	WRENS		
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	MSS	O, V
<i>Salpinctes obsoletus obsoletus</i>	rock wren	DL	O, V
<i>Thryomanes bewickii</i>	Bewick's wren	CSS, DCSS, MSS, DMSS	O, V
SYLVIIDAE	GNATCATCHERS		
<i>Polioptila californica californica</i>	coastal California gnatcatcher	CSS, DCSS, MSS, DMSS, DL	O, V
TIMALIIDAE	BABLERS		
<i>Chamaea fasciata henshawi</i>	wrentit	CSS, MSS, DMSS	V
MIMIDAE	MOCKINGBIRDS & THRASHERS		
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	CSS, DCSS, MSS, DMSS, DEV, DL	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	MSS	O, V
STURNIDAE	STARLINGS & MYNAS		
<i>Sturnus vulgaris</i>	European starling (I)	DEV	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS		
<i>Phainopepla nitens lepida</i>	phainopepla	MSS	V
PARULIDAE	WOOD WARBLERS		
<i>Setophaga [=Dendroica] petechia</i>	yellow warbler	MFS	O, V
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	CSS, DCSS, DMSS	V
<i>Oreothlypis [=Vermivora] virginiae</i>	Virginia's warbler	DCSS	O
<i>Cardellina [=Wilsonia] pusilla</i>	Wilson's warbler	CSS, MFS	O, V
EMBERIZIDAE	EMBERIZIDS		
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	MSS	V
<i>Melospiza melodia</i>	song sparrow	DCSS, DMSS	O, V
<i>Melospiza [=Pipilo] crissalis</i>	California towhee	CSS, DCSS, DMSS, DEV	O, V
<i>Pipilo maculatus</i>	spotted towhee	MSS	V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	CSS, DCSS, DMSS	O, V
CARDINALIDAE	CARDINALS & GROSBEAKS		
<i>Passerina caerulea salicaria</i>	blue grosbeak	MFS	O

**Attachment 2
Wildlife Species Observed**

Scientific Name	Common Name	Occupied Habitat	Evidence of Occurrence
<i>Passerina amoena</i>	lazuli bunting	DMSS, CSS	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES		
<i>Icterus cucullatus nelsoni</i>	hooded oriole	DEV	V
<i>Sturnella neglecta</i>	western meadowlark	DL	O, V
FRINGILLIDAE	FINCHES		
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	DEV	V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	CSS, DCSS, MSS, DEV	O, V, N
MAMMALS (Nomenclature from Baker et al. 2003)			
LEPORIDAE	RABBITS & HARES		
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	DMSS, DL	O
<i>Sylvilagus audubonii</i>	desert cottontail	DMSS, DL	O
SCIURIDAE	SQUIRRELS & CHIPMUNKS		
<i>Spermophilus beecheyi</i>	California ground squirrel	CSS, DCSS, MSS, DMSS, DL	O, V, B
HETEROMYIDAE	POCKET MICE & KANGAROO RATS		
<i>Dipodomys sp.</i>	kangaroo rat	DCSS	B, T
MURIDAE	MICE & RATS		
<i>Neotoma sp.</i>	woodrat	DMSS	M
CANIDAE	CANIDS		
<i>Canis latrans</i>	coyote	MFS, DL	V, T, C
FELIDAE	CATS		
<i>Lynx rufus</i>	bobcat	CSS	S

(I) = Introduced species

HABITATS

CSS = Diegan coastal sage scrub
 DCSS = disturbed Diegan coastal sage scrub
 DEV = urban/developed
 DL = disturbed land
 DMSS = disturbed maritime succulent scrub
 F = flying overhead
 MSS = maritime succulent scrub
 MFS = mule fat scrub

EVIDENCE OF OCCURRENCE

B = burrow
 C = carcass
 M = midden
 N = nest
 O = observed
 S = scat
 T = track
 V = vocalization

ATTACHMENT 3

Sensitive Plant Species Observed or with the Potential to Occur

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
BRYOPHYTES				
POTTIACEAE				
<i>Triquetrella californica</i> coastal triquetrella	1B.2	Moss; coastal bluff scrub, coastal sage scrub; elevation below 350 feet. Known in California from fewer than 10 coastal occurrences in San Diego, Contra Costa, Del Norte, Mendocino, Marin, San Francisco, San Mateo, and Sonoma counties. Additional populations in Oregon.	L	Although potentially suitable habitat occurs on-site, this species was not observed. Surveys were conducted during times when this species would have been apparent if present.
SPHAEROCARPACEAE				
<i>Geothallus tuberosus</i> Campbell's liverwort	1B.1	Ephemeral liverwort; mesic coastal sage scrub, vernal pools; elevation below 2,000 feet. California endemic. Known from San Diego and Riverside counties. Recently reported from Camp Pendleton, likely extirpated elsewhere in urbanized San Diego County.	N	This species was not observed during focused rare plant surveys. No natural vernal pool habitat was observed within the project parcels. Although the site contains scattered man-made depressions that support ephemeral ponding, they undergo frequent disturbance and do not support plant species adapted for vernal pools. Additionally, the site contains very few suitably mesic areas. Any potentially suitable locales appear to be disturbed by human traffic and/or invaded by non-native plant species.
<i>Sphaerocarpos drewei</i> bottle liverwort	1B.1	Ephemeral liverwort; openings in chaparral and coastal sage scrub; elevation 300–2,000 feet. California endemic. Known from San Diego and Riverside counties.	N	This species was not observed during focused rare plant surveys. The site contains very few suitably mesic areas which are preferred by this species. Any potentially suitable locales appear to be disturbed by human traffic and/or invaded by non-native plant species.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
LYCOPODS				
SELAGINELLACEAE SPIKE-MOSS FAMILY				
<i>Selaginella cinerascens</i> ashy spike-moss	4.1	Perennial rhizomatous herb; chaparral, coastal scrub; elevation 65– 2,100 feet.	O	This species was observed in an approximate 30-square-foot area in undisturbed maritime succulent scrub in an east-central portion of the project parcels.
FERNS				
ASPLENIACEAE SPLEENWORT FAMILY				
<i>Asplenium vespertinum</i> western spleenwort	4.2	Perennial herb; chaparral, cismontane woodland, coastal sage scrub; rocky habitat; blooms February–June; elevation 500–3,300 feet.	N	The project parcels lack suitably mesic areas and are outside the known range of this species. Additionally, surveys were done at times when this species likely would have been apparent if present, but it was not observed.
OPHIOGLOSSACEAE ADDER'S TONGUE FAMILY				
<i>Ophioglossum californicum</i> California adder's-tongue	4.2	Perennial herb; chaparral, vernal pools, valley and foothill grasslands; blooms December–May; elevation 200–1,000 feet.	N	The project parcels lack chaparral, vernal pool, or grasslands habitat on-site. The man- made depressions on-site undergo frequent disturbance and do not support plant species adapted for vernal pools. Additionally, surveys were done at times when this species would have been apparent if present, but it was not observed.
ANGIOSPERMS: DICOTS				
CHENOPODIACEAE GOOSEFOOT FAMILY				
<i>Aphanisma blitoides</i> aphanisma	1B.2 NE MSCP	Annual herb; coastal bluff scrub, coastal sage scrub; sandy soils; blooms March–June; elevation less than 1,000 feet.	N	This species has only been recorded at the immediate coast. Surveys were done at times when this species likely would have been apparent if present, but it was not observed.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Atriplex coulteri</i> Coulter's saltbush	1B.2	Perennial herb; coastal bluff scrub, coastal dunes, coastal sage scrub, valley and foothill grasslands; alkaline or clay soil; blooms March–October; elevation less than 1,500 feet.	L	Although potentially suitable habitat occurs on-site, surveys were conducted during times when this species would have been apparent if present, but it was not observed.
<i>Atriplex pacifica</i> south coast saltbush	1B.2	Annual herb; coastal bluff scrub, coastal dunes, coastal sage scrub, playas; blooms March–October; elevation less than 500 feet.	O	This species was observed mainly in southwestern portions of the project parcels, often in eroded areas associated with disturbance from vehicle activity. Three individuals were observed in the northern portion of the project parcels. In total, approximately 153 individuals were recorded within the project parcels.
APIACEAE CARROT FAMILY				
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	CE/FE 1B.1 NE VPHCP	Biennial/perennial herb; vernal pools, mesic areas of coastal sage scrub and grasslands, blooms April–June; elevation less than 2,000 feet. Known from San Diego and Riverside counties. Additional populations occur in Baja California, Mexico.	N	Although there are recent records within 0.5 mile east of the site (CDFW 2017a), the locations contain mostly intact vernal pool complexes. No natural vernal pool habitat was observed within the project parcels. The project parcels contain scattered man-made depressions that support ephemeral ponding, but they are subject to regular disturbance by off-road vehicle and bicycle use. This disturbance has likely eliminated the presence of vernal pool plant species, including this species. In addition, surveys were conducted at a time when this species likely would have been apparent if present but was not observed.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
ASTERACEAE SUNFLOWER FAMILY				
<i>Ambrosia chenopodiifolia</i> San Diego bur-sage	2B.1	Perennial shrub; coastal sage scrub; cobbly loam soils; blooms April–June; elevation 150–500 feet. Known in California from fewer than 15 occurrences all of which are in San Diego County. Additional populations in Baja California, Mexico.	O	This species was observed in most portions of the project parcels, including areas that appear to have been disturbed by vehicle activity, and often occurs as a dominant component of maritime succulent scrub. It is estimated that approximately 16,500 individuals were observed within the project parcels.
<i>Ambrosia monogyra</i> [= <i>Hymenoclea monogyra</i>] singlewhorl burrobrush	2B.2	Perennial shrub; sandy, chaparral, Sonoran desert scrub; blooms August–November; elevation 30–1,650 feet.	N	Although a record occurs within 1 mile of the project parcels (CDFW 2017a), the parcels lack sandy chaparral or riparian habitat. Additionally, this is a conspicuous perennial species that would have been apparent if present and was not observed.
<i>Ambrosia pumila</i> San Diego ambrosia	FE 1B.1 NE MSCP	Perennial herb (rhizomatous); chaparral, coastal sage scrub, valley and foothill grasslands, creek beds, vernal pools, often in disturbed areas; blooms May–September; elevation less than 1,400 feet. Many occurrences extirpated in San Diego County.	L	Potentially suitable habitat occurs within the northern portion of the project parcels, and recent records occur within 0.5 mile of the site (CDFW 2017a). However, the records indicate that they could have been misidentified. Additionally, surveys were conducted when this species likely would have been apparent if present, but it was not observed.
<i>Artemisia palmeri</i> San Diego sagewort	4.2	Perennial deciduous shrub; coastal sage scrub, chaparral, riparian, mesic, sandy areas; blooms May–September; elevation less than 3,000 feet.	N	Potentially suitable habitat occurs along Moody Canyon in the northern portion of the project parcels. However, this is a conspicuous species that would have been apparent during the surveys if present and was not observed.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Baccharis vanessae</i> Encinitas baccharis [=Encinitas coyote brush]	CE/FT 1B.1 NE MSCP	Perennial deciduous shrub; chaparral; maritime; sandstone; blooms August–November; elevation less than 2,500 feet. San Diego County endemic. Known from fewer than 20 occurrences. Extirpated from Encinitas area.	N	This species was not observed during focused rare plant surveys. The project parcels lack sandstone soils and are outside the typical range for this species.
<i>Bahiopsis</i> [=Viguiera] <i>laciniata</i> San Diego viguiera [=San Diego County viguiera]	4.3	Perennial shrub; chaparral, coastal sage scrub; blooms February–June; elevation less than 2,500 feet.	O	This species was observed in many portions of the project parcels, especially in the eastern portion. It is estimated that approximately 600 individuals occur within the project parcels.
<i>Deinandra</i> [=Hemizonia] <i>conjugens</i> Otay tarplant	CE/FT 1B.1 NE MSCP	Annual herb; clayey soils of coastal scrub openings, valley and foothill grassland; blooms April–June, elevation less than 1,000 feet.	O	This species was observed on the north-facing slope south of Moody Canyon in the northern portion of the project parcels. On-site, this species was associated with areas of open scrub, particularly in areas previously disturbed by vehicle activity. It was often found with non-native grasses and other native annuals but mostly excluded from areas dominated by mustards or containing a high density of shrubs. Approximately 2,700 individuals were observed within the project parcels.
<i>Ericameria palmeri</i> var. <i>palmeri</i> [= <i>E. palmeri</i> ssp. <i>palmeri</i>] Palmer's goldenbush [=Palmer's ericameria]	1B.1 MSCP	Perennial evergreen shrub; chaparral coastal sage scrub, typically in mesic areas; blooms July–November; elevation less than 2,000 feet. Known in California from sixteen occurrences all of which are in San Diego County. Additional populations in Baja California, Mexico.	N	This is a conspicuous perennial species that would have been apparent during the surveys if present but was not observed.

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Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i> beach goldenaster	1B.1	Perennial herb; chaparral (coastal), coastal dunes, coastal scrub; blooms March–December; elevation less than 4,000 feet. Known in California from 12 occurrences presumed to be extant in San Diego County. Additional populations occur in Baja California, Mexico.	O	A total of 25 individuals of this species was recorded in sandy locales within disturbed coastal sage scrub in a central portion of the project parcels. During recent site visits on 5/15/19 and 6/18/19, only 1 beach goldenaster individual was relocated.
<i>Holocarpha virgata</i> ssp. <i>elongata</i> graceful tarplant	4.2	Annual herb; coastal sage scrub, cismontane woodland, valley and foothill grasslands, chaparral; blooms July–November; elevation 200–3,600 feet. California endemic. Known from San Diego, Riverside, and Orange counties.	L	Potentially suitable habitat occurs within the project parcels. However, surveys were conducted when this species likely would have been apparent in a vegetative form if present, but it was not observed.
<i>Isocoma menziesii</i> var. <i>decumbens</i> decumbent goldenbush	1B.2	Perennial shrub; chaparral, coastal sage scrub; sandy soils, often in disturbed areas; blooms April–November; elevation less than 500 feet.	N	Potentially suitable habitat occurs within the project parcels. However, this is a perennial species that would have been apparent if present and was not observed.
<i>Iva hayesiana</i> San Diego marsh-elder	2B.2	Perennial herb; marshes and swamps, playas, riparian areas; blooms April–September; elevation below 1,700 feet.	N	One record of this species from 1894 is attributed to “San Ysidro” (CDFW 2017a). Potentially suitable riparian areas occur within the northern portion of the project parcels. However, this is a conspicuous perennial species that would have been apparent during the surveys if present and was not observed.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Microseris douglasii</i> ssp. <i>platycarpa</i> small-flowered microseris	4.2	Annual herb; Clay lenses on perennial grasslands, vernal pools, openings in coastal sage scrub; blooms March–May; elevation 50–3,500 feet.	O	Approximately 20 individuals of this species were observed in one location in a south-central portion of the project parcels in association with an area of disturbance due to vehicle activity.
<i>Pentachaeta aurea</i> ssp. <i>aurea</i> golden-ray pentachaeta	4.2	Annual herb; cismontane woodland, coastal sage scrub, lower montane coniferous forest, perennial grasslands; blooms March–July; elevation 260–6,100 feet.	L	The project parcels provide few marginally suitable mesic, grassy areas within coastal sage scrub. Additionally, surveys were conducted when this species would have been apparent if present, but it was not observed.
<i>Senecio aphanactis</i> chaparral ragwort [=rayless ragwort and groundsel]	2B.2	Annual herb; chaparral, cismontane woodland, coastal sage scrub; blooms January–April; elevation less than 2,700 feet.	L	Potentially suitable habitat occurs within the project parcels. However, surveys were conducted when this species would have been apparent if present, and it was not observed. Additionally, the closest known population occurs approximately 7 miles east of the project parcels (Consortium of California Herbaria 2018).
<i>Xanthisma junceum</i> [= <i>Machaeranthera juncea</i>] rush-like bristleweed	4.3	Perennial herb; chaparral, coastal sage scrub; blooms June–January; elevation 800–3,300 feet.	N	Although potentially suitable habitat occurs within the project parcels, the parcels are outside the known range of this species. Additionally, this is a perennial species that would have been apparent if present and was not observed.
BORAGINACEAE BORAGE FAMILY				
<i>Harpagonella palmeri</i> Palmer's grappplinghook	4.2	Annual herb; chaparral, coastal sage scrub, valley and foothill grasslands; clay soils; blooms March–May; elevation less than 3,200 feet. Inconspicuous and easily overlooked.	O	A total of 12 individuals of this species was recorded in two locations in the south-central portion of the project parcels in disturbed maritime succulent scrub.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
<i>Nama stenocarpum</i> mud nama	2B.2	Annual/perennial herb; marshes and swamps, lake margins, riverbanks; blooms January–July; elevation less than 1,700 feet.	N	The project parcels lack suitable habitat for this species. The nearest record is from an unknown location on Otay Mesa (CDFW 2017a).
BRASSICACEAE MUSTARD FAMILY				
<i>Lepidium virginicum</i> var. <i>robinsonii</i> Robinson's peppergrass	4.3	Annual herb; coastal sage scrub, chaparral; blooms January–July; elevation less than 2,900 feet.	L	Potentially suitable habitat occurs within the project parcels. However, surveys were conducted when this species likely would have been apparent if present, but it was not observed. Additionally, the closest known population occurs approximately 7 miles east on Otay Mountain (Consortium of California Herbaria 2018).
CACTACEAE CACTUS FAMILY				
<i>Bergerocactus emoryi</i> golden-spined cereus	2B.2	Perennial stem succulent; closed-cone coniferous forest, chaparral, coastal sage scrub; sandy soils; blooms May–June; elevation less than 1,300 feet.	N	The nearest record for this species occurs approximately 1 mile north of the project parcels (CDFW 2017a). However, this is a perennial species that likely would have been apparent if present and was not observed.
<i>Cylindropuntia californica</i> var. <i>californica</i> [= <i>Opuntia parryi</i> var. <i>serpentina</i>] snake cholla	1B.1 NE MSCP	Perennial stem succulent; chaparral, coastal sage scrub; blooms April–May; elevation 100–500 feet.	O	A total of 8 individuals of this species was recorded in the southwestern and eastern portions of the project parcels, generally in association with undisturbed maritime succulent scrub.
<i>Ferocactus viridescens</i> San Diego barrel cactus	2B.1 MSCP	Perennial stem succulent; chaparral, coastal sage scrub, valley and foothill grasslands, vernal pools; blooms May–June; elevation less than 1,500 feet.	O	A total of 9 individuals was recorded in the southeastern portion of the project parcels in maritime succulent scrub.

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Sensitive Plant Species Observed or with the Potential to Occur

Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
CONVOLVULACEAE MORNING-GLORY FAMILY				
<i>Convolvulus simulans</i> small-flowered morning glory	4.2	Annual herb; openings in chaparral, coastal sage scrub, valley and foothill grasslands; clay substrate; blooms March–July; elevation less than 2,300 feet.	L	The project parcels may provide suitable soil for this species, as it often occurs alongside Otay tarplant. However, as surveys were conducted during this species' growing period, this species likely would have been apparent if present but was not observed.
<i>Dichondra occidentalis</i> western dichondra	4.2	Perennial herb (rhizomatous); chaparral, cismontane woodland, coastal sage scrub, valley and foothill grasslands; blooms March–July; elevation less than 200–1,650 feet.	L	A record of this species occurs within approximately 1,000 feet of the project parcels (Consortium of California Herbaria 2018), and potentially suitable habitat occurs on-site. However, this species likely would have been apparent during the surveys if present and was not observed.
CRASSULACEAE STONECROP FAMILY				
<i>Dudleya brevifolia</i> [= <i>D. blochmaniae</i> ssp. <i>brevifolia</i>] short-leaved dudleya [short-leaved live-forever]	CE 1B.1 NE MSCP	Perennial herb; southern maritime chaparral, coastal sage scrub on Torrey sandstone; blooms in April; elevation less than 1,000 feet. San Diego County endemic. Known from fewer than five occurrences in the Del Mar and La Jolla areas.	N	This species was not observed during focused rare plant surveys, and the project parcels lack suitable Torrey sandstone soils.
<i>Dudleya variegata</i> variegated dudleya	1B.2 NE MSCP	Perennial herb; openings in chaparral, coastal sage scrub, grasslands, vernal pools; blooms May–June; elevation less than 1,900 feet.	L	Recent records of this species occur within less than 1 mile of the project parcels (CDFW 2017a). However, surveys were conducted during the blooming period of this species. Therefore, it likely would have been apparent if present but was not observed.

Attachment 3
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EUPHORBIACEAE SPURGE FAMILY				
<i>Euphorbia misera</i> cliff spurge	2B.2	Shrub; coastal sage scrub, maritime succulent scrub, coastal bluff scrub; blooms December–August; elevation less than 2,000 feet.	O	A total of 129 individuals of this species was recorded in the southwestern, eastern, and northern portions of the project parcels, generally in association with undisturbed maritime succulent scrub.
FABACEAE LEGUME FAMILY				
<i>Astragalus deanei</i> Dean's milkvetch	1B.1	Perennial herb; chaparral, coastal sage scrub, riparian, blooms February–May, elevation 250–2,300 feet. San Diego County endemic. Known from fewer than 15 occurrences within tributaries to Otay and Sweetwater rivers.	N	Potentially suitable habitat occurs within the project parcels. However, this species likely would have been apparent if present and was not observed.
<i>Astragalus tener</i> var. <i>titi</i> coastal dunes milkvetch	CE/FE 1B.1 NE MSCP	Annual herb; coastal bluff scrub, coastal dunes, sandy soils, mesic coastal prairie; blooms March–May; elevation less than 200 feet. California endemic. Known from fewer than 10 occurrences in San Diego (presumed extirpated), Los Angeles (presumed extirpated), and Monterey counties.	N	The project parcels lack suitable coastal dune or bluff habitat.
FAGACEAE OAK FAMILY				
<i>Quercus dumosa</i> Nuttall's scrub oak	1B.1	Perennial evergreen shrub; closed-cone coniferous forest, coastal chaparral, coastal sage scrub; sandy and clay loam soils; blooms February–March; elevation less than 1,300 feet.	N	Records of this species occur within 2 miles of the site (CDFW 2017a). However, this large perennial would have been apparent during the surveys if present and was not observed.

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Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
GERANIACEAE GERANIUM FAMILY				
<i>California macrophylla</i> round-leaved filaree	1B.2	Annual herb; cismontane woodland, grassland; clay soils; blooms March–May; elevation less than 4,000 feet.	L	The project parcels lack suitable friable clay soil. Additionally, this species likely would have been apparent during the surveys if present and was not observed.
LAMIACEAE MINT FAMILY				
<i>Acanthomintha ilicifolia</i> San Diego thornmint	CE/FT 1B.1 NE MSCP	Annual herb; chaparral, coastal sage scrub, and grasslands; friable or broken clay soils; blooms April–June; elevation less than 3,200 feet.	N	The project parcels lack suitable friable clay soil. Additionally, as surveys were conducted during this species' blooming period, this species likely would have been apparent if present but was not observed.
<i>Pogogyne abramsii</i> San Diego mesa mint	CE/FE 1B.1 NE VPHCP	Annual herb; vernal pools; blooms April–July; elevation 300–700 feet. San Diego County endemic.	N	This species was not observed during focused rare plant surveys, and the project parcels are outside the known range of this species.
<i>Pogogyne nudiuscula</i> Otay mesa mint	CE/FE 1B.1 NE VPHCP	Annual herb; vernal pools; blooms May–July; elevation 300–820 feet. In California, known from approximately 10 occurrences in Otay Mesa in San Diego County. Additional populations occur in Baja California, Mexico.	N	Although there are recent records within 0.5 mile east of the project parcels (CDFW 2017a), the locations contain mostly intact vernal pool complexes. No natural vernal pool habitat was observed within the project parcels. The project parcels contain scattered man-made depressions that support ephemeral ponding; however, they are subject to regular disturbance by off-road vehicle and bicycle use. This disturbance has likely eliminated the presence of vernal pool plant species, including this species. In addition, surveys were conducted during this species' blooming period. Therefore, this species likely would have been apparent if present but was not observed.

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Species' <i>Scientific Name</i> Common Name	Listing Status	Habitat Requirements/ Blooming Period	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
MONTIACEAE MONTIA FAMILY				
<i>Calandrinia breweri</i> Brewer's calandrinia	4.2	Annual herb; chaparral and coastal sage scrub; sandy or loamy soils, disturbed sites and burns; blooms March–June; elevation less than 4,000 feet.	L	Although the project parcels contain coastal sage scrub, no areas appear to have burned recently which is the preferred condition for this species. Additionally, this species likely would have been apparent during the surveys if present and was not observed.
<i>Cistanthe</i> [= <i>Calandrinia</i>] <i>maritima</i> seaside cistanthe	4.2	Annual herb; coastal bluff scrub, coastal sage scrub, valley and foothill grassland; blooms February–August; elevation less than 1,000 feet.	O	This species was observed in small groups in the southwestern, southeastern, and northeastern portions of the project parcels, often occurring on open, south-facing slopes. A total of 78 individuals was recorded within the project parcels.
ONAGRACEAE EVENING-PRIMROSE FAMILY				
<i>Camissoniopsis</i> [= <i>Camissonia</i>] <i>lewisii</i> Lewis's evening primrose	3	Annual herb; coastal bluff scrub, cismontane woodland, coastal dunes, coastal sage scrub, valley and foothill grasslands; sandy or clay soils; blooms March–July; elevation less than 1,000 feet.	N	The project parcels lack coastal habitats preferred by this species.
OROBANCHACEAE BROOM-RAPE FAMILY				
<i>Dicranostegia orcuttiana</i> [= <i>Cordylanthus orcuttianus</i>] Orcutt's bird's-beak	2B.1 MSCP	Annual herb (hemiparasitic); coastal sage scrub; blooms March–September; elevation less than 1,200 feet.	L	A recent record was recorded approximately 2 miles north of the project parcels along the Otay River (CDFW 2017a), and suitable habitat occurs along Moody Canyon within the northern portion of the project parcels. However, this species likely would have been apparent during the surveys if present and was not observed.

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Sensitive Plant Species Observed or with the Potential to Occur

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<i>Stemodia durantifolia</i> purple stemodia	2B.1	Perennial herb; Sonoran desert scrub, mesic; sandy soils; blooms January–December; elevation 600–1,000 feet.	N	Although Moody Canyon, which occurs in the northern portion of the project parcels, could provide potentially suitable habitat for this species, the site is slightly out of the known range of this species with the nearest known records occurring on Otay Mountain (Reiser 2001). Additionally, surveys were conducted during this species' blooming period. Therefore, this species likely would have been apparent during the surveys if present but was not observed.
POLEMONIACEAE PHLOX FAMILY				
<i>Navarretia fossalis</i> spreading navarretia [=prostrate navarretia]	FT 1B.1 NE VPHCP	Annual herb; vernal pools, marshes and swamps, chenopod scrub; blooms April–June; elevation 100–4,300 feet.	N	Although there are recent records within 0.5 mile east of the project parcels (CDFW 2017a), the locations contain mostly intact vernal pool complexes. No natural vernal pools were observed within the project parcels. The project parcels contain scattered man-made depressions that support ephemeral ponding, but they are subject to regular disturbance by off-road vehicle and bicycle use. This disturbance has likely eliminated or precluded the presence of vernal pool plant species, including this species. In addition, surveys were conducted during this species' blooming period. Therefore, this species likely would have been apparent if present but was not observed.

Attachment 3
Sensitive Plant Species Observed or with the Potential to Occur

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POLYGONACEAE BUCKWHEAT FAMILY				
<i>Chorizanthe polygonoides</i> var. <i>longispina</i> long-spined spineflower	1B.2	Annual herb; clay soils; openings in chaparral, coastal sage scrub, near vernal pools and montane meadows, April–July; elevation 100–5,000 feet.	N	The project parcels lack undisturbed open areas with clay soil. The scattered man-made depressions on-site appear to undergo regular disturbance and do not support plant species adapted for vernal pools. Additionally, surveys were conducted during this species' blooming period. Therefore, this species likely would have been apparent during the surveys if present but was not observed.
<i>Mucronea californica</i> [= <i>Chorizanthe californica</i> var. <i>suksdorfii</i>] California spineflower	4.2	Annual herb; coastal sage scrub, chaparral, dunes, grasslands, cismontane woodlands, very sandy microhabitats; blooms March–August; elevation less than 4,600 feet. California endemic. Known from San Diego, Riverside, Los Angeles, Santa Barbara, San Bernardino, San Luis Obispo, Ventura, Kern, and Monterey counties.	N	Although small portions of the project parcels contain sandy soil, these areas are highly disturbed and unlikely to support this species. Additionally, this species is only known from the immediate coast in San Diego County and would have been apparent during the surveys if present.
<i>Nemacaulis denudata</i> var. <i>gracilis</i> slender woolly-heads	2B.2	Annual herb; coastal and desert dunes, Sonoran desert scrub; blooms March–May; elevation 170–1,300 feet.	N	One record from 1903 documents this species in the vicinity of San Ysidro and the Tijuana River (CDFW 2017a). The project parcels lack suitable coastal dune or desert scrub habitat. In addition, surveys were conducted during this species' blooming period. Therefore, this species likely would have been apparent if present but was not observed.

Attachment 3
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RANUNCULACEAE BUTTERCUP FAMILY				
<i>Myosurus minimus</i> little mousetail	3.1	Annual herb; vernal pools, perennial grasslands; blooms March–June; elevation 70–2,100 feet.	N	Although there are recent records within 0.5 mile east of the project parcels (CDFW 2017a), the locations contain mostly intact vernal pool complexes. No vernal pools were observed within the project parcels. The project parcels contain scattered man-made depressions that support ephemeral ponding, but they are subject to regular disturbance by off-road vehicle and bicycle use. This disturbance has likely eliminated or precluded the presence of vernal pool plant species, including this species. As surveys were conducted during this species' blooming period, it likely would have been apparent if present but was not observed.
RHAMNACEAE BUCKTHORN FAMILY				
<i>Adolphia californica</i> California adolphia	2B.1	Perennial deciduous shrub; Diegan coastal sage scrub and chaparral; clay soils; blooms December–May; elevation 100–2,500 feet.	N	Records of this species occur within 0.5 mile of the project parcels (CDFW 2017a), and the parcels provide potentially suitable habitat. However, this perennial shrub likely would have been apparent during the surveys if present and was not observed.

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ROSACEAE ROSE FAMILY				
<i>Rosa minutifolia</i> small-leaved rose	CE 2B.1 MSCP	Perennial deciduous shrub; coastal sage scrub; blooms January–June; elevation 500–550 feet. Known in the U.S. from only one occurrence on Otay Mesa in San Diego county. This entire occurrence was transplanted to a new preserved location on Otay Mesa for mitigation in 1997. Additional populations occur in Baja California, Mexico.	N	This woody shrub would have been apparent during the surveys if present and was not observed.
<i>Lycium californicum</i> California box-thorn	4.2	Perennial shrub; coastal bluff scrub, coastal sage scrub; blooms March–August; elevation less than 500 feet.	O	A total of 23 individuals of this species was recorded in the southwestern, northwestern, northeastern, and central portions of the project parcels, mostly in association with undisturbed maritime succulent scrub.
ANGIOSPERMS: MONOCOTS				
AGAVACEAE AGAVE FAMILY				
<i>Agave shawii</i> var. <i>shawii</i> Shaw's agave	2B.1 NE MSCP	Perennial leaf succulent; coastal bluff scrub, coastal sage scrub, maritime succulent scrub; blooms September–May; elevation less than 400 feet.	N	This conspicuous perennial species likely would have been apparent during the surveys if present and was not observed.
POACEAE GRASS FAMILY				
<i>Hordeum intercedens</i> bobtail barley [=vernal barley]	3.2	Annual herb; coastal dunes, coastal sage scrub, valley and foothill grasslands, vernal pools; blooms March–June; elevation less than 3,300 feet.	N	The project parcels lack vernal pools, which are a preferred habitat of this species. The scattered man-made depressions on-site undergo regular disturbance and do not support plant species adapted to vernal pools. Additionally, surveys were done at times when this species would have been apparent, and it was not observed.

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Sensitive Plant Species Observed or with the Potential to Occur

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<i>Orcuttia californica</i> California Orcutt grass	CE/FE 1B.1 NE VPHCP	Annual herb; vernal pools; blooms April–August; elevation 50–2,200 feet.	N	Although there are recent records within 0.5 mile east of the project parcels (CDFW 2017a), the locations contain mostly intact vernal pool complexes. No vernal pools were observed within the project parcels. The project parcels contain scattered man-made depressions that support ephemeral ponding, but they are subject to regular disturbance by off-road vehicle and bicycle use. This disturbance has likely eliminated or precluded the presence of vernal pool plant species, including this species.
<i>Stipa diegoensis</i> [= <i>Achnatherum diegoense</i>] San Diego needle grass	4.2	Perennial herb; rocky soils, chaparral, coastal sage scrub, often near streams; blooms February–June; elevation less than 2,600 feet.	N	Recent records of this species occur within approximately 1,000 feet of the site (Consortium of California Herbaria 2018), and the site contains suitable coastal sage scrub near a water channel. However, this perennial species would have been apparent during the surveys if present and was not observed.
THEMIDACEAE BRODIAEA FAMILY				
<i>Bloomeria</i> [= <i>Muilla</i>] <i>clevelandii</i> San Diego goldenstar	1B.1 MSCP	Perennial herb (bulbiferous); chaparral, coastal sage scrub, valley and foothill grassland, vernal pools; clay soils; blooms May; elevation 170– 1,500 feet.	N	As surveys were conducted during the blooming period for this species, it likely would have been apparent if present.
<i>Brodiaea orcuttii</i> Orcutt's brodiaea	1B.1 MSCP	Perennial herb (bulbiferous); closed cone coniferous forest, chaparral, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay soil; blooms May–July; elevation less than 5,600 feet.	N	As surveys were conducted during the blooming period for this species, it likely would have been apparent if present.

Attachment 3
Sensitive Plant Species
Observed or with the Potential for Occurrence

STATUS CODES

FEDERAL CANDIDATES AND LISTED PLANTS

FE = Federally listed endangered
FT = Federally listed threatened

STATE LISTED PLANTS

CE = State listed endangered

CALIFORNIA NATIVE PLANT SOCIETY (CNPS): CALIFORNIA RARE PLANT RANKS (CRPR)

1B = Species rare, threatened, or endangered in California and elsewhere. These species are eligible for state listing.
2B = Species rare, threatened, or endangered in California but more common elsewhere. These species are eligible for state listing.
3 = Species for which more information is needed. Distribution, endangerment, and/or taxonomic information is needed.
4 = A watch list of species of limited distribution. These species need to be monitored for changes in the status of their populations.
.1 = Species seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat).
.2 = Species fairly threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat).
.3 = Species not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known).

CITY OF SAN DIEGO

NE = Narrow endemic
MSCP = Multiple Species Conservation Program covered species
VPHCP = Vernal Pool Habitat Conservation Plan covered species

DETECTED/POTENTIAL TO OCCUR

O = observed
N = not expected
L = low potential
M = moderate potential
H = high potential

ATTACHMENT 4

Sensitive Wildlife Species Occurring or with the Potential to Occur

Attachment 4
Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
INVERTEBRATES (Nomenclature from Eriksen and Belk 1999; San Diego Natural History Museum 2002)				
BRANCHINECTIDAE FAIRY SHRIMP				
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT	Vernal pools.	N	This species was not detected during focused surveys conducted during the 2016-2017 wet season or 2017 dry season.
San Diego fairy shrimp <i>Branchinecta sandiegonensis</i>	FE, VPHCP, *	Vernal pools.	O	This species has been reported previously within 1 mile of the project parcels (CDFW 2017a, USFWS 2017) and was observed within an artificial ditch in a stand of disturbed Diegan coastal sage scrub near the western edge of the project parcels.
STREPTOCEPHALIDAE FAIRY SHRIMP				
Riverside fairy shrimp <i>Streptocephalus woottoni</i>	FE, VPHCP, *	Vernal pools.	N	This species has been reported previously within 1 mile of the project parcels (CDFW 2017a). However, this species was not detected during focused branchiopod surveys conducted during the 2016-2017 wet season or dry season sampling conducted in 2017. In addition, as the observed on-site ponding duration in an above-average rainfall year (2016-2017) was not sufficient to support this species, it is unlikely that any of the depressions within the project parcels provide a favorable environment for this species.

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HESPERIIDAE SKIPPERS				
Harbison dun skipper <i>Euphyes vestris harbisoni</i>	*	Woodland meadows, bogs, grasslands. Host plant <i>Carex spissa</i> . Adult emergence late May–early July.	N	No suitable habitat or host plant occurs on the subject parcels.
LYCAENIDAE BLUES, COPPERS, & HAIRSTREAKS				
Hermes copper <i>Lycaena hermes</i>	FC, *	Chaparral and coastal sage scrub where host plant <i>Rhamnus crocea</i> occurs. Adult emergence late May to July.	N	One individual <i>Rhamnus crocea</i> was observed in maritime succulent scrub; however, this plant species is not present in sufficient numbers to support a population of Hermes copper.
NYPHALIDAE BRUSH-FOOTED BUTTERFLIES				
Quino checkerspot <i>Euphydryas editha quino</i>	FE	Open, dry areas in foothills, mesas, lake margins. Larval host plant <i>Plantago erecta</i> . Adult emergence mid-January through April.	L	This species has been observed previously within 2 miles of the project parcels (RECON 2005), and suitable habitat with larval host plant dot-seed plantain was observed within the project parcels. However, this species was not observed during presence/absence Quino checkerspot butterfly surveys conducted in 2017.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
AMPHIBIANS (Nomenclature from Crother et al. 2012)				
PELOBATIDAE SPADEFOOT TOADS				
Western spadefoot <i>Spea hammondi</i>	SSC	Vernal pools, floodplains, and alkali flats within areas of open vegetation.	L	This species has been reported previously within 1 mile of the project parcels (County of San Diego 2017). Although the project parcels contain scattered depressions that provide ephemeral water sources for breeding, no tadpoles were observed on-site during 2016-2017 wet season fairy shrimp surveys, which were conducted in an above-average rainfall year.
REPTILES (Nomenclature from Crother et al. 2012)				
San Diego banded gecko <i>Coleonyx variegatus abbotti</i>	SSC	Granite and rocky outcrops in coastal sage scrub and chaparral. Most often found in coastal foothills between 500 and 3,000 feet in elevation.	N	Although the project parcels contain coastal sage scrub, no suitable rocky outcrops are present.

Attachment 4
Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
IGUANIDAE IGUANID LIZARDS				
Coast horned lizard <i>Phrynosoma blainvillii</i> [= <i>P. coronatum</i> coastal population]	SSC, MSCP, *	Chaparral, coastal sage scrub with fine, loose soil. Partially dependent on harvester ants for forage.	L	Moderately suitable habitat is present within the project parcels, and a large expanse of highly suitable habitat occurs off-site to the east. This species has been reported previously within 1 mile north of the project parcels (CDFW 2017a). However, no harvester ants (a primary food source for this species) were observed within the project parcels. In addition, the high number of biological surveys conducted in spring and summer of 2017 for this project would have likely resulted in a detection of this species, if present.
SCINCIDAE SKINKS				
Coronado skink <i>Plestiodon</i> [= <i>Eumeces</i>] <i>skiltonianus</i> <i>interparietalis</i>	SSC	Grasslands, open woodlands and forest, broken chaparral. Rocky habitats near streams.	L	This species has been observed previously within 2 miles northeast of the project parcels adjacent to Dennery Canyon (RECON 2005). However, potentially suitable habitats within the project parcels are somewhat splintered and disturbed.
TEIIDAE WHIPTAIL LIZARDS				
Belding's orange-throated whiptail <i>Aspidoscelis hyperythra beldingi</i>	SSC, MSCP	Chaparral, coastal sage scrub with coarse sandy soils and scattered brush.	O	This species has been reported previously within 1 mile of the project parcels (CDFW 2017a) and was repeatedly observed within the project parcels.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
Coastal whiptail <i>Aspidoscelis tigris stejnegeri</i>	SSC	Coastal sage scrub, chaparral, woodlands, and streamsides where plants are sparsely distributed.	L	Suitable coastal sage scrub habitat with a mix of shrubby and open areas occurs within the project parcels. However, this species was not observed during 2016 or 2017 surveys. The nearest record of this species is on eastern Otay Mesa, approximately 7.6 miles to the east (CDFW 2017a).
BOIDAE BOAS				
Rosy boa <i>Lichanura trivirgata roseofusca</i>	*	Coastal sage scrub, chaparral in inland and desert locales with rocky soils.	L	Only one record of this species occurs within the vicinity of the project parcels: a 1923 collection specimen found "1 mi S of San Ysidro" (County of San Diego 2017). Moderately suitable habitat occurs in the subject parcels; however, the high level of disturbance from recreational users and off-highway vehicle access greatly reduces the habitat value.
COLUBRIDAE COLUBRID SNAKES				
California glossy snake <i>Arizona elegans occidentalis</i>	SSC	Occurs in desert and other arid habitats, particularly where sandy substrates are present. In western San Diego County, one population is known from El Monte Valley.	N	Only one record of this species occurs in the project vicinity: a 1916 record from near present-day Interstate 5 at the international border (CDFW 2017a). This species is not presently known from this part of the San Diego County.

Attachment 4
Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
Baja California coachwhip <i>Coluber fuliginosus</i>	SSC	In California restricted to southern San Diego County, where it is known from grassland and coastal sage scrub.	H	Although only one 1941 CNDDDB record of this species exists from Otay Mesa (CDFW 2017a), this species was observed in 2017 within one mile northeast of the project parcels (San Diego Natural History Museum 2017). Potentially suitable coastal sage scrub and grassy areas are present within the project parcels, including the project impact area.
San Diego ring-necked snake <i>Diadophis punctatus similis</i>	*	Rocky areas in wet locales, such as swamps, damp forests, or riparian woodlands.	L	This species is known from a 1939 collection specimen from San Ysidro, although no detailed information exists (County of San Diego 2017). Riparian areas are extremely limited and largely unsuitable within the project parcels.
Coast patch-nosed snake <i>Salvadora hexalepis virgultea</i>	SSC	Grasslands, chaparral, sagebrush, desert scrub. Found in sandy and rocky areas.	L	Marginally suitable habitat is present within the coastal sage scrub and maritime succulent scrub; however, current and historic disturbance have significantly reduced the habitat quality.
CROTALIDAE RATTLESNAKES				
Red diamond rattlesnake <i>Crotalus ruber</i>	SSC	Desert scrub and riparian, coastal sage scrub, open chaparral, grassland, and agricultural fields. Typically found in areas with large rock piles or outcrops.	L	Moderately suitable habitat for this species is present within the coastal sage scrub and maritime succulent scrub. However, current and historic disturbance have significantly reduced the habitat quality, and no large rock outcrops are present on-site.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
BIRDS (Nomenclature from American Ornithologists' Union 2015 and Unitt 2004)				
ARDEIDAE HERONS & BITTERNS				
Great blue heron (rookery site) <i>Ardea herodias</i>	*	Bays, lagoons, ponds, lakes. Non-breeding year-round visitor, some localized breeding.	O (fly-over) N (nesting)	This species was observed flying over the project parcels, and this species may rarely utilize the site for foraging. However, no suitable nesting habitat is present within the project parcels.
ACCIPITRIDAE HAWKS, KITES, & EAGLES				
Cooper's hawk (nesting) <i>Accipiter cooperii</i>	WL, MSCP	Mature forest, open woodlands, wood edges, river groves. Parks and residential areas.	O	This species was observed during one survey visit in 2017. This species may forage within the project parcels, as potentially suitable nest sites (e.g., mature eucalyptus trees and other ornamental tree species) are available in the adjacent development. However, the project parcels lack suitable mature trees for nest sites.
Sharp-shinned hawk (nesting) <i>Accipiter striatus velox</i>	WL	Open deciduous woodlands, forests, edges, parks, residential areas. Migrant and winter visitor.	L (foraging) N (nesting)	The project parcels provide potentially suitable foraging grounds for this uncommon winter visitor.
Ferruginous hawk (wintering) <i>Buteo regalis</i>	WL, MSCP	Require large foraging areas. Grasslands, agricultural fields. Uncommon winter resident.	L (foraging) N (nesting)	The project parcels provide potentially suitable foraging grounds for this uncommon winter visitor.
Northern harrier (nesting) <i>Circus cyaneus hudsonius</i>	SSC, MSCP	Coastal lowland, marshes, grassland, agricultural fields. Migrant and winter resident, rare summer resident.	O	This species was observed repeatedly flying over and foraging within the project parcels. The project parcels provide potentially suitable nesting habitat.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
White-tailed kite (nesting) <i>Elanus leucurus</i>	CFP, *	Nest in riparian woodland, oaks, sycamores. Forage in open, grassy areas. Year-round resident.	M (foraging) N (nesting)	This species has been observed previously within 2 miles northeast of the project parcels (RECON 2005). The project parcels provide potentially suitable foraging habitat but lack suitable nest sites such as oaks or other mature trees with dense canopy.
FALCONIDAE FALCONS & CARACARAS				
Merlin <i>Falco columbarius</i>	WL	Rare winter visitor. Grasslands, agricultural fields, occasionally mud flats.	L (foraging) N (nesting)	The project parcels provide potentially suitable foraging grounds for this rare winter visitor.
Prairie falcon (nesting) <i>Falco mexicanus</i>	WL	Grassland, agricultural fields, desert scrub. Uncommon winter resident. Rare breeding resident.	O (fly-over) L (nesting)	This species was observed flying over the project parcels on two occasions. The project parcels provide suitable foraging habitat and abundant prey items (i.e., California ground squirrels). However, the project parcels lack suitable cliff ledges or bluffs for nesting. Only the tall ornamental tree species within the adjacent development have potential to provide nesting habitat, as this species has been known to reuse stick nests of hawks or ravens (Unitt 2004).
LARIDAE GULLS, TERNS, & SKIMMERS				
California gull (nesting colony) <i>Larus californicus</i>	WL	Common in San Diego County as a winter species, coastal waters, lakes, ponds, garbage dumps.	O (fly-over) N (nesting)	This species was observed flying over the project parcels and may occasionally visit the site to forage. However, the project parcels provide no suitable nesting habitat, and this species is only a winter visitor to San Diego County.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

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STRIGIDAE TYPICAL OWLS				
Western burrowing owl (burrow sites) <i>Athene cunicularia hypugaea</i>	SSC, MSCP	Grassland, agricultural land, coastal dunes. Require rodent burrows. Declining resident.	O	This species has previously been reported within 1 mile of the project parcels (County of San Diego 2017) and was observed within the central portion of the project parcels. Suitable breeding habitat occurs within the project parcels. However, based on 2017 breeding season survey results, this species currently appears to be utilizing the site as wintering habitat.
LANIIDAE SHRIKES				
Loggerhead shrike <i>Lanius ludovicianus</i>	SSC	Open foraging areas near scattered bushes and low trees.	L	This species has been observed previously within 2 miles northeast of the project parcels (RECON 2005). The project parcels, including the project impact area, provide potentially suitable nesting and foraging habitat due to the presence of dense thickets of thorny shrubs and cactus for nesting and adjacent open habitat for foraging. However, this species was not observed during the 2016 and 2017 surveys.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
VIREONIDAE VIREOS				
Least Bell's vireo (nesting) <i>Vireo bellii pusillus</i>	FE, CE, MSCP	Willow riparian woodlands. Summer resident.	O	This species has previously been reported within 1 mile of the project parcels (CDFW 2017a) and was observed only once within project parcels during focused surveys and once incidentally during general surveys in the adjacent survey buffer. Marginally suitable breeding habitat (riparian vegetation) occurs within Moody Canyon, located in the northern portion of the project parcels; outside of the project impact area. However, based on 2017 focused survey results, this species only appears to be utilizing the site during migration.
ALAUDIDAE LARKS				
California horned lark <i>Eremophila alpestris actia</i>	WL	Sandy shores, mesas, disturbed areas, grasslands, agricultural lands, sparse creosote bush scrub.	O	This species was observed on one occasion foraging within disturbed land in the project parcels. The open areas of disturbed land within the central portion of the project parcels and project impact area provide potentially suitable nesting habitat for this species. However, the suitability of this habitat may be negatively affected by the common occurrence of pedestrian and off-road vehicle activity.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
TROGLODYTIDAE WRENS				
Coastal cactus wren <i>Campylorhynchus brunneicapillus sandiegensis</i>	SSC, MSCP, *	Maritime succulent scrub, coastal sage scrub with <i>Opuntia</i> thickets. Rare localized resident.	M	This species has previously been reported within 1 mile of the project parcels (CDFW 2017a, County of San Diego 2017) and was observed in the adjacent survey buffer north of the project parcels boundary during focused cactus wren surveys. The maritime succulent scrub at the northern edge of the project parcels supports cactus patches suitable for nesting; however, only the cactus-dominated stands of maritime succulent scrub within the southeastern and southwestern portion of the project impact area have potential to support this species.
SYLVIIDAE GNATCATCHERS				
Coastal California gnatcatcher <i>Polioptila californica californica</i>	FT, SSC, MSCP	Coastal sage scrub, maritime succulent scrub. Resident.	O	This species has previously been reported within 1 mile of the project parcels (CDFW 2017a, County of San Diego 2017, USFWS 2017) and was frequently observed during general and focused surveys within suitable habitat throughout the project parcels. Based on 2017 focused survey results, the project parcels and surrounding 300-foot buffer support a minimum of six nesting pairs; however, while the project impact area supports suitable coastal sage scrub habitat, the primary use areas were located outside of the project impact area.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

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PARULIDAE WOOD WARBLERS				
Yellow warbler (nesting) <i>Setophaga [=Dendroica] petechia</i>	SSC	Breeding restricted to riparian woodland. Spring and fall migrant, localized summer resident, rare winter visitor.	O N (nesting)	This species was observed on one occasion moving west through the mule fat scrub in the northern portion of the project parcels and the ornamental trees just northwest of the project parcels.
Yellow-breasted chat (nesting) <i>Icteria virens auricollis</i>	SSC	Dense riparian woodland. Localized summer resident.	N	No suitable dense riparian habitats occur within the project parcels, and this species was not detected during focused surveys for least bell's vireo.
Virginia's warbler (nesting) <i>Oreothlypis virginiae</i>	WL	Great Basin and Rocky Mountains, rare vagrant to coastal southern California	O N (nesting)	This species was observed on one occasion in the disturbed land in the southern portion of the project parcels. This species is a rare vagrant in San Diego County and is not expected to nest within the project parcels.
EMBERIZIDAE EMBERIZIDS				
Southern California rufous-crowned sparrow <i>Aimophila ruficeps canescens</i>	WL, MSCP	Coastal sage scrub, chaparral, grassland. Resident.	H	This species has been reported previously within one mile of the project parcels (County of San Diego 2017) and was repeatedly detected within maritime succulent scrub in the survey buffer adjacent to the eastern boundary of the project parcels. The open stands of Diegan coastal sage scrub and maritime succulent scrub on south-facing slopes in the western, southern, and eastern portions of the project parcels, including the project impact area, provide potentially suitable nesting habitat for this species.

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Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
Grasshopper sparrow (nesting) <i>Ammodramus savannarum perpallidus</i>	SSC	Tall grass areas. Localized summer resident, rare in winter.	N	Suitable tall grasslands do not occur within the project parcels due to the invasion of non-native annual species such as garland daisy.
Bell's sage sparrow <i>Artemisiospiza [=Amphispiza] belli belli</i>	WL	Chaparral, coastal sage scrub. Localized resident.	L	This species has been reported previously within one mile of the project parcels (County of San Diego 2017). The open stands of maritime succulent scrub within and adjacent to the project parcels provide potentially suitable nesting habitat. However, the suitability of this habitat may be negatively affected by the common occurrence of pedestrian and off-road vehicle activity.
MAMMALS (Nomenclature from Baker et al. 2003)				
VESPERTILIONIDAE VESPER BATS				
Pallid bat <i>Antrozous pallidus</i>	SSC	Deserts, canyons, and grasslands below 6,000 feet. Coniferous forests above 6,000 feet. Most abundant in desert habitats. Day and night roosts are located in crevices in rock outcrops, caves, mines, and trees. Tree roosts are primarily in cavities on redwoods, sequoias, oaks, riparian trees, and fruit trees, as well under exfoliating bark.	N	No suitable roosting habitat is present within the project parcels. Arthropods are present for foraging, but much of the habitat has been historically degraded by human activities. Lack of permanent water source on site further reduces habitat quality.

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Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
Pale big-eared bat <i>Corynorhinus townsendii pallescens</i>	SSC	Caves, mines, buildings. Found in a variety of habitats, arid and mesic. Individual or colonial. Extremely sensitive to disturbance	N	Suitable roosting habitat is not present within the project parcels, and suitable foraging habitat is limited.
Townsend's western big-eared bat <i>Corynorhinus townsendii townsendii</i>	SSC	Day roosts in small groups, primarily in caves and mines. Very sensitive to human disturbance and may abandon roosts following human disruption. Night roosts may occur in caves, mines, or buildings. Found in a variety of habitats, arid and mesic. Primarily feeds on moths.	N	No caves or mines are present on site. Little potential foraging habitat is present on site that would be expected to attract this species. Foraging more likely to occur in longer-standing water that attracts a high density of moths and other invertebrates.
Spotted bat <i>Euderma maculatum</i>	SSC	Wide range of habitats, including desert scrubs, sub-alpine meadows, conifer forest, pinon-juniper woodland, canyon bottoms, riparian habitats, and pastures. Most often found in rough, rocky, semiarid, or arid terrain. Presence strongly tied to prominent rock features for roosting. Known from only four records in San Diego County.	N	This species is mostly reported from the eastern half of California. No suitable prominent rock features are present on-site.

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Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
Western red bat <i>Lasiurus blossevillii</i>	SSC	Generally associated with riparian habitats, especially willows, cottonwoods, and sycamores. Roosts alone in foliage of trees and large shrubs in habitats bordering forests, rivers, cultivated fields, and urban areas.	N	Marginally suitable trees for roosting are present in the landscaped areas of the adjacent residences and at the school to the north; however, no suitable roosting trees are present on-site. The San Diego Natural History Museum has a 1946 record of this species from approximately 0.4 mile southwest of the project site, but there no other records in the vicinity (County of San Diego 2017).
Yuma myotis <i>Myotis yumanensis</i>	*	Occurs in all Pacific states, and extends east to extreme western Montana and central Texas. Found in riparian, scrublands, deserts, and forests, where there is a permanent water source.	N	SanBIOS has a 1994 record of this species from approximately 0.5 mile southwest of the project parcels (County of San Diego 2017); however, no suitable roosting or foraging habitat occurs within the project site.
MOLOSSIDAE FREE-TAILED BATS				
Western mastiff bat <i>Eumops perotis californicus</i>	SSC	Occurs in desert scrub, chaparral, oak woodland, ponderosa pine and mixed conifer forests, and meadows. Strongly tied to areas with cliffs and other significant rock features for roosting.	N	No suitable roosting habitat is present within the project parcels, and suitable roosting habitat is limited.
Pocketed free-tailed bat <i>Nyctinomops femorosaccus</i>	SSC	Normally roost in crevice in rocks, slopes, cliffs. Lower elevations in San Diego and Imperial Counties. Colonial. Leave roosts well after dark.	N	No suitable roosting habitat is present within the project parcels, and suitable foraging habitat is limited.

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Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
Big free-tailed bat <i>Nyctinomops macrotis</i>	SSC	Rugged, rocky terrain. Roost in crevices, buildings, caves, tree holes. Forages over stock ponds and other water bodies. Very rare in San Diego County. Colonial. Migratory.	N	No suitable roosting habitat is present within the project parcels, and suitable foraging habitat is absent.
LEPORIDAE RABBITS & HARES				
San Diego black-tailed jackrabbit <i>Lepus californicus bennettii</i>	SSC	Open areas of scrub, grasslands, agricultural fields.	O	This species was observed numerous times within the project parcels. The project parcels provides suitable habitat for this species, as the majority of the habitat is open or patchy in density and connected to a large expanse of undeveloped land to the east.
HETEROMYIDAE POCKET MICE & KANGAROO RATS				
Dulzura pocket mouse <i>Chaetodipus californicus femoralis</i>	SSC	Occurs along the edges of chaparral, sage scrub, and grassland in areas with gravelly soil and sunny openings. Most common in inland valleys and foothills throughout San Diego County and on the coast in North County. Less common on the coast in the southern part of the county.	N	While sage scrub with sunny opening occurs on site, suitable gravelly soil is absent.

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Northwestern San Diego pocket mouse <i>Chaetodipus fallax fallax</i>	SSC	Found throughout San Diego County, with the exception of flat lowlands in Anza Borrego Desert. Prefers shrubby habitats with loose and sandy soils, often with rock outcrops.	M	This species has been observed previously within 2 miles northeast of the project parcels (RECON 2005). Coastal sage scrub on-site, including the project impact area, is suitable, though frequent disturbance within the project parcels may reduce habitat value for this species.
Stephens' kangaroo rat <i>Dipodomys stephensi</i>	FE, CT	Grassland, open areas. Within San Diego County, known from several scattered locations in the northern portion of the County.	N	There are no records of this species in the southern portion of San Diego County. Suitable level grassland habitat is not present within the project parcels.
Pacific pocket mouse <i>Perognathus longimembris pacificus</i>	FE, SSC	Open coastal sage scrub; fine, alluvial sands near ocean. Within San Diego County, known primarily from several locations on Camp Pendleton. Historic population from the Tijuana River Valley is believed extirpated.	N	Potentially suitable habitat is present within the project parcels. However, the extant populations of this species in San Diego County are limited to northern, coastal sites (Tremor et al. 2017).

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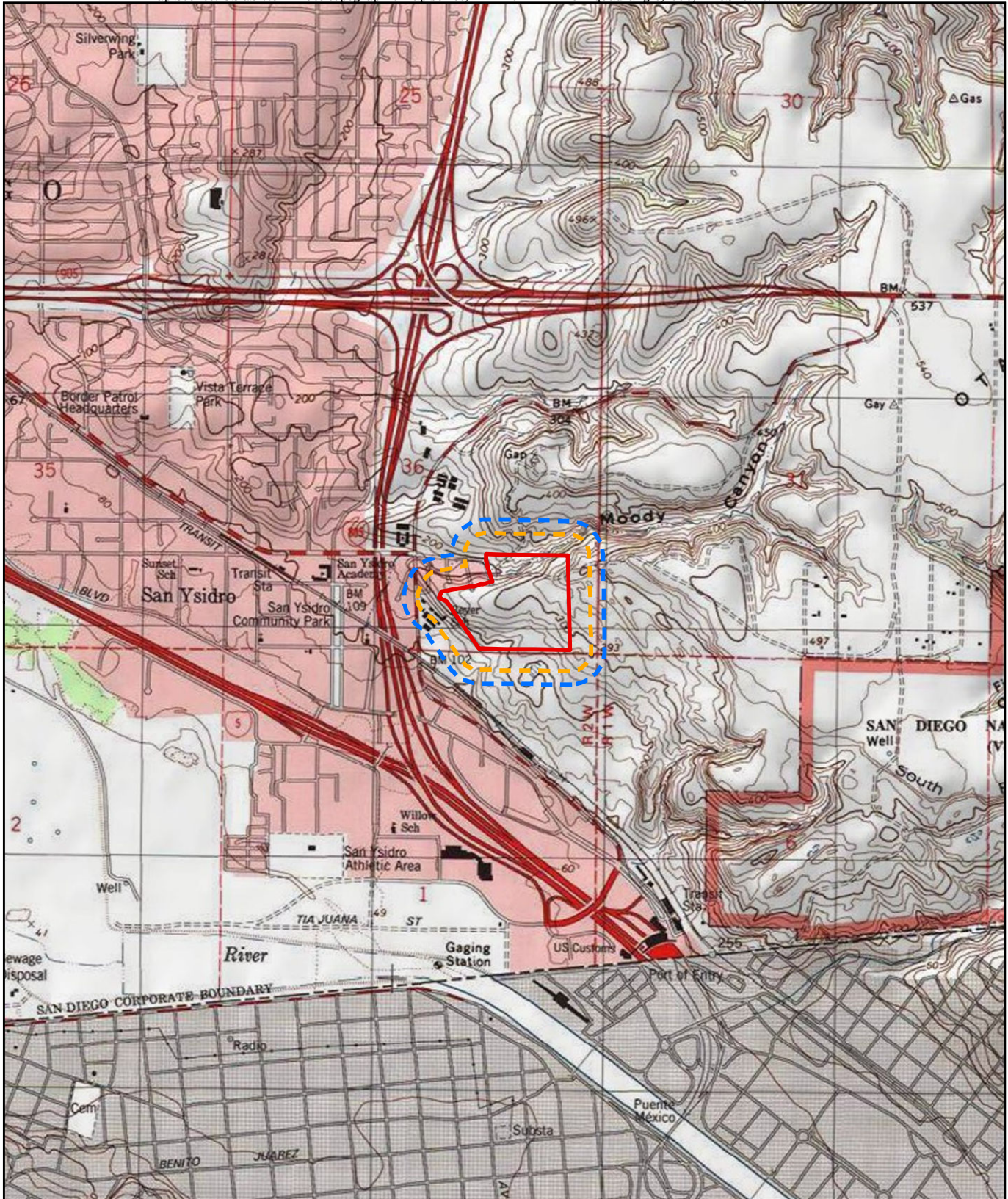
Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
MURIDAE OLD WORLD MICE & RATS				
San Diego desert woodrat <i>Neotoma lepida intermedia</i>	SSC	Coastal sage scrub and chaparral, where there are large rock outcrops. Middens generally made within rocky ledges or large cracks, or beneath large shrubs or cactus. Widespread throughout San Diego County, though more common in the eastern portion of the county, where habitat is less disturbed.	M	This species has been observed previously within 2 miles northeast of the project parcels (RECON 2005). Although the project parcels lack large rock outcrops preferred by this species for midden sites, the parcels provide suitable scrub habitat with cactus stands, within the project impact area.
Southern grasshopper mouse <i>Onychomys torridus ramona</i>	SSC	Found in grasslands or open coastal sage scrub west of the mountains, or in alluvial fans or desert scrub east of the mountains.	N	Open coastal sage scrub is present within the project parcels; however, coastal records of this species (including in the Tijuana river valley) are from populations believed to be extirpated (Tremor et al. 2017).
MUSTELIDAE WEASELS, OTTERS, & BADGERS				
American badger <i>Taxidea taxus</i>	SSC, MSCP,	Grasslands, Sonoran desert scrub. Generally only occurs in large areas of undeveloped land,	N	The project parcels are located adjacent to a large developed area, and habitat on-site is too frequently disturbed to be suitable for this species.

Attachment 4
Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
FELIDAE CATS				
Mountain lion <i>Puma concolor</i>	CFP, MSCP	Widespread; occurs in many habitats, provided there is sufficient cover. Found primarily in undeveloped areas, as well as less-densely populated rural communities and suburbs. Generally avoids areas of dense urban development.	L	Mule deer, this species' preferred prey, have moderate potential to occur (see below), and the project parcels occur at the western edge of a large expanse of undeveloped land. However, the project parcels do not provide regional connectivity. In addition, due to the project parcels' adjacency to urban development, they are subjected to frequent human disturbance, which may deter this species from using the site.
CERVIDAE DEER				
Southern mule deer <i>Odocoileus hemionus fuliginata</i>	MSCP	Many habitats.	M	The project parcels are located at the western end of a large swath of suitable habitat. Frequent human disturbance may reduce habitat value, but this species may be expected to occasionally use the project site, including the project impact area for foraging.

Attachment 4
Sensitive Wildlife Species Occurring or With the Potential to Occur

Species' Common Name/ Scientific Name	Listing Status	Habitat Preference/ Requirements	Detected/ Potential to Occur On Site	Basis for Determination of Occurrence Potential
STATUS CODES				
<u>Listed/Proposed</u>				
FE	=	Listed as endangered by the federal government		
FT	=	Listed as threatened by the federal government		
CE	=	Listed as endangered by the state of California		
CT	=	Listed as threatened by the state of California		
<u>Other</u>				
CFP	=	California fully protected species		
SSC	=	California Department of Fish and Wildlife species of special concern		
FC	=	Federal candidate for listing (taxa for which the U.S. Fish and Wildlife Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list as endangered or threatened; development and publication of proposed rules for these taxa are anticipated)		
WL	=	California Department of Fish and Wildlife watch list species		
MSCP	=	City and County of San Diego Multiple Species Conservation Program covered species		
VPHCP	=	City of San Diego Vernal Pool Habitat Conservation Plan		
PSE	=	Proposed as endangered by the state of California		
*	=	Taxa listed with an asterisk fall into one or more of the following categories: <ul style="list-style-type: none"> • Taxa considered endangered or rare under Section 15380(d) of CEQA guidelines • Taxa that are biologically rare, very restricted in distribution, or declining throughout their range • Population(s) in California that may be peripheral to the major portion of a taxon's range but which are threatened with extirpation within California • Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands) 		
DETECTED/POTENTIAL TO OCCUR				
O	=	observed		
N	=	not expected		
L	=	low potential		
M	=	moderate potential		
H	=	high potential		



-  Project Boundary
-  Least Bell's Vireo Survey Area
-  Burrowing Owl Survey Area

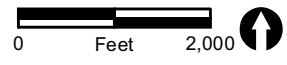






FIGURE 1

Beyer Park Development Project
2017 Burrowing Owl and Least Bell's
Vireo Survey Locations on USGS Map



-  Project Boundary
-  Background Depressions
- Ponded Extents**
-  1/5/2017
-  12/29/2016

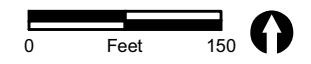


FIGURE B
Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on Aerial Photograph



**Enhancement and Restoration of
Maritime Succulent Scrub as Habitat
for Western Burrowing Owl and Beach
Goldenaster for the Beyer Park
Development Project
San Diego, California**

Prepared for

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November 26, 2019

A handwritten signature in cursive script that reads "Meagan Olson".

Meagan Olson, Restoration Ecologist

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Acronyms

CDFW	California Department of Fish and Wildlife
City	City of San Diego
DSD	Development Services Department
MHPA	Multi-Habitat Planning Area
MMC	Mitigation Monitoring Coordination
MSCP	Multiple Species Conservation Program
PEP	Plant Establishment Period
Plan	mitigation and restoration plan
PWD	Public Works Department
SDZ ICR	San Diego Zoo Institute for Conservation Research
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

The purpose of this mitigation and restoration plan (Plan) is to provide a guide for measures to mitigate for impacts to maritime succulent scrub and Diegan coastal sage scrub habitats during the construction of Beyer Park. Mitigation for both vegetation communities will be accomplished through the enhancement of adjacent maritime succulent scrub and disturbed maritime succulent scrub, and the restoration of disturbed areas to maritime succulent scrub. Occupied habitat for western burrowing owl and beach goldenaster individuals will be impacted during construction. This Plan will also serve as the mitigation plan for both western burrowing owl (*Athene cunicularia hypugaea*) and beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora*). As a result, artificial burrows for western burrowing owls will be installed and enhancement and restoration of maritime succulent scrub determined to be occupied by western burrowing owl will be executed so that the mitigation areas will also serve as appropriate western burrowing owl habitat. The enhancement and restoration will also include installation of beach goldenaster individuals. This Plan includes a discussion of existing conditions, an implementation and maintenance plan, ecological performance standards, monitoring requirements, and details for long-term and adaptive management.

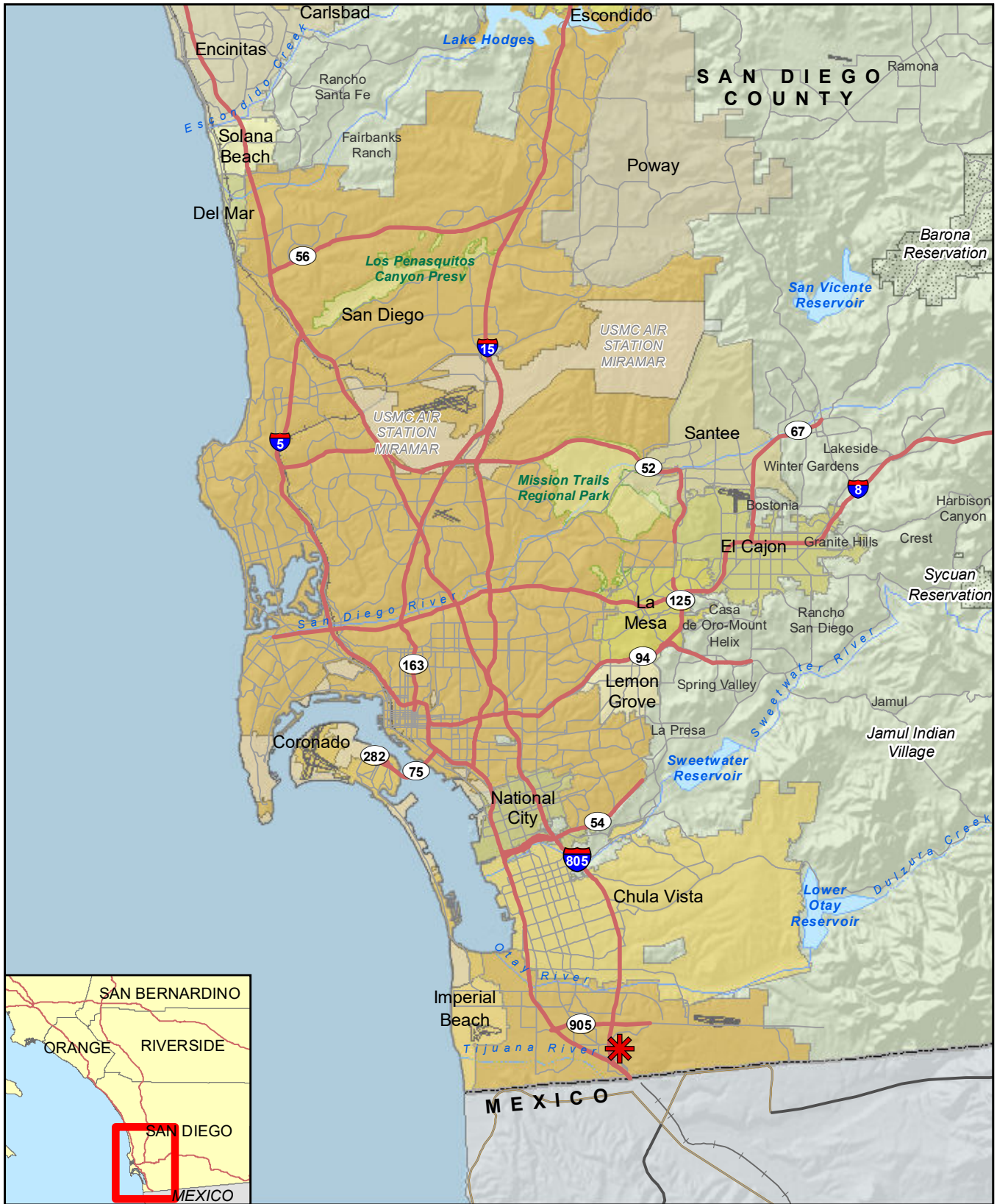
1.1 Project Location

The mitigation site is located on undeveloped City of San Diego (City) park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro, city of San Diego (Figures 1–3). The mitigation site (site) is located immediately east of the Beyer Park development footprint. The mitigation site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey (USGS) 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 2; USGS 1996). The mitigation site totals 14.12 acres and is situated on two parcels: Assessor Parcel Numbers 6380707100 and 6381701900 (Figure 4).

The mitigation site is situated within the City’s Multiple Species Conservation Program (MSCP) Subarea Plan boundary. The majority of the site is located within the City’s Multi-Habitat Planning Area (MHPA) boundary (see Figure 4).

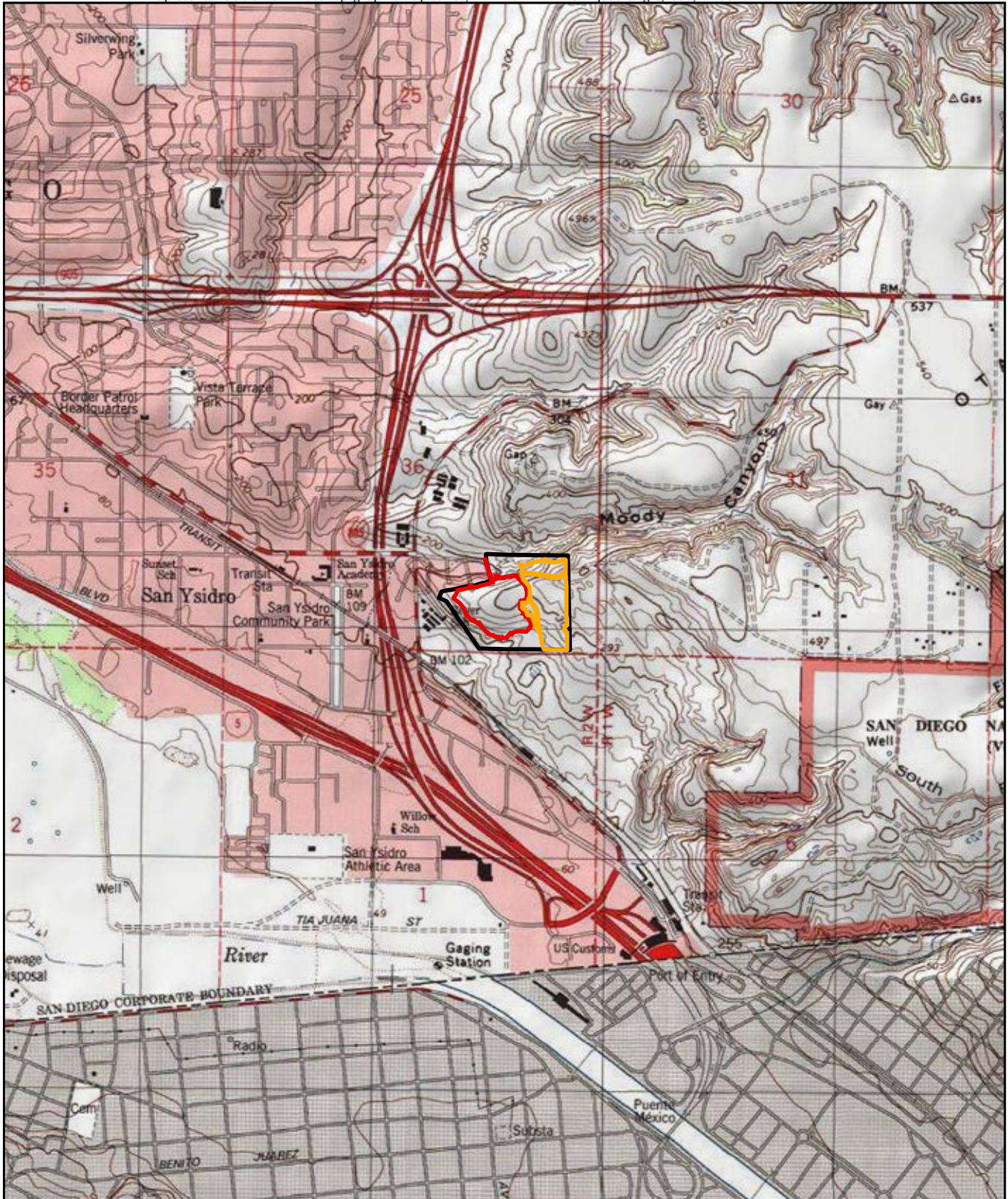
1.2 Mitigation Requirements

The City proposes the Beyer Park Development Project (project), which entails development and operation of a new community park with turf sports fields, picnic/gathering spaces, trails, a children’s play area, a skate park, a fitness area, a half basketball court, a dog park, a comfort station, and other associated amenities and facilities. Additional details of the park are included in the Biological Technical Report (RECON 2019).



 Project Location

FIGURE 1
Regional Location





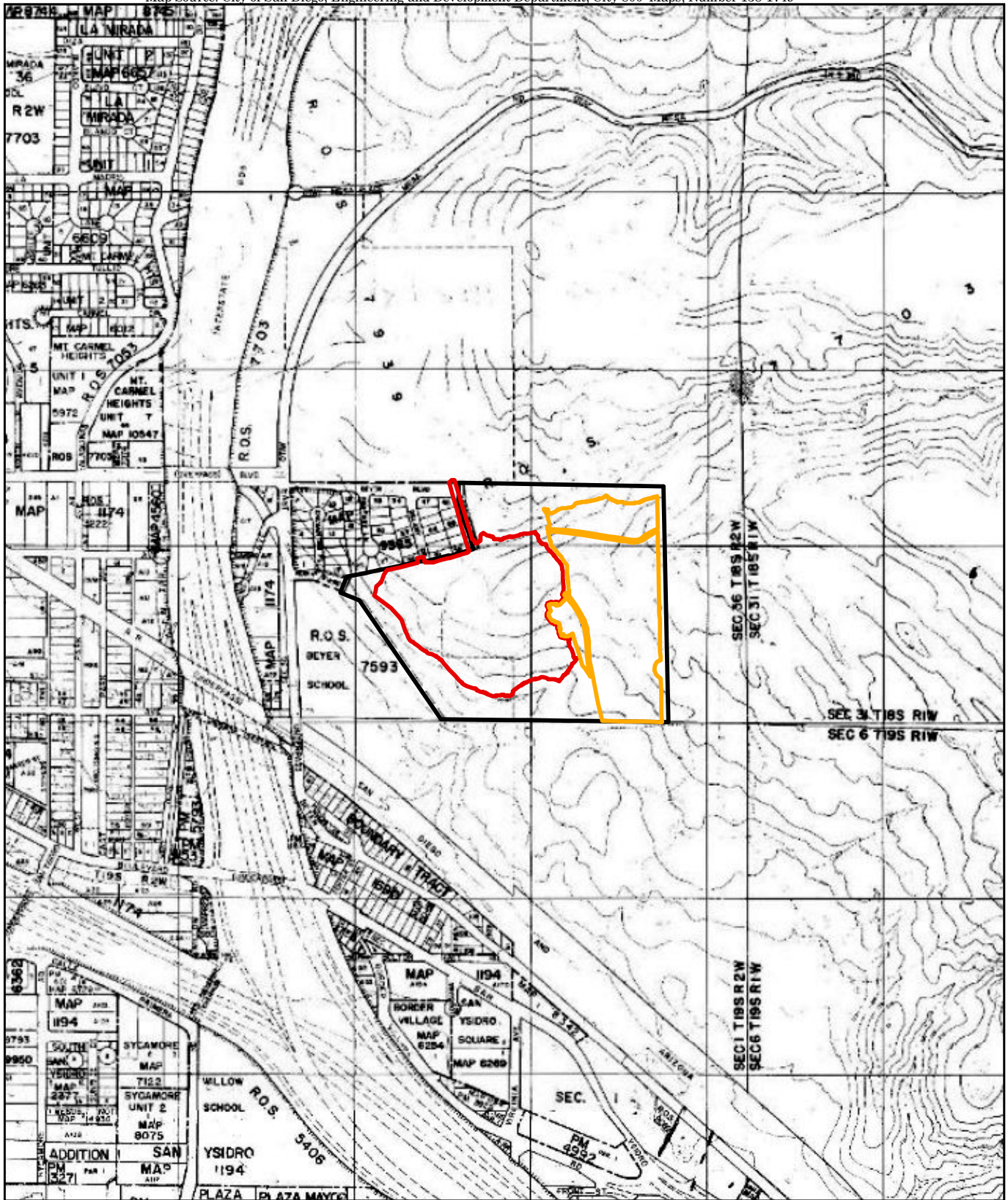



-  Project Boundary
-  Mitigation Site
-  Beyer Park Development Project



FIGURE 2

Project Location on USGS Map



-  Project Boundary
-  Mitigation Site
-  Beyer Park Development Project

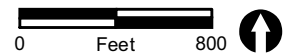
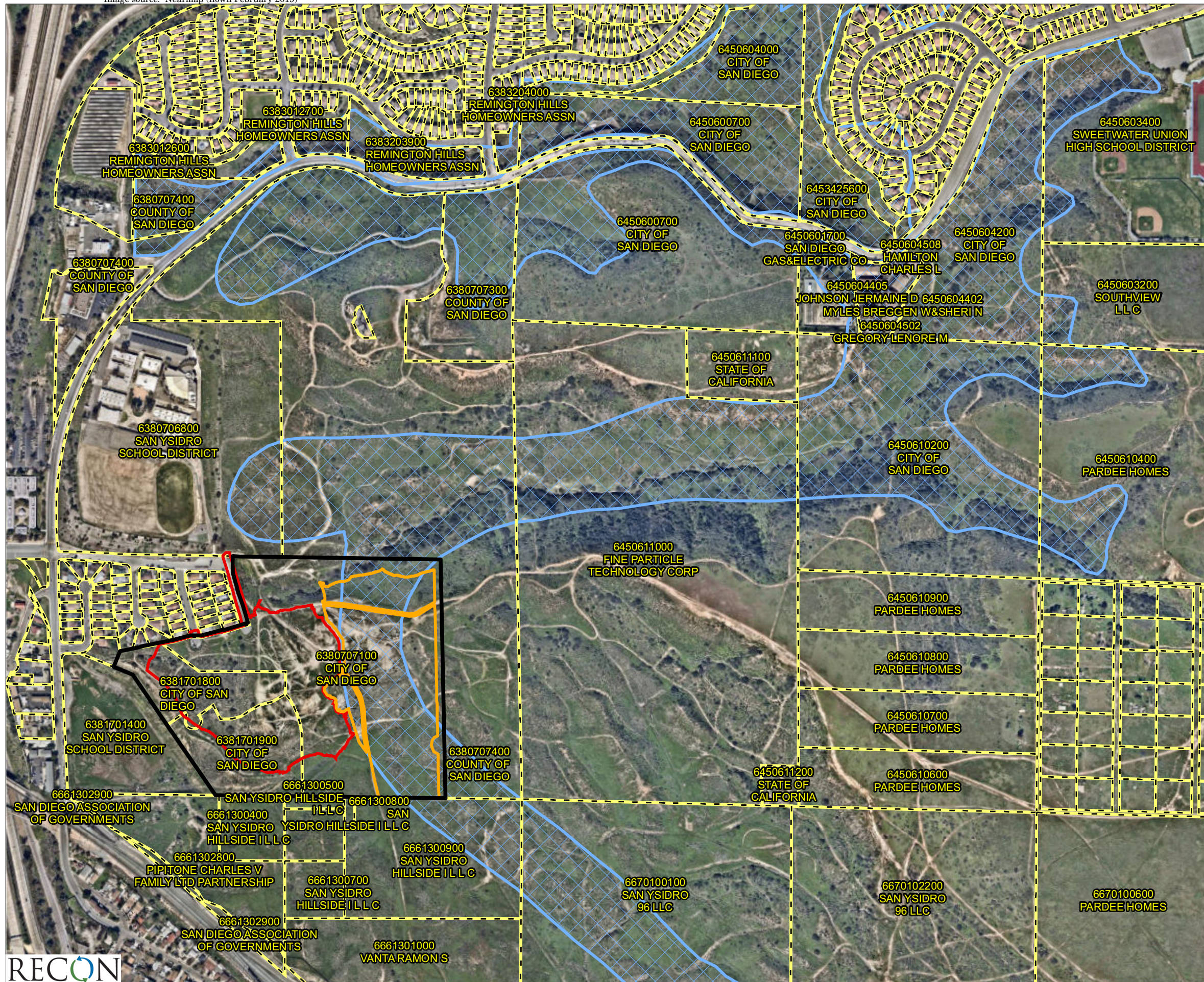







FIGURE 3

Project Location on City 800' Map



-  Project Boundary
-  Beyer Park Development Project
-  Mitigation Site
-  Parcels
-  City of San Diego MHPA

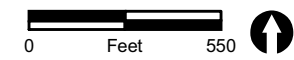


FIGURE 4
Project Location on Aerial Photograph

The project would result in direct impacts to 0.91 acre of maritime succulent scrub (Tier I), 4.86 acres of disturbed maritime succulent scrub (Tier I), 1.41 acres of Diegan coastal sage scrub (Tier II), and 4.29 acres of disturbed Diegan coastal sage scrub (Tier II; Table 1). These impacts would be mitigated through on-site mitigation: restoration of 3.70 acres of disturbed land and enhancement of 10.42 acres of maritime succulent scrub and disturbed maritime succulent scrub, for a total of 14.12 acres (Table 2).

Portions of the habitat that will be impacted by park construction have been determined to be occupied by burrowing owl and beach goldenaster individuals. Approximately 13.55 acres of occupied burrowing owl habitat (Table 3) will be impacted and requires mitigation of 10.42 acres of occupied burrowing owl habitat per mitigation requirements in Table 3 in the City's Land Development Code – Biology Guidelines (City of San Diego 2018a). The maritime succulent scrub that will be enhanced and restored for Tier I and II mitigation is also occupied burrowing owl habitat. Therefore, mitigation for occupied habitat will occur within the maritime succulent scrub enhancement/restoration areas described above. Up to 25 beach goldenaster individuals will be impacted and will be mitigated in-kind within the restoration area.

The mitigation for impacts to Tier I (maritime succulent scrub) and Tier II (Diegan coastal sage scrub) sensitive vegetation communities will be met through enhancement and restoration of maritime succulent scrub, a Tier I community. In addition, enhancement and restoring maritime succulent scrub habitat will also meet mitigation requirements for the following two sensitive species: western burrowing owl and beach goldenaster. The mitigation area encompasses the area within the MHPA but also incorporates adjacent lands outside of the MHPA to the east and southwest.

**Table 1
Direct Impacts to Vegetation and Associated Mitigation**

Vegetation Community by City of San Diego Tier	Direct Impacts to Vegetation-Outside MHPA (acres)	Mitigation Ratios		Required Mitigation (acres)		Proposed Enhancement (acres)	Proposed Restoration (acres)	Total Proposed Mitigation (acres)
		Inside the MHPA	Outside the MHPA	Preserved Inside the MHPA	Preserved Outside the MHPA			
Tier I								
Maritime succulent scrub	0.91	1:1		0.91	0	0.91	0	0.91
Disturbed maritime succulent scrub	4.86	1:1		4.86	0	4.86	0	4.86
<i>Subtotal (Tier I)</i>	<i>5.77</i>			<i>5.77</i>	<i>0</i>	<i>5.77</i>	<i>0</i>	<i>5.77</i>
Tier II¹								
Diegan coastal sage scrub	1.41	1:1		1.41	0	1.41 ¹		1.41
Disturbed Diegan coastal sage scrub	4.29	1:1		0.60	5.54	0.60	0	6.14
			1.5:1			2.64	0	
			1.5:1				2.90 ²	
<i>Subtotal (Tier II)</i>	<i>5.70</i>			<i>2.01</i>	<i>5.54</i>	<i>4.65¹</i>	<i>2.90²</i>	<i>7.55</i>
Tier IV								
Disturbed land	5.05	0:1	0:1	0	0	0	0.80	0.80
Ornamental plantings	0	0:1	0:1	0	0	0	0	0
Other Land Cover Types								
Urban/Developed Land	0.64	0:1	0:1	0	0	0	0	0
<i>Subtotal (Tier IV)</i>	<i>5.69</i>			<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>
<i>Subtotal (All Tiers)</i>	<i>17.16</i>			<i>7.78</i>	<i>5.54</i>	<i>10.42</i>	<i>3.70</i>	<i>0</i>
Total	17.16			13.32		10.42	3.70³	14.12

¹Tier II habitat will be mitigated with Tier I habitat. Due to surrounding MSS habitat it is likely that historically this habitat would have been MSS prior to routine disturbance.

²Restoration of Tier I maritime succulent scrub habitat will be accomplished through conversion of disturbed lands.

³An additional 0.8 acre of disturbed land will be restored in anticipation that some of the edge areas near the trails and roads may not achieve success criteria. Total mitigation will be 14.12 acres.

Table 2 Mitigation Summary	
Mitigation Method	Fulfillment of Mitigation (acre) ¹
Restoration ¹	2.90
Enhancement ²	10.42
Additional restoration of disturbed land ³	0.80
TOTAL	14.12
¹ Restoration will consist of converting disturbed lands to Tier I maritime succulent scrub appropriate for burrowing owl foraging and nesting. Restoration and enhancement acreages combined meet the required mitigation for impacts to Tier I and Tier II habitats. ² Enhancement will be focused on improving maritime succulent scrub appropriate for burrowing owl foraging and nesting. Restoration and enhancement acreages combined meet the required mitigation for impacts to Tier I and Tier II habitats. ³ An additional 0.80 acre of disturbed land will be restored in anticipation that some of the edge areas near the trails and road may not achieve success criteria. Total mitigation will be 14.12.	

Table 3 Required and Proposed Mitigation for Burrowing Owl Impacts					
Vegetation Community by City of San Diego Tier	Direct Impacts to Occupied BUOW Habitat- Outside MHPA (acres)	Mitigation Ratio ¹		Required Amount of Occupied Habitat to Fulfill Mitigation (acres) ²	
		Inside the MHPA	Outside the MHPA	Inside the MHPA	Outside the MHPA
Tier I					
Maritime succulent scrub	0.20	1:1	2:1	0.20	0
Disturbed maritime succulent scrub	3.91	1:1	2:1	3.91	0
Tier II					
Diegan coastal sage scrub	0.18	1:1	1.5:1	0.18	0
Disturbed Diegan coastal sage	4.28	1:1	1.5:1	0.60	5.53
Tier IV					
Disturbed land	4.89	0:1	0:1	0	0
Ornamental plantings	0	0:1	0:1	0	0
Other Land Cover Types					
Urban/Developed Land	0.09	0:1	0:1	0	0
TOTAL	13.55			10.42	
¹ Mitigation ratios are consistent with Table 3 of the Land Development Code Biology Guidelines. ² 10.42 acres of occupied habitat is required for mitigation. Any areas successfully preserved in excess of the required amount may be utilized by the City for burrowing owl mitigation.					

During the biological surveys, it was determined that the project site had potential to support burrowing owl. This required that the guidelines outlined in the MSCP Subarea Plan Area Specific Management Directives be implemented (Appendix A of City of San Diego 1997). Table 4 and the section below outline those requirements and how this Plan will address those requirements.

Table 4 Area Specific Management Directives	
Area Specific Management Directives of the MSCP Subarea Plan	Proposed Action of Mitigation Plan
<p>Conditions: During the environmental analysis of proposed projects, burrowing owl surveys (using appropriate protocols) must be conducted in suitable habitat to determine if this species is present and the location of active burrows.</p>	<p>During the habitat assessment it was determined that appropriate habitat was present within the project site due to the open nature of the vegetative structure, amount of disturbance, and presence of fossorial mammal burrows. The habitat mapped as suitable/occupied for the species is composed of open, low-growing maritime succulent scrub with patches of bare ground. In March and April of 2017, surveys were conducted in accordance with California Department of Fish and Wildlife (CDFW) breeding season survey guidelines (CDFW 2012). Burrowing owl sightings occurred on three separate occasions, four potential burrows were observed within the project site and one active burrow was observed east of the park development footprint, within the central west edge of the mitigation site. Burrowing owl sightings may represent the same individual. Based on the data, it is expected that at least one burrowing owl may utilize the site for wintering or transient stopovers during the wintering/non-breeding season (RECON 2017). The project site and active burrow are outside but adjacent to the MHPA. <u>The proposed mitigation is partially within the MHPA.</u></p>
<p>If burrowing owls are detected, the following mitigation measures must be implemented: within the MHPA, impacts must be avoided; outside of the MHPA, impacts to the species must be avoided to the maximum extent practicable;</p>	<p>Construction of the park will impact 13.55 acres of occupied habitat outside of the MHPA.</p>
<p>any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies;</p>	<p>Burrow exclusion and closure procedures are documented in this Plan in the event that potential burrows are observed within the mitigation site prior to park construction and restoration implementation. Pre-activity surveys will be conducted to determine the status of the burrowing owl on-site so that appropriate measures can be put in place. Passive methodologies will be employed to relocate the burrowing owl, if present, using a combination of burrow exclusion and creation of artificial burrows within the adjacent land preserved for burrowing owl mitigation.</p>
<p>mitigation for impacts to occupied habitat (at the Subarea Plan specified ratio) must be through the conservation of occupied burrowing owl habitat or conservation of lands appropriate for restoration, management and enhancement of burrowing owl nesting and foraging requirements.</p>	<p>This Plan outlines the enhancement and restoration of occupied habitat through the creation of artificial burrows to encourage nesting and enhancement and restoration of foraging habitat through vegetation management. In addition, the amount of enhancement and restoration of occupied habitat is done at the mitigation ratios set forth for the underlying sensitive vegetation and are shown in Table 1.</p>
<p>Management plans/directives must include: enhancement of known, historical and potential burrowing owl habitat;</p>	<p>The area to be enhanced/restored has been established as occupied habitat through several observations of a single burrowing owl and a potential active burrow during breeding season protocol surveys within the last three years. This Plan details how the habitat will be preserved and enhanced to support burrowing owl in the future, including the installation of an artificial burrowing owl cluster in suitable habitat away from park operations.</p>
<p>management for ground squirrels (the primary excavator of burrowing owl burrows).</p>	<p>Ground squirrels are present within the mitigation site in high quantities. Ground squirrel populations will be documented during annual assessment to ensure that there is not any drastic change in population.</p>

Table 4 Area Specific Management Directives	
Area Specific Management Directives of the MSCP Subarea Plan	Proposed Action of Mitigation Plan
Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat.	Three artificial burrows are planned for installation per this Plan. Enhancement of disturbed maritime succulent scrub, enhancement of existing maritime succulent scrub, and species-specific restoration (for burrowing owl) of disturbed habitat to maritime succulent scrub are outlined in this Plan to enhance foraging habitat.
Management plans must also include: monitoring of burrowing owl nest sites to determine use and nesting success;	A single burrowing owl was observed on-site during the breeding season protocol surveys completed in support of the biological technical report. No pairs or nesting was observed. However, this Plan requires monitoring for burrowing owl activity including nesting.
predator control;	It has been recommended in the biological technical report that tall structures installed within the park (light poles, etc.) feature roosting deterrents so that new perching areas are not created for predators.
establishing a 300 foot-wide impact avoidance area (within the preserve) around occupied burrows.	Passive methodologies will be employed to relocate any burrowing owl, if present, using a combination of burrow exclusion and creation of artificial burrows within the adjacent land preserved for burrowing owl mitigation. Proposed artificial burrow sites are planned for installation and will be located 300 feet or more from the project boundary.

The project would also result in impacts to 13.55 acres of burrowing owl occupied habitat. During surveys conducted in accordance with California Department of Fish and Wildlife (CDFW) breeding season survey guidelines (CDFW 2012), three burrowing owl observations occurred on separate occasions between March and April 2017 (these observations may represent the same individual). Based on the data, it is expected that at least one burrowing owl may utilize the site for wintering or transient stopovers during the wintering/non-breeding season (RECON 2017). The habitat mapped as suitable/occupied for the species is composed of open, low-growing maritime succulent scrub with patches of bare ground. Mitigation for these impacts would include installation of a cluster of three artificial burrows to provide suitable habitat for at least one pair of western burrowing owl, restoration and enhancement of 14.12 acres of open maritime succulent scrub habitat, and a five-year maintenance and monitoring program.

Lastly, there would be impacts to up to 25 beach goldenaster individuals and mitigation is required to reduce these impacts to less than significant. Impacts to beach goldenaster would be mitigated through on-site restoration. Only one individual was relocated during two site visits in spring 2019. A pre-construction survey will be conducted prior to project implementation which may result in a revision to the number of individuals mitigated.

Per the City MSCP Subarea Plan Appendix A, this Plan includes enhancement of known, historical, and potential burrowing owl habitat; management for ground squirrels; enhancement through artificial burrow installation and vegetation management; monitoring of burrowing owl use of the site during breeding and non-breeding seasons; and an implementation and maintenance plan designed to prevent predation of burrowing owls.

2.0 Existing Conditions

This section describes the existing physical and biological conditions of the areas within the proposed mitigation site and surrounding area. This includes a summary of land use, topographical features, soils, and hydrological features observed during biological surveys conducted between June 13, 2016, and August 7, 2017.

2.1 Physical Characteristics

2.1.1 Existing Land Use

The proposed mitigation site consists of undeveloped City land, with residential development approximately 500 feet to the northwest and County of San Diego (County) open space preserve to the east. The project footprint is west of the mitigation site. The mitigation site currently consists of maritime succulent scrub, disturbed maritime succulent scrub, and disturbed land (Figure 5). A large portion of the vegetation within the mitigation site has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps, trash dumping, and radio-controlled car running and course building).

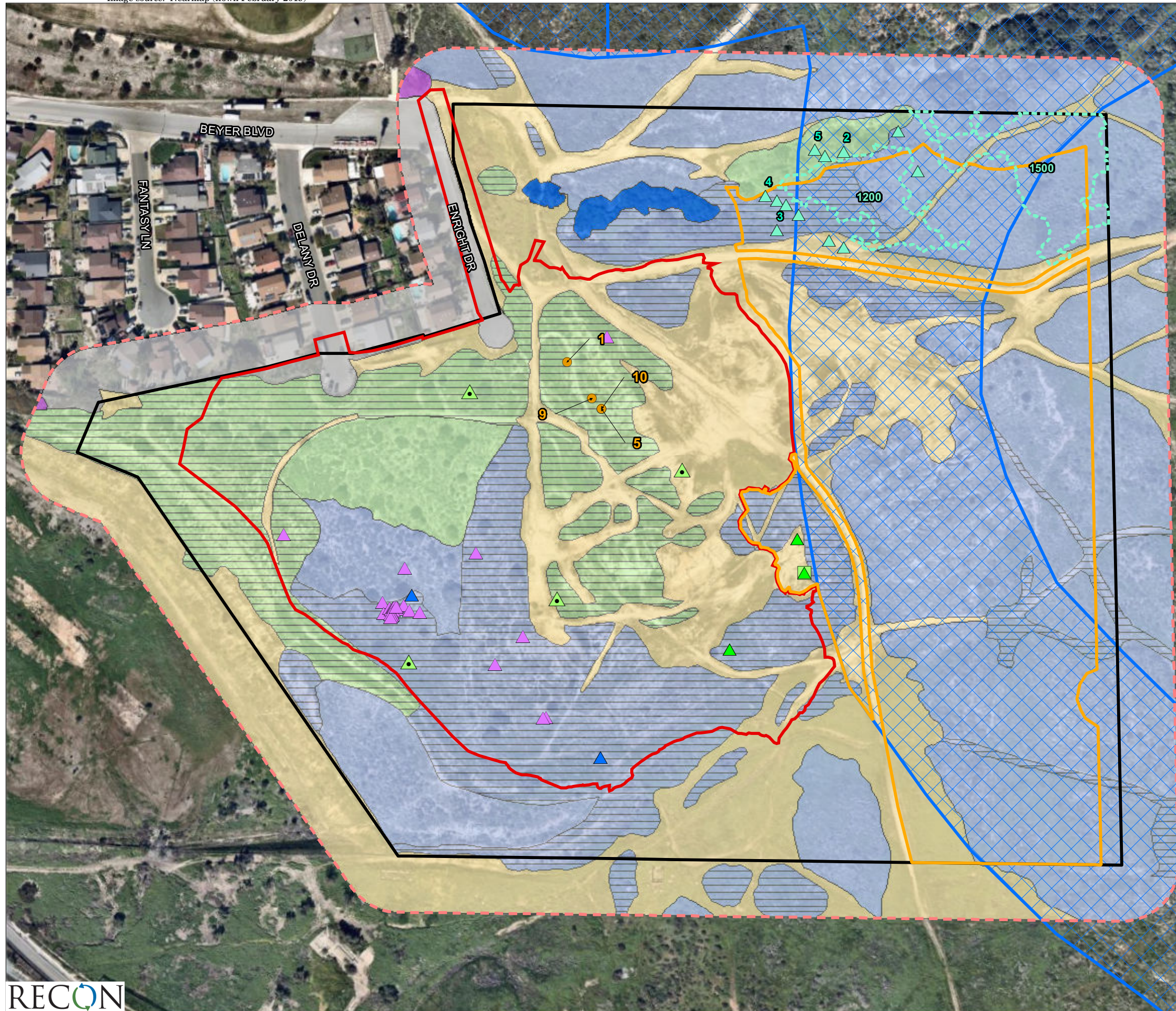
2.1.2 Topography and Soils

The mitigation site is characterized by north-, south-, and west-facing slopes with numerous wide, exposed terraces.

Two soil types occur within the mitigation site: Olivenhain cobbly loam, 9 to 30 percent slopes (ohE), in the south and Olivenhain cobbly loam, 30 to 50 percent slopes (ohF) in the north (Figure 6; U.S. Department of Agriculture 2017). Olivenhain cobbly loam soils formed in ancient cobbly and gravelly alluvium and are located on marine terraces and mesas. The topsoil is typically well-drained cobbly loam with a very cobbly clay subsoil. Low slopes tend to form mima mounds on the surface, whereas steeper areas are easily eroded and tend to form gullies and cut banks (Natural Resource Conservation Service 2015).

2.1.3 Hydrology

The mitigation site is located near the northern extent of the Tijuana River watershed. Moody Canyon, which contains an unnamed tributary of the Tijuana River, occurs just within the northern end of the mitigation site.



- Project Parcels Boundary
 - Beyer Park Development Project
 - Mitigation Site
 - 100-foot Survey Buffer
 - City of San Diego MHPA
- Vegetation Communities/Land Cover Types**
- Mule Fat Scrub
 - Maritime Succulent Scrub
 - Disturbed Maritime Succulent Scrub
 - Disturbed Diegan Coastal Sage Scrub
 - Diegan Coastal Sage Scrub
 - Disturbed Land
 - Ornamental
 - Urban/Developed
- Burrowing Owl Observation**
- Burrowing Owl with Active Burrow Observation
 - Burrowing Owl Observation
 - Potentially Suitable Burrow
- MSCP Covered Species**
- Otay tarplant
- Not MSCP Covered Species**
- Beach Goldenaster
- Plants Recommended for Salvage**
- Fish-hook Cactus
 - San Diego Barrel Cactus

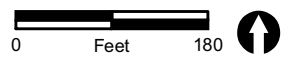
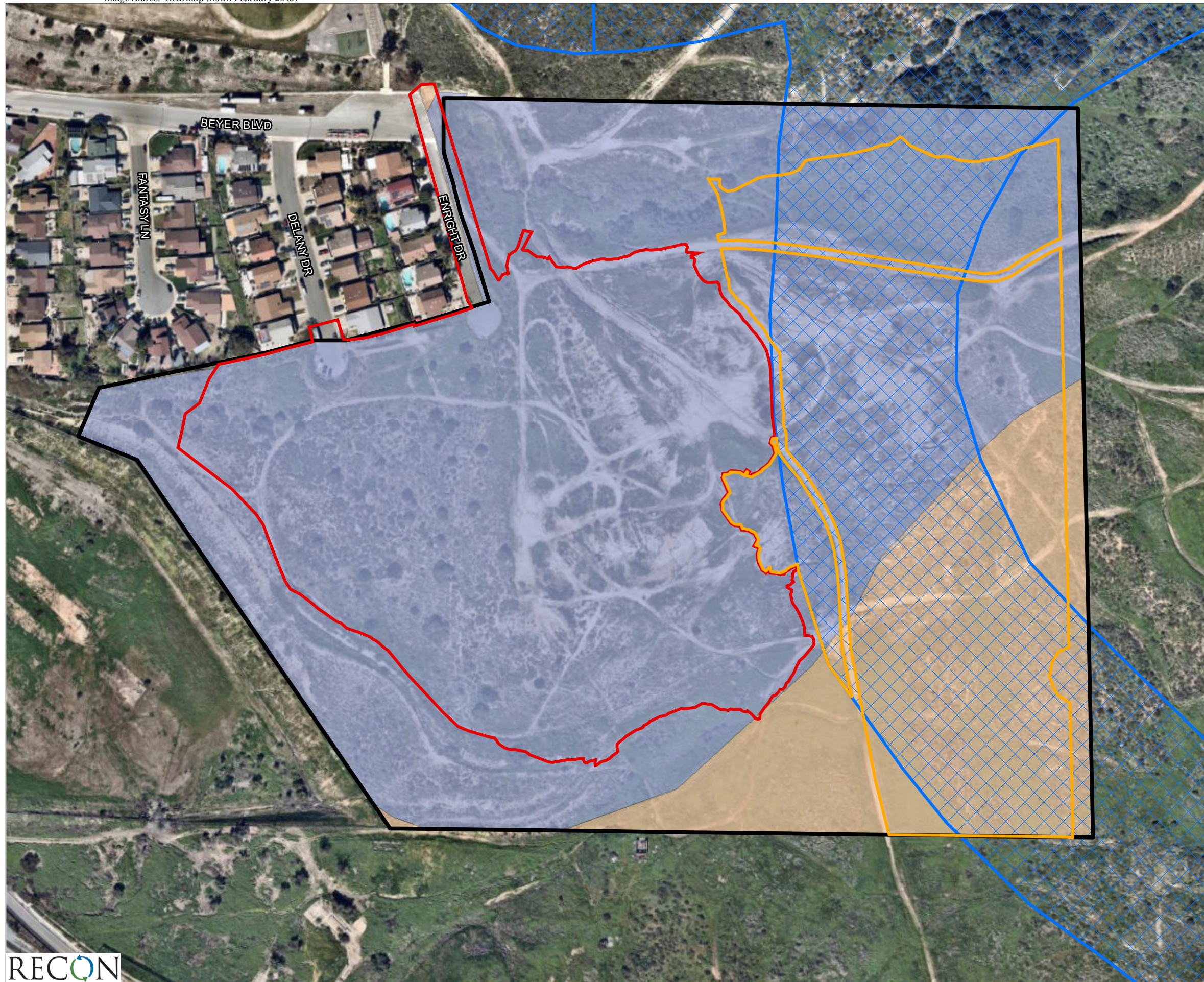








FIGURE 5
Existing Biological Resources



-  Project Parcels Boundary
-  Beyer Park Development Project
-  Mitigation Site
-  City of San Diego MHPA
- Soil Classification**
-  Olivenhain cobbly loam, 9-30 % slopes
-  Olivenhain cobbly loam, 30-50 % slopes

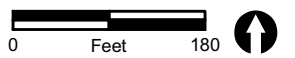


FIGURE 6
Project Location on Soils Map

2.2 Biological Conditions

There are three vegetation communities within the 14.12-acre mitigation site: maritime succulent scrub (8.30 acres), disturbed maritime succulent scrub (2.13 acres), and disturbed land (3.70 acres; see Figure 5).

Maritime succulent scrub is the dominant existing vegetation community within the mitigation site and is comprised of an open density of low growing shrubs. The maritime succulent scrub is dominated by San Diego bur-sage (*Ambrosia chenopodifolia*), jojoba (*Simmondsia chinensis*), cliff spurge (*Euphorbia misera*), coast prickly pear (*Opuntia littoralis*), California buckwheat (*Eriogonum fasciculatum*), San Diego viguiera (*Bahiopsis laciniata*), and California sagebrush (*Artemisia californica*). Otay tarplant (*Deinandra conjugens*) also occurs in the maritime succulent scrub found within the northern portion of the site. The species composition and general cover parameters in these undisturbed habitat areas was used as a guide in developing the restoration program throughout the mitigation site.

The disturbed maritime succulent scrub occurs throughout the mitigation site in areas that have been subjected to human-caused disturbance and non-native plant species invasion. The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including black mustard (*Brassica nigra*) and non-native grasses.

Disturbed land within the mitigation site consists of a complex of dirt roads and unauthorized pedestrian and off-road vehicle trails traversing the site, as well as a series of open areas characterized by exotic vegetation. The vegetated portions of disturbed land are dominated primarily by garland daisy (*Glebionis coronaria*) and Russian thistle (*Salsola tragus*), with scattered non-native grasses. The disturbed areas of the site also support evidence of fossorial mammal burrows.

2.3 Rationale for Expecting Success

2.3.1 Restoration Goals

The goals for this mitigation project are to restore, enhance, and maintain maritime succulent scrub habitat that is suitable for burrowing owl, beach goldenaster, and Otay tarplant (although mitigation for Otay tarplant is not a requirement of this project) (Photographs 1 through 5). Currently degraded areas will be improved through restoration to native maritime succulent scrub habitat suitable for burrowing owl foraging and nesting and beach goldenaster. Areas that currently support suitable burrowing owl habitat and Otay tarplant will be maintained to continue to support those species.



PHOTOGRAPH 1
Existing On-site Low-growing, Open Maritime Succulent Scrub
Habitat to be Enhanced as Suitable Burrowing Owl Habitat,
Central Portion of the Mitigation Site, Facing West, May 2019



PHOTOGRAPH 2
Existing On-site Disturbed Maritime Succulent Scrub Habitat to be
Enhanced to Suitable Burrowing Owl Habitat, Central Portion of the
Site Facing South, May 2019



PHOTOGRAPH 3
Trail Planned for Closure, Northern Portion of the Mitigation Site,
Facing East, May 2019



PHOTOGRAPH 4
Proposed Burrowing Owl Burrow Location, Facing Northeast,
May 2019



PHOTOGRAPH 5
Proposed Beach Goldenaster Mitigation Location, Facing Southeast,
May 2019

The restoration activities aim to restore and enhance maritime succulent scrub habitat as one contiguous patch of suitable wildlife habitat that is adjacent to additional habitat on County preserved land. Currently the site supports areas suitable for burrowing owl, including low-growing shrubs and open ground, and evidence of ground squirrel activity. The methods described in this Plan are intended to further enhance these areas and restore additional areas to maritime succulent scrub habitat that is suitable as western burrowing owl habitat.

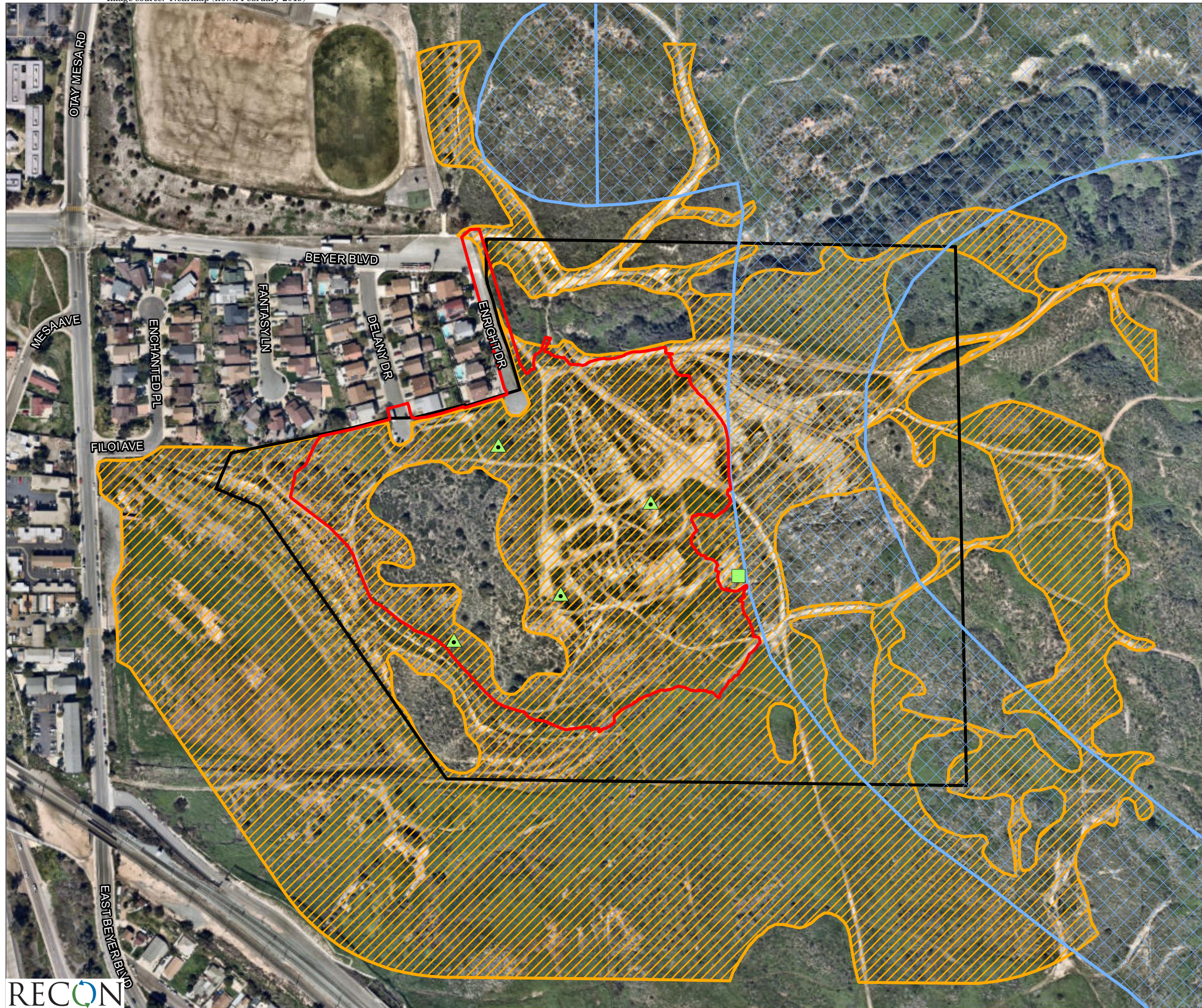
2.3.2 Restoration Site Suitability







The proposed location of the mitigation site is immediately east of the project development site, dominated by existing maritime succulent scrub habitat, and within the area where western burrowing owls and burrows were observed during focused surveys and suitable habitat was mapped during the burrowing owl habitat assessment (Figure 7; RECON 2017). The beach goldenaster-designated restoration area was chosen based on the sandy, erodible soils found in this area, which are appropriate for beach goldenaster growth and establishment. The existing maritime succulent scrub habitat within the mitigation site is fragmented and contains evidence of anthropogenic impacts, through the presence of unauthorized trails used by pedestrians and vehicles. The restoration activities described in this Plan will remove the fragmentation and effects of the anthropogenic impacts to create one contiguous patch of maritime succulent scrub that is suitable for burrowing owl foraging and nesting. In addition, it is anticipated that restoration of the disturbed lands to native habitat and enhancement of the disturbed maritime succulent scrub will reduce the extent of non-native invasive plants and will increase the habitat quality of this vegetation community.

The proposed mitigation site is considered suitable maritime succulent scrub, burrowing owl, and beach goldenaster restoration; factors that support this assessment include:

- 1) located on City-owned lands within and adjacent to the MHPA;
- 2) current use of site by fossorial mammals;
- 3) adequate site access;
- 4) proximity to water source;
- 5) proximity to existing habitat east of the site with similar soils and topography;
- 6) presence of adjacent native scrub habitat;
- 7) avoidance of utility easements; and
- 8) outside any brush management zone.

Existing utility access roads occur near the proposed mitigation site (Figure 8); these roads will facilitate both short- and long-term maintenance access for restoration activities while their location is also far enough away from proposed owl burrow locations that the occasional vehicular traffic will not pose a risk to owls or wildlife. Once restored, long-term maintenance and management of the site will be executed by the City's Parks and Recreation Department as part of their Open Space management program. No utility easements are present within the mitigation site (mitigation credit is not allowed within any easements) and potential future development in adjacent areas was taken into consideration when identifying the mitigation site.



-  Project Parcels Boundary
-  Project Impact Area
-  City of San Diego MHPA
-  Western Burrowing Owl Suitable Habitat
-  Burrowing Owl with Active Burrow Observation
-  Potentially Suitable Burrow

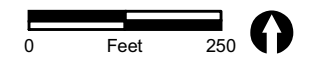
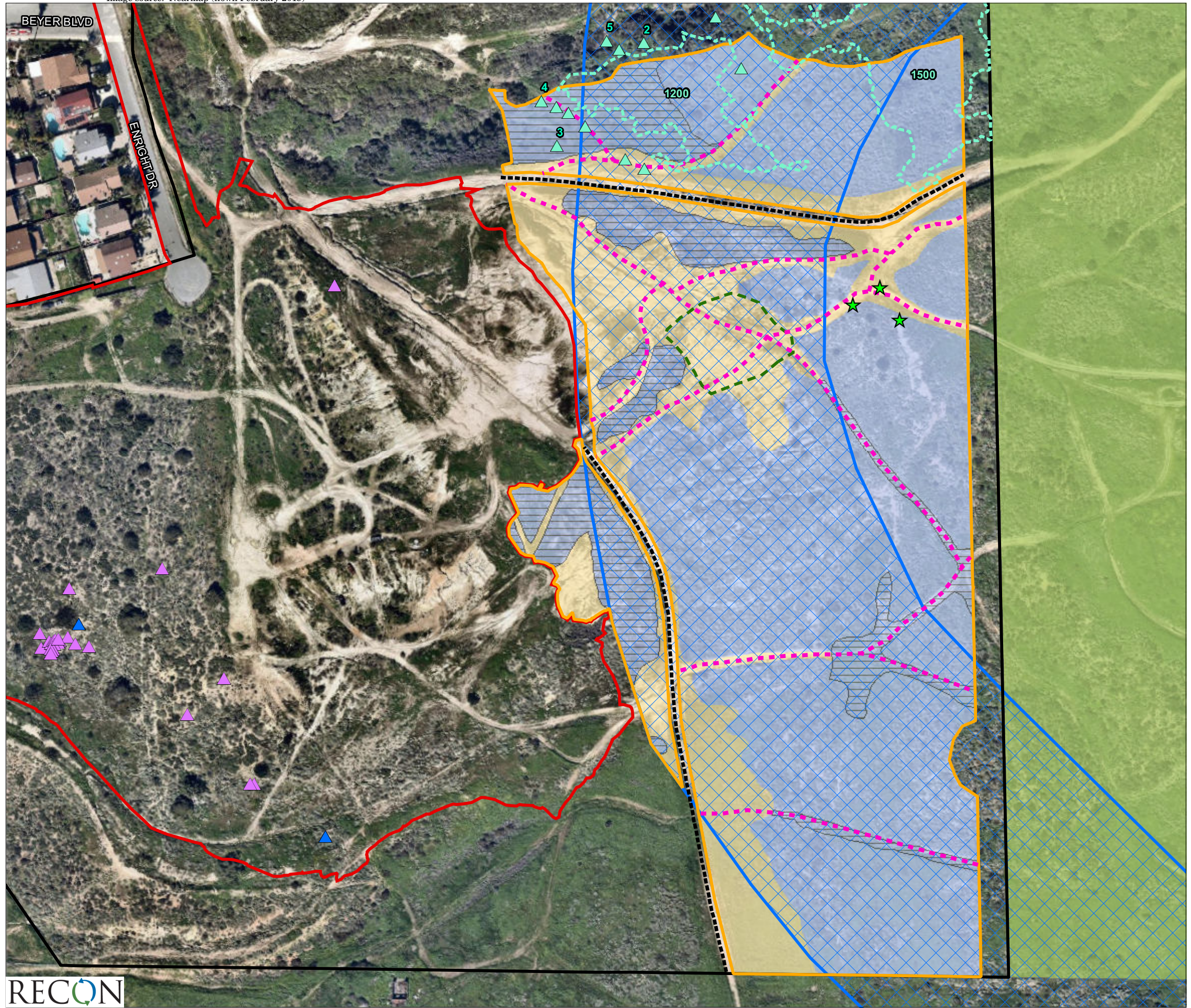


FIGURE 7
Project Location and Suitable
Burrowing Owl Habitat



- Mitigation Site
- Project Parcels Boundary
- Beyer Park Development Project
- City of San Diego MHPA
- County Preserve
- Sensitive Plant Species Observations**
- ▲ Otay tarplant
- Plants Recommended for Salvage**
- ▲ Fish-hook Cactus
- ▲ San Diego Barrel Cactus
- Mitigation Design**
- Enhancement**
- Existing Maritime Succulent Scrub Habitat
- Existing Disturbed Maritime Succulent Scrub Habitat
- Restoration**
- Existing Disturbed Land
- Mitigation Details**
- Trails to Remain Open
- Trails to be Closed
- ★ Proposed Artificial Owl Burrow Locations
- Proposed Beach Goldenaster Mitigation Location



FIGURE 8
Proposed Mitigation Design

2.3.3 Restoration Viability

The viability of the proposed mitigation was assessed during the preparation of this Plan per the City's Land Development Code – Biology Guidelines (City of San Diego 2018a). The assessment included consideration of the site's connectivity to larger planned open space, the surrounding land uses, and sensitivity of maritime succulent scrub, western burrowing owl, and beach goldenaster to change. While the Beyer Park development will occur to the west of the mitigation site, land uses to the north, south, and east are largely planned as open space per the City's MHPA and County of San Diego preserve area (see Figure 4). The location of the restoration and enhancement adjacent to the larger open space preserve will reduce fragmentation of this sensitive vegetation community and increase viability and longevity of the habitat quality.

In preparing this Plan, the most current resources were utilized to develop a viable approach to mitigation for potential impacts to western burrowing owl. The San Diego Zoo Institute for Conservation Research (SDZ ICR) is a global leader in extinction research and their Recovery Ecology team works closely with local partners to help land managers protect western burrowing owl. Information regarding SDZ ICR's research can be found in their 2018 Project Report for burrowing owls (SDZ ICR 2018). The San Diego Natural History Museum's (SDNHM) research division, the Biodiversity Research Center of the Californias, is a leader in natural sciences for the scientific study of natural history, biological diversity, and evolution within southern California. Mr. Kevin Clark serves as the SDNHM's Director of Bioservices and has worked with burrowing owls conducting surveys and preparing management and mitigation plans for over 20 years.

The County of San Diego preserve area located immediately east of the mitigation site provides wildlife connectivity to the mitigation site and further suitable habitat for burrowing owls (Kevin Clark, pers. comm., May 15 and 29, 2019). Beyer Park will be located to the west; however, the proposed owl burrows were intentionally positioned towards the eastern side of the mitigation site, away from Beyer Park. Proposed burrow locations will provide a natural viewpoint for burrowing owls to observe foraging habitat within and adjacent to the mitigation site while the view of Beyer Park will be obstructed by natural topography. Burrow locations are located within or adjacent to disturbed land to avoid impacts to existing native vegetation during mound creation.

The design of Beyer Park includes several modifications to preserve the adjacent mitigation site as suitable for burrowing owl. Modifications include a single row of tall shrubs along the park's eastern perimeter to obstruct view of the park by owls and the installation of perch exclusion devices on light posts.

Burrowing owl site fidelity was considered when assessing sensitivity of burrowing owls to change. The mitigation site includes the one active owl burrow previously observed and is within 1,000 feet of the potentially suitable burrows that were observed during focused surveys and the burrowing owl habitat assessment (RECON 2017). Burrowing owls that may return to the area can readily locate the mitigation site due to its proximity to the impacted active and potential burrows. The pre-existing land use of the impact area and

mitigation site included burrowing owl foraging with no documentation of breeding. The mitigation site was designed to encourage additional use of the site for winter foraging and breeding with the inclusion of artificial owl burrows.

The artificial owl burrows recommended for installation are based on the most recent plans created by the SDZ ICR (2017). The placement of the artificial burrows within the mitigation site was determined based on the recommendations included in the SDZ ICR's Burrowing Owl Conservation and Management Plan for San Diego County (SDZ ICR 2017) and through on-site consultation with Mr. Clark of the SDNHM. Proposed artificial burrow locations are based on their location away from large populations of coast cholla (*Cylindropuntia prolifera*), which have been known to be used by wood rats to exclude owls from burrows, and from the proposed park to avoid inadvertent harassment of owls by park use.

2.4 Responsible Parties

2.4.1 Project Proponent and Financial Responsibility

The project proponent (City Public Works Department [PWD]) will be responsible for retaining (1) a qualified Restoration Specialist with over five years of experience monitoring habitat restoration to oversee the entire installation and monitoring of the mitigation program in coordination with City Development Services Department (DSD) staff and (2) a qualified installation/maintenance contractor with expertise in restoration of native habitat and artificial owl burrow installation and maintenance. Contact information for the City's PWD Project Manager is provided below:

Contact: Ms. Maya Mazon
City of San Diego
Public Works Department
525 B Street, Suite 750
San Diego, CA 92101
Office: 619-533-4620

The City PWD will be responsible for financing the installation, five-year maintenance program, and biological monitor of the proposed mitigation described in this Plan.

2.4.2 Responsible Agencies

The City DSD will be responsible for issuing any necessary permits and reviewing and approving this Plan.

Contact: Mr. Mark Brunette
City of San Diego
Development Services Department
1222 First Avenue, MS 301
San Diego, CA 92101-4101
Office: 858-654-4237

Due to the location of the mitigation site on City-owned preserve lands, the City's Parks and Recreation Department will be responsible for overseeing the establishment and development of habitat during the five-year maintenance and monitoring period and beyond. The primary avenue for the City's participation is through the permitting process; reviewing and commenting on this Plan, the construction documents, and subsequent annual reports; and inspecting and commenting on significant milestones involved in the implementation of this Plan.

Contact: Ms. Gina Washington
City of San Diego
Parks and Recreation Department
Office: 858-538-8066
gWASHINGTON@sandiego.gov

2.4.3 Restoration Specialist

Overall supervision of the installation and maintenance of this restoration effort will be the responsibility of a Restoration Specialist with at least five years of maritime succulent scrub restoration and artificial burrowing owl burrow installation. The Restoration Specialist will oversee the efforts of the installation/maintenance contractor for the life of the restoration. Specifically, the Restoration Specialist will educate all participants about restoration goals and requirements; inspect plant material; directly oversee planting, seeding, weeding, installation of artificial owl burrows, and other maintenance activities; and other maintenance activities; and conduct regular monitoring as well as annual assessments of the restoration effort. The Restoration Specialist will provide the PWD Project Manager and contractor with a written monitoring memo, including a list of items in need of attention. The Restoration Specialist will prepare and submit required reports annually.

2.4.4 Installation/Maintenance Contractor

The City PWD Project Manager will hire a qualified restoration contractor, i.e., artificial burrowing owl burrow installation, sensitive plant species restoration, and native and non-native plant identification. The contractor will be a firm holding a valid C-27 Landscape Contracting License from the State of California, a valid Pest Control Business License, and a Qualified Applicator Certificate or Qualified Applicator License, with Category B, that will allow them to perform the required work for this restoration effort. The PWD Project Manager may change contractors at their discretion.

During the installation, the contractor will be responsible for initial weed control/dethatching, irrigation installation (if applicable), implementation of grow/kill cycles, mound creation, artificial burrow installation, barrier installation, and planting and seeding, as well as maintenance of the restoration site during the 120-day Plant Establishment Period (PEP) and five-year maintenance period.

Following installation, the contractor will submit marked up as-builts for all activities that occurred during implementation to the PWD Project Manager. The contractor will be held responsible for meeting the success criteria specified for the PEP until formal sign-off of the PEP has been obtained from the Restoration Specialist, PWD Project Manager, and City DSD staff.

Following formal sign-off of the PEP, the contractor will maintain the restoration areas for five years. During this period, the contractor will service the entire mitigation site according to the maintenance schedule (Section 4.0, below). Service will include, but not be limited to, weed control, irrigation maintenance, trash removal, watering, dead plant replacement, re-seeding, and pest and disease management. All activities conducted will be seasonally appropriate and approved by the Restoration Specialist and PWD Project Manager. The contractor will meet with the Restoration Specialist and PWD Project Manager at the site when requested and will perform all checklist items in a timely manner as directed.

2.4.5 Burrowing Owl Biologist

A qualified biologist with experience monitoring and surveying for burrowing owls will be required if work occurs during burrowing owl breeding season (February 1–August 31). The biologist will determine if burrowing owls are present and, if present, will work with restoration crews to direct work in a manner that avoids impacts to burrowing owls.

2.4.6 Native Plant Nursery

Seed collection and bulking, plant salvage and storage, and container plant propagation will be conducted by a nursery that specializes in native plants and contract seed collection and growing. The nursery will be responsible for providing brief updates on the progress of plant salvage, seed collection, and bulking activities to the Restoration Specialist and City PWD Biologist.

3.0 Implementation Plan

This section describes the design of the proposed mitigation and how it will be implemented. Implementation of the mitigation efforts would be conducted under the direction of the qualified habitat Restoration Specialist with close coordination with the City PWD Biologist and shall adhere to appropriate standards stated in the current City’s “Whitebook” edition (City of San Diego 2018b or updated, as relevant). Seed collection should commence at least two seasons prior to the initiation of project impacts. All other mitigation activities would commence the first summer-fall season prior to, or concurrently with, construction. Activities that take place during the burrowing owl breeding season (February 1–August 31) would require the presence of a burrowing owl monitor. The timing of artificial burrow installation and burrowing owl exclusion would be closely timed with construction activities, coordinated with the City, and will include the surveys outlined in

the Biological Technical Report (RECON 2019). The proposed mitigation design is shown on Figure 8.

3.1 Preliminary Design and Engineering

Mitigation would occur adjacent to the project site within the City-owned parcel. Mitigation would consist of improvements to maritime succulent scrub habitat through restoration and enhancement efforts. Restoration will occur on approximately 3.70 acres of disturbed lands. Disturbed land will be restored to maritime succulent scrub suitable for burrowing owl foraging and nesting through weed maintenance, container plant installation, and seeding. Decompaction of disturbed areas that are currently unauthorized trails or roads will occur, as needed. Enhancement will occur for approximately 2.13 acres of disturbed maritime succulent scrub. Disturbed maritime succulent scrub will be enhanced to maritime succulent scrub through weed maintenance. It is not anticipated that installation of container plants and/or seed will be necessary for the disturbed maritime succulent scrub areas. Approximately 8.30 acres of existing maritime succulent scrub will be further enhanced through minor weed maintenance only. All areas should be maintained as suitable burrowing owl habitat throughout the five-year maintenance and monitoring period, as described in Section 4.0. A figure depicting the suitable habitat present adjacent to the project site can be found in Figure 7. Areas not mapped as suitable habitat will be enhanced to create foraging habitat for burrowing owl. A figure depicting the mitigation site boundaries, and the enhancement and restoration areas can be found in Figure 8.

To further enhance the mitigation area, artificial owl burrows will be installed, existing Otay tarplant populations will be preserved, and an area that supports beach goldenaster will be created (see Figure 8).

Within the mitigation site, a cluster of three artificial owl burrows would be constructed and installed to provide habitat to support one breeding pair of western burrowing owls using the most up-to-date research. The site would support 14.12 acres of suitable western burrowing owl/maritime succulent habitat restored through dethatching, weed maintenance, native plant installation and hand seeding, barrier construction, and continued maintenance and monitoring. Otay tarplant will be preserved by ensuring that the population will not be disturbed during enhancement and restoration activities. Beach goldenaster would be restored through seed collection, container plant installation, and seed bulking and dispersal. Implementation activities are described in Sections 3.3 and 3.4 and ongoing maintenance and monitoring activities are discussed in Section 4.0. For beach goldenaster, a pre-construction survey will be conducted to determine the number of individuals present at the time of the proposed project. Impacted beach goldenaster individuals will be mitigated in-kind through restoration. The results of this pre-construction survey may inform the number of beach goldenaster to be planted.

If owl exclusion activities take place within burrowing owl breeding season (February 1 to August 31), additional precautions may be required and will be determined through discussion with the City PWD Biologist. Table 5 presents the order of occurrence for the

proposed restoration activities and the months in which they are to occur but does not denote frequency.

Table 5 Restoration Implementation Activities Schedule												
Order of Occurrence	Jan	Feb ¹	Mar ¹	Apr ¹	May ¹	Jun ¹	Jul ¹	Aug ¹	Sep	Oct	Nov	Dec
Pre-Construction												
1. Plant Salvage	X	X	X	X	X	X	X	X	X	X	X	X
2. Beach Goldenaster Seed Collection								X	X	X	X	
3. Beach Goldenaster Bulking									X	X	X	X
4. Mound Creation ²									X	X		
5. Artificial Owl Burrow Installation ²										X	X	
6. BUOW Exclusion/ Passive Relocation ^{2,3}									X	X	X	
7. Burrowing Owl Relocation ³		X	X	X	X	X	X	X				
Site Preparation												
8. Barrier/Signage											X	X
9. Dethatching						X	X	X				
10. Irrigation System Installation ³									X	X		
11. Grow/Kill Cycle	X	X	X	X	X							
Installation												
12. Plant Installation	X	X									X	X
13. Seeding	X	X										X
¹ BUOW breeding season ² Activities must occur prior to any ground disturbance or vegetation removal ³ If needed												

3.2 Pre-Construction Activities

Required pre-construction activities include native plant salvage; beach goldenaster survey, seed collection, bulking, and plant propagation; mound creation; artificial owl burrow installation; trail decompaction; and burrowing owl exclusion. These activities would occur prior to the start of the construction of Beyer Park, in particular, mound creation and owl burrow installation must occur prior to construction to avoid potential significant impacts to burrowing owls. Restoration activities should occur in the order included in the following sections, although seasonal variability should be taken into consideration and the contractor’s best professional judgment should be applied. Some activities may be conducted concurrently. The timing of all activities should be closely coordinated with the City PWD Biologist and Wildlife Agencies.

3.2.1 Native Plant Salvage

Native species indicative of maritime succulent scrub occurring within the impact area appropriate for salvage would be collected prior to construction activities (see Figure 5). Anticipated species to be salvaged include coast barrel cactus (*Ferocactus viridescens*) and fish-hook cactus (*Mammillaria dioica*). All plants would be salvaged from the ground using

hand tools to remove the plant and root ball and the same methods would be applied for both species. The plants would be bare rooted, root trimmed, and the plants stored under shade cloth for one to three weeks, depending on weather conditions and season, to allow roots to callus. This will prevent to and encourage protective callus development on freshly exposed surfaces. Once the roots have callused, the barrel cactus and fish-hook cactus would be transplanted either within the mitigation site or into containers to be cared for at a local native plant nursery until the mitigation site is ready for plant installation. If plants require care for longer than six months, the nursery would provide quarterly (every three months) progress updates with photos to document plant health. Brief updates would be provided to the Restoration Specialist and City PWD Biologist.

3.2.2 Beach Goldenaster Seed Collection and Propagation

Beach goldenaster seed would be collected from the existing plant populations found within the impact area once the plants have set seed, likely between August and November but may vary based on seasonal weather patterns. Collected seed would be taken to an approved native plant nursery, rough cleaned, and stored until the fall. In the fall, when temperatures cool and conditions begin to favor native perennial plant germination, the seed would be sown into flats to germinate over the winter for container plant propagation and seed bulking. Individuals would be properly cared for through flowering and seed set and seed would be collected and rough cleaned. The bulking process would continue until adequate seed quantities are obtained to meet the project requirements, which may require several seasons (at least two) of bulking. In addition, 30 beach goldenaster container plants would be produced for installation within the mitigation site. The nursery would provide quarterly (every 3 months) progress updates with photos to document progress of the bulking activities to the Restoration Specialist and City PWD biologist.

3.2.3 Barriers

Concurrent with mound creation, temporary barriers will be installed at all unauthorized access point into the mitigation site to prevent unauthorized trespassing by people and vehicles. Barriers will not be installed at locations that will prohibit entrance into the site by maintenance or water trucks for the purposes of maintaining the mitigation site. Particular attention will be given to prohibit entrance into the site from the east and south by off-road vehicles. It is recommended that physical barriers (such as k-rails, orange environmental fencing, rocks, etc.) be installed if their removal at the end of the mitigation would not cause damage to native vegetation or owl burrows, as directed by the City PWD Biologist. Once grading is complete, signs would be installed to provide notice that the area is an ecological preserve, notify that trespassing is prohibited, and cite penalties for trespass violation including liability for repair of any damage to soil or biological resources within the barrier. Signs in both Spanish and English will be mounted at approximately 200-foot intervals around the mitigation site on metal t-posts or similar.

The mitigation site will be permanently fenced with three wire cable fencing or equivalent along the perimeter of the mitigation site. Vegetation will be strategically placed along the trails and at other strategic locations, to prevent unauthorized entry and to minimize vandalism. Protection of the mitigation site from human disturbance is essential for success. Of particular importance is protection of the mitigation site from pedestrians and off-road vehicles. Any permanent fencing would be installed in consultation with the City.

3.2.4 Mound Creation

Mound creation at the site would be implemented to create suitable topography for owl burrows. Mounds would be approximately 3 feet high to allow space for the burrow installation and to provide the owls a higher elevation relative to the surroundings for perching.

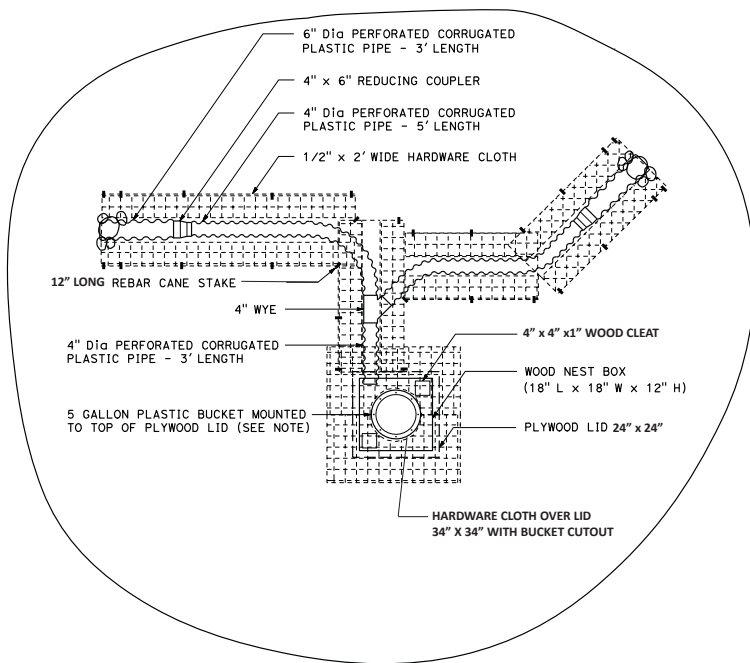
The mound creation would be conducted under the direction of the Restoration Specialist. Care would be taken during grading to avoid impacts to existing native plants. Areas that are to remain unaffected by mound creation activities would be marked prior to implementation. Grading and creation of the mounds would be done in a manner that removes or erases unauthorized trails and soil work will be done strategically to help visibly blend the unauthorized trails within the mitigation site in the approximate locations shown on Figure 8. The grading would be implemented using a small bulldozer. The equipment operator would also be experienced in habitat restoration work. The appropriate BMPs will be installed per the standards included in the current City's "Whitebook", as needed.

3.2.5 Trail Decompaction

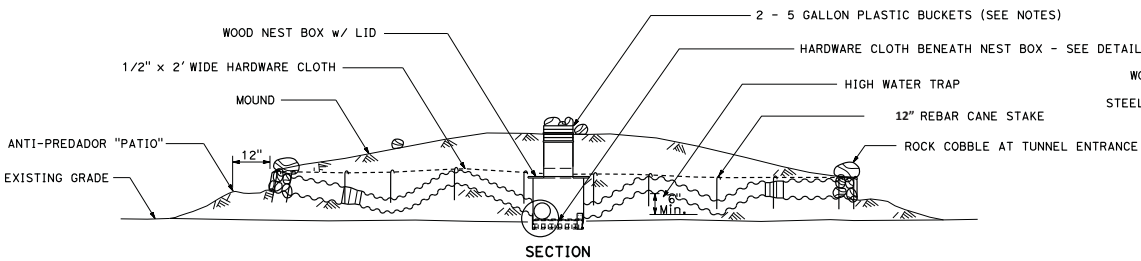
Concurrent with mound creation, trails to be closed will be decompacted, as needed. Areas where soil has become compacted from off-road-vehicle activity that may inhibit the planting and establishment of container plants will be targeted for decompaction. Trail decompaction would be conducted under the direction of the qualified restoration specialist. Trail decompaction activities will be conducted in a manner that does not result in impacts to adjacent native vegetation or soil crusts. Trail decompaction will be accomplished using a small bulldozer with ripping tines, or similar. The appropriate BMPs will be installed per the standards included in the current City's "Whitebook", as needed.

3.2.6 Owl Burrow Installation

Artificial owl burrows would be installed within the created mounds in the approximate locations shown on Figure 8. Burrows would be built and installed per the drawings shown in Figure 9. Figure 9 includes the artificial burrowing owl burrow design developed and modified by the SDZ ICR (SDZ ICR 2018). The artificial owl burrows would be constructed with wood boxes and plastic corrugated pipe and installed within the created mounds. Owl burrows would be installed per Figure 9 and in a manner that supports western burrowing owl use of the mounds, including but not limited to installing burrow entrances in appropriate locations for owl perching and installing entrances at angles that preclude rain runoff from entering burrows.



PLAN



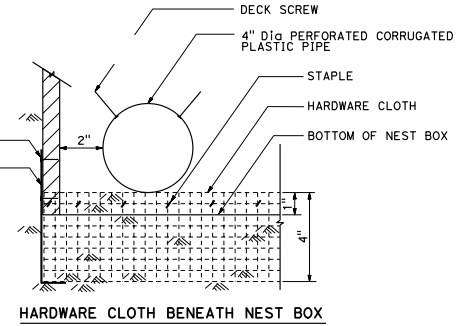
SECTION

ARTIFICIAL BURROWING OWL BURROW

NO SCALE

Notes for artificial burrowing owl burrows:

- Step 1. Use 3/4" pine for wood nest box. Use 3/4" plywood for nest box lid. Secure nest box walls with appropriate sized wood deck screws. Secure two cleats to lid positioned diagonally from each other with appropriate sized wood deck screws. Cleats can be constructed from 4" x 4" timber cut to 1" thickness. Position cleats at base of lid to keep lid from sliding off of nest box. Do not secure lid to nest box.
- Step 2. Cut 4-1/2" diameter hole in wood nest box wall 2" from corner and 1" from bottom. Extend perforated corrugated plastic pipe into nest box 2" beyond interior wall. Secure pipe to wall with two appropriate sized wood deck screws. Place 1/4" of native soil in bottom of perforated corrugated plastic pipe the entire length of the pipe.
- Step 3. All hardware cloth shall be 1/2" square mesh. Place hardware cloth (24" wide) over perforated corrugated plastic pipe prior to backfilling. Secure hardware cloth with 12" long cane stakes.
- Step 4. Place hardware cloth beneath nest box as detailed. Secure hardware cloth to nest box walls with 1/2" long galvanized steel staples. Install four appropriate sized L-brackets at each corner of nest box to provide support for nest box and hardware cloth. Secure each L-bracket to outside wall of nest box with minimum of four appropriate sized wood screws. L-brackets should extend 3" beyond the bottom of the box. Cut a 26" square of hardware cloth to wrap over L-brackets to secure to box, per cross section. Place 4" of native soil in bottom of nest box on top of hardware cloth.
- Step 5. Cut 8" diameter hole in center of nest box lid and 8" diameter hole in bottom of 5 gallon plastic bucket. Secure bucket to lid with appropriate sized wood screws. Install top lip of bucket level with finish grade of mound - adjust depth of wood nest box as necessary. Place hardware cloth over nest box lid. Overlap lid minimum 4" all sides.
- Step 6. Place 2nd 5 gallon plastic bucket inside 1st bucket. Fill bucket with native soil to 3" from top. Install rocks (3" to 6" diameter) in top of bucket. Integral color of all 5 gallon plastic buckets shall blend with surroundings, as approved by the City of San Diego.



HARDWARE CLOTH BENEATH NEST BOX

CROSS SECTION

FIGURE 9
Artificial Burrowing Owl Burrow Plan

3.2.7 Burrowing Owl Exclusion

If burrowing owls are found on the site during the pre-construction surveys, any potentially impacted burrowing owl individuals must be relocated out of the impact area using passive or active methodologies approved by the Wildlife Agencies. Burrow exclusion is a method of passive relocation that precludes owls from re-entering burrows that they have exited. The method outlined below includes an approach recommended by the SDZ ICR and requires installing one-way doors at all burrow entrances to evict owls from burrows that may be impacted during construction and encourage them to move into the nearby artificial burrows. Burrowing owl exclusion would take place after the installation of the artificial burrows and outside of burrowing owl breeding season (February 1 to August 31). The following guidelines conform to the Staff Report on Burrowing Owl Mitigation (CDFW 2012).

Prior to exclusion, all potential burrows would be scoped and exclusionary, one-way doors installed. Exclusion should take place during the early morning or late afternoon hours when owls are typically active outside of their burrows. Exclusionary doors would be left in place for three or more days and burrows should be scope twice daily during the early morning or late afternoon hours after exclusionary door installation to ensure that owls have vacated the burrows. Once it has been determined through scoping and monitoring that owls are no longer occupying the burrow, the burrow would be collapsed using heavy equipment or hand tools.

For this mitigation project, it is anticipated that active burrowing owl relocation will not be required if project activities are timed appropriately. If active burrowing owl relocation is required, these activities will be determined through discussion with the City PWD Biologist.

3.3 Site Preparation Activities

Required site preparation activities include barrier installation, weed dethatching, irrigation system installation, and a grow-kill cycle. Site preparation activities would occur prior to or concurrent with the start of the construction of Beyer Park. Site preparation activities should occur in order listed in the following sections, although seasonal variability should be taken into consideration, the contractor's best professional judgment should be applied, and some activities may be conducted concurrently.

3.3.1 Dethatching

Prior to mound creation and outside of the burrowing owl breeding season (February 1 through August 30), crews familiar with native and non-native plants would remove the accumulated weedy thatch throughout the site using line trimmers and rakes.

Areas of black mustard and garland daisy within the restoration and enhancement areas, in particular, would be targeted for dethatching as these areas inhibit owl activity due to the tall structure of these species. Cut material would be raked into piles, removed from the

site, and taken to a landfill or put into a green waste dumpster for disposal. Removal of the thatch aides in creating space for mounds, preparing the site for container plant installation and hand seeding, and reducing future weed growth that may inhibit use of the site by burrowing owls.

3.3.2 Irrigation System Installation

A temporary aboveground irrigation system will be installed within areas planned to receive container plants in the disturbed maritime succulent scrub (enhancement areas/trail closure areas) and disturbed areas (restoration areas) at the restoration contractor's discretion and with the approval of the City PWD Biologist. The irrigation system would be field fit to ensure adequate irrigation coverage to all installed container plants. In particular, the beach goldenaster mitigation area will be on a separate station to allow for this area to be irrigated at the specific duration and frequency as required to maintain the species without impacting the establishment of other vegetation as these plants may require longer periods of dry-out between watering events compared to other planted species. If a point of connection to a reliable water source is not available at the time of mitigation implementation, a water truck will be utilized to provide supplemental irrigation to container plants.

3.3.3 Grow-Kill Cycle

After installation of the irrigation system, the stations located within the disturbed areas would run for a period of approximately 30 days. At the end of the 30-day period, all weeds would be sprayed with the appropriate herbicide. Weeds would continue to be treated with herbicide every two weeks until weed germination is no longer observed to ensure adequate suppression of the weed seed bank. This process typically requires three rounds of herbicide treatment.

If an irrigation system is not installed and there is time available within the project schedule, a grow-kill cycle would be performed through one rain season. Weeds would be allowed to germinate from natural rainfall and killed once they reach the appropriate size (less than 6 inches in height and/or prior to setting seed) for herbicide treatment (City of San Diego 2018b). Supplemental water would not be applied. All weeds would be treated before flowering and setting seed.

3.4 Installation Activities

Required installation activities include maritime succulent scrub and beach goldenaster plant and seed installation. Installation activities would occur after site preparation activities are complete, although seasonal variability should be taken into consideration, the contractor's best professional judgment should be applied, and some activities may be conducted concurrently. Planting and seeding will occur in areas shown on Figure 8 as disturbed maritime succulent scrub, disturbed land, trails to be closed, and the beach goldenaster mitigation location.

3.4.1 Plant and Seed Installation

The maritime succulent scrub habitat would be planted after the installation of the owl burrows and after the first significant rain of the rain season. See Table 5 for the seeding and planting schedule. The mitigation site currently supports maritime succulent scrub, disturbed maritime succulent scrub, and disturbed habitats. Plant and seed installation will occur within the disturbed habitat areas, including within trails to closed. The restoration of native plant communities at the site would be based on a principle of re-establishing suitable soil conditions (i.e., mycorrhizal fungi); reintroduction of native shrub and herbaceous species; and native seed banks suitable for western burrowing owl foraging habitat.

Approximately 3.69 acres would be restored from disturbed habitat to maritime succulent scrub suitable for burrowing owl foraging through container plant installation and seeding.

The 2.13 acres of disturbed maritime succulent scrub and 8.30 acres of maritime succulent scrub to be enhanced on-site should not require container plant or seed installation but will be further enhanced by minor weed maintenance. All areas should be maintained as suitable burrowing owl habitat throughout the five-year maintenance and monitoring period, as described in Section 4.0.

The restoration techniques would include installing container stock grown from a local seed source and hand-broadcasting locally collected seed. All seed used for plant propagation would be collected from the vicinity of the mitigation site where feasible and as approved by the City PWD Biologist. All planting will be installed in a way that mimics natural plant distribution. Only lower growing species would be installed within 50 feet of the installed artificial owl burrows (see Figure 8).

The reestablishment of a fully diverse native community would rely on appropriate initial conditions and intensive weed control efforts. The container plant palette and seed mix for the maritime succulent scrub restoration that supports burrowing owl are listed in Tables 6 and 7. All plant material salvaged from the impact area shall be installed within the mitigation site.

The plant palette was designed to mimic the plant composition and structure of the current on-site maritime succulent scrub.

Table 6 Container Stock for the Maritime Succulent Scrub Restoration			
Scientific Name	Common Name	Size	Number per Acre ¹
<i>Agave shawii</i>	Shaw's agave	Rose-pot	50
<i>Artemisia californica</i> ²	California sagebrush	1-gallon	50
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	Rose-pot	80
<i>Bahiopsis laciniata</i> ²	San Diego sunflower (viguiera)	1-gallon	50
<i>Bergerocactus emoryi</i>	Golden cereus	1-gallon	60
<i>Distichlis spicata</i>	Salt grass	Rose-pot	150
<i>Echinocereus engelmannii</i>	Strawberry hedgehog cactus	1-gallon	60
<i>Eriogonum fasciculatum</i> ²	California buckwheat	1-gallon	70
<i>Euphorbia misera</i> ²	Cliff spurge	1-gallon	40
<i>Opuntia littoralis</i> ²	Coast prickly pear cactus	1-gallon or cuttings	60
<i>Simmondsia chinensis</i> ²	Jojoba	1-gallon	80
TOTAL			750
¹ Approximate number per acre to be adjusted for areas within existing native target vegetation.			
² Not to be installed within 50 feet of artificial owl burrows.			

Table 7 Seed Mix for the Maritime Succulent Scrub Restoration		
Scientific Name	Common Name	Pounds per Acre
<i>Acmispon glaber</i>	Deerweed	1.0
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage	1.0
<i>Eriophyllum confertiflorum</i>	Golden yarrow	2.0
<i>Heterotheca sessiliflora</i> ssp. <i>sessiliflora</i>	Beach goldenaster	TBD
<i>Lasthenia californica</i>	California goldfields	4.0
<i>Plantago erecta</i>	Dot seed plantain	4.0
TOTAL		12.0
TBD = to be determined based on seed collection and bulking quantities as discussed in Section 3.3.2.		

3.4.2 Beach Goldenaster Planting and Seed Dispersal

The 30 one-gallon beach goldenaster plants would be installed within the designated area within the maritime succulent scrub habitat. The designated area would be clearly marked with snow fencing to ensure protection of the plants. Fencing would be removed after Year 3 to prevent the establishment of visible boundaries between the beach goldenaster area and the maritime succulent scrub. Maintenance measures for this area will follow those outlined for the maritime succulent scrub but particular care (i.e., additional watering and weeding) may be required to maintain at least 25 individuals at the end of the mitigation (or fewer if this number is adjusted based on the results of the pre-construction survey). Beach goldenaster seed would also be distributed by hand within the designated beach goldenaster area and throughout the mitigation site in the areas identified in Figure 8. Seed would be scheduled for distribution in the fall/winter sometime following the first significant rain event of the season and immediately prior to a forecasted rain event (not more than 48 hours). The area would be lightly raked and the seed dispersed by hand.

3.5 As-Built Reporting

At the completion of implementation, the installation will be approved by the City DSD and PWD Biologist. The installation/maintenance contractor shall submit an as-built report that documents implementation activities and the dates they were completed. The report will include but not be limited to dates of on-site work, location of artificial owl burrows, location of the beach goldenaster designated area, final maritime succulent scrub plant and seed lists and quantities, and modifications to the mitigation site design that occurred through consultation with the Restoration Specialist and City PWD Project Manager. The report may be a brief letter report with photos of the final site design and figures with locations of site elements.

3.6 120-day Plant Establishment Period

The 120-day Plant Establishment Period (PEP) would begin once the implementation activities are approved by the City, likely once all container plants and native seed have been installed. The PEP shall last for 120 calendar days and shall consist of all maintenance activities and methods discussed in Section 4.0. Regular (at least once per week) qualitative monitoring will be conducted to assess native container plant establishment and non-native weed germination and make recommendations for maintenance activities, as needed. At the end of the PEP, any dead container plants would be replaced in kind and the site would be free of non-native weed species. Year 1 would begin after successful completion of the PEP and any required remedial container plant installation has been completed. At the completion of the PEP, the Restoration Specialist will prepare a letter report for submittal to the City to document activities conducted during the PEP and the site progress towards final success criteria.

4.0 Maintenance Plan

Regular maintenance of the mitigation site would be required during the five-year maintenance period to establish native container plants and control non-native weeds and will be conducted throughout the entire mitigation site. The need for weeding is expected to decrease substantially by the end of the maintenance period provided successful habitat restoration has been achieved. Weeding activities would include herbicide application, line trimming, and hand pulling, depending on the species and phenology of the weed encountered and their location within the mitigation site. Maintenance activities would also include watering of planted container stock, re-planting and re-seeding of native species, repair of fencing and signage, and trash removal. Maintenance activities would be performed consistent with the following and per the schedule in Table 8:

- All herbicide and pesticide use will be under the direction of a licensed qualified applicator and will be applied by personnel trained to apply herbicide. All weeding personnel will be educated and experienced to distinguish between native and non-native species to ensure that local native plants are not inadvertently killed.

- Appropriate herbicides will be applied on all areas that have been dethatched. Herbicide will only be applied when wind speed is low and spray nozzles will be of a design to maximize the size of droplets. A wind speed of less than 5 miles per hour is recommended, however, best professional judgment should be exercised when spraying weeds to reduce the potential for drift of herbicide to non-target plants. Application of herbicide will not occur if rain is projected within 24 hours of the scheduled application.
- Weeds will be treated once they reach the appropriate size (less than 6 inches in height and/or prior to setting seed) for herbicide treatment (City of San Diego 2018b).
- A 10-foot buffer will be maintained between concentrations of any sensitive plant species during herbicide application.
- Weeds would only be removed by hand from within the beach goldenaster designated mitigation area.
- A 10-foot-wide weed maintenance buffer from the mitigation site boundary will be established around the mitigation site. The buffer will be maintained for non-native weeds to prevent the encroachment of weeds into the mitigation site.
- Watering of container plants would be conducted via an irrigation system, if installed, or water truck and hoses. Water would be done in a manner to mimic natural rainfall, at a frequency and duration to encourage deep root establishment, and prevent runoff.
- Artificial owl burrows would be checked and maintained annually. Burrows damaged by predators would be repaired immediately if unoccupied or, if occupied, outside the burrowing owl breeding season (February 1–August 30). At the end of each breeding season, the nest boxes and burrow entrances would be checked for debris or damage and necessary maintenance or repairs would be made.
- Replacement of container plants would be conducted, as needed. All dead plants will be replaced during years 1 and 2 after initial plant installation, unless their function has been replaced by natural recruitment.
- All fencing and signs would be checked and repaired as necessary.
- Trash in the mitigation areas would be removed as necessary.
- After completion of the PEP, mitigation areas would be qualitatively monitored once a week by the restoration ecologist for the first two months, once every other week for the next four months, and monthly thereafter during the growing season (December to May). Monitoring will include, but not be limited to, assessment of container plant health, native seed germination, weed presence, and unauthorized trespassing. Monitoring results will be used to determine the timing and frequency of maintenance activities.

- At the completion of the five-year maintenance period and prior to final sign-off, foot paths and access routes that may have developed within the site during maintenance and monitoring would be vertically mulched with brush and prickly pear cactus pads. This is only required in areas where the footpaths may encourage trespassing. If trespassing has not been problematic in these areas, no vertical mulching is required.
- Other site problems such as vehicle damage and erosion would be reported to the City Project Biologist with recommendations for remedial measures.

Table 8
Restoration Maintenance Schedule

Task	Year 1	Year 2	Year 3	Year 4	Year 5
Weed Control (Herbicide Treatment)	Monthly ¹	6 times per year ¹	4 times per year ¹	4 times per year	3 times per year
Watering	As needed	As needed	As needed	--	--
Supplemental Upland Planting/Seeding	Fall/Winter	Fall/Winter	--	--	--
Beach Goldenaster Seeding	Winter	Winter	Winter		
Artificial burrow maintenance	As needed	As needed	As needed	As needed	As needed
Trash Removal	As needed	As needed	As needed	As needed	As needed
Barrier/Sign Maintenance	As needed	As needed	As needed	As needed	As needed
Footpath Vertical Mulching	--	--	--	--	As needed

¹Minimum frequency

5.0 Ecological Performance Standards

The performance standards used to determine successful mitigation will include the achievement of standards for maritime succulent scrub vegetation, beach goldenaster establishment, and suitable western burrowing owl habitat establishment. The achievement of these standards will be measured by native and non-native cover, plant species richness, burrowing owl use, and beach goldenaster presence. The performance standards discussed below have been developed to provide evidence that the restoration of the mitigation site has been successful at mitigating for beach goldenaster impacts and replacing and improving habitat for western burrowing owl breeding and foraging.

The target values for the maritime succulent scrub would ultimately be based on values appropriate to support owl foraging. In addition, the enhanced and restored areas on-site shall blend with the preserved areas on-site. An appropriate reference site will be determined by the Restoration Specialist in coordination with the City PWD Biologist. High quality maritime succulent scrub habitat appropriate for burrowing owl with the same southwestern exposure and soils is located adjacent to the mitigation area and can be used as a reference site.

Performance standards for enhancement areas (see Figure 8) will focus on control of non-native species. The goals will be for the maritime succulent scrub and disturbed maritime succulent scrub within the enhancement area to seamlessly blend together and to provide habitat for western burrowing owl. The performance standards for the restoration areas (see Figure 8) will focus on control of non-native species and obtaining native maritime

succulent scrub cover appropriate for this vegetation community and western burrowing owl.

Each of the specified performance standards will be evaluated following the completion of seasonal field monitoring to determine if the final performance standards have been met and to assess the likelihood that any particular standard will ever be met (taking into account the seasonal conditions). The final assessment of success shall be based on the combined performance over the monitoring period and an analysis of the trends established.

5.1 Maritime Succulent Scrub Restoration Vegetation Performance Standards

The performance standards for the maritime succulent scrub habitat are based on establishing vegetation within the disturbed areas that replicate the open nature of the existing maritime succulent scrub habitat on-site and as compared to an appropriate reference site. In addition, absolute performance standards have been established for container plant survivorship, species richness, and weed abundance. As the maritime succulent scrub habitat will also serve as western burrowing owl foraging habitat, total native coverage should be appropriate to support burrowing owl use of the site. Absolute approximate yearly target values for the performance standards cover and species richness of maritime succulent scrub habitat that provides suitable burrowing owl habitat are presented in Table 9.

Year	Native Shrub Species Cover	Native Herbaceous Species Cover	Species Richness ²	Non-native Species Cover
1	10	5	12	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
2	20	10	13	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
3	30	15	14	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
4	40	20	15	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
5	40	20	15	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
Cal-IPC = California Invasive Plant Council ¹ Alternatively quantitative values may be compared to a reference site ² Number of different species				

5.1.1 Plant Survivorship, Vegetation Cover, and Species Richness Performance Standards

In addition to the performance standards included in Table 8, the standards listed below will also be evaluated and applied to the mitigation site. The mitigation site will be compared to an appropriate reference site with the potential to support burrowing owl as approved by the City PWD Biologist. The plant survivorship, vegetation cover, and species richness performance standards are as follows:

- Container plant survival shall be 80 percent of the initial plantings for year 1. After year 1, all dead plants will be replaced unless their function has been replaced by natural recruitment.
- At the end of the five-year monitoring program, the mitigation site will be compared to the reference site. The mitigation site will support 80 percent of the native shrub cover, native herbaceous cover, and native species richness as compared to the same values observed and recorded at the reference site during the same monitoring year.
- At the end of the monitoring program, restored burrowing owl foraging habitat will visibly blend in with the existing maritime succulent scrub habitat on-site and will not contain vegetative cover that precludes owl foraging.

5.1.2 Non-native Species Tolerance Performance Standard

The relative cover of all non-native species within the mitigation site will not exceed an absolute value of 5 percent and no California Invasive Plant Council List High or Moderate rated species will be present at the end of the five-year monitoring period. In addition, no non-native perennial species will be present.

5.2 Enhancement Areas Vegetation Performance Standards

The performance standards for the maritime succulent scrub enhancement areas will focus on the control of non-native species. The relative cover of all non-native species within the mitigation site will not exceed an absolute value of 5 percent and no California Invasive Plant Council List High or Moderate rated species will be present at the end of the five-year monitoring period. In addition, no non-native perennial species will be present (Table 10).

Table 10 Enhancement Areas Vegetation Performance Standards (percent)	
Year	Non-native Species Cover
1	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
2	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
3	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
4	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
5	<ul style="list-style-type: none"> • <5 • 0 Cal-IPC high or moderate species • 0 perennial species
Cal-IPC = California Invasive Plant Council	

5.3 Beach Goldenaster Performance Standards

At the end of the five-year monitoring period, a minimum of 25 beach goldenaster individuals should be present within the mitigation site. This number may be adjusted based on the results of the pre-construction survey. The 25 individuals can be present within the designated beach goldenaster area, individuals that germinated from seed distributed throughout the mitigation site, or from a combination of the two. In addition, during at least two of the monitoring years, a minimum of 25 individuals must have been observed setting seed. At least one of these years must occur outside of the years when supplemental watering is being applied to the plants (i.e., Years 4 or 5).

5.4 Burrowing Owl Performance Standards

At the end of the five-year monitoring period, western burrowing owls should be observed utilizing the mitigation site during two of the five monitoring years during either breeding or non-breeding season. Burrowing owl presence may be confirmed through focused non-protocol burrowing owl surveys or through incidental observations that may occur during routine qualitative and quantitative monitoring.

5.5 Photographic Documentation

A minimum of fifteen permanent photo points will be established within the mitigation site prior to the start of restoration activities. Representative photographs will be taken at the completion of implementation, completion of the PEP, and annually to visually document the progress of vegetation cover development over the monitoring period.

6.0 Monitoring Requirements

A minimum commitment of five years of monitoring of the mitigation site will be completed. Biological monitoring for performance standard goals will include vegetation monitoring, complete flora and fauna inventories, and photographic documentation. The monitoring schedule is presented in Table 11.

Task	Year 1	Year 2	Year 3	Year 4	Year 5
Qualitative Monitoring	Once weekly for first 2 months; Once every other week for months 2–6; Monthly thereafter during the growing season (December-May)	Every other week during the growing season	Monthly during the growing season	Monthly during the growing season	Monthly during the growing season
Beach Goldenaster Monitoring	Once weekly for first 2 months; Once every other week for months 2–6; Monthly thereafter during the growing season (December-May)	Every other week during the growing season	Monthly during the growing season	Monthly during the growing season	Monthly during the growing season
Photograph Documentation	As-needed	Spring	Spring	Spring	Spring
Vegetation Monitoring (Quantitative)	Spring	Spring	Spring	Spring	Spring

¹Time dependent on rainfall.

6.1 Maritime Succulent Scrub Vegetation Monitoring

It is anticipated that maritime succulent scrub habitat would become established within the five-year monitoring period, although full maturation of the community may take longer. Overall native cover (i.e., shrubs, herbaceous species) and species richness would be evaluated for the mitigation site and compared to the same data collected for the reference site. For the enhancement areas, overall non-native cover would be evaluated and compared to the reference site.

The native and non-native vegetation cover in the mitigation and reference sites would be measured using ocular estimates and line-intercept sampling method. Transects should be separated by restoration areas and enhancement areas. The line-intercept method involves the establishment of randomly placed transects to gather data to estimate native vegetation cover (i.e., shrub and herbaceous). Approximately two 10-meter transects will be sampled per acre with a representative number of transects placed in restored and enhanced areas. Plant species and growth form will be noted at every 0.5 meter. Vegetation coverage of the mitigation site should be similar to the reference site at the end of the five-year monitoring

period. Species richness would be determined by lists of all plant species present within the mitigation site.

The presence of non-native weed species would be monitored in the mitigation site. Information collected during qualitative monitoring visits would be used to schedule the maintenance crews to conduct weed maintenance activities. Ocular estimates and transect data would be used to quantify coverage of non-native species and compare to performance standards.

In addition, the mitigation site as a whole should blend together at the end of the monitoring period. The mitigation site should look like one contiguous patch of native vegetation.

6.2 Beach Goldenaster Monitoring

Counts of beach goldenaster individuals would be conducted annually throughout the mitigation site during the blooming period for this species, approximately March through June. The timing of these counts would be adjusted based on seasonal weather patterns and qualitative monitoring of the species phenology for that year. Total individuals at each stage of phenology would be recorded; seedling, vegetative, flowering, seeding. Counts would be separated into individuals observed in the beach goldenaster planting areas and other areas of the mitigation site.

6.3 Burrowing Owl Monitoring

Monitoring for western burrowing owl would be conducted by a biologist familiar with the behavior and natural history of the burrowing owl and consist of four surveys during each monitoring year, three surveys conducted during the non-breeding season (September 1 through January 31) and one conducted during the breeding season (February 1 through August 31) with at least two months between each survey. Surveys would be conducted in the morning or late afternoon when owls are active outside their burrows and timed with weeding activities and beach goldenaster monitoring.

Owl observance shall be marked in the field and approximately locations shall be included in annual reports. In addition, fossorial mammal activity shall be recorded during burrowing owl surveys and a description of their activity would be included in the annual reports.

6.4 Reporting

Annual reports that assess both the attainment of yearly interim and progress toward the final performance standards for the site would be submitted to the City PWD Biologist and Project Manager for dispersal to the appropriate stakeholders by December 1 of each year. The reports would also summarize the mitigation project's compliance with all applicable mitigation measures and permit conditions. A list of wildlife species observed using the mitigation site would be prepared and included in the annual reports. Species lists would be

compiled annually. A final monitoring report would be prepared and submitted to Wildlife Agencies for use in the notification of completion and final acceptance of the mitigation effort.

7.0 Long-term Management

The mitigation site mostly lies within the City MSCP's MHPA. After the successful restoration of maritime succulent scrub and beach goldenaster habitat suitable for western burrowing owl foraging and nesting, the site will be managed pursuant to the guidelines of the City MSCP. The site will be preserved in perpetuity as part of the City MSCP Program. Prior to the issuance of any construction permits or beginning any construction-related activity on-site, the City would provide the location of mitigation lands to the satisfaction of MSCP and the Wildlife Agencies.

The MSCP provides the requirements of the long-term management of the mitigation site with respect to ownership, long-term maintenance requirements (i.e., planting, weed control, barriers-fencing, lighting, drainage, signage-public information and education, trash removal), funding, prohibitions, corrective measures for unforeseen circumstances, monitoring, and responsible parties (i.e., City of San Diego).

In addition, long-term maintenance and monitoring of the approved mitigation land shall be conducted in accordance with the MSCP program by the City Parks and Recreation department. Funding for maintenance would occur through the operating budget for the management of Park and Recreation Open Space lands.

8.0 Adaptive Management Plan

An adaptive management approach would be implemented for the mitigation site in the event that the areas of the site are not attaining the desired habitat values and functions. Adaptive management is defined, for the purposes of this mitigation project, as a flexible, iterative approach to the long-term management of biological resources that is directed over time by the results of ongoing monitoring activities and direct observation of environmental stressors that are producing adverse results within the mitigation site. Effects of any catastrophic events that affect the mitigation would receive prompt and appropriate corrective actions.

Adaptive management measures to be implemented would include the utilization of qualitative data gathered in the field throughout the five-year monitoring period to assess the health and vigor of newly established habitat within the mitigation site. Following an event that causes damage to all or part of the mitigation sites, this data will be used in part to drive management considerations for the repair of the damaged areas. Achieving the key goals of the mitigation program and establishing self-sustaining native habitats will be the focus of all adaptive management decisions. Adaptive measures may include owl burrow repair, remedial plant installation, collection and dispersal of beach goldenaster seed, re-seeding of native shrubs and annuals, additional weed control efforts, and others deemed

appropriate through consultation with the City and Wildlife Agencies. Plant and seed installation may occur within the disturbed maritime succulent scrub areas as a measure to deter non-native cover and/or fill in bare areas as determined by the Restoration Specialist with approval of the PWD Project Manager.

If an interim performance standard is not met for any of the criteria in any year, or if the final performance standards are not met, the City will prepare an analysis of the cause(s) of failure and, if deemed necessary by the Wildlife Agencies, propose remedial actions for approval. If the site has not met a performance standard during the initial five-year period, the maintenance and monitoring obligations will continue until the Agencies deem the restoration successful or contingency measures are implemented. Restoration will not be deemed successful until at least two years after any contingency measures are implemented, as determined by the Wildlife Agencies.

9.0 Notification of Completion

If the final success criteria have been met at the end of the five-year monitoring program, notification of these events would be provided with the fifth-year report. If the final success criteria have not been met by the end of the five-year monitoring program, the fifth-year report would discuss the possible reasons and recommendations for remedial measures to cause the site to meet the criteria. If the mitigation site has not met the performance standards, the City's maintenance and monitoring obligations will continue, until the City Mitigation Monitoring Coordination (MMC) and PWD deem the mitigation program as successful or contingency measures must be implemented (see Section 8.0, Adaptive Management Plan).

Following achievement of the final success criteria and receipt of the final annual report to the City MMC and PWD, the City MMC will provide written approval of the completion of the mitigation effort.

10.0 References Cited

California Department of Fish and Wildlife (CDFW)

- 2012 Staff Report on Burrowing Owl Mitigation. State of California. Natural Resources Agency, Department of Fish and Game. March 7.

RECON Environmental, Inc. (RECON)

- 2017 Results of the 2017 Burrowing Owl Breeding Season Surveys for the Beyer Park Development Project. September 13.
- 2019 Biological Resources Report for the Beyer Park Development Project, San Diego, CA. WBS#S-00752.02.02. November.

San Diego, City of

- 1997 City of San Diego Multiple Species Conservation Plan (MSCP) Subarea Plan. March.
- 2017 Final City of San Diego Vernal Pool Habitat Conservation Plan. October.
- 2018a San Diego Municipal Code: Land Development Code, Biology Guidelines. February.
- 2018b The “Whitebook”. Standard Specifications for Public Works Construction.

San Diego Zoo Institute for Conservation Research (SDZ ICR)

- 2017 Burrowing Owl Conservation and Management Plan for San Diego County. San Diego, CA.
- 2018 2018 Project Report: Advancing Burrowing Owl Conservation in San Diego County through Mitigation Measures using Science and Adaptive Management. December.

U.S. Department of Agriculture (USDA)

- 1973 *Soil Survey, San Diego Area, California*. Edited by Roy H. Bowman. Soil Conservation Service and Forest Service. December.



An Employee-Owned Company

August 23, 2017

Ms. Esther Burkett
California Department of Fish and Wildlife
Wildlife Branch – Nongame Wildlife
1812 9th Street
Sacramento, CA 95811

Reference: Results of the 2017 Burrowing Owl Breeding Season Surveys for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Burkett:

This letter is to notify the California Department of Fish and Wildlife (CDFW) of the results of the 2017 breeding season surveys for burrowing owl (*Athene cunicularia*), a CDFW Species of Special Concern, conducted for the City of San Diego's Beyer Park Development Project (project). A burrowing owl species description, survey area conditions, survey methods, and results are discussed in detail below. Burrowing owl was detected within the project survey area during 2017 focused breeding season surveys.

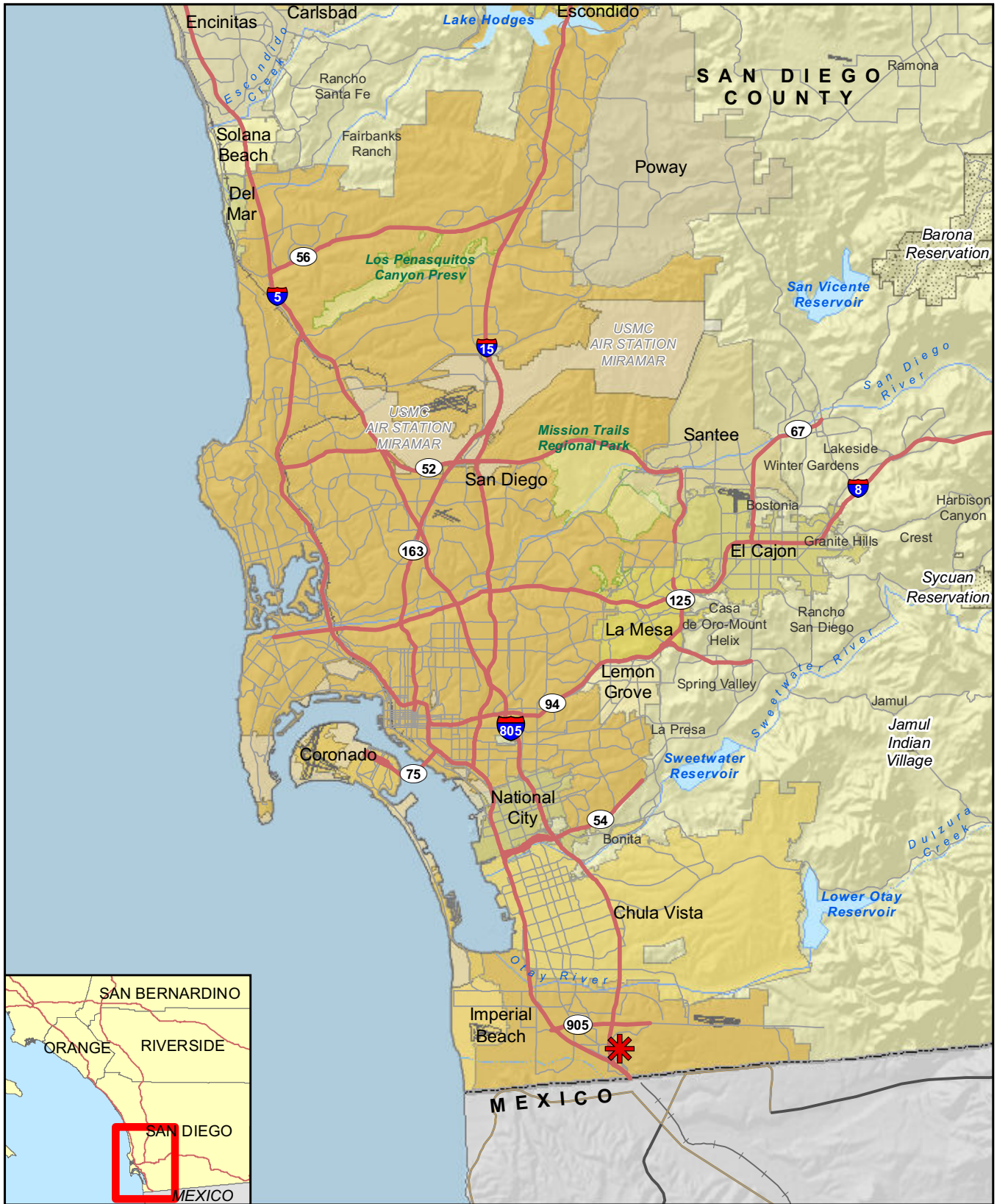
The project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; U.S. Geological Survey 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071. The surrounding 150-meter buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 64506110, 66701001, 66613009, 66613007, 66613028, 63817014, and 63828017; as well as the entirety of APNs 66613006, 66613005, 66613004, and 66613008.

The project site is situated within the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan boundary. An aerial view of the project area is shown on Figure 3.

The project site includes 44 acres with approximately 12.6 acres considered usable for the proposed recreational park. The proposed park may include lighted multi-purpose sports fields, a skate park, a lighted basketball court, children's play areas, a comfort station/concession building, picnic facilities including a picnic shelter, viewpoints/overlooks and interpretive signage, bicycle paths and racks, nature trails, parking areas, walkways, security lighting, and landscaping. The project is currently in the conceptual design and preliminary environmental review phase.

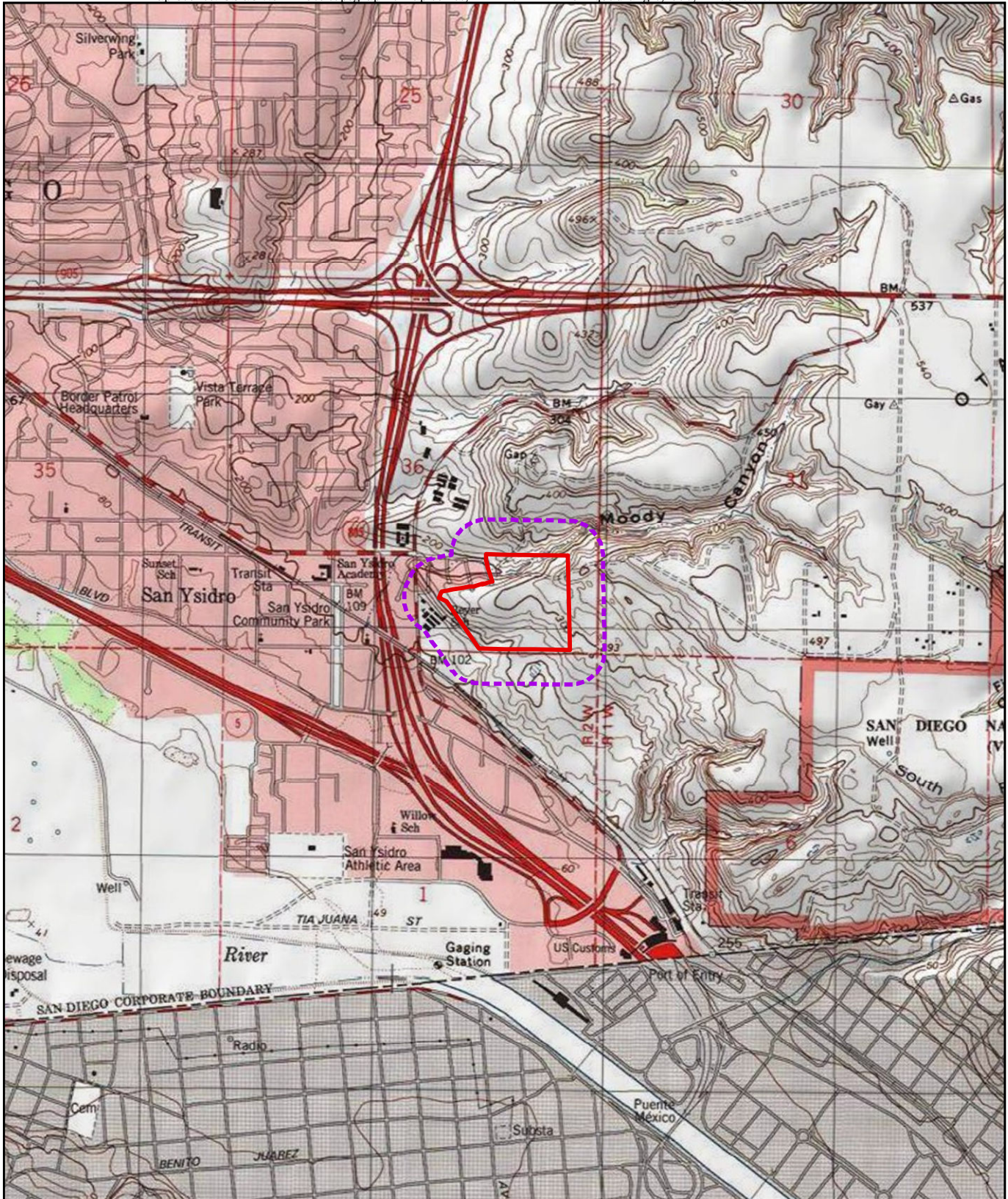
BURROWING OWL SPECIES DESCRIPTION

The burrowing owl is a CDFW Species of Special Concern, and western burrowing owl (*A. c. hypugaea*), the western subspecies, is covered by the County of San Diego Multiple Species Conservation Program. This subspecies is primarily restricted to the western United States and Mexico. A year-round resident in San Diego County, breeding burrowing owls remain in only five primary areas in San Diego County, including Otay Mesa, Imperial Beach, Naval Air Station North Island, Warner Valley, and Borrego Valley (Unitt 2004). The closest reported occurrence to the survey area is on Otay Mesa approximately one mile to the southeast, and it dates back to 1994 (CDFW 2017; County of San Diego 2017).



***** Project Location

FIGURE 1
Regional Location





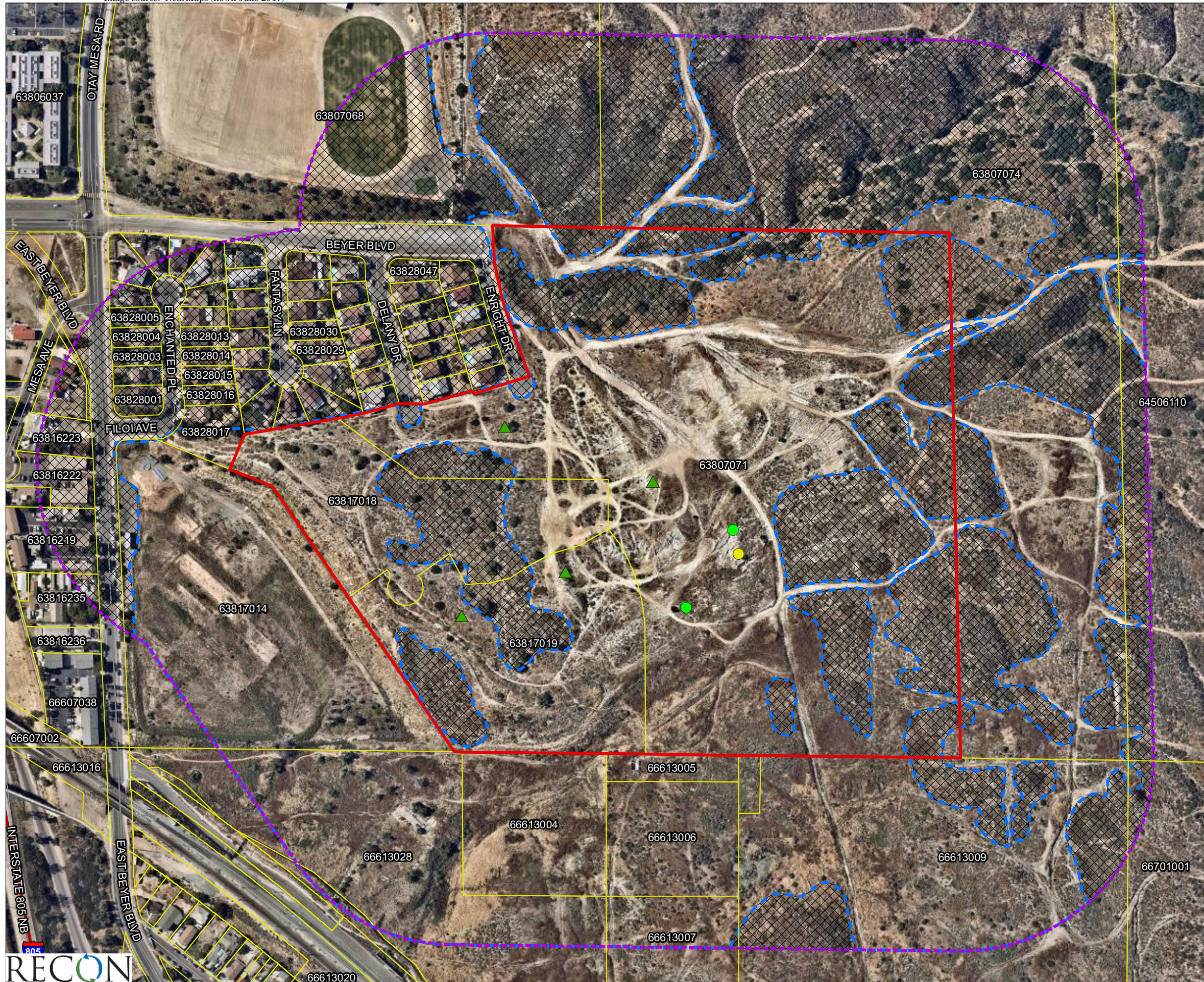
-  Project Boundary
-  Burrowing Owl Habitat Assessment Area (150-meter buffer)

FIGURE 2

Project Location on USGS Map



- Project Boundary
- Parcel Boundaries
- Burrowing Owl Habitat
- Assessment Area (150-meter buffer)
- Burrowing Owl Suitable Habitat
- Not Suitable Habitat
- Burrowing Owl and Active Burrow Observation
- Burrowing Owl Observation
- Potentially Suitable Burrow

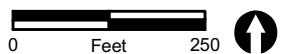


FIGURE 3
Burrowing Owl 2017 Breeding Season
Survey Area and Results

Habitat for the burrowing owl includes dry, open areas of short grass with level to gentle topography and well-drained soils (CDFW 2012). These areas are also often associated with fossorial mammals, such as California ground squirrel (*Spermophilus beecheyi*) (Haug et al. 1993). Burrowing owls are known to use multiple burrows, which include nesting burrows and “satellite” burrows. “Satellite” burrows are non-nesting burrows used to seek protection from predators and for roosting during the non-breeding season (CDFW 2012).

The burrowing owl is diurnal and typically perches during daylight at the entrance to its burrow or on adjacent structures, such as low posts. Nesting occurs from March through August. Burrowing owls form a pair bond for more than one year and exhibit high site fidelity, reusing the same burrow and/or nesting areas year after year (Haug et al. 1993). The female remains inside the burrow during most of the egg laying and incubation period and is fed by the male throughout brooding. Burrowing owls are opportunistic feeders, eating arthropods, small mammals and birds, and occasionally amphibians and reptiles (Haug et al. 1993).

Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this species include the poisoning of squirrels and prairie dogs, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

SITE DESCRIPTION AND HABITAT ASSESSMENT SUMMARY

Prior to initiating the focused surveys, RECON Environmental, Inc. (RECON) biologists Brenna Ogg and JR Sundberg conducted a biological constraints survey of the project site in June 2016. Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for burrowing owl within the project site and surrounding 150-meter buffer was identified. Based on these constraints survey results, Busby Biological Services, Inc. (BBS) biologists Erik LaCoste, Darin Busby, and Andrew Kort conducted a focused burrowing owl habitat assessment on 127.4 acres within the project area and surrounding 150-meter buffer on March 6 and 9, 2017 (BBS 2017).

The assessment area contains varied topography that generally increases in elevation from the southwest to the northeast, ranging from flat, tiered areas in the central and western portions to undulating hills and steep canyon slopes in the northern, eastern, southern, and western portions. Two soil types occur within the assessment area: Olivenhain cobbly loam, 9 to 30 percent slopes (ohE) in the east and south, and Olivenhain cobbly loam, 30 to 50 percent slopes (ohF) in the north and west (USDA 2017). Urban/developed land occurs in the northwestern portion of the assessment area. Vegetation communities within the assessment area include maritime succulent scrub, disturbed maritime succulent scrub, coastal sage scrub, disturbed coastal sage scrub, disturbed land (i.e., disturbed habitat), mule fat scrub, and non-native grassland. Per the CDFW guidelines, vegetation community classifications should follow Sawyer et al. (2009). However, Holland classifications (1986) as modified by Oberbauer et al. (2008) and the City of San Diego Biology Guidelines (City of San Diego 2012) were used to remain consistent with the City’s reporting requirements. A large portion of the assessment area has been subjected to recent and historic disturbance and impacts from unauthorized access.

As detailed in the habitat assessment summary report (BBS 2017), approximately 68.9 acres of the 127.4-acre assessment area contain potentially suitable habitat for breeding, resident, and migrant wintering burrowing owl. The potentially suitable habitat areas range from having low to high potential to support burrowing owl, and in general contain low to moderate shrub density, friable soils, few to numerous fossorial mammal burrows and debris piles, open to moderately open foraging habitat, and potentially suitable topography and hydrological features.

The majority of the areas that have a low potential to support burrowing owls occur in the northern undeveloped portions of the assessment area. These areas contain steep slopes, moderately dense vegetation, narrow dirt roads surrounded by dense vegetation, few to no fossorial mammal burrows, and/or little to no adjacent foraging habitat.

The majority of the areas that were identified as having a moderate potential to support burrowing owls occur in the southern and eastern portions of the project site and survey buffer. These areas contain gentle to moderate slopes, friable soils, and few fossorial mammal burrows; and at the time of the habitat assessment, these areas supported open to moderately dense vegetation, narrow dirt roads surrounded by moderately dense vegetation, and/or a moderate amount of open foraging habitat. However, when the season progressed into spring, the suitability of these areas for burrowing owl decreased, as the garland daisy (*Glebionis coronaria*) became a dominant species, forming dense stands, reaching four to six feet in height and, in turn, obstructing visibility at or close to ground level. Photographs 1, 2, and 3 show the progression of this plant from early March to July in the southeastern portion of the survey area.

The majority of the areas that have a high potential to support burrowing owls occur in the central and western portions of the project site and survey buffer. These areas contain flat to gentle slopes, open vegetation, friable soils, numerous fossorial mammal burrows, and/or large, open foraging areas.

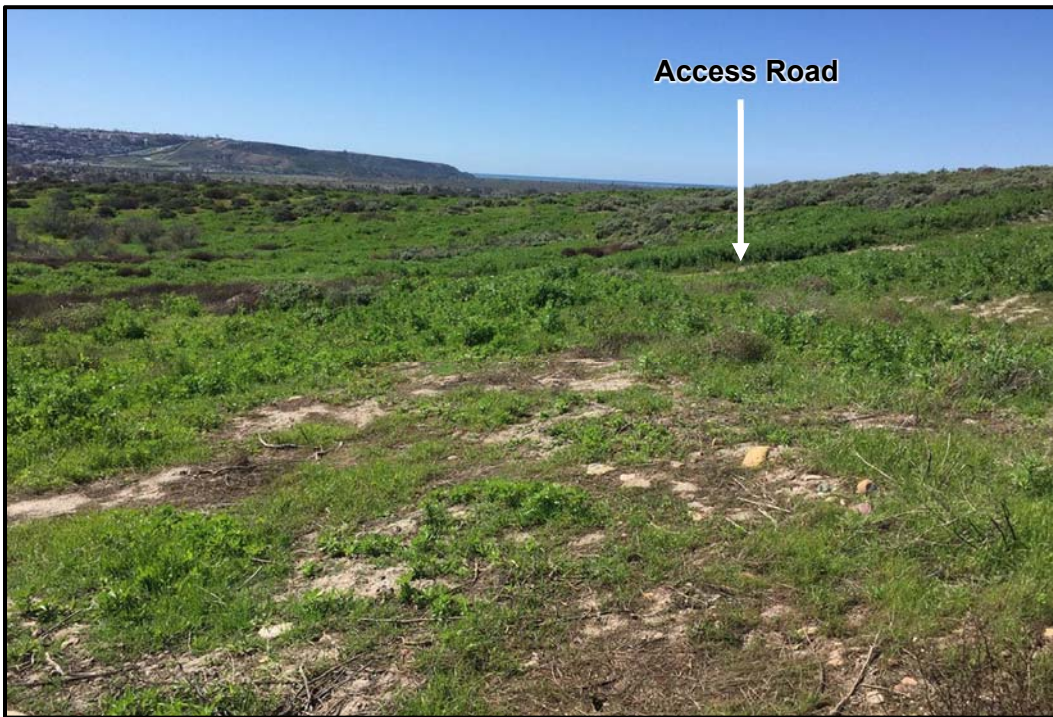
Burrows from fossorial mammals and debris piles that have potential to be used by burrowing owl for nesting, roosting, and cover are scattered in low density throughout the assessment area. In addition, areas of eroded and friable soils that have a potential to support fossorial mammals occur along road banks, slopes, and drainages within areas of little to no vegetation.

BREEDING SEASON SURVEY METHODS

RECON biologists Brenna Ogg, Diana Saucedo, Kayo Valenti, and Sonya Vargas, and Busby Biological Services, Inc. biologists Erik LaCoste and Garrett Huffman conducted four survey visits to 68.9 acres of habitat considered suitable for burrowing owl (see Burrowing Owl Suitable Habitat on Figure 3) within the habitat assessment area. In accordance with CDFW breeding season survey guidelines for this species (CDFW 2012), each survey was conducted between morning civil twilight and 10:00 A.M., and the surveying biologists walked line transects within all accessible portions of suitable habitat, stopping at the start of each transect and approximately every 100 meters to scan the survey area with binoculars. Transects were typically spaced approximately 15 to 20 meters apart, as much of the suitable habitat areas support open and low-growing vegetation, allowing for good visibility. Transect spacing was narrowed in areas of denser and/or taller vegetation.

Direct access was only available to 37.6 acres of the survey area, which included the project boundary and one parcel, APN 63807074, in the 150-meter buffer. Therefore, all remaining areas within the 150-meter buffer were surveyed only by using binoculars from the edge of the project boundary. Topography and low-lying vegetation allowed for good visibility and survey coverage in the western 150-meter buffer. However, due to the presence of dense stands of garland daisy, visibility in some of the buffer area in the southeast portion of the survey area was partially obstructed, as shown in Photograph 3.

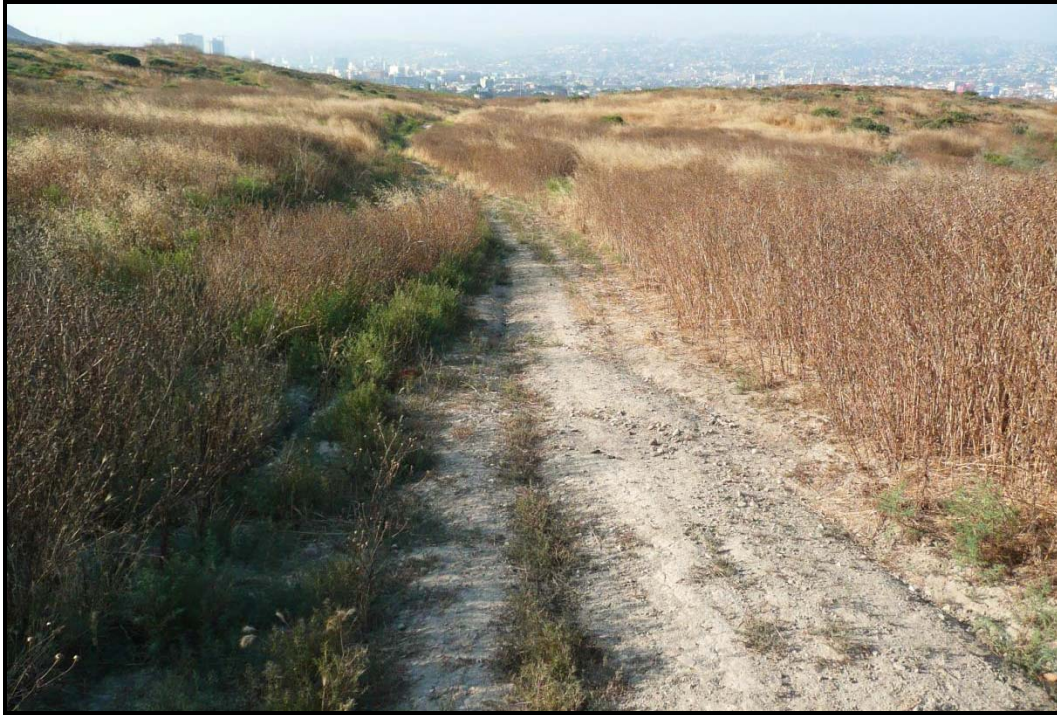
An approximate total of 30 hours and 25 minutes of field effort was devoted to the breeding season surveys. The surveying biologist(s) recorded any burrowing owl and other sensitive wildlife species observations, active owl burrows, and potentially suitable burrows and compiled lists of wildlife species detected. Locations of sensitive species were recorded on a one-inch-equals-150-foot aerial map or using a hand-held global positioning system unit. The survey visit numbers, dates, personnel, times, and weather conditions are provided in Table 1. As shown in Table 1, weather conditions were fair, and air temperatures were mild during all survey visits and are not expected to have negatively affected burrowing owl activity or the survey results. Each survey included periods with air temperatures above 68 degrees Fahrenheit and cloud cover below 75 percent, and all surveys were conducted when winds were below 12 miles per hour.



PHOTOGRAPH 1
Habitat in Southeastern Portion of Project Site, Facing West.
Taken March 6, 2017. Compare to Photograph 2.



PHOTOGRAPH 2
Habitat in Southeastern Portion of Project Site, Facing West.
Taken April 6, 2017. Compare to Photograph 1.



PHOTOGRAPH 3
Garland Daisy-dominated Vegetation in Southeast Corner of Survey Area, Facing South-southeast. Taken July 6, 2017.

Table 1 Survey Dates, Personnel, Times, and Weather Conditions for 2017 Burrowing Owl Breeding Season Surveys					
Survey Number	Date	Surveyors	Times	Acres Surveyed per Hour	Weather Conditions
1	3/29/2017	E. LaCoste	06:15–09:45 A.M.	9.8	54–74°F, clear sky, wind 1–8 mph
		G. Huffman			
2	5/4/2017	B. Ogg	05:40–09:30 A.M.	9.0	64–76°F, 100% clearing to 0% cloud cover (marine layer), wind 0–6 mph
		D. Saucedo			
3	6/8/2017	B. Ogg	05:20–09:10 A.M.	8.0	65–69°F, 100% clearing to 15% cloud cover (marine layer), wind 0–4 mph
		K. Valenti	05:15–10:00 A.M.		
4	7/6/2017	B. Ogg	05:30–08:50 A.M.	9.6	68–77°F, 100% clearing to 0% cloud cover (marine layer), wind 0–5 mph
		S. Vargas	05:30–09:20 A.M.		

°F = degrees Fahrenheit; % = percent; mph = miles per hour.

Each of the surveying biologists' qualifications are summarized below.

Ms. Ogg has over 11 years of experience conducting general biological surveys, constraints analyses, and impact assessments; environmental compliance monitoring; habitat restoration; mitigation implementation and monitoring; and focused surveys for sensitive floral and faunal species – including coastal California gnatcatcher (*Polioptila californica californica*) and least Bell's vireo (*Vireo bellii pusillus*) – in a variety of habitats in southern California. Ms. Ogg has years of experience conducting habitat assessments and focused breeding and non-breeding season surveys for burrowing owl, as well as construction monitoring for avoidance of impacts to this species. Ms. Ogg's experience with burrowing owl includes projects in San Diego, Imperial, and Riverside counties in California, and Yuma County in Arizona.

Mr. LaCoste has worked as a wildlife biologist in southern California for the past 20 years. He has worked with both federally and state-listed plant and wildlife species; conducted focused, protocol-level surveys for state and federally listed coastal California gnatcatcher and southwestern willow flycatcher (*Empidonax traillii extimus*); and performed focused, protocol-level presence/absence surveys, habitat assessments, and biological monitoring for many other federally and state-listed sensitive wildlife species including burrowing owl and least Bell's vireo. He has conducted burrowing owl habitat assessments, surveys, and monitoring on projects throughout San Diego and Imperial counties.

Mr. Huffman has worked as a field biologist in southern California for approximately eight years, specializing in avian surveys. Relevant work has included conducting presence/absence surveys for burrowing owl and serving as a construction monitor to establish appropriate buffers to prevent negative impacts to nesting birds. Mr. Huffman has worked on projects in San Diego, Imperial, Riverside, and San Bernardino counties that have required these specific services and/or burrowing owl experience.

Ms. Saucedo has over 18 years of biological and natural resource management experience, with over 10 years in southern California with emphasis on general and focused sensitive plant and wildlife species surveys, vegetation mapping, habitat assessments, evaluation of impacts to sensitive species, and preparation of biological technical reports and environmental impact statements. She has conducted habitat assessments and presence/absence surveys for a variety of wildlife species including burrowing owl and coastal California gnatcatcher. Burrowing owl survey experience includes projects on the Santa Ana River and El Sobrante Landfill and Open Space Preserve in Riverside County; transmission line projects in Imperial County; and various projects within San Diego County including Otay Mesa, Kearny Mesa, and Marine Corps Air Station (MCAS) Miramar.

Ms. Valenti has over 11 years of experience as a biologist in southern California, has participated in the San Diego Audubon Society Introductory Birding Course in 2012, and has conducted numerous focused bird surveys since early 2011. Ms. Valenti has conducted general and focused biological surveys; habitat assessments and focused presence/absence surveys for upland and riparian bird species, including coastal California gnatcatcher (under supervision) and least Bell's vireo; environmental compliance monitoring; and habitat restoration implementation and monitoring. Ms. Valenti's experience with burrowing owl includes construction monitoring for avoidance of impacts to this species on projects near Calexico, California, and Yuma, Arizona.

Ms. Vargas is a restoration biologist with two years of experience in southern California. She performs sensitive bird surveys, nesting bird surveys, non-native weed species surveys, sensitive plant species surveys, and vegetation transect monitoring. Ms. Vargas has conducted several burrowing owl surveys in Riverside and Imperial counties. In addition, she has conducted several nest surveys for various construction projects in San Diego County.

BREEDING SEASON SURVEY RESULTS

Burrowing Owl Observations

A minimum of one burrowing owl was observed within the project site during focused breeding season surveys. Specifically, one adult burrowing owl was observed during the first focused breeding season survey on March 29, 2017, and was using a burrow within the east-central portion of the project site. One adult burrowing owl was also observed incidentally in the same general area during two separate biological surveys conducted by RECON on March 9 and April 4, 2017. These burrowing owl observations are shown as point locations on Figure 3 and may represent the same individual. No burrowing owls or sign of active burrows were observed at these locations during the second through fourth focused surveys or during any other biological surveys conducted between April 5 and May 23, 2017.

The area in the immediate vicinity of the burrowing owl observations consists of a gentle southwest-facing slope with bare soil that has eroded over time and formed many shallow to deep rills and cuts. The burrow associated with the burrowing owl observation on March 29, 2017, is shown in Photograph 4. This area lies at the edge of the central portion of the project site and supports a mix of open disturbed land, disturbed maritime succulent scrub, and Diegan coastal sage scrub. It has been subjected to ongoing human disturbance, such as off-road vehicle use, radio control car use, and pedestrian activity. Specifically, the area immediately adjacent to the observed burrow location contains a radio-control car course with small wooden bridges, pin flags, and sign of ongoing use.

California ground squirrel is present throughout the survey area, and multiple potentially suitable (greater than 11 centimeters in diameter) burrows were observed during the focused surveys, as shown on Figure 3. However, no burrowing owl sign (e.g., cast pellets, prey remains, molted feathers, excrement at burrow entrances) or burrowing owl individuals were observed at or adjacent to any other burrow locations within the survey area.

Data for the burrowing owl occurrences were submitted to the California Natural Diversity Database on August 23, 2017 via email.

Burrowing Owl Predator Observations

The following wildlife species that are considered predators of burrowing owls were detected during focused or other biological surveys conducted on-site: coyote (*Canis latrans*), bobcat (*Lynx rufus*), northern harrier (*Circus cyaneus hudsonius*), red-tailed hawk (*Buteo jamaicensis*), and prairie falcon (*Falco mexicanus*). Coyote and bobcat were only detected by vocalization and sign such as tracks and scat. None were directly observed during focused burrowing owl surveys. A pair of northern harrier was observed repeatedly throughout the central portion of the survey area, foraging and occasionally perching atop some small dirt



PHOTOGRAPH 4
Active Burrowing Owl Burrow,
Taken March 29, 2017

mounds within a few hundred feet of the burrowing owl observation locations. However, when observed during the focused burrowing owl surveys, these individual northern harriers would only utilize the site temporarily. Although northern harriers were repeat visitors, their presence was not constant, and no sign of nesting was observed on-site. Red-tailed hawks were also observed on multiple occasions. Individuals were typically observed flying high overhead or foraging within and perching atop a chain-link fence in the western portion of the survey area, over 1,000 feet from the active burrow location. Prairie falcon was only observed twice during all biological surveys conducted thus far by RECON for this project, each time flying overhead. No sign of predation on burrowing owl was observed on-site. A complete list of avian species detected during the surveys is provided in Table 2.

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
ODONTOPHORIDAE	NEW WORLD QUAIL	
<i>Callipepla californica californica</i>	California quail	O, V
ACCIPITRIDAE	HAWKS, KITES, & EAGLES	
<i>Buteo jamaicensis</i>	red-tailed hawk	O, V
<i>Circus cyaneus hudsonius</i>	northern harrier	O
FALCONIDAE	FALCONS & CARACARAS	
<i>Falco mexicanus</i>	prairie falcon	O
LARIDAE	GULLS, TERNS, & SKIMMERS	
<i>Larus californicus</i>	California gull	O
COLUMBIDAE	PIGEONS & DOVES	
<i>Columba livia</i>	rock dove (I)	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	O, V
<i>Zenaida macroura marginella</i>	mourning dove	O, V
STRIGIDAE	TYPICAL OWLS	
<i>Athene cunicularia hypugaea</i>	western burrowing owl	O, B
APODIDAE	SWIFTS	
<i>Aeronautes saxatalis</i>	white-throated swift	O, V
TROCHILIDAE	HUMMINGBIRDS	
<i>Calypte anna</i>	Anna's hummingbird	O, V
TYRANNIDAE	TYRANT FLYCATCHERS	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	O, V
<i>Sayornis saya</i>	Say's phoebe	O, V
<i>Tyrannus verticalis</i>	western kingbird	O
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	O, V
VIREONIDAE	VIREOS	
<i>Vireo bellii pusillus</i>	least Bell's vireo	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES	
<i>Aphelocoma californica</i>	California scrub-jay	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	O, V
<i>Corvus corax clarionensis</i>	common raven	O, V
HIRUNDINIDAE	SWALLOWS	
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	O, V
AEGITHALIDAE	BUSHTIT	
<i>Psaltriparus minimus melanurus</i>	bushtit	O, V
TROGLODYTIDAE	WRENS	
<i>Salpinctes obsoletus obsoletus</i>	rock wren	O, V

Table 2 Avian Species Observed		
Scientific Name	Common Name	Evidence of Occurrence
<i>Thryomanes bewickii</i>	Bewick's wren	O, V
SYLVIIDAE	GNATCATCHERS	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	O, V
TIMALIIDAE	BABLERS	
<i>Chamaea fasciata henshawi</i>	wrentit	O, V
MIMIDAE	MOCKINGBIRDS & THRASHERS	
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	O, V
STURNIDAE	STARLINGS & MYNAS	
<i>Sturnus vulgaris</i>	European starling (I)	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS	
<i>Phainopepla nitens lepida</i>	phainopepla	V
PARULIDAE	WOOD WARBLERS	
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	V
EMBERIZIDAE	EMBERIZIDS	
<i>Melospiza melodia</i>	song sparrow	O, V
<i>Melozone [=Pipilo] crissalis</i>	California towhee	O, V
<i>Pipilo maculatus</i>	spotted towhee	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	O, V
CARDINALIDAE	CARDINALS & GROSBEAKS	
<i>Passerina amoena</i>	lazuli bunting	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES	
<i>Icterus cucullatus nelsoni</i>	hooded oriole	O, V
<i>Sturnella neglecta</i>	western meadowlark	O, V
FRINGILLIDAE	FINCHES	
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	O, V, N
Nomenclature from American Ornithologists' Union 2015 and Unitt 2004.		
(I) = Introduced species		
Evidence of Occurrence		
B = Burrow		
O = Observed		
V = Vocalization		
N = Nest		

Other Sensitive Avian Species Observations

The following four additional sensitive avian species were detected within or adjacent to the survey area during focused burrowing owl surveys: northern harrier (CDFW Species of Special Concern [SSC]), prairie falcon (CDFW Watch List), least Bell's vireo (federally and state endangered, CDFW SSC), and coastal California gnatcatcher (federally threatened, CDFW SSC). Focused surveys for least Bell's vireo and coastal California gnatcatcher were completed for this project in 2017. In addition, a biological technical report will be prepared for this project following completion of 2017 biological surveys. Therefore, all other sensitive species observations will be addressed in detail in the associated survey reports and/or biological technical report. Data for these additional sensitive species occurrences were or will be submitted to the California Natural Diversity Database concurrent with completion of the focused survey reports or biological technical report.

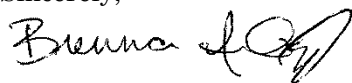
DISCUSSION OF SURVEY RESULTS AND AVOIDANCE AND MITIGATION REQUIREMENTS

The burrowing owl observations described above suggest that the central portion of the survey area is being used by a minimum of one burrowing owl as wintering habitat. The latest burrowing owl observation on-site was early in the breeding season, and no sign of breeding burrowing owl was observed on-site. This apparent use of the site correlates well with the observed changes in vegetation throughout the seasons. Although the central portion of the survey area maintains open habitat conditions throughout the year, the dominance of garland daisy in the disturbed land in the southeastern portion of the survey area causes substantial seasonal changes in the habitat's structure. Areas dominated by garland daisy can be functionally similar to short-grass vegetation when the garland daisy plants have died back and deteriorated, typically from late summer through winter. However, these areas quickly change to dense, tall vegetation as new garland daisy plants sprout and reach full maturity, typically during spring and early summer. This results in a decrease in suitability of the habitat for foraging burrowing owl during much of the breeding season.

Due to the positive survey results during breeding season surveys, no non-breeding season surveys are planned for this project. Take avoidance (pre-construction) focused surveys for this species will be required at least 14 days prior to ground disturbance to detect the presence of burrowing owls and inform necessary take avoidance actions (CDFW 2012). Within the Multi-habitat Planning Area (MHPA), impact to this species must be avoided. Outside the MHPA, impacts to this species must be avoided to the maximum extent practicable. In accordance with the coverage conditions in the City of San Diego MSCP Subarea Plan, any impacted individuals must be relocated out of the impact area using passive or active methodologies approved by the wildlife agencies, and habitat-based mitigation will be required for impacts to occupied habitat. Any avoidance, minimization, or mitigation measures will be developed in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (2012) and require approval from the wildlife agencies.

We certify that the information in this survey report and attached exhibits fully and accurately represents our work. Please contact Ms. Ogg at 619-308-9333 extension 118 or bogg@reconenvironmental.com with any questions regarding this survey.

Sincerely,



8/23/2017

Brenna Ogg
Senior Biologist
CDFW Scientific Collecting Permit SC-9997

Date



8/23/2017

Erik LaCoste
Senior Biologist
CDFW Scientific Collecting Permit SC-9735

Date

Ms. Esther Burkett
Page 15
August 23, 2017



Garrett Huffman 8/23/2017
Biologist Date
CDFW Scientific Collecting Permit SC-12948



Diana Saucedo 8/23/2017
Biologist Date
CDFW Scientific Collecting Permit SC-006138



Kayo Valenti 8/23/2017
Biologist Date
CDFW Scientific Collecting Permit SC-11672



Sonya Vargas 8/23/2017
Biologist Date

BAO:eab

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

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An Employee-Owned Company

August 3, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Coastal California Gnatcatcher Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of the results of the 2017 focused presence/absence survey for the federally threatened coastal California gnatcatcher (*Polioptila californica californica*; gnatcatcher) conducted for the City of San Diego's Beyer Park Development Project (project). The survey methods, survey area conditions, and results are discussed in detail below. Gnatcatchers were detected within the project survey area during each survey visit.

The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; U.S. Geological Survey 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071. The surrounding 300-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, and 63828017; as well as the entirety of 66613005 and 66613008.

The project site is situated within the boundary of the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan boundary. An aerial view of the project area is shown on Figure 3.

The project site includes 44 acres with approximately 12.6 acres considered usable acres for the proposed recreational park. The proposed park may include lighted multi-purpose sports fields, a skate park, a lighted basketball court, children's play areas, a comfort station/concession building, picnic facilities including picnic shelter, viewpoints/overlooks and interpretive signage, bicycle paths and racks, nature trails, parking areas, walkways, security lighting, and landscaping. The project is currently in the conceptual design and preliminary environmental review phase.

SURVEY METHODS

Prior to initiating the focused surveys, RECON Environmental, Inc. (RECON) biologists Brenna Ogg and JR Sundberg conducted a biological constraints survey of the project site in June 2016. Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for gnatcatcher within the project site and surrounding 300-foot buffer was identified. During the focused survey visits, species composition, height, and density of the vegetation communities within the suitable habitat areas were further assessed for their potential to support gnatcatcher.

RECON biologists Brenna Ogg and Diana Saucedo and Busby Biological Services, Inc. biologist Darin Busby conducted three survey visits to 52.4 acres of habitat considered suitable for gnatcatcher (Figure 3) within

the project site and surrounding 300-foot buffer. RECON biologist Kayo Valenti assisted under supervision during one of the survey visits. In accordance with USFWS protocol survey guidelines for this species (USFWS 1997), the surveying biologists walked all accessible portions of suitable habitat and periodically used taped gnatcatcher vocalizations in an attempt to elicit initial calls. However, the areas within the 300-foot buffer south and west of the project boundary could not be directly accessed; therefore, these areas were surveyed by using binoculars and listening from the edge of the project boundary. In addition, the biologists used taped vocalizations very infrequently due to the prevalence of northern mockingbird (*Mimus polyglottos polyglottos*)—a potential avian nest predator—throughout the survey area. Use of any taped vocalizations was suspended when potential nest predators were detected in the vicinity. An approximate total of 24.5 hours of field effort was devoted to the survey. The surveying biologist(s) compiled lists of wildlife species detected and recorded the location of any observed sensitive wildlife species on a one-inch-equals-150-foot aerial map or using a hand-held global positioning system unit. The survey visit numbers, dates, personnel, times, and weather conditions are provided in Table 1. Ms. Ogg is authorized to conduct presence/absence gnatcatcher surveys under USFWS 10(a)(1)(A) permit TE-134338-3. Ms. Saucedo is authorized under permit TE-221287-1, and Mr. Busby is authorized under permit TE-115373-3.

Survey Number	Date	Surveyors	Times	Acres Surveyed per Hour	Weather Conditions
1	4/5/2017	B. Ogg	06:30–11:40*	6.8	50–78°F, clear sky, wind 0–9 mph
		D. Saucedo	06:30–10:30*		
2	4/27/2017	B. Ogg	07:00–09:10, 09:30–10:20, 10:50–11:20	7.3	60–70°F, 100% cloud cover, wind 0–6 mph
		D. Saucedo	07:15–08:50, 09:15–11:20		
3	5/23/2017	B. Ogg, K. Valenti	06:00–11:10	5.5	62–69°F, 100% clearing to 40% cloud cover (marine layer), wind 0–8 mph
		D. Busby	06:45–11:10		

°F = degrees Fahrenheit; % = percent; mph = miles per hour.
*A total of 25 minutes of these survey periods was devoted to a focused coastal cactus wren survey.

Per the protocol survey guidelines (USFWS 1997), three survey visits were conducted for gnatcatcher. Because the project area is within the City of San Diego MSCP Subarea Plan boundary, the survey area is considered part of an active Natural Community Conservation Planning area. The three surveys were conducted a minimum of seven days apart.

SURVEY AREA

The northern and eastern portions of the survey area are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the survey area. The southern and western portions transition into multiple terraces with a steep manufactured slope and graded field (previous school site) along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation communities/land cover types that occur within the project area and surrounding 300-foot buffer include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, disturbed maritime succulent scrub, mule fat scrub, non-native grassland, disturbed land, and urban/developed land.

Vegetation communities and land cover types are characterized in accordance with Oberbauer et al. (2008) and the City of San Diego Biology Guidelines (City of San Diego 2012). The survey area for gnatcatcher totals approximately 52.4 acres and includes all potentially suitable gnatcatcher habitat within the project area and surrounding 300-foot buffer (see Figure 3). Habitat considered suitable for gnatcatcher includes the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub. These vegetation communities are described below.

Diegan coastal sage scrub is present within the western portion of the survey area, largely within the project boundary, and a small portion of Moody Canyon in the northern portion of the survey area. In the western stands, the Diegan coastal sage scrub comprises a mix of California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), broom baccharis (*Baccharis sarothroides*), and laurel sumac (*Malosma laurina*). Vegetation cover is generally above 70 percent, and typical shrub height is between two and four feet with the occasional taller laurel sumac and broom baccharis. The Diegan coastal sage scrub that occurs along Moody Canyon in the northern portion of the survey area is taller, denser, and dominated by lemonade berry (*Rhus integrifolia*).

The disturbed Diegan coastal sage scrub occurs along the manufactured slope at the edge of the project boundary, in a swale at the northwestern edge of the project boundary, and in other scattered areas that show sign of previous human-caused soil disturbance and ongoing disturbance from unauthorized pedestrian activity and dumping. The species composition is similar to the undisturbed stands of Diegan coastal sage scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia (*Acacia* sp.), tamarisk (*Tamarix ramosissima*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and non-native grasses.

Maritime succulent scrub is the dominant vegetation community within the survey area. In the northwestern portion of the survey area, the maritime succulent scrub is dominated by coast cholla (*Cylindropuntia prolifera*) with waterjacket (*Lycium andersonii*), California box-thorn (*L. californicum*), cliff spurge (*Euphorbia misera*), and jojoba (*Simmondsia chinensis*) occurring as common species. The combined vegetative cover of cactus and shrub species is at or above 75 percent and typical shrub height is between two and four feet. Throughout the remainder of the maritime succulent scrub in the survey area, the coast cholla occurs in scattered patches, and dominant species include San Diego bur-sage (*Ambrosia chenopodiifolia*), jojoba, cliff spurge, coast prickly pear (*Opuntia littoralis*), California buckwheat, San Diego viguiera (*Bahiopsis laciniata*), California sagebrush, and fish-hook cactus (*Mammillaria dioica*).

Similar to the disturbed Diegan coastal sage scrub, the disturbed maritime succulent scrub occurs in areas that have been subjected to human-caused disturbance and non-native plant species invasion. The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia, fountain grass (*Pennisetum setaceum*), garland daisy (*Glebionis coronaria*), and non-native grasses.

SURVEY RESULTS

Multiple gnatcatcher detections were recorded within the survey area during each of the three 2017 focused survey visits, and additional incidental observations were recorded during concurrent biological surveys conducted between February 9 and May 23, 2017. Each gnatcatcher observation point shown on Figure 3 represents one detection event, whereas each Observed Use Area represents a compilation of multiple detections. The total number of points is not intended to represent the total number of gnatcatchers present within the survey area; however, the total number of Observed Use Areas represents an estimate of the total number of breeding pairs present within the survey area. For purposes of this report, each Observed Use Area has been labeled with a letter (A through I) and is described below. A complete list of avian species detected during the surveys is provided in Table 2.

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
BIRDS (Nomenclature from American Ornithologists' Union 2015 and Unitt 2004)		
ODONTOPHORIDAE	NEW WORLD QUAIL	
<i>Callipepla californica californica</i>	California quail	O, V
ACCIPITRIDAE	HAWKS, KITES, & EAGLES	
<i>Buteo jamaicensis</i>	red-tailed hawk	O, V
<i>Circus cyaneus hudsonius</i>	northern harrier	O
FALCONIDAE	FALCONS & CARACARAS	
<i>Falco sparverius sparverius</i>	American kestrel	O
CHARADRIIDAE	LAPWINGS & PLOVERS	
<i>Charadrius vociferus vociferus</i>	killdeer	O, V
COLUMBIDAE	PIGEONS & DOVES	
<i>Columba livia</i>	rock dove (I)	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	O, V
<i>Zenaida macroura marginella</i>	mourning dove	O, V
CUCULIDAE	CUCKOOS & ROADRUNNERS	
<i>Geococcyx californianus</i>	greater roadrunner	O
CAPRIMULGIDAE	GOATSUCKERS	
<i>Chordeiles acutipennis texensis</i>	lesser nighthawk	O
APODIDAE	SWIFTS	
<i>Aeronautes saxatalis</i>	white-throated swift	O, V
TROCHILIDAE	HUMMINGBIRDS	
<i>Calypte anna</i>	Anna's hummingbird	O, V
<i>Calypte costae</i>	Costa's hummingbird	O, V
TYRANNIDAE	TYRANT FLYCATCHERS	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	O, V
<i>Sayornis saya</i>	Say's phoebe	O, V
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	O, V
VIREONIDAE	VIREOS	
<i>Vireo bellii pusillus</i>	least Bell's vireo	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES	
<i>Aphelocoma californica</i>	California scrub-jay	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	O, V
<i>Corvus corax clarionensis</i>	common raven	O, V
HIRUNDINIDAE	SWALLOWS	
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	O, V
AEGITHALIDAE	BUSHTIT	
<i>Psaltriparus minimus melanurus</i>	bushtit	O, V
TROGLODYTIDAE	WRENS	
<i>Campylorhynchus brunneicapillus sandiegensis</i>	coastal cactus wren	O, V
<i>Salpinctes obsoletus obsoletus</i>	rock wren	O, V
<i>Thryomanes bewickii</i>	Bewick's wren	O, V
SYLVIIDAE	GNATCATCHERS	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	O, V
TIMALIIDAE	BABLERS	
<i>Chamaea fasciata henshawi</i>	wrentit	O, V

Table 2 Avian Species Observed		
Scientific Name	Common Name	Evidence of Occurrence
MIMIDAE	MOCKINGBIRDS & THRASHERS	
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	O, V
STURNIDAE	STARLINGS & MYNAS	
<i>Sturnus vulgaris</i>	European starling (I)	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS	
<i>Phainopepla nitens lepida</i>	phainopepla	V
PARULIDAE	WOOD WARBLERS	
<i>Setophaga [=Dendroica] coronata</i>	yellow-rumped warbler	O
<i>Setophaga [=Dendroica] petechia</i>	yellow warbler	O, V
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	V
<i>Oreothlypis [=Vermivora] virginiae</i>	Virginia's warbler	O
<i>Cardellina [=Wilsonia] pusilla</i>	Wilson's warbler	O, V
EMBERIZIDAE	EMBERIZIDS	
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	V
<i>Melospiza melodia</i>	song sparrow	O, V
<i>Melospiza [=Pipilo] crissalis</i>	California towhee	O, V
<i>Pipilo maculatus</i>	spotted towhee	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	O, V
CARDINALIDAE	CARDINALS & GROSBEAKS	
<i>Passerina caerulea salicaria</i>	blue grosbeak	O
<i>Passerina amoena</i>	lazuli bunting	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES	
<i>Icterus cucullatus nelsoni</i>	hooded oriole	O, V
<i>Sturnella neglecta</i>	western meadowlark	O, V
FRINGILLIDAE	FINCHES	
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	O, V, N
(I) = Introduced species		
Evidence of Occurrence		
O = Observed		
V = Vocalization		
N = Nest		

Observed Use Area A

Observed Use Area A includes gnatcatcher detections between April 5 and May 23, 2017 and represents the main area used by one breeding pair of gnatcatchers. On April 5, one male gnatcatcher with breeding plumage was observed and heard calling in the northern portion of the use area. On April 27, a pair of gnatcatchers with the male in breeding plumage was observed, and on May 23, a gnatcatcher vocalization was detected in the western portion of the use area.

Vegetation within and adjacent to Observed Use Area A is composed of maritime succulent scrub on a south-facing slope (Photograph 1). The maritime succulent scrub in this area is dominated by coast cholla, waterjacket, California box-thorn, cliff spurge, and joboba with shrub cover at or above 75 percent.

Observed Use Area B

Observed Use Area B includes gnatcatcher detections between April 5 and May 23, 2017, and represents the main area used by one breeding pair of gnatcatchers. On April 5, a possible nest swap was observed, when a male in breeding plumage was first observed traveling quietly and low in the shrubs. Shortly thereafter, the male ducked down into the vegetation and was replaced by a female who quietly flew off to the west. On April 27, the pair was again detected foraging just east of the possible nest location. On May 4, an incidental gnatcatcher detection (vocalization) was recorded within this use area during another biological survey conducted for this project. On May 23, a male in breeding plumage, likely belonging to this pair, was observed twice traveling to and from the adjacent north-facing slope east of the mapped use area, once chasing a juvenile gnatcatcher and once engaging in an apparent territorial dispute with another mature male from Observed Use Area C (described below).

Vegetation within Observed Use Area B comprises dense maritime succulent scrub, with 80 percent or greater vegetation cover, on a moderate to steep south-facing slope (Photograph 2). Dominant shrub species include San Diego bur-sage, coast cholla, jojoba, cliff spurge, San Diego viguiera, and big saltbush (*Atriplex lentiformis*). Dirt roads bound this use area to the north, west, and south, and one old overgrown road cut intersects this use area in the eastern portion. The old road cut is overgrown with scattered native shrubs and non-native annuals, including garland daisy, tocalote (*Centaurea melitensis*), and black mustard (*Brassica nigra*).

Observed Use Area C

Observed Use Area C includes gnatcatcher detections between April 27 and May 23, 2017, and represents the main area used by one breeding pair of gnatcatchers. On April 27, a pair of gnatcatchers was observed using the eastern portion of this use area. The male, in breeding plumage, was calling and observed carrying nest material. On May 23, a male in breeding plumage was observed foraging at the western tip of this use area and then traveling uphill toward the central portion of this use area. A male in breeding plumage, assumed to be the same individual, was later in the same day observed twice outside the northern edge of this use area, once chasing a juvenile to the east and once engaging in an apparent territorial dispute with the mature male from Observed Use Area B (described above).

Vegetation within this use area is composed of maritime succulent scrub with 60 percent or greater vegetation cover on south- and west-facing slopes (Photograph 3). Dominant shrub species include San Diego bur-sage, jojoba, San Diego viguiera, cliff spurge, California buckwheat, and California sagebrush. Non-native annuals, including garland daisy and non-native grasses, are also common and occur in scattered patches, typically adjacent to old road cuts and other areas that show sign of previous human disturbance.

Observed Use Areas D, E, F, and G

Observed Use Areas D, E, F, and G represent a minimum of two and maximum of four breeding pairs. Although distinct use areas seemed apparent, two of these use areas overlapped. In addition, only the presence of two mature males in this vicinity could be confirmed at any one time. Each use area is described in detail below.

Observed Use Area D

Observed Use Area D includes gnatcatcher detections from April 4 and 5, 2017. On April 4, a gnatcatcher was detected incidentally in the western portion of the use area during another biological survey conducted for this project. On April 5, a gnatcatcher pair was detected. The male, in breeding plumage, was observed and heard calling, while the female remained quiet.

Vegetation within Observed Use Area D comprises maritime succulent scrub on a southwest-facing slope (Photograph 4). Dominant shrub species include San Diego bur-sage, California sagebrush, San Diego viguiera, and California buckwheat; other common shrubs include broom baccharis, lemonade berry, and

jojoba. Vegetation cover is generally 60 percent or greater, with scattered unvegetated erosional rills and patches of open soil with cryptogamic crust. Shrub height is typically two to three feet with an occasional jojoba reaching five feet.

Observed Use Area E

Observed Use Area E includes gnatcatcher detections from May 23, 2017. On this day, a pair was observed foraging together throughout this use area, and a third individual (likely juvenile) was later observed at the western edge of this use area.

Vegetation within Observed Use Area E comprises maritime succulent scrub on a moderate south-facing slope (no photograph available). The dominant native shrub species is San Diego bur-sage, and other common plant species include jojoba, fascicled tarweed (*Deinandra fasciculata*), and black mustard.

Observed Use Area F

Observed Use Area F includes gnatcatcher detections from February 9, April 5, and April 27, 2017. The February 9 detection was incidental during another biological survey conducted for the same project. On April 5, a pair of gnatcatchers was heard calling and observed moving throughout the central and eastern portions of the use area. On April 27, a pair was again observed in the central portion of the use area at the same time a separate pair was observed in Observed Use Area G, described below.

Observed Use Area F includes two separate stands of maritime succulent scrub, with disturbed land between (Photograph 5). The maritime succulent scrub supports a mix of California buckwheat, jojoba, San Diego bur-sage, San Diego viguiera, and cliff spurge with shrub cover at or above 50 percent. At the time of the surveys, the disturbed land supported a dense stand of garland daisy, which reached an average height of four to five feet, and a mostly unvegetated dirt road.

Observed Use Area G

Observed Use Area G includes gnatcatcher detections from April 27 and May 23, 2017. On April 27, a family group of gnatcatchers with two fledglings was observed. The mature male was initially observed carrying food. The mature male and female were then observed foraging together, and the two juveniles were observed shortly thereafter. As mentioned above, while this family group was being observed, the presence of a separate gnatcatcher pair was confirmed in Observed Use Area F. On May 23, a mature male was observed chasing two juveniles eastward from Observed Use Area G.

Vegetation within Observed Use Area G comprises maritime succulent scrub on a gradual south- to southeast-facing slope (Photograph 6). The scrub in this area is dominated by San Diego bur-sage; other common shrub species include San Diego viguiera and jojoba. Vegetation cover is generally 60 percent or greater with average shrub height at two to three feet.

Observed Use Areas H and I

Observed Use Areas H and I represent a minimum of one and maximum of two breeding pairs. Although distinct use areas seemed apparent, only the presence of one mature male in this vicinity could be confirmed at any one time. Each use area is described in detail below.

Observed Use Area H

Observed Use Area H includes gnatcatcher detections from April 27 and May 23, 2017. On April 27, a family group of gnatcatchers with three juveniles was observed. On May 23, one male in breeding plumage and two individual gnatcatchers lacking a black cap were observed on a south-facing slope within tall stands of garland daisy. All flew to the east, and after a few moments, one uncapped individual was again observed at

the southwestern tip of this use area. Based on behavior, it is likely that the two uncapped individuals were juvenile and were being chased from their natal territory or from a neighboring pair's territory.

Vegetation within Observed Use Area H comprises disturbed maritime succulent scrub and disturbed land (Photograph 7). This use area straddles a shallow drainage, with a south-facing slope in the northern portion. Tall (five to six feet high), dense stands of garland daisy occur around patches of two- to three-foot high jojoba and San Diego bur-sage.

Observed Use Area I

Observed Use Area I includes gnatcatcher detections from focused surveys conducted on April 5 and May 23, 2017, and an incidental observation from March 28, 2017.

On March 28 and April 5, one male in breeding plumage was observed and heard calling on the west-facing slope in this use area. On May 23, a male in breeding plumage was initially detected perching in a Peruvian pepper tree (*Schinus molle*) and black mustard stalks at the northeastern tip of this use area. This individual then flew down the south-facing slope and westward, to the west-facing portion of the manufactured slope.

Vegetation within Observed Use Area I comprises maritime succulent scrub and disturbed maritime succulent scrub on south- and west-facing slopes (Photograph 8). San Diego bur-sage and jojoba are dominant shrub species. Other common perennial plant species include broom baccharis, cliff spurge, coast prickly pear, California buckwheat, and California sagebrush, with patches of coast cholla. Vegetation cover is 60 percent or greater with shrub height typically between two and four feet.

Other Gnatcatcher Detections

The majority of the detections shown as points on Figure 3 likely represent individual gnatcatchers already represented by the mapped observed use areas discussed above, with the addition of one likely pair in the northwestern corner of the survey area and one possible pair in the southeastern corner. Many of the point detections on Figure 3 represent juvenile dispersal as well as outlying locations where adult males were observed chasing juveniles beyond what appeared to be their typical use area or territory. Other detections may represent expansions of the mapped observed use areas but could not be directly tied to any one use area, as the individuals' movement could not be sufficiently tracked. In the northwestern corner of the survey area, although the individual(s) were not observed, gnatcatchers were repeatedly detected by call in this area throughout the survey period, and no movement between these locations and the next closest use area was observed. Therefore, the presence of an additional breeding pair is likely. In the southeastern corner of the survey area, only one vocal gnatcatcher detection was recorded on April 5, 2017. However, the distance of this detection from the next closest mapped gnatcatcher locations and the timing of this detection in the breeding season suggest the potential presence of another pair.

Summary of Gnatcatcher Detections

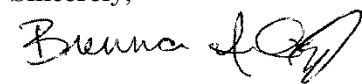
Based on the gnatcatcher detections discussed above, a minimum of six and maximum of 11 breeding pairs is estimated to occupy the survey area. The majority of the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub within the survey area is considered suitable breeding habitat for gnatcatcher. The only exception is some portions of the disturbed Diegan coastal sage scrub in the westernmost portion of the survey area, as the shrub density and height are lower than are typically preferred for nesting by this species. The entirety of the Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, and disturbed maritime succulent scrub, as well as the disturbed land and mule fat scrub, also provide suitable foraging habitat and habitat for dispersal of juveniles. Data for these occurrences were submitted to the California Natural Diversity Database on July 13, 2017 via email.

Other Sensitive Avian Species Observations

The following six additional sensitive avian species were detected within or adjacent to the survey area during focused coastal California gnatcatcher surveys: northern harrier (*Circus cyaneus*; California Department of Fish and Wildlife [CDFW] Species of Special Concern [SSC]), least Bell's vireo (*Vireo bellii pusillus*; federally and state endangered, CDFW SSC), coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; CDFW SSC), yellow warbler (*Setophaga [=Dendroica] petechia*; CDFW SSC), Virginia's warbler (*Oreothlypis virginiae*; CDFW Watch List), and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; CDFW Watch List). Focused surveys for least Bell's vireo and coastal cactus wren are being or were completed for this project in 2017. In addition, a biological technical report will be prepared for this project following completion of 2017 biological surveys. Therefore, this report focuses only on detections of coastal California gnatcatcher, and all other sensitive species observations will be addressed in the associated survey reports and/or biological technical report. Data for these additional sensitive species occurrences will be submitted to the California Natural Diversity Database concurrent with completion of the biological technical report.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. Please contact me at bogg@reconenvironmental.com with any questions regarding this survey.

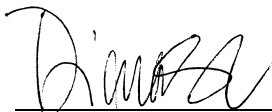
Sincerely,



8/3/2017

Brenna Ogg
Senior Biologist
USFWS Permit Number TE-134338-3
CDFW Scientific Collecting Permit SC-9997

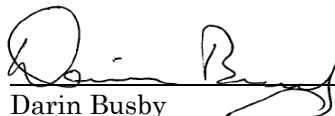
Date



8/3/2017

Diana Saucedo
Biologist
USFWS Permit Number TE-221287-1
CDFW Scientific Collecting Permit SC-006138

Date



8/3/2017

Darin Busby
Principal Biologist
USFWS Permit Number TE-115373-3
CDFW Scientific Collecting Permit SC-006243

Date

BAO:jg

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Esther Burkett, California Department of Fish and Wildlife

REFERENCES CITED

American Ornithologists' Union

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Unitt, P. A.

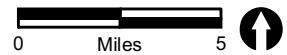
- 2004 San Diego County Bird Atlas. San Diego Natural History Museum, Ibis Publishing Company. San Diego, California. October.

U.S. Fish and Wildlife Service (USFWS)

- 1997 Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. July 28.

U.S. Geological Survey (USGS)

- 1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.




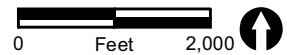
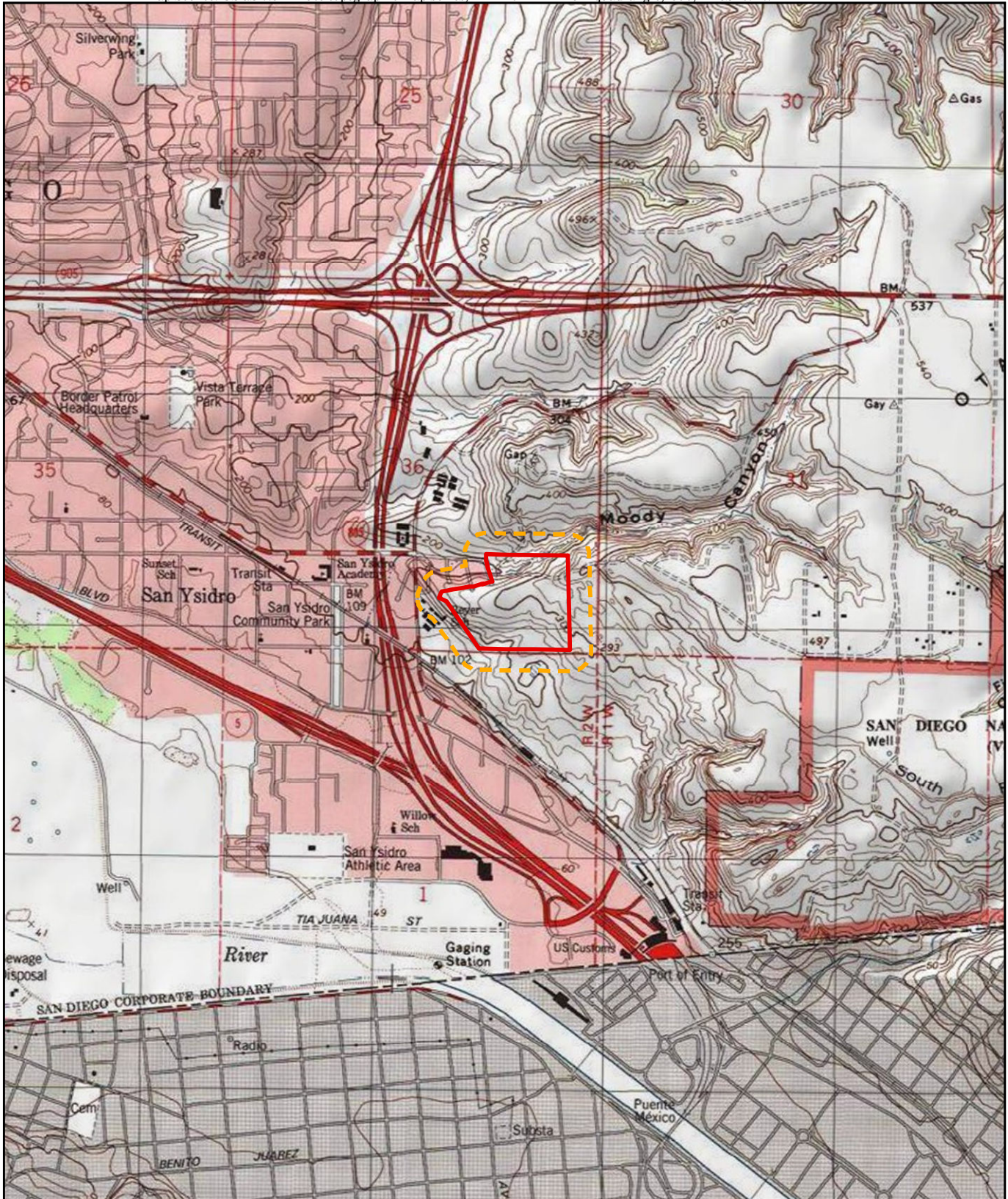
 Project Location

FIGURE 1
Regional Location





-  Project Boundary
-  300-foot Buffer

FIGURE 2

Project Location on USGS Map



- Project Boundary
- 300-ft Buffer
- Gnatcatcher Suitable
- Not Gnatcatcher Suitable Nesting Habitat
- Gnatcatcher Observed Use Area
- Gnatcatcher Detection
- Possible Gnatcatcher Nest

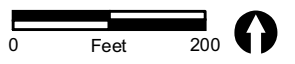


FIGURE 3
Coastal California Gnatcatcher
2017 Survey Area and Results



PHOTOGRAPH 1
Vegetation in Observed Use Area A,
Facing North



PHOTOGRAPH 2
Vegetation in Observed Use Area B,
Facing Northeast



PHOTOGRAPH 3
Vegetation in Observed Use Area C,
Facing Northeast



PHOTOGRAPH 4
Vegetation in Observed Use Area D,
Facing North



PHOTOGRAPH 5
Vegetation in Observed Use Area F,
Facing West



PHOTOGRAPH 6
Vegetation in Observed Use Area G,
Facing Northwest



PHOTOGRAPH 7
Vegetation in Observed Use Area H,
Facing North



PHOTOGRAPH 8
Vegetation in Observed Use Area I,
Facing North



An Employee-Owned Company

September 15, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Least Bell's Vireo Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of the results of the 2017 focused presence/absence survey for the federally and state endangered least Bell's vireo (*Vireo bellii pusillus*; vireo) conducted for the City of San Diego's Beyer Park Development Project (project). The survey methods, area, and results are discussed in detail below. Although vireo were detected within the project survey area, nesting activity was not confirmed on-site.

The project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the city of San Diego (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (Figure 2; U.S. Geological Survey 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071. The surrounding 300-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, and 63828017; as well as the entirety of 66613005 and 66613008.

The project site is situated within the City of San Diego Multiple Species Conservation Program (MSCP) Subarea Plan boundary. An aerial view of the project site is shown on Figure 3.

The project site includes 44 acres with approximately 12.6 acres considered usable for the proposed recreational park. The proposed park may include lighted multi-purpose sports fields, a skate park, a lighted basketball court, children's play areas, a comfort station/concession building, picnic facilities including picnic shelter, viewpoints/overlooks and interpretive signage, bicycle paths and racks, nature trails, parking areas, walkways, security lighting, and landscaping. The project is currently in the conceptual design and preliminary environmental review phase.

SURVEY METHODS

Prior to initiating the focused surveys, RECON Environmental, Inc. (RECON) biologists Brenna Ogg and JR Sundberg conducted a biological constraints survey of the project site in June 2016. Using vegetation mapping completed as part of the constraints survey and aerial imagery, potentially suitable habitat for vireo within the project site and surrounding 300-foot buffer was identified. During the focused survey visits, species composition, height, and density of the vegetation within the suitable habitat areas were further assessed for their potential to support vireo.

RECON biologists Brenna Ogg and Diana Saucedo and Busby Biological Services, Inc. (BBS) biologists Darin Busby and Garrett Huffman conducted eight survey visits to 0.4 acre of habitat considered suitable for

vireo (see Figure 3) within the project site. No suitable habitat for vireo was mapped within the 300-foot buffer surrounding the project site. In accordance with USFWS survey guidelines for this species (USFWS 2001), the biologists conducted each survey between dawn and 11:00 a.m. and avoided periods of excessive or abnormal cold, heat, wind, rain, or other inclement weather conditions. A total of 5 hours and 55 minutes of field effort was devoted to the survey. The surveying biologist(s) compiled lists of wildlife species detected and recorded the location of any observed sensitive wildlife species on a one-inch-equals-150-foot aerial map or using a hand-held global positioning system unit. The survey visit numbers, dates, personnel, times, and weather conditions are provided in Table 1. As shown in Table 1, weather conditions were fair, and air temperatures were mild during all survey visits and are not expected to have reduced the likelihood of detection of the species.

Survey Number	Date	Surveyor	Times	Acres Surveyed per Hour	Weather Conditions
1	4/13/2017	G. Huffman	06:00–07:30	0.3	50–53°F, 40-100% cloud cover, wind 2–6 mph
2	4/27/2017	B. Ogg	06:15–07:00	0.5	60–61°F, 100% cloud cover, wind 0–2 mph
3	5/11/2017	D. Saucedo	08:45–09:00	1.6	63°F, 10% cloud cover, wind 0–1 mph
4	5/23/2017	D. Busby	06:00–06:45	0.5	62–64°F, 100% cloud cover, wind 0–2 mph
5	6/8/2017	B. Ogg	09:10–10:00	0.5	68–69°F, 100% clearing to 15% cloud cover (marine layer), wind 0–4 mph
6	6/22/2017	B. Ogg	09:50–10:30	0.6	73–75°F, 90% clearing to 40% cloud cover (marine layer), wind 0–6 mph
7	7/6/2017	B. Ogg	08:50–09:20	0.8	76–77°F, clear sky, wind 0–5 mph
8	7/18/2017	B. Ogg	08:15–08:55	0.6	74–77°F, 90% clearing to 30% cloud cover (marine layer), wind 0–4 mph

^oF = degrees Fahrenheit; % = percent; mph = miles per hour.

SURVEY AREA

The undeveloped northern and eastern portions of the project site and surrounding 300-foot buffer are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the survey area. The southern and western portions transition into multiple terraces with a steep manufactured slope and graded field (previous school site) along the western edge. A large portion of the vegetation within the project site has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation communities/land cover types that occur within the project site and surrounding 300-foot buffer include Diegan coastal sage scrub, disturbed Diegan coastal sage scrub, maritime succulent scrub, disturbed maritime succulent scrub, mule fat scrub, non-native grassland, disturbed land, and urban/developed land. Vegetation communities and land cover types are characterized in accordance with Oberbauer et al. (2008) and the City of San Diego Biology Guidelines (City of San Diego 2012).

The survey area for vireo totals approximately 0.4 acre and includes all potentially suitable vireo habitat within the project site and surrounding 300-foot buffer (see Figure 3). Habitat considered suitable for vireo includes the mule fat scrub and a small patch of disturbed Diegan coastal sage scrub. This vegetation is described below.

The mule fat scrub occurs within the western and lower portion of Moody Canyon within the project site. The vegetation is dominated by mule fat (*Baccharis salicifolia*; Photograph 1) with two willow trees at the western edge, adjacent to a dirt path (Photograph 2). The vegetation is moderately dense with the mule fat reaching approximately 15 feet in height and the taller of the two willow trees reaching approximately 25 feet in height.

The disturbed Diegan coastal sage scrub that was included in the vireo survey occurs in a swale at the northwestern edge of the project boundary and shows sign of previous and ongoing disturbance from unauthorized pedestrian activity and dumping. This portion of the disturbed Diegan coastal sage scrub comprises a dense patch of the invasive plant species tamarisk (*Tamarix ramosissima*), which reaches approximately 20 feet in height (Photograph 3).

SURVEY RESULTS

Least Bell's Vireo Detections

One vireo was observed during the fourth survey visit on May 23, 2017, and one incidental vireo detection was recorded during an earlier, separate biological survey conducted by Mr. Huffman on March 29, 2017. The point location shown on Figure 3 within the 300-foot buffer represents the March detection, and the point location within the project boundary represents the May detection. On March 29, 2017, one individual vireo was detected by vocalization only and was mapped in a section of Moody Canyon that lies just outside and upstream of the northern limit of the project boundary, and supports upland vegetation. On May 23, 2017, an individual male was detected, singing frequently, traveling throughout the mule fat scrub in a lower portion of Moody Canyon, and observed carrying food while traveling to a castor bean (*Ricinus communis*) plant within the canyon. Although the carrying of food suggests the possible presence of an active nest, no female vireo or vireo nest was detected during this visit. In addition, no vireo were detected during any of the other seven focused survey visits, or during any of the other biological survey visits conducted by RECON and BBS during the 2017 season.

Data for the vireo occurrences were submitted to the California Natural Diversity Database on September 15, 2017 via email.

Least Bell's Vireo Predator Detections

The following wildlife species that are considered predators of vireo were detected during focused or other biological surveys conducted on-site: coyote (*Canis latrans*), Cooper's hawk (*Accipiter cooperii*), greater roadrunner (*Geococcyx californianus*), California scrub-jay (*Aphelocoma californica*), and American crow (*Corvus brachyrhynchos hesperis*) (Brown 1993, USFWS 1998). No brown-headed cowbirds (*Molothrus ater*), known brood parasites, were detected on site. Coyote was only detected by vocalization and sign such as tracks and scat. None were directly observed during focused vireo surveys. Cooper's hawk was only observed during one of the focused survey visits. California scrub-jays were frequently detected on-site, and American crows were frequently observed flying overhead. A complete list of avian species detected during the focused vireo surveys is provided in Table 2.

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
ODONTOPHORIDAE	NEW WORLD QUAIL	
<i>Callipepla californica californica</i>	California quail	O, V
ARDEIDAE	HERONS & BITTERNS	
<i>Ardea herodias</i>	great blue heron	O (flyover)
ACCIPITRIDAE	HAWKS, KITES, & EAGLES	
<i>Accipiter cooperii</i>	Cooper's hawk	O
<i>Buteo jamaicensis</i>	red-tailed hawk	O, V
<i>Buteo lineatus elegans</i>	red-shouldered hawk	O, V
<i>Circus cyaneus hudsonius</i>	northern harrier	O
FALCONIDAE	FALCONS & CARACARAS	
<i>Falco sparverius sparverius</i>	American kestrel	O
COLUMBIDAE	PIGEONS & DOVES	
<i>Columba livia</i>	rock dove (I)	O
<i>Streptopelia decaocto</i>	Eurasian collared-dove (I)	O, V
<i>Zenaida macroura marginella</i>	mourning dove	O, V
CUCULIDAE	CUCKOOS & ROADRUNNERS	
<i>Geococcyx californianus</i>	greater roadrunner	O
CAPRIMULGIDAE	GOATSUCKERS	
<i>Chordeiles acutipennis texensis</i>	lesser nighthawk	O
APODIDAE	SWIFTS	
<i>Aeronautes saxatalis</i>	white-throated swift	O, V
TROCHILIDAE	HUMMINGBIRDS	
<i>Calypte anna</i>	Anna's hummingbird	O, V
<i>Calypte costae</i>	Costa's hummingbird	O, V
<i>Selasphorus rufus</i>	rufous hummingbird	O, V
<i>Selasphorus sasin</i>	Allen's hummingbird	O, V
PICIDAE	WOODPECKERS & SAPSUCKERS	
<i>Picoides nuttallii</i>	Nuttall's woodpecker	V
TYRANNIDAE	TYRANT FLYCATCHERS	
<i>Empidonax difficilis</i>	Pacific-slope flycatcher	V
<i>Myiarchus cinerascens cinerascens</i>	ash-throated flycatcher	O, V
<i>Sayornis nigricans semiatra</i>	black phoebe	O, V
<i>Sayornis saya</i>	Say's phoebe	O, V
<i>Tyrannus verticalis</i>	western kingbird	O
<i>Tyrannus vociferans vociferans</i>	Cassin's kingbird	O, V
VIREONIDAE	VIREOS	
<i>Vireo bellii pusillus</i>	least Bell's vireo	O, V
CORVIDAE	CROWS, JAYS, & MAGPIES	
<i>Aphelocoma californica</i>	California scrub-jay	O, V
<i>Corvus brachyrhynchos hesperis</i>	American crow	O, V
<i>Corvus corax clarionensis</i>	common raven	O, V
ALAUDIDAE	LARKS	
<i>Eremophila alpestris actia</i>	California horned lark	O
HIRUNDINIDAE	SWALLOWS	
<i>Petrochelidon pyrrhonota tachina</i>	cliff swallow	V
<i>Stelgidopteryx serripennis</i>	northern rough-winged swallow	O, V
AEGITHALIDAE	BUSHTIT	
<i>Psaltriparus minimus melanurus</i>	bushtit	O, V
TROGLODYTIDAE	WRENS	
<i>Thryomanes bewickii</i>	Bewick's wren	O, V
SYLVIIDAE	GNATCATCHERS	
<i>Polioptila californica californica</i>	coastal California gnatcatcher	O, V
TIMALIIDAE	BABLERS	
<i>Chamaea fasciata henshawi</i>	wrentit	O, V

Table 2
Avian Species Observed

Scientific Name	Common Name	Evidence of Occurrence
MIMIDAE	MOCKINGBIRDS & THRASHERS	
<i>Mimus polyglottos polyglottos</i>	northern mockingbird	O, V
<i>Toxostoma redivivum redivivum</i>	California thrasher	O, V
STURNIDAE	STARLINGS & MYNAS	
<i>Sturnus vulgaris</i>	European starling (I)	O, V
PTILOGONATIDAE	SILKY FLYCATCHERS	
<i>Phainopepla nitens lepida</i>	phainopepla	V
PARULIDAE	WOOD WARBLERS	
<i>Setophaga [=Dendroica] petechia</i>	yellow warbler	O, V
<i>Oreothlypis [=Vermivora] celata</i>	orange-crowned warbler	V
<i>Cardellina [=Wilsonia] pusilla</i>	Wilson's warbler	O, V
EMBERIZIDAE	EMBERIZIDS	
<i>Aimophila ruficeps canescens</i>	southern California rufous-crowned sparrow	V
<i>Melospiza melodia</i>	song sparrow	O, V
<i>Melospiza [=Pipilo] crissalis</i>	California towhee	O, V
<i>Pipilo maculatus</i>	spotted towhee	O, V
<i>Zonotrichia leucophrys</i>	white-crowned sparrow	O, V
CARDINALIDAE	CARDINALS & GROSBILLS	
<i>Passerina amoena</i>	lazuli bunting	O, V
ICTERIDAE	BLACKBIRDS & NEW WORLD ORIOLES	
<i>Icterus cucullatus nelsoni</i>	hooded oriole	O, V
FRINGILLIDAE	FINCHES	
<i>Spinus [=Carduelis] psaltria hesperophilus</i>	lesser goldfinch	O, V
<i>Haemorhous [=Carpodacus] mexicanus frontalis</i>	house finch	O, V, N
Nomenclature from American Ornithologists' Union 2015 and Unitt 2004. (I) = Introduced species Evidence of Occurrence O = Observed V = Vocalization N = Nest		

Other Sensitive Avian Species Observations

The following six additional sensitive avian species were detected within or adjacent to the survey area during focused coastal California gnatcatcher surveys: Cooper's hawk (California Department of Fish and Wildlife [CDFW] Watch List [WL]), northern harrier (*Circus cyaneus*; CDFW Species of Special Concern [SSC]), California horned lark (*Eremophila alpestris actia*; CDFW WL), coastal California gnatcatcher (*Poliophtila californica californica*; federally threatened, CDFW SSC), yellow warbler (*Setophaga [=Dendroica] petechia*; CDFW SSC), and southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*; CDFW WL). Focused surveys for coastal California gnatcatcher were completed for this project in 2017, with a report provided under separate cover. In addition, a biological technical report will be prepared for this project following completion of 2017 biological surveys. Therefore, all other sensitive species observations will be addressed in the associated survey reports and/or biological technical report. Data for these additional sensitive species occurrences were or will be submitted to the California Natural Diversity Database concurrent with completion of the focused survey reports or biological technical report.

DISCUSSION OF SURVEY RESULTS

Least Bell's vireo was detected on two occasions within the mule fat scrub in Moody Canyon (northern portion of the project site), and at a minimum, appears to be using this habitat during migration. Although the mule fat scrub and the tamarisk-dominated patch of disturbed Diegan coastal sage scrub may provide suitable breeding habitat for this species, no on-site breeding or nesting was confirmed during the 2017 focused surveys.

The March detection coincides with the typical arrival time of vireo to their breeding grounds in southern California (USFWS 1998; Unitt 2004), indicating this individual could have been passing through during migration to its established territory or in search of a new territory.

Least Bell's vireo males tend to be vocal. Therefore, the lack of detection between March and May could indicate that the May detection was from an unpaired mature male still looking to establish a territory or dispersal of an early-season fledgling. Although fledglings generally remain within or in close proximity to their natal territory for most of the season, immatures more than 30 days out of the nest may move over wide areas (Brown 1993). The initial dispersal distance of a juvenile vireo from its natal site has at least been documented at 1.6 kilometers (approximately 1 mile) by the time a second brood has fledged (USFWS 1998, Gray and Greaves 1984 as cited in Brown 1993). Furthermore, fledglings have been known to produce adult-like songs (Brown 1993). A section of the Tijuana River that has been known to support breeding vireo since at least 1978 (CDFW 2017), which comes within two miles of the project site, may be a source of dispersing juveniles.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. Please contact me at bogg@reconenvironmental.com with any questions regarding this survey.

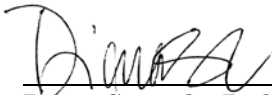
Sincerely,



Brenna Ogg, Senior Biologist
CDFW Scientific Collecting Permit SC-9997

9/15/2017

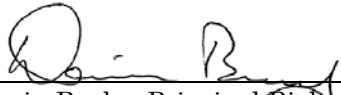
Date



Diana Saucedo, Biologist
CDFW Scientific Collecting Permit SC-006138

9/15/2017

Date



Darin Busby, Principal Biologist
Principal Biologist
CDFW Scientific Collecting Permit SC-006243

9/15/2017

Date



Garrett Huffman, Biologist
CDFW Scientific Collecting Permit SC-12948

9/15/2017

Date

BAO:jg

cc: Darren Genova, City of San Diego
Juan Baligad, City of San Diego
Carly Gagen-Cheeny, City of San Diego
Esther Burkett, California Department of Fish and Wildlife

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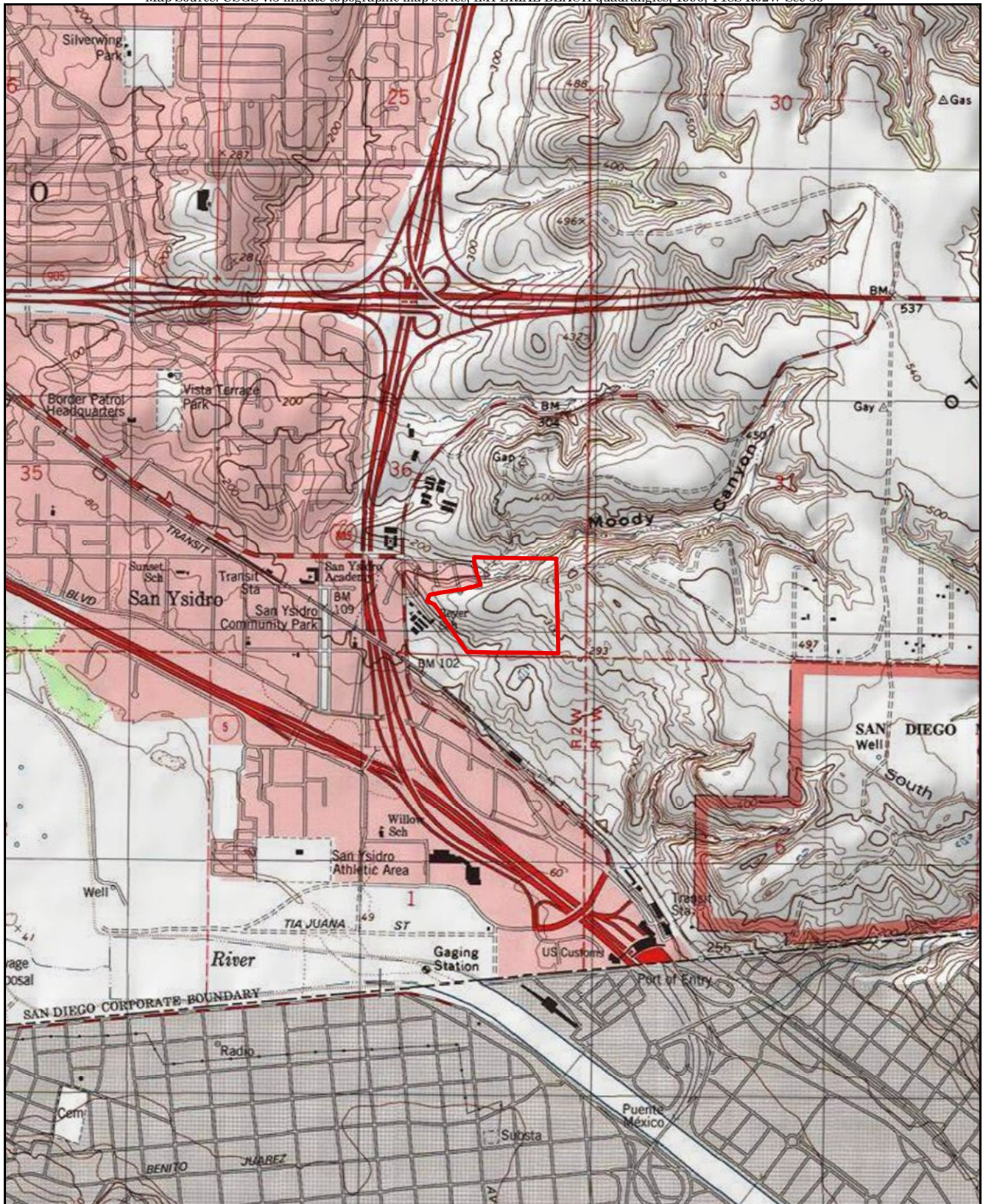
 Project Location

FIGURE 1
Regional Location




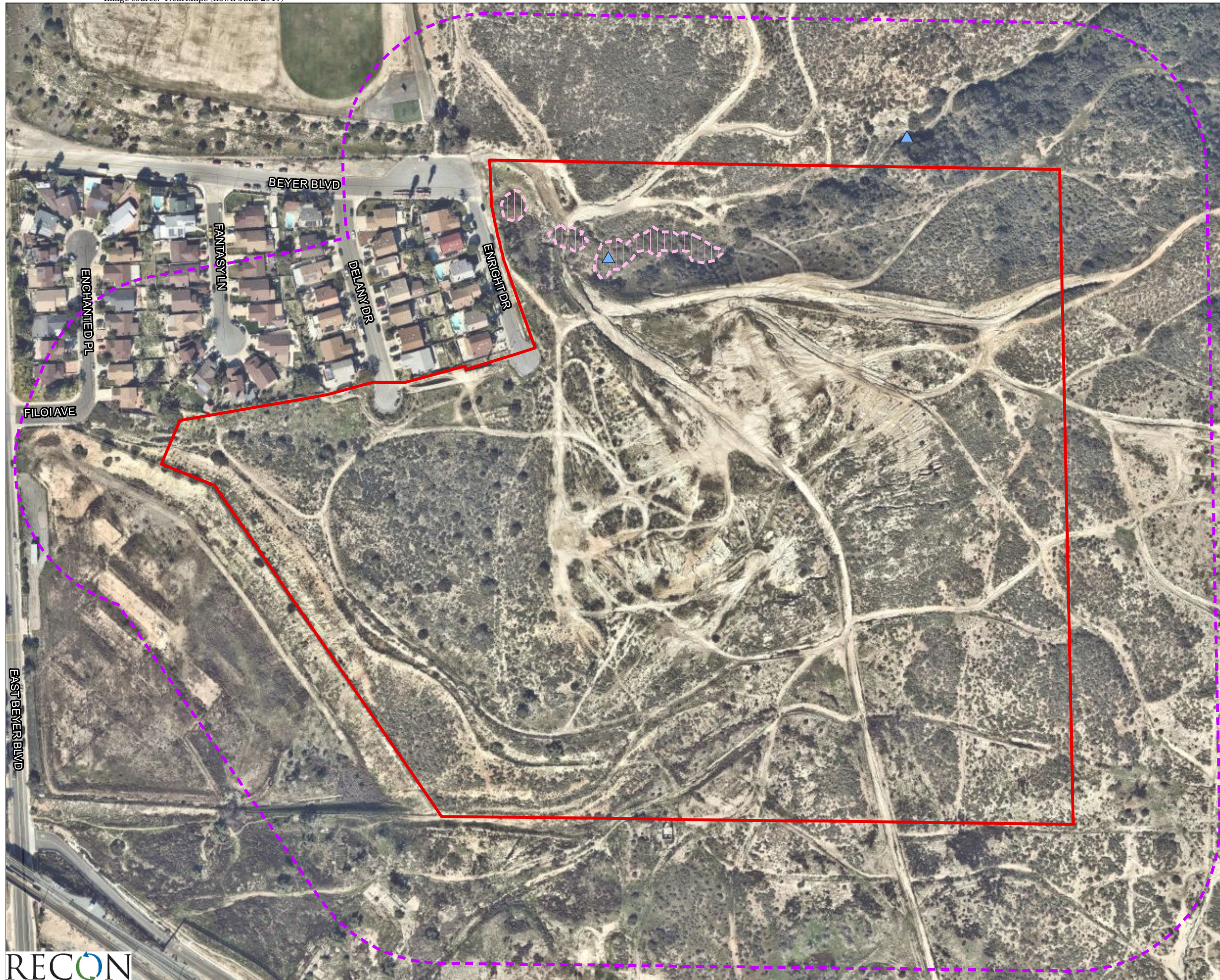




 Project Boundary

FIGURE 2

Project Location on USGS Map



-  Project Boundary
-  300-ft Buffer
-  Least Bell's Vireo Survey Area
-  Least Bell's Vireo Observation

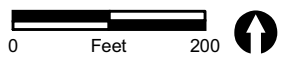


FIGURE 3
Least Bell's Vireo
2017 Survey Area and Results



PHOTOGRAPH 1
Mule Fat Scrub along Bottom of Moody Canyon, Facing South.
Taken June 22, 2017



PHOTOGRAPH 2
Mule Fat Scrub along Bottom of Moody Canyon, Facing Southwest.
Taken June 22, 2017



PHOTOGRAPH 3
Tamarisk-dominated Disturbed Diegan Coastal Sage Scrub within
Swale at West End of Moody Canyon, Facing West.
Taken June 22, 2017.



An Employee-Owned Company

July 17, 2017

Ms. Stacey Love
Recovery Permit Coordinator
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Quino Checkerspot Butterfly Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of the results of the 2017 focused presence/absence survey for the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) conducted for the City of San Diego's Beyer Park Development Project (project). The survey methods, site assessment, and survey results are discussed in detail below. No QCB were detected within the project survey area during 2017 presence/absence surveys.

The 44-acre project site is located east and southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the City of San Diego, California (Figures 1, 2, and 3). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 2; U.S. Geological Survey [USGS] 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071.

USFWS recommends that site assessments be conducted for all projects within the QCB's potential range (USFWS 2014) to determine if a site contains areas where QCB surveys are recommended. Areas excluded from surveys include orchards, developed areas, infill parcels, active agricultural fields, and areas of closed canopy woody vegetation, such as dense forest, riparian vegetation, and shrublands (USFWS 2014). The project site is within QCB Survey Area as designated by the USFWS survey guidelines (USFWS 2014) and supports vegetation recommended for QCB surveys by USFWS.

Prior to March 3, 2017, right of entry had not been granted for any off-site land within the 100-foot survey buffer. Thus, at the time of the site assessment and first two focused surveys, only areas within the project boundary were accessible. The survey area was expanded to include the majority of the 100-foot buffer to the north and east (i.e., adjacent portions of the County of San Diego's Furby-North Preserve) on March 3, 2017, when right of entry was granted for that parcel.

QCB Biology

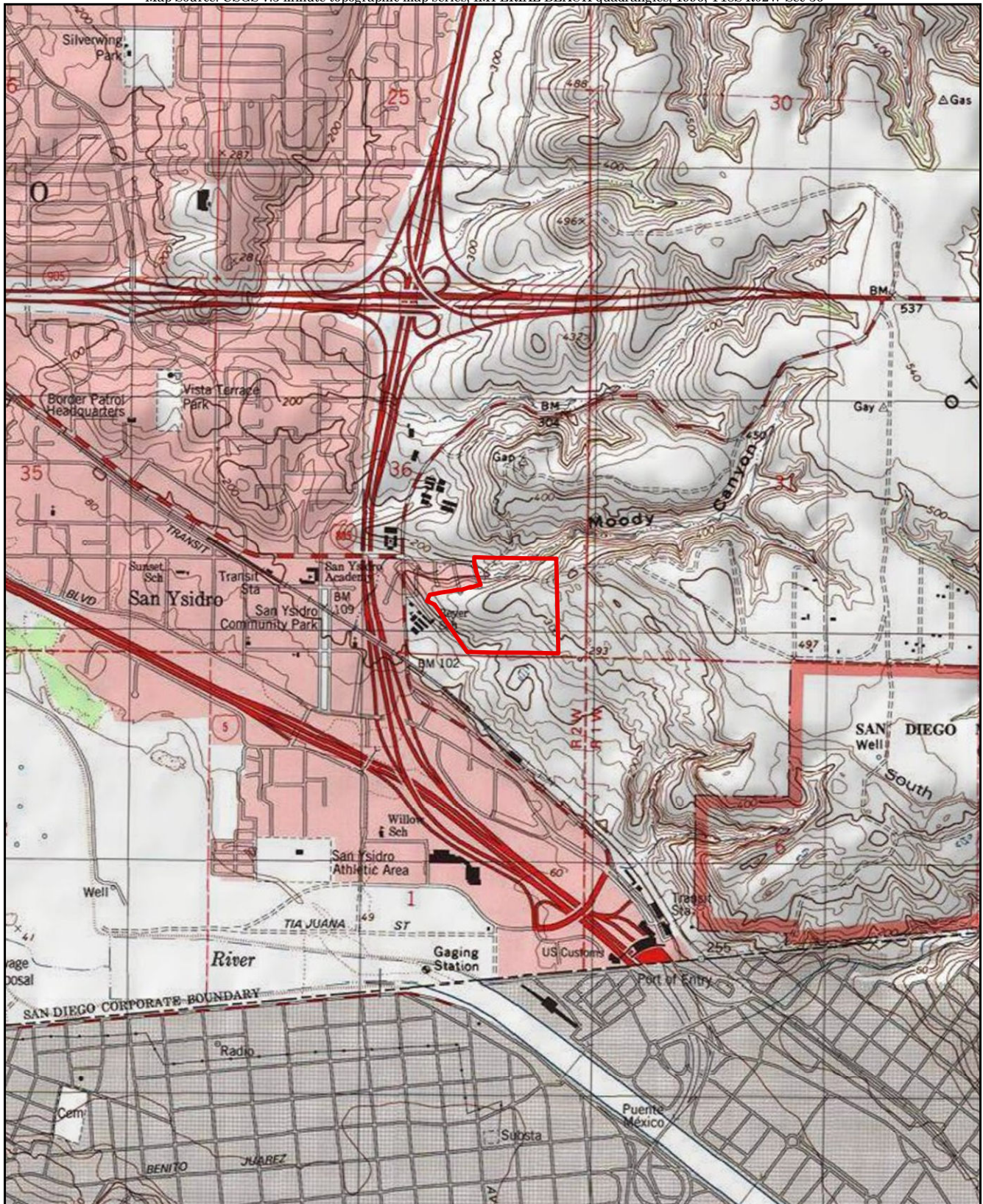
QCB, a member the brush-footed butterfly family (Nymphalidae), was federally listed as endangered in January 1997 (USFWS 1997). It is one of 12 subspecies of the *Euphydryas editha* checkerspot and was formerly known as *E. e. wrightii*.

Historically, QCB ranged from Los Angeles and western San Bernardino counties; south through Orange, western Riverside, and San Diego counties; and into northern Baja California, Mexico. As of 2010, QCB were known to occur in portions of southwestern Riverside County, southern San Diego County, and northern Baja California (Faulkner and Klein 2010). Both the larval and adult stages have specific habitat requirements, and habitat loss and degradation are considered the cause of the dramatic decline in the



 Project Location

FIGURE 1
Regional Location



 Project Boundary

FIGURE 2

Project Location on USGS Map



- Project Boundary
- QCB Survey Area
- Excluded QCB Survey Area
- Not Surveyed/Private Property
- QCB Host Plants (Population in Label)**
- Dot-seed Plantain (*Plantago erecta*)

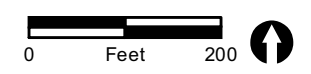


FIGURE 3
Habitat Assessment and Survey Area

species. These habitats have been impacted due to development, invasive non-native vegetation, overgrazing, poorly planned fire management practices, extreme adverse weather, over-collection by butterfly collectors, and off-road vehicles (USFWS 1997).

The QCB's distribution is defined primarily by that of its primary larval host plant, dot-seed plantain (*Plantago erecta*). Female QCBs have also been observed depositing eggs on woolly plantain (*Plantago patagonica*), white snapdragon (*Antirrhinum coulterianum*), thread-leaved bird's-beak (*Cordylanthus rigidus*), purple owl's clover (*Castilleja exserta*), and Chinese houses (*Collinsia* sp.) (USFWS 2014; Faulkner and Klein 2010). Adults use a variety of low-growing annuals that bloom during the QCB flight period as nectar sources, including goldfields (*Lasthenia* spp.), popcornflower (*Cryptantha* and *Plagiobothrys* spp.), gilia (*Gilia* spp.), ground-pink (*Linanthus dianthiflorus*), chia (*Salvia columbariae*), wild onion (*Allium* spp.), lomatium (*Lomatium* spp.), goldenstar (*Bloomeria* and *Muilla* spp.), and yarrow (*Achillea millefolium*) (USFWS 2002; Faulkner and Klein 2010). Some native perennials, including California buckwheat (*Eriogonum fasciculatum*), sugar bush (*Rhus ovata*), and skunk bush (*Rhus aromatica*), are also utilized (Faulkner and Klein 2010). QCB will use a variety of sparsely vegetated habitats, including open coastal sage scrub and chaparral, vernal pool complexes, oak woodland, and desert pinyon-juniper woodland. Densely vegetated areas and extensive open grasslands are not known to support QCB (Mattoni et al. 1997). Quino checkerspot butterfly exhibits a preference for low-growing vegetation interspersed with barren spots, as its thermodynamic needs require it to avoid shaded areas and flight below the canopy level (Osborne and Redak 2000; USFWS 2002).

Typically, there is one adult generation of QCB per year, with a four- to six-week flight period beginning between mid-February and early March and continuing through May (Faulkner and Klein 2010), although the timing of the flight period can vary considerably from year to year depending on rainfall and temperature patterns. Adult life span averages 10 to 14 days, and emergence is staggered (USFWS 2002). The full life cycle of a QCB includes egg, larva, pupa, and adult – with larval stages divided into five to seven instars. Adult QCBs spend their time searching for mates, feeding on nectar, defending territories, basking in the sun, and in the case of females, searching for sites to deposit eggs (USFWS 2002).

Methods

Site Assessment Methods

RECON biologist Brenna Ogg conducted a site assessment within the project boundary on February 9, 2017, to identify suitable QCB survey areas, as defined in the USFWS survey guidelines and the recovery plan (USFWS 2014 and 2003, respectively). Ms. Ogg is authorized to conduct presence/absence QCB surveys under USFWS 10(a)(1)(A) permit TE 134338-3. Suitable QCB survey areas and populations of larval host plants were mapped in the field, using either a sub-meter accuracy global positioning system unit or by hand on a one-inch-equals-200-feet color aerial photograph of the site flown in July 2016.

At the time of the site assessment, right of entry had not been granted for any of the off-site properties within the 100-foot survey buffer. Habitat suitability of these off-site properties was assessed from the edge of the project boundary where visual line-of-sight was possible and by interpretation of aerial photography where it was not (i.e., the top and east-facing portions of hills to the east of the project site).

Right of entry was granted to the County's Furby-North Preserve parcel (APN 639-070-74) on March 3, 2017, allowing for direct access to the majority of the 100-foot buffer to the north and east. During the first subsequent focused survey (i.e., on March 9, 2017), the habitat suitability determinations made during the initial site assessment were confirmed for all areas within this portion of the off-site survey buffer.

Presence/Absence Survey Methods

Presence/absence adult flight season surveys for QCB were conducted in accordance the Quino Checkerspot Butterfly Survey Guidelines (USFWS 2014) by RECON biologists Brian Parker and Alex Fromer under

USFWS 10(a)(1)(A) permit TE 797665 and Diana Saucedo under USFWS 10(a)(1)(A) permit TE 221287-1. Weekly surveys were conducted starting the third week of February 2017. As no QCBs were observed, surveys continued weekly until the end of the season, which is defined as the second Saturday in May (Table 1).

Table 1					
2017 QCB Survey Dates, Personnel, Times, Conditions, and Acres Surveyed per Hour					
Date	Survey	Personnel	Beginning Time and Conditions	Ending Time and Conditions	Acres/ Hour
02/9/17	SA	BAO	11:15 A.M.	4:10 P.M.	n/a
02/21/17	QCB #1	BDP	9:00 A.M.; 64° F; winds 0-2 mph 0% cloud cover	2:15 P.M.; 71° F; winds 4-8 mph 50% cloud cover	8.3
03/1/17	QCB #2	BDP	9:30 A.M.; 62° F; winds 4-6 mph 0% cloud cover	2:40 P.M.; 70° F; winds 6-7 mph 0% cloud cover	8.4
03/09/17	QCB #3	BDP DGS	9:15 A.M.; 74° F; winds 0 mph; 5% cloud cover	2:00 P.M.; 73° F; winds 8-10 mph; 0% cloud cover	5.1
03/14/17	QCB #4	BDP	9:30 A.M.; 73° F; winds 1-3 mph; 25% cloud cover	3:00 P.M.; 76° F; winds 8-10 mph; 10% cloud cover	8.8
03/21/17	QCB #5	BDP DGS	9:25 A.M.; 62° F; winds 3-5 mph; 5% cloud cover	1:00 P.M.; 72° F; winds 4-6 mph; 15% cloud cover	6.9
03/28/17	QCB #6	DGS APF	10:00 A.M.; 68° F; winds 0-1 mph; 0% cloud cover	2:00 P.M.; 74° F; winds 4-6 mph; 0% cloud cover	6.1
04/04/17	QCB #7	DGS APF	10:00 A.M.; 65° F; winds 1-3 mph; 0% cloud cover	1:40 P.M.; 68° F; winds 4-6 mph; 00% cloud cover	6.6
04/11/17	QCB #8	BDP DGS	9:50 A.M.; 63° F; winds 0-1 mph; 0% cloud cover	1:55 P.M.; 72° F; winds 4-7 mph; 0% cloud cover	6.0
04/18/15	QCB #9	BDP	9:25 A.M.; 73° F; winds 5-7 mph; 50% cloud cover	2:45 P.M.; 77° F; winds 4-8 mph; 5% cloud cover	9.1
04/24/15	QCB #10	BDP DGS	10:00 A.M.; 71° F; winds 3-6 mph; 75% cloud cover	1:25 P.M.; 73° F; winds 5-70 mph; 60% cloud cover	7.1
05/1/17	QCB #11	BDP	9:00 A.M.; 72° F; winds 5-7 mph; 0% cloud cover	12:25 P.M.; 78° F; winds 6-8 mph; 0% cloud cover	7.7
		DGS	9:30 A.M.; 74° F; winds 5-7 mph; 0% cloud cover	12:25 P.M.; 78° F; winds 6-8 mph; 0% cloud cover	
05/11/17	QCB #12	BDP	8:40 A.M.; 64° F; winds 0-2 mph; 25% cloud cover	12:00 P.M.; 73° F; winds 8-12 mph; 35% cloud cover	7.7
		DGS	9:00 A.M.; 63° F; winds 0-1 mph; 10% cloud cover	12:00 P.M.; 73° F; winds 8-12 mph; 35% cloud cover	

SA = Site Assessment; QCB = Quino checkerspot butterfly
°F = degrees Fahrenheit at ground level; mph = miles per hour
APF = Alex Fromer; BAO = Brenna Ogg; BDP = Brian Parker; DGS = Diana Saucedo

At the start of the survey period, right of entry had not been provided for any off-site properties. On March 3, 2017 (prior to Survey 3), right of entry was provided for the County of San Diego's Furby–North Preserve parcel; however, right of entry was not granted for any other adjacent parcels, which are all private property. Thus, for Surveys 1 and 2, the survey area consisted of 43.5 acres of suitable QCB habitat within the 44-acre project site, and thereafter, the survey area increased to 48.6 acres of suitable habitat within the project site and surrounding 100-foot buffer to the north and east. All potentially suitable QCB habitat was surveyed while walking at a slow pace, and all butterfly species and blooming plant species were noted during each visit. Field notes are provided in Attachment 1.

Results

Site Assessment

Within the QCB survey area, elevations range from 120 feet above mean sea level in a drainage in the northwestern portion of the survey area to 396 feet above mean sea level on a hill in the eastern portion of the survey area. The northern and eastern portions of the survey area are characterized by two large hills, separated by Moody Canyon, which runs east–west through the northern portion of the survey area. The steep north-, south-, and west-facing slopes associated with these hills transition in the south and west into multiple terraces, with a steep manufactured slope along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation communities/land cover types (following Holland 1986 as updated by Oberbauer et al. [2008] and City of San Diego [2012]) within the survey area include Diegan coastal sage scrub (including disturbed), maritime succulent scrub (including disturbed), disturbed land, and urban/developed land. The total area of suitable QCB habitat within the survey area, including habitat within the off-site Furby–North Preserve, is approximately 48.6 acres (see Figure 3); this includes all Diegan coastal sage scrub, the majority of the maritime succulent scrub, and disturbed land on-site. Areas excluded from the QCB survey include a dense patch of cactus-dominated maritime succulent scrub on a south-facing slope in the northern portion of the site, a closed-canopy patch of mule fat scrub in the northwestern portion of the site, and all urban/developed areas. Vegetation communities included in the survey area are described in detail below.

Diegan coastal sage scrub is present in the western portion of the survey area and in a small portion of Moody Canyon in the northern portion of the survey area. In the western stands, the Diegan coastal sage scrub comprises a mix of California buckwheat, California sagebrush (*Artemisia californica*), broom baccharis (*Baccharis sarothroides*), and laurel sumac (*Malosma laurina*). Vegetation cover is generally above 70 percent, and typical shrub height is between two and four feet with the occasional taller laurel sumac and broom baccharis. The Diegan coastal sage scrub that occurs along Moody Canyon in the northern portion of the survey area is taller, denser, and dominated by lemonade berry (*Rhus integrifolia*).

Disturbed Diegan coastal sage scrub occurs along the manufactured slope at the edge of the project boundary, in a swale at the northwestern edge of the project boundary, and in other scattered areas that show sign of previous human-caused soil disturbance and ongoing disturbance from unauthorized pedestrian activity and dumping. The species composition is similar to the undisturbed stands of Diegan coastal sage scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia (*Acacia* sp.), saltcedar (*Tamarix ramosissima*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and non-native grasses.

Maritime succulent scrub is the dominant vegetation community within the survey area. In the northwestern portion of the survey area, the maritime succulent scrub is dominated by coast cholla (*Cylindropuntia prolifera*) with waterjacket (*Lycium andersonii*), California box-thorn (*L. californicum*), cliff spurge (*Euphorbia misera*), and jojoba (*Simmondsia chinensis*) occurring as common species. The combined vegetative cover of cactus and shrub species is at or above 75 percent, and typical shrub height is between two and four feet. Throughout the remainder of the maritime succulent scrub in the survey area, the coast

cholla occurs in scattered patches; common shrub species include San Diego bur-sage (*Ambrosia chenopodiifolia*), jojoba, cliff spurge, coast prickly pear (*Opuntia littoralis*), California buckwheat, San Diego viguiera (*Bahiopsis laciniata*), California sagebrush, and fish-hook cactus (*Mammillaria dioica*).

Similar to the disturbed Diegan coastal sage scrub, the disturbed maritime succulent scrub occurs in areas that have been subjected to human-caused disturbance and non-native plant species invasion. The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia, fountain grass (*Pennisetum setaceum*), garland daisy (*Glebionis coronaria*), and non-native grasses.

Disturbed land consists of a complex of dirt roads and unauthorized off-road vehicle trails traversing the site, as well as a series of open areas characterized by exotic vegetation. The vegetated portions of disturbed land are dominated primarily by garland daisy and Russian thistle (*Salsola tragus*), with scattered non-native grasses. A large saltcedar is present in a terminal depression at the west end of Moody Canyon in the western portion of the site.

Presence/Absence Surveys

One larval host plant species, dot-seed plantain, was observed in patches ranging in size from approximately 50 to over 1,000 individuals throughout the survey area (see Figure 3). Most of these patches were located within maritime succulent scrub on the hills in the central and eastern portion of the survey area; however, three small patches were found in disturbed Diegan coastal sage scrub in the western portion of the survey area. Generally, the dot-seed plantain was found in openings in scrub habitats, in areas with moderate native wildflower cover. Despite the many signs of disturbance, the survey area supports a substantial number of potential nectar sources, including known nectar sources such as *Allium*, *Amsinckia*, *Cryptantha*, *Dichelostemma*, *Eriogonum*, *Lasthenia*, *Linanthus*, and *Plagiobothrys* species. A list of flowering plants observed during the protocol surveys is presented in Table 2.

Scientific Name	Common Name
<i>Acmispon strigosus</i>	bishop's lotus
<i>Allium haematochiton</i>	red-skin onion
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage
<i>Amsinckia menziesii</i>	rancher's fiddleneck
<i>Bahiopsis laciniata</i>	San Diego viguiera
<i>Brassica nigra</i>	black mustard
<i>Camissoniopsis bistorta</i>	California sun cup
<i>Cryptantha</i> sp.	cryptantha
<i>Daucus pusillus</i>	rattlesnake weed
<i>Deinandra conjugens</i>	Otay tarplant
<i>Deinandra fasciculata</i>	fascicled tarweed
<i>Delphinium parryi</i>	blue larkspur
<i>Dichelostemma capitatum</i>	blue dicks
<i>Encelia californica</i>	California encelia
<i>Erodium cicutarium</i>	red-stem filaree
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	long-stem golden-yarrow
<i>Glebionis coronaria</i>	garland daisy
<i>Hirschfeldia incana</i>	short-pod mustard
<i>Lasthenia gracilis</i>	common goldfields
<i>Linanthus dianthiflorus</i>	farinose ground pink

Table 2 Flowering Plants within the Survey Area	
Scientific Name	Common Name
<i>Logfia gallica</i>	daggerleaf cottonrose
<i>Lupinus truncatus</i>	collar lupine
<i>Mammillaria dioica</i>	fish-hook cactus
<i>Medicago polymorpha</i>	California burclover
<i>Melilotus sp.</i>	sweet clover
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant
<i>Nemophila menziesii</i>	Menzies' baby blue-eyes
<i>Nuttallanthus texanus</i>	blue toadflax
<i>Oncosiphon piluliferum</i>	stinknet
<i>Oxalis sp.</i>	oxalis
<i>Papaver heterophyllum</i>	wind poppy
<i>Pectocarya sp.</i>	pectocarya
<i>Peritoma arborea</i>	bladderpod
<i>Phacelia cicutaria</i>	caterpillar phacelia
<i>Phacelia grandiflora</i>	giant-flowered phacelia
<i>Plantago erecta</i>	dot-seed plantain
<i>Plagiobothrys sp.</i>	popcornflower
<i>Pseudognaphalium biolettii</i>	bicolor cudweed
<i>Sonchus asper</i>	prickly sow thistle
<i>Verbena menthifolia</i>	mint-leaf vervain

A total of 1,360 butterfly observations, representing a minimum of 27 butterfly species, were recorded during the 2017 presence/absence surveys; however, QCB was not detected (Table 3). Habitat within the survey area was generally suitable for QCB despite the high level of human-caused disturbance in some areas. The most common species observed was cabbage white (*Pieris rapae*), which generally increased in numbers throughout the survey period. Pacific Sara orangetip (*Anthocharis sara sara*) was also very abundant in the survey area, and showed a peak population in Weeks 7 and 8. Other common butterflies included funereal duskywing (*Erynnis funeralis*), which was present in moderate numbers throughout the survey period, western tailed blue (*Everes amyntula*), which was most common in the middle portion of the survey period, and western pygmy blue (*Brephidium exile*), which peaked in Weeks 8 and 9.

If you have any questions, please feel free to contact me at bparker@reconenvironmental.com or at 619.308.9333 extension 109.

Sincerely,



Brian Parker
 Biologist/Associate Project Manager

BDP:eab

cc: Darren Genova, City of San Diego
 Gretchen Eichar, City of San Diego
 Justin Garcia, California Department of Fish and Wildlife

Table 3
Butterflies Observed within the Survey Area

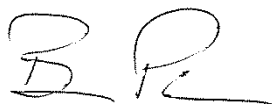
Scientific Name	Common Name	Survey Number											
		1	2	3	4	5	6	7	8	9	10	11	12
N/A	unidentified white	1		1	3	2	6	12					8
N/A	unidentified blue							8					
<i>Anthocharis cethura</i>	desert orangetip						5	15	3				
<i>Anthocharis sara sara</i>	Pacific Sara orangetip		3	8	4	11	34	37	37	33	23	7	1
<i>Apodemia mormo virgulti</i>	Behr's metalmark			1		5	8	7	18	9	7	3	4
<i>Brephidium exile</i>	western pygmy blue			7	5	8	8	2	13	12	9	25	16
<i>Callophrys augustinus</i>	brown elfin					2							
<i>Chlosyne gabbii</i>	Gabb's checkerspot							1					
<i>Coenonympha californica californica</i>	common California ringlet		1										
<i>Colias eurhytheme</i>	orange sulphur											10	6
<i>Colias</i> sp.	unidentified sulphur										2	3	3
<i>Danaus plexippus</i>	monarch					1							
<i>Erynnis funeralis</i>	funereal duskywing			12	5	21	18	9	12	7	9	6	16
<i>Everes amyntula</i>	western tailed-blue								27	24	22	20	19
<i>Glaucopsyche lygdamus australis</i>	southern blue	1				4	7	22		4			
<i>Hylephila phyleus muertovalle</i>	fiery skipper												1
<i>Icaricia acmon</i>	Acmon blue	1	4				1			2	13	5	1
<i>Junonia coenia grisea</i>	common buckeye								1	2		1	1
<i>Leptotes marina</i>	marine blue								1	3	8	4	
<i>Limenitis lorquini</i>	Lorquin's admiral					1							
<i>Nymphalis antiopa</i>	mourning cloak		1									2	4
<i>Papilio eurymedon</i>	pale swallowtail												5
<i>Papilio zelicaon</i>	anise swallowtail	1		2	1	1		2	3	3	3	10	21
<i>Pieris rapae</i>	cabbage white			1	4	12	20	37	31	32	35	98	97
<i>Pontia sisymbrii</i>	spring white								7	3	2	2	47
<i>Pyrgus communis</i>	checkered skipper											1	4
<i>Strymon melinus</i>	gray hairstreak			1		2			2		5	5	
<i>Vanessa</i> sp.	unidentified lady						3						2
<i>Vanessa annabella</i>	west coast lady			4	3	5	1	1	2	3	5	3	4
<i>Vanessa atalanta rubria</i>	red admiral						2					3	9
<i>Vanessa cardui</i>	painted lady		2	10	3	4	8	2			1		
TOTAL		4	11	47	28	79	121	155	157	137	144	208	269

Ms. Stacey Love
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July 17, 2017

Certification

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Date: July 17, 2017

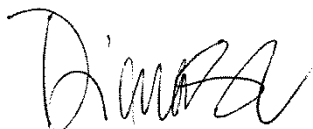


Signed: _____
Brian Parker, Biologist/Associate Project Manager
USFWS Permit #TE 797665
Report Author and Surveyor

Other Surveyors:



Signed: _____
Alexander Fromer, Biologist
USFWS Permit #TE 797665



Signed: _____
Diana Saucedo, Biologist
USFWS Permit #TE 221287-1



Signed: _____
Brenna Ogg, Senior Biologist
USFWS Permit #TE 134338-3

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1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.

ATTACHMENT 1

Date 2/21/17 Time Weather 09:00 / 14:15
 Location 8359 OCT 31/ 64 71
 Notes 0% 50%
 0.2 4.8

Chrysanth Mal Par
 Pickleweed Dic Capp.
 Sch Bar BEA Nig
 Cen meo Der Fas
 Jugosa Sonchus
 Bac Sae Sisy mbum
 Ero Cic. Gra coh
 Arabid Lepidium

Bulky herb
 Anise ST
 Acmon
 UNK Wht
 Southern Blue

Leafy kept PLAEBO
 Cyl pro Cytosagalm
 Atroplex Log Gal Mal Lam
 Misery Cryptath Jade Plant
 Vitis Cla Per Ero Bot
 Opulit Medicago Eri Fns (stand.)
 Ams Men (moss) Agave corn x2
 Bromus Astragalus P. ERIO GENF
 Beh lac N. glia AMGLA
 Sal tra TAM PAR Pennisetum
 Eri con Fse Vu Mammaleum
 Blw int Eri Cac. Camissonopsis
 Arr inc FER VIR
 Hor Inc Pectocarya

Few plants in
 Moist - wet
 but waterlogged
 in some places
 in open scrub
 (moss) - soil
 present. Soil
 looks like
 some heavy
 stuff. Soil
 looks like
 some heavy
 stuff. Soil
 looks like
 some heavy
 stuff.

Rite in the Rain.

ROAD
 (A.P.)

Date 3/1/17 Time Weather 0930
 Location Bayou Park PCB #2 62° 151 440
 46 10
 0% 0-7
 0% 0%

Notes

Atriplex	San Asp °	
Mes 12	DIC Cap °	Butterflies
Chrysoanth	San OLS	Sneat ° °
SASTRA	Bra Nig	
Hir Inc	CRA Con	Acmon ° °
Cylops (A)	LINDIA °	PL °
Ams Men °	Chl Par	
UOJOSA	Lep Nit	Mary Clark °
Epo CK	Plago °	Ringlet °
CON MEA	CLA FER	
Lac Ser	Euc (A) °	
Ric Com	SABAE	
ART (A)	CHIA (Not Fever)	
BAE SAE	Arenopsis	
BMP	Mes	
Avena	BAHAE	
Medicago	Oxalis °	Motorcycle + SUV
Rh INT	Logan	at site
Bae SAE	RA SAE	
Astragalus	ERI Fas	
Mictra	Fer Vir	
Agave sp.	Mam Dr	beverage h
Der fas	Opuntia	Cam/serapsen
P. m. v.	ACMKA	Was Rd

Date 3/9/17 Time Weather 0915 | 1400
 Location Bayou Park OCB #3 74° | 73°
 Notes 5% cc 0% cc
 0 mph 8-10 mph
 12:00 → 78°

Plants

Mes 1	Bro Nig	
Chrysanth	Dir CAP	
Sch bar	Bro Mand	CABBW
Cyl Cal	Hr Inc	SARA L
Arms MEN	Sen ASP	
Mar Vul	BAH Laz	PL L
Mes cry	Rho Int	
Der son	Plagw	Pygmy BF
Rha cro	Bac sal	
Misog	Pse (light)	Wht
Jajota	Foe Vul	WCL
Gen mel	Astragalus	FDW
Aneca	Bac sar	Behr MMM
Atriplex	Ric Lem	Anise ST
Mam Dio	Bro Dr.	
Ant Cal	Cameleonopsis	
Ero cir	Phacelia	
Crypt	cup (son)	NIGRA Lupinus
Sed ka	log bac	ERIPAS Solanum (bush)
Mar ma	LepNT	met Ind Lamarche
Sil gal	Asterum	Chrysom Oxa Res-c
San ole	ERO BOT	CRICER

8359

QCB#3

03/09/17

12:15

79

46

5% CC

BDP

2:00

73

7-10

5% CC

DGS

Sunny

PYGMY BLUE

||

FUN DUSKY WING

|||||

SARA ORANGE TIP

||

WEST COAST LADY

|||

GRAY HAIR STREAK

|

PAINTED LADY

|||

ANISE SWALLOWTAIL

|

SPHINX MOTH

||

WILDLIFE INC.

GRRO

CAGN+

8359

QCB#3

03/09/17

SM

~~Astragalus~~

FB

CSS

Mellilotus

SB

Lotus scoparius

FB

Graphium

FB

Plantago erecta SB

Chrysom

SB/FB

- 50 plants

Enc cal

FB

- threats: human

Brassica

FB

foot traffic, erosion

Hirschfeldia

FB

trash.

Amarindia

FB

- New PT in GPS

Camissonia bi

SB

Cryptantha

SB

Date 3/14/17 Time

Weather 0930 1500

Location Beyer #4

73 76

Notes

1-3 2-10

25% 10%

Amisnicic

Plagio

Cryptanth

Chaenactis

SALCEL

DICCAP

LINDA

Pha Cic

Plantago

Camissonopsis

Lupinus Skinny

ERIFAS

Butterflies

SARA ::

White ::

FYN DW ::

CABBW ::

Pygmy Bl ::

PL ::

WCL ::

ANISE

Date 3/21 Time Weather 09:25 13 05
 Location Seyer #15 62° 72
 3.5 4.6

Notes

Plants

Gle cor Saltra
 Ercic belum
 Mes 1 Jojoba.
 Mesary Yucca^{whi}
 Bac srf Lup srf
 Bac srf Bra Nig
 Cyl cal Cen mel
 BMR Sch bar
 Foe vul Htz sfo
 Nic gh Pse cal
 Bro dia Log gal
 Jcl go Eri gas

576 | 10-15

Butterflies

Pygmy i:
 Unid W:
 SARA OT h:
 Southam B:
 CABB W:
 Behr i:
 Fun DW
 WCL "

Roc con Psa (M^{1/2}) Emm Ren Rumex Rensat
 Melobates Bra (tqu?) ~~Poa~~ Opy Lit Iso Men
 Astragalus Lamarckia Liverwort Sel cen Log gal
 Art cal Oxalis p-c Plago: Mirae Acmyls
 Atrplex SA Mol Misary Flaere: Lup (long)
 Rho int Cey lor Ans Men Sonda. Pectocary
 Cra con Hel mth Phaeic ~~Mamm~~ Cor Fil
 Hordern De Fos Sen ASP Cheese Mel Lau
 Lep wit MAM Dia Dic CAP Shi pul Acaan
 Avena Bah ka paw Pus Camiss.

8359

QCBS: BEYER BLVD 03/21/17

9:25 62°F 0-1 5% CC

13:05 72°F 4-6, 8g 10-15% CC

monarch	
Behr's metal mark	
Sala orange tip	###
pigmy blue	###
Cabbage white	####
NC lady	
Funerid dusky wing	### ##
Anise swallowtail	
Common admiral	
Painted lady	
brownie fin	
grey hawk streak	
southern blue	

Northeast side

10:45 66°F 0-low BF activity 0-1 mph 0% a

south west side

12:00 65°F 4 mph, 6 mph gust 0-low BF act.

03/21/17

QCBS: 8359

host plantnectar plants

Pieris (FB)	Ams int (FB)
prev. dist area in buffer	Bras. nig FB
NNG, NN-forbs	Cryptantha FB
DCSS habitat	Diagio FB
	Ero cil FB
	Nemophila FB
	Phac FB
	Mel ind FB
	Alli hema FB (FB)
	x Las cal (SB) / Lin dia
	NNG, Bro mad rub.
Euc hry bip (SB)	DCSS habitat
Emme pond varp. (SB)	crypto crusts w/ Craccon, Cyp. Sp. Scap plant, Ero but
	Bahiopsis luc. (SB)
	Papa hete (FB)
incidental mil allife (sensitive)	
CAUK	Am gla (FB)
CAZL	Quaplic (FB)

PROJECT NAME (JN XXXX)
 QCB Focused Surveys YEAR
 BEYER PARK

Name: ALEX FROMER

Date: 3/28/17

Grid/Map #: _____ Survey Week #: 6

Starting conditions: Time: 10:10 Temp (oF): 65 Cloud Cover: 0% Wind Speed: 0-1 MPH

Ending Conditions: Time: 2:00 Temp (oF): 74 Cloud Cover: 0% Wind Speed: 4-6 W/G to R

Butterflies Observed	# Obs (general tally)	Host & Potential Nectar Plants	Phenology*
SARA'S OT.		<i>Plantago erecta</i> (Observed: <u>Y</u> /N)	FB
LADY SP.		<i>Castilleja exserta</i> (Observed: Y/N)	
PYGMY BLUE		<i>Plantago patag.</i> (Observed: Y/N)	
BEHR'S MM		<i>Antirrhinum coul.</i> (Observed: Y/N)	
WHITE SP.		<i>Cordylanthus rig.</i> (Observed: Y/N)	
DUSKY SP.		<i>Collinsia heter.</i> (Observed: Y/N)	
S. BLUE		<i>Lasthenia gracilis</i> (Observed: Y/N)	
W.C. LADY		<i>Layia sp.</i> (Observed: Y/N)	
ANISE S.T.		<i>Cryptantha sp.</i> (Observed: <u>Y</u> /N)	FB
PAINTED LADY		<i>Allium sp.</i> (Observed: <u>Y</u> /N)	PB
		<i>Linanthus dianth.</i> (Observed: <u>Y</u> /N)	FB
		PSEUDOCNA	FB
		LOT 500	FB
		FILAGO	FB
		ERIE FAY	SB
		LUPINE	FB
		CRYSANTHEMUM	FB
		BAHIOPSES	FB
		DICHELOSTEMA	FB
		AMJINKIA	FB
		NUT TEX	FB
		ENC CAL	FB

*Notes regarding if vegetative (V), starting to bloom (SB), full bloom (FB), fruits and flowers (FF), post-bloom (PB), desiccated (D)

General Notes (include any details on QCB observed and photographs taken as appropriate):

10:00 68°F 0-1 mph 0% cc
14:00 74°F 4-6, 98 0% CC

safety audit 11:45-12:15 onsite in habitat

cabbage white	### IIII ### IIII
red admiral	
Sara orangetip	### IIII ### III
painted lady	### II
pygmy blue	
berris metalmark	### I
fanonid duskywing	### IIII ### III
desert orangetip	###
southern blue	

032817

8359 GCB#6 BEYER 032817 DGS/APF

host plant

nectar plant

Placere (FB)

Chrysanthemum sp.

almost drying up.

Melilind

(GPS mapped @ NWN)

Medi poly

Corner of gate

Eroic

Crypto crusts pres.

Cinac bic

Cras con

Astr

open patches in kar.

Acme glab.

Shrubs w/ NING sparse

Bra nig

Bahi lac. Enc. cal.

Placere senescent & dry

Dich cap

@ centre of site

Scindendrasp. (SB)

& N-facing slope

N-facing hillside

habitat

Lin dian (FB)

~~SS~~ MSS

Las cal (FB)

CSS

crypto crusts in CSS

DCSS

Cras con

open sparse

Harp palm (mapped)

Logfia Placere

Near Placere top.

Amisk.

Near encampment

04/04/17 QCB# 7, BEYER BLVD DGS, APF

10:00 65°F 1-3 mph 0% cc

13:40 68°F 4-6 mph 0% cc

BUTTERFLIES

Sara orange tip	###-###-###-###-
Funeral dusky wing	###-
Cabbage white	###-###-###-###-###-###-###-###
Southern blue	###-###-###-###
Pigmy blue	
Behr's metal mark	###
Anise swallowtail	
Desert orange tip	###-###-
Cabb's checkerspot	
printed lady	

Sphinx moth ###

<u>Host plant</u>	<u>Flowering</u>	<u>Nectar sp.</u>
Flare - flowering and fruiting -	Chrysanthemum	FB
Some senescent.	Medi poly	FB
Same near encampment -	Acmo glab	FB
	Onoph cal	SB
	Bahi laci	FB
<u>West side pop:</u>	Dich capi	FB
	Branig.	FB
<u>Southern pop: also</u>	pha gva.	FB
fruiting & flowering.	Fuccal	FB
Almost obscured by	Ams.	FB
Lepidium Gyto	Sami.	SB
Crust + Crac Cona.	Lin dia	FB
Deinandra sp. now vegetative	Northern pop:	
	flowering & fruiting	
<u>Eastern pop: new pop (?)</u>	mapped dry and	
sun. flowering (5-10 pl.)	senescent in	
	old road.	
Note: Lupines setting seed.		
Southern pacific rattlesnake.		
AMKE BUOW GRRO		
CA ₄ N(0) CA₄N(4) → NOMO(0, B#0 4/5/17)		
Visual on Person (0?) camped in pepper.		

Date 4/11/17 Time _____ Weather 0950 1335
 Location S359 Beyer 3 63° 73
 50% 0%
 Notes 0-1 4-7

Coronopsis Sal Col
 Pinnaculo Stinknet

Eucric

Astragalus

Mel ind

Pse ken

Acmbk

Dat wri

Eur Fas

Hirinc

Bra nig

Gen mel

Camissouf

Dic CAP

Pha Cic

SARH LK

Ams men

Lup Hir

Lup ?*

Cryostatm

Calendmar

Son ASP

Aem STR

Pygmy B Li

Behr ☒ ::

WTB ~~Southern B~~ ☒ ;

Cabbage ☒ ☒ ::

Buckeye ☒ °

Gray HS °

Sp WHt ☒ Li

Marine B °

WCL ;

SARA ☒ ::

Anise :

04/11/17

BEYER BLVD

09:50 63°F 0%occ 0-1mph
 13:35 72°F 0%occ 4-7 mph

BUTTERFLIES

Cabbage white IIII IIII IIII II
~~Common blue~~
 Pinyon blue IIII II
 Anise Swallowtail I
 Behr's metalmark IIII
 Sara orangetip IIII IIII IIII IIII IIII
 Funckia duskywing IIII IIII II
~~Common blue~~ western tailed blue
 Marine blue IIII II
 Gray hairstreak IIII I
 Desert orangetip IIII
 Spring white IIII

MOTH

Cynthia moth IIII

04/11/17

Flowering plants

Chrysanthemum FB/PB
 Medicago PB
 Astragalus PB
 Gnaphalium PB
 Acroglab FB/PB
 Eriofasc SB
 Bahi laci FB
 Amisk intc. FB
 Lup. FB
 Dich. cap. FB
 Sani. FB

Nectar plants

Lastical FB
 Lin dia FB

Cryptanthasp. FB, Bloomeria clevelandii
 Crocea

Food plant

Platere FF (North facing slope only)
 Senescent in road

NOTE: Noxious weed: Oncosiphon
 STINKNET piluliferum

Date 4/18/17 Time

Weather 09:25 | 14:15

Location Beyond?

Notes

73	77
5-7	4-8
50%	5%
<hr/>	
1230	77 14.6 20%

- Glebionis * ENO CAL
- Brau Nig Verbena FUN DW LI
- Mor Lett SAC CAL CABBAGE ☒ ☒ ☒ :
- Gen Mel PMA Cic. WT Blue ☒ ☒ : :
- BRO CIC Pygmy B. ☒ :
- Mel IND South B : : :
- Gummosopis Buckeye :
- Am GLA SARA OT ☒ ☒ ☒ : :
- ^{HYP} ~~Am~~ GLA MARINE B : :
- Eri Con Behr PMA ☒
- Eri Fns ACMON :
- Dic Cap WCL :
- Des Fns SPA W : :
- Cryptantho Anise ST : :
- BAW LAC
- Lin Dia
- Pla Fca
- Dev Pusi
- Las Cal
- Pseudo
- Lupin tree
- BLO CRD

Date 4/24/17 Time Weather 1000 1325
 Location Bayers Park 71° 73°
 Notes 75% 60%
 3-6 5-7

Chaparral
 Preen Cow

Em Fr

Crypta Tr

Per Fr

Eric Car

Bra Ny

Bath Lac

Len Mel

Eco Cic

Bladderpod

Acn Mic

Acn Gk

Ana Adv

Pha Cic

Stinknet

Verbena

Sol Col

Amis Mel

WTB I:

MARINE :

CABB W :

ACMON I:

Behr :

FUNDW :

Pygmy I:

~~Gray Hs~~

GRAY HS :

SARAOI I:

DIC CAF :

SPR W :

WEL :

042417

QCB#10

8359

DGS/BAP

9:30 68°F, too cloudy 90%cc 42 miles

not TD, 2-4 mph, g to 6

10:00 71°F ground temp, 3-6 mph
75% cc

Behr's metal mark	###
Western tailed blue	###
functional dusky wing	###
marble blue	
Caldwells white	###
acmon blue	###
pygmy blue	
banded lady	
gray hairstreak	
sulphur	
Sara orange tip	###
anis swallowtail	
west coast lady	

flowering pl:	Sphinx moth	###
acmon glab	bahilaci	###
erio conf.	onc cal	plan pat. (dry)
erio fasc.		

chry (glebionus sp.) 13:25 60% high haze
bras nig 5-7 mph, 73°F

Date 5/1/17 Time _____ Weather 0900 :225
 Location Bayer Park CEB # 720 78
 Notes _____ 5-7 0-8
 _____ 0-6 0-6

Atriplex	Del Par	
Era Fas		ANISE ST ✓ ✓
Glebionis		Pygmy b <input checked="" type="checkbox"/> 1°
Dev Fas		W/ Blue <input checked="" type="checkbox"/>
Gen Mel		✓ SKIP °
(Acm glk)		Marine B :
Commissar/apsis		Cabb ✓ <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> °
Dev P/S		GRAY ITS °°
Mir Inc		ACMON °°
Bah Lac		Behr PM °
Amb p/s		Spr W °
Era ck		Morning Creak ✓
Bra Nig		Sil fur °°
Pha ck		WCL °°
Cryptantha		ANISE ST ✓ ✓
Verbena		Red Admiral °°
ERI con		Sara OT W
Stinknot		Buckeye °
DICAP		FUN DW °
Ana BRV		
Dev con		
Mescrey		

Bright Purple/reddish form

835a

QCB #11

05017
DYS, BAP

0930	74	57	0% cl
1230	78	68	0% cl

western tailed blue			1
marine blue			
pygmy blue			
cabbage white			
gray hairstreak			
funeral duskywing			
behv's metal mark			
orange silpnuv			
mourning cloak			
wise swallowtail			
red admiral			

blooming spp.

En fas

Chrysanthemum

Hirs inca

Bra nig

Bahilac

Delp parv

Dein conq

Ero conf.

pulled stake net out
@ top of hill above
near gate on N-
East side

other spp.

Southern Pacific rat

western fence liz

CAGN - W slope

family coming to
south side

Date 5/12/17 Time Weather 0840 1200
 Location 2359 OCB #12 64° 73°
 Notes 25% 35%
 0-2 8-12 mph

Glebionis
 Dot Wri
 Euc Crc
 Air Inc
 Em Fms
 ATRIPLEX
 Camissoniopsis
 Cen Mel
 Cal Mac
 Des Fes
 Barn Lac
 Cryptantha
 Pha Crc
 Une W
 Buckeye
 Lady
 FUN DOW
 WT B
 CABB W L
 Pygmy B
 Sahr MM ::
 Sulfor :
 Red Admiral ::
 Lady
 Morn Ck
 SRR W ::
 Anise ST ::
 WCL
 Orange Sulfor

11 May 17

QCB #12

8359
Beyer Park

0900 63°F 0-1 mph 10% cc
1200 73°F 8-12 mph, g 16 mph 35% cc

cabbage white IIII IIII IIII IIII IIII IIII IIII
IIII IIII IIII IIII IIII I

Spring white IIII IIII IIII IIII IIII IIII IIII IIII
IIII

pale swallowtail IIII
checkered white IIII
funeral duskywing IIII I
mourning cloak IIII

anise swallowtail IIII IIII IIII II

Carra orange tip I
red admiral IIII

orange sulfur IIII No host plant

prissy blue IIII II obs.

hardtweil ~~hardtweil~~ I
L. sulfur blooming:

acmon blue I bahilaci

west coast lady IIII phac gran

fiery skipper I

11 May 17

LBV #3 (2)

8359

0845 63°F 0-1 mph 10% cc
0900 63°F 0-1 mph 10% cc

WSJA
COHA
HOPI
NOMO
RTHA
ANHA
LEGO
SAPH
BLPH
CATO
RUHU
BEUR
BUSH
RSHA
MODO
OCWA
CACIN
AMCK
SPTD

No LBVI observed.



An Employee-Owned Company

December 22, 2016

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project – **Request for Waiver of 15-day Notification** (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct wet season surveys for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. As multiple substantial (greater than 0.50 inch) rain events have already occurred this season, resulting in ponding within known vernal pool complexes in San Diego County, we are requesting a waiver of the 15-day notification. With your authorization, we propose to conduct the first survey on December 29, 2016.

Although the project site does not include any known vernal pool complexes, during a previous biological survey, two depressions with signs of ponding were observed within the project site. The surveys will focus on these two depressions. However, if other ponded depressions are observed within the project site during the course of the surveys, these depressions may be included. Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Kayo Valenti, Anna Bennett, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); and Erik LaCoste (TE-027736-5). However, personnel conducting these surveys are subject to change based on staff availability. Any changes or adjustments to staff would be reported in the post-survey report. Surveys will be conducted according to the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015).

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: The areas to be surveyed comprise two depressions observed during a biological survey conducted on June 13, 2016 (see Figure 2). The actual survey area will be documented in the post-survey report.

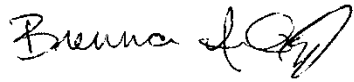
Assessor's Parcel Numbers (APN): The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
December 22, 2016

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenna Ogg", with a stylized flourish at the end.

Brenna Ogg
Senior Biologist
TE-134338-3

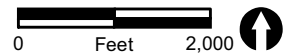
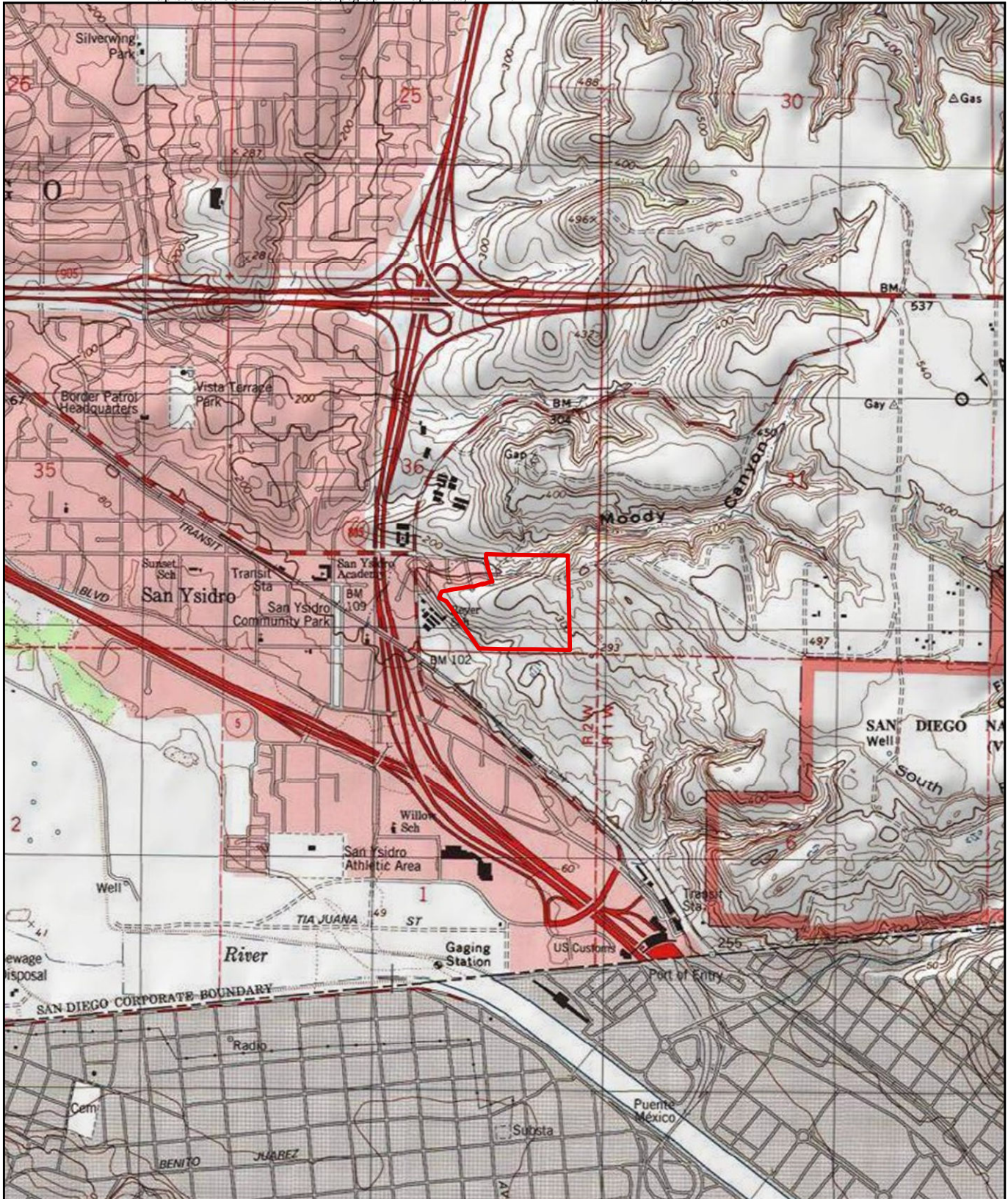
BAO:sh

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

U.S. Fish and Wildlife Service
2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.






 Project Boundary

FIGURE 1

Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on USGS Map



-  Project Boundary
-  Depressions to be Surveyed

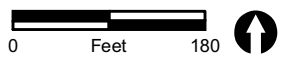


FIGURE 2

Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on Aerial Photograph



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January 17, 2017

Ms. Christine Beck
California Department of Fish and Wildlife
Christine.Beck@wildlife.ca.gov

Reference: Regional Office Notification of Burrowing Owl and Least Bell's Vireo Presence/Absence Surveys for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Beck:

As required by our Scientific Collecting Permits, this letter is to notify the California Department of Fish and Wildlife (CDFW) of our intent to conduct a habitat assessment and breeding season survey for the CDFW species of special concern burrowing owl (*Athene cunicularia*) and presence/absence surveys for the federally and state listed as endangered and CDFW species of special concern least Bell's vireo (*Vireo bellii pusillus*) within the proposed Beyer Park Development Project (Project) site. The Project site is located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figure 1). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures.

Surveys will be conducted according to the California Department of Fish and Wildlife *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) and USFWS *Least Bell's Vireo Survey Guidelines* (USFWS 2001). Brenna Ogg (SC-9997) will serve as the lead biologist/surveyor. Other RECON Environmental, Inc. biologists/surveyors may include Beth Procsal (SC-10557), Erin McKinney (SC-11526), Brian Parker (SC-4448), Wendy Loeffler (SC-6264), Alex Fromer (SC-11525), and Kayo Valenti (SC-11672).

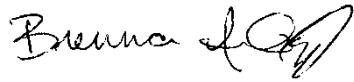
<i>Name of project:</i>	Beyer Park Development Project
<i>Location:</i>	The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).
<i>Survey Area:</i>	The areas to be surveyed comprise suitable habitat within the project site and surrounding 300-foot buffer for least Bell's vireo and surrounding 150-meter (approx. 500-foot) buffer (see Figure 1). The actual survey area will be documented in the post-survey report.

Ms. Christine Beck
Page 2
January 17, 2017

A post-survey report detailing the results of this season's survey will be submitted to the CDFW within 45 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333, extension 118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,



Brenna Ogg
Senior Biologist
SC-9997

BAO:sh

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

- California Department of Fish and Wildlife
2012 Staff Report on Burrowing Owl Mitigation. March 7.
- U.S. Fish and Wildlife Service
2001 Least Bell's Vireo Survey Guidelines. January 19.
- U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



An Employee-Owned Company

January 12, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Coastal California Gnatcatcher Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a presence/absence survey for the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*) within the proposed Beyer Park Development Project (Project) site. The Project site is located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures.

Surveys will be conducted according to the current *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines* (USFWS 1997). Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Beth Procsal, Erin McKinney, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); Erik LaCoste (TE-027736-5); Crysta Dickson (TE-067347-5); Gretchen Cummings (TE-031850-4); Monica Alfaro (TE-051242-2); and Garrett Huffman (TE-20185A-1). As the Project site is within an active Natural Community Conservation Planning area, we propose to conduct three survey visits between February 15 and August 30, 2017. Personnel conducting these surveys and the exact survey schedule are to be determined based on staff availability and weather conditions, but each surveyor will possess a valid USFWS permit. The final schedule and staffing will be reported in the post-survey report.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: Based on preliminary vegetation mapping conducted in June 2016, the areas to be surveyed comprise approximately 62 acres of habitat within the project site and surrounding 300-foot buffer (see Figure 2). The actual survey area will be documented in the post-survey report.

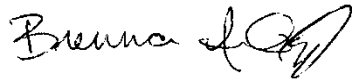
Assessor's Parcel Numbers (APN): The project site comprises APNs 63817018, 63817019, and 63807071. The surrounding 300-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, and 63828017; and the entirety of 66613005 and 66613008.

Ms. Stacey Love
Page 2
January 12, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 45 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333, extension 118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,



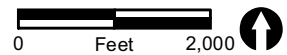
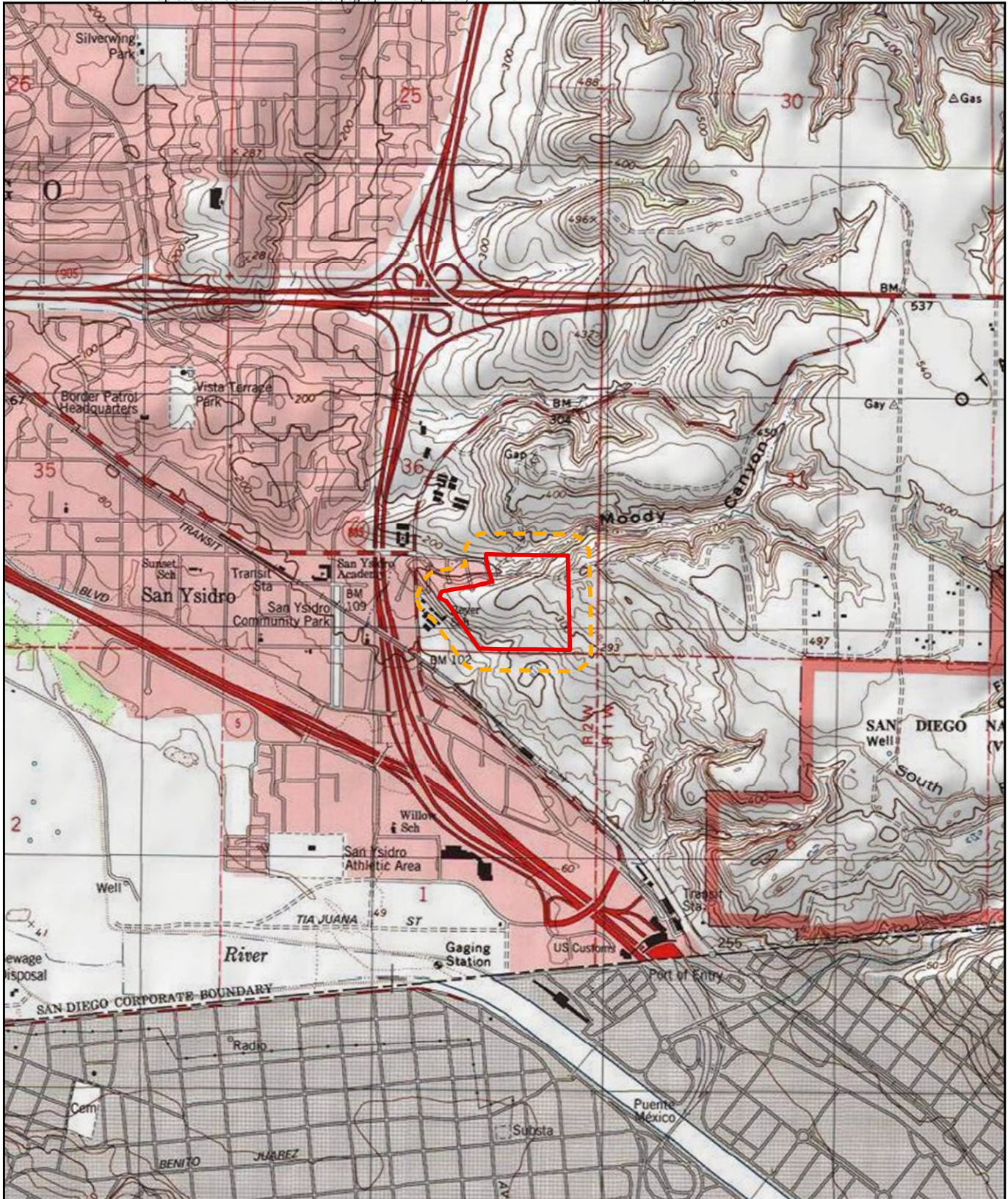
Brenna Ogg
Senior Biologist
TE-134338-3, SC-9997

BAO:jg

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Christine Beck, California Department of Fish and Wildlife

References Cited

- U.S. Fish and Wildlife Service
1997 Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines. February 28.
- U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.







-  Project Boundary
-  Survey Area

FIGURE 1
Beyer Park Development Project
2017 Coastal California Gnatcatcher
Survey Location on USGS Map



 Project Boundary
 Survey Area

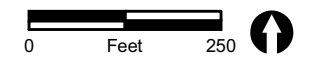


FIGURE 2
 Beyer Park Development Project
 2017 Coastal California Gnatcatcher
 Survey Location on Aerial Photograph



An Employee-Owned Company

December 22, 2016

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project – **Request for Waiver of 15-day Notification** (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct wet season surveys for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. As multiple substantial (greater than 0.50 inch) rain events have already occurred this season, resulting in ponding within known vernal pool complexes in San Diego County, we are requesting a waiver of the 15-day notification. With your authorization, we propose to conduct the first survey on December 29, 2016.

Although the project site does not include any known vernal pool complexes, during a previous biological survey, two depressions with signs of ponding were observed within the project site. The surveys will focus on these two depressions. However, if other ponded depressions are observed within the project site during the course of the surveys, these depressions may be included. Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Kayo Valenti, Anna Bennett, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); and Erik LaCoste (TE-027736-5). However, personnel conducting these surveys are subject to change based on staff availability. Any changes or adjustments to staff would be reported in the post-survey report. Surveys will be conducted according to the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015).

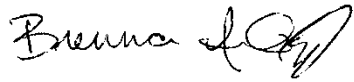
<i>Name of project:</i>	Beyer Park Development Project
<i>Location:</i>	The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).
<i>Survey Area/Acreage:</i>	The areas to be surveyed comprise two depressions observed during a biological survey conducted on June 13, 2016 (see Figure 2). The actual survey area will be documented in the post-survey report.
<i>Assessor's Parcel Numbers (APN):</i>	The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
December 22, 2016

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenna Ogg". The signature is fluid and cursive, with a large, stylized initial "B" and "O".

Brenna Ogg
Senior Biologist
TE-134338-3

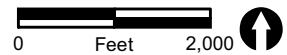
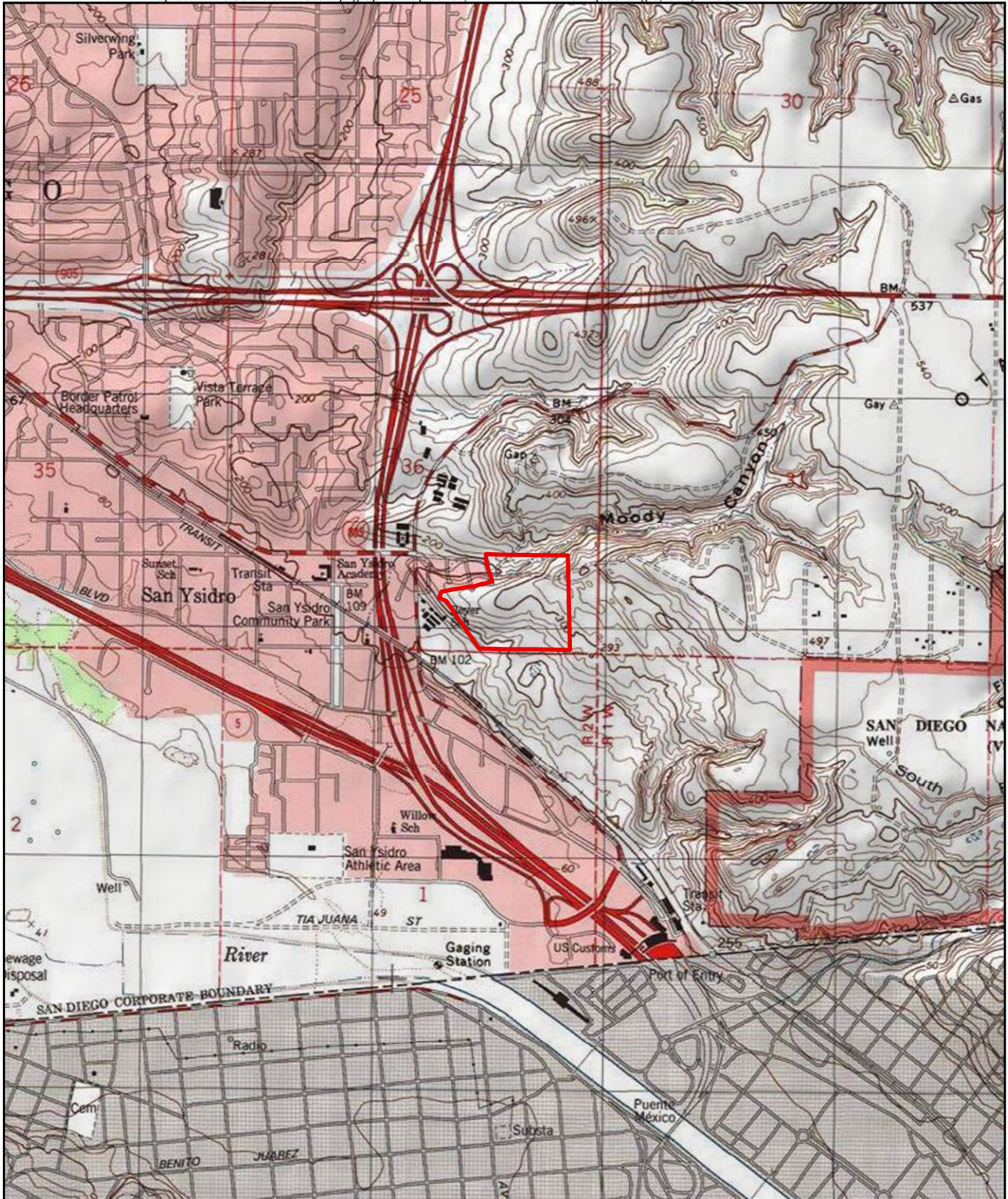
BAO:sh

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

U.S. Fish and Wildlife Service
2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.






 Project Boundary

FIGURE 1

Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on USGS Map



-  Project Boundary
-  Depressions to be Surveyed

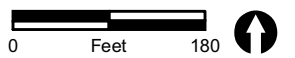


FIGURE 2
Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on Aerial Photograph



An Employee-Owned Company

January 12, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Quino Checkerspot Butterfly Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a presence/absence survey for the federally listed as endangered Quino checkerspot butterfly (*Euphydryas editha quino*) within the proposed Beyer Park Development Project (project) site. The project site is located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures.

The site assessment and surveys will be conducted according to current *Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014). Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Brian Parker, Alex Fromer, Anna Leavitt, Erin McKinney, Jeannine Ross, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); Erik LaCoste (TE-027736-5); Crysta Dickson (TE-067347-5); Gretchen Cummings (TE-031850-4); Monica Alfaro (TE-051242-2); and Garrett Huffman (TE-20185A-1). We propose to conduct the habitat assessment during the week of February 6, 2017, and to begin weekly surveys during the week of February 13, 2017. Personnel conducting these surveys and the survey schedule are subject to change based on staff availability and weather conditions, but all surveyors will possess valid permits. Any changes or adjustments to staff would be reported in the post-survey report.

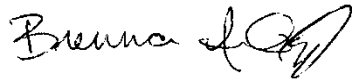
- Name of project:* Beyer Park Development Project
- Location:* The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).
- Survey Area/Acreage:* Based on preliminary vegetation mapping conducted in June 2016, the areas to be surveyed comprise approximately 55 acres of habitat within the project site and surrounding 100-foot buffer (see Figure 2). The actual survey area will be documented in the post-survey report.
- Assessor's Parcel Numbers (APN):* The project site comprises APNs 63817018, 63817019, and 63807071. The surrounding 100-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, 63828017, and 66613008; and the entirety of 66613005.

Ms. Stacey Love
Page 2
January 12, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 45 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333, extension 118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,



Brenna Ogg
Senior Biologist
TE-134338-3, SC-9997

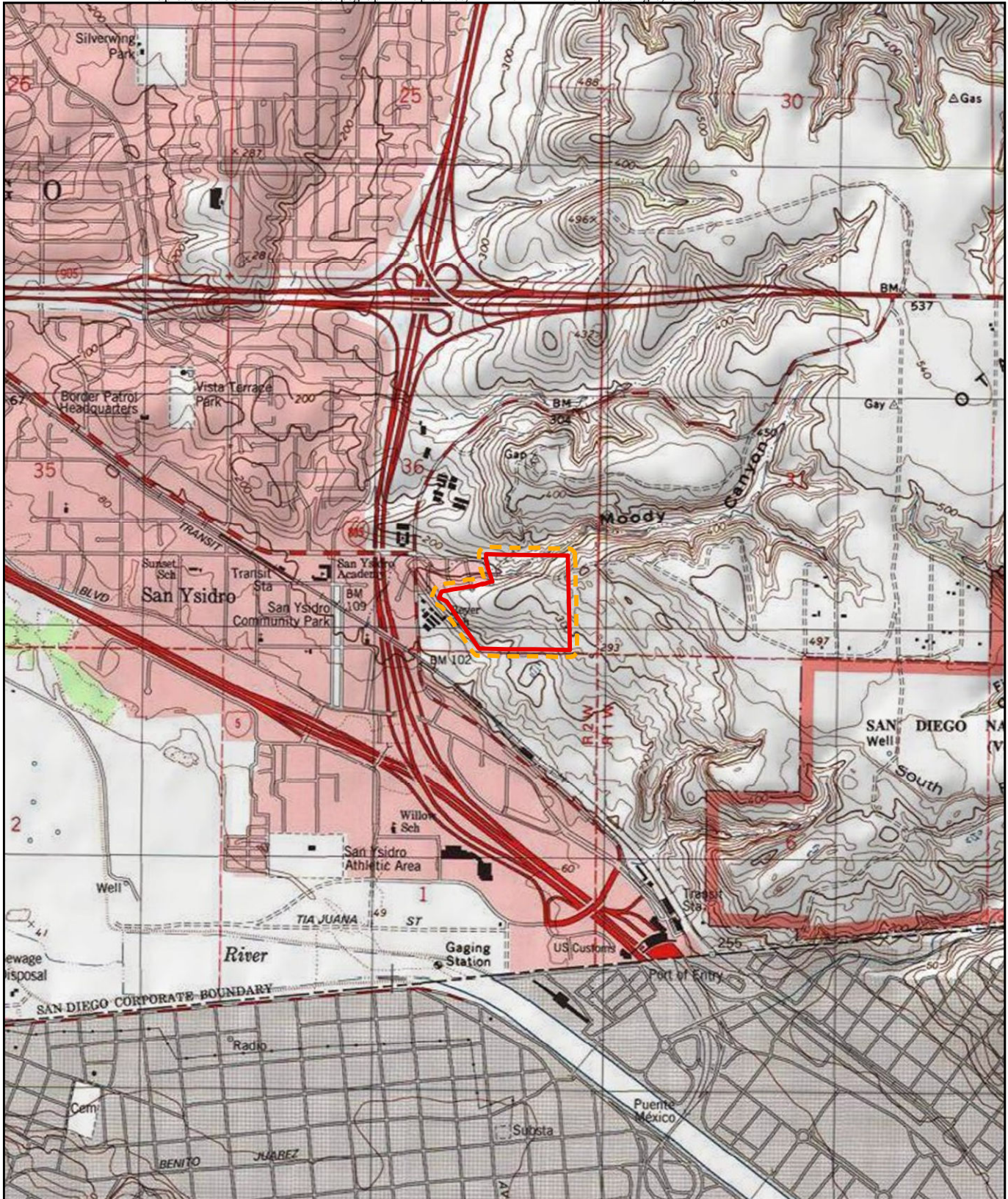
BAO:jg



cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

U.S. Fish and Wildlife Service
2014 Quino Checkerspot Butterfly Survey Guidelines. December 15.

U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



-  Project Boundary
-  Survey Area

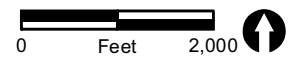


FIGURE 1
Beyer Park Development Project
2017 Quino Checkerspot Butterfly
Survey Location on USGS Map



Project Boundary
Survey Area

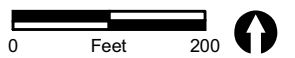


FIGURE 2
Beyer Park Development Project
2017 Quino Checkerspot Butterfly
Survey Location on Aerial Photograph



An Employee-Owned Company

October 25, 2017

Ms. Stacey Love
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Dry Season Fairy Shrimp Survey for the Beyer Park Development Project in the City of San Diego, California (RECON Number 8359)

Dear Ms. Love:

This letter is to provide you with the results of the dry season survey for fairy shrimp conducted in 2017 in 16 depressions located within the Beyer Park Development Project parcels (Assessor's Parcel Numbers 63817018, 63817019, and 63807071). The survey area is located in the communities of San Ysidro and Otay Mesa, in undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego, California (Figure 1). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Background

U.S. Fish and Wildlife Service (USFWS) protocol wet season surveys for listed vernal pool branchiopod species, including federally endangered San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*), were conducted during the 2016–2017 wet season for a total of 17 ponded depressions that were observed within the 44-acre project boundary shown on Figure 2. Detailed methods and results of the wet season surveys can be found in the Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project (RECON 2017). In summary, survey methods were conducted in accordance with the USFWS *Survey Guidelines for the Listed Large Branchiopods* (USFWS 2015). During the course of the 2016–2017 wet season protocol surveys, one federally endangered vernal pool branchiopod species—San Diego fairy shrimp—was observed in one of the 17 ponded depressions within the project boundary. No other aquatic wildlife species were observed in any of the ponded depressions. As the presence of San Diego fairy shrimp was confirmed in ponded depression 1 during wet season surveys and Riverside fairy shrimp is not expected to occur due to insufficient duration of ponding, USFWS approved exclusion of ponded depression 1 from dry season sampling (Attachment 1).

Existing Conditions

The Beyer Park Development Project is located on undeveloped City park land, southeast of the eastern terminus of Beyer Boulevard. The project is located on the western end of the Otay Mesa terrace. The northern and eastern portions of the project site are largely characterized by steep north-, south-, and west-facing slopes, with Moody Canyon running east–west through the northern part of the project site. The southern and western portions transition into multiple terraces with a steep manufactured slope along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation occurring within the immediate vicinity of the surveyed depressions consists of disturbed Diegan coastal sage scrub and disturbed land, with depressions 2 through 12 and 15 through 17 occurring within tire tracks. Depression 1 is an artificial ditch within disturbed Diegan coastal sage scrub, which occurs between an old dirt road bed and the top of a manufactured slope. Depressions 13 and 14 occur within

disturbed land and a pedestrian path. Scattered plant species occurring in and/or immediately adjacent to the depressions include broom baccharis (*Baccharis sarothroides*), curly dock (*Rumex crispus*), and San Diego bur-sage (*Ambrosia chenopodiifolia*). See Figure 2 for locations of the surveyed depressions, each of which ponded during the 2016–2017 wet season. Photographs of the depressions can be found in the Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project (RECON 2017).

Methods

Soil samples for the dry season survey were collected by RECON biologist Kayo Valenti (TE-797665-9) on August 7, 2017, with the assistance of RECON biologists Andrew Smisek, J.R. Sundberg, and Mandy Weston, each under supervision. The survey was conducted between 8:45 a.m. and 10:30 a.m., with air temperatures between 70 and 74 degrees Fahrenheit, 0- to 4-mile-per-hour winds, and 100 clearing to 20 percent cloud cover. The 16 depressions were sampled in accordance with the current USFWS *Survey Guidelines for the Large Listed Branchiopods* (USFWS 2015). As mentioned above, depression 1 was excluded from the dry season survey (see Attachment 1). The approximate size of each depression sampled, number of samples collected per depression, and total approximate volume of soil collected per depression is presented in Table 1. Equipment used during sampling was disinfected between depression complexes or isolated depressions. No more than 10 percent of the sampled feature’s surface area was disturbed. Therefore, at depressions that were 2.1 square meters in size or smaller, only one sample was collected from the deepest spot of the depression. At depressions that included multiple sample collections, the sampled locations were scattered to achieve a variety of locations within the depression, and included at least one sample from the deepest spot.

Depression Number	Depression Size (Square Meters)	Number of Samples Collected	Total Approximate Volume Collected (Milliliters)
2	1	1*	50
3	7.9	10	1000
4	8.5	10	1000
5	3.2	4	400
6	3.7	5	500
7	2.1	1*	50
8	1.1	1*	50
9	1.8	1*	50
10	3.4	4	400
11	0.9	1*	50
12	<0.9	1*	50
13	2.1	1*	50
14	<2.1	1*	50
15	5	7	700
16	21.3	10	1000
17	59.5	25	<2,500
*Where only 1 sample was required, collection was made in the deepest spot of the depression.			

Soil samples were shipped to ECORP Consulting, Inc. (ECORP; permit number TE-012973-11) for analysis. The methods used for processing and analyzing the samples are summarized in the attached memorandum dated October 10, 2017 (Attachment 2).

Ms. Stacey Love
Page 3
October 25, 2017

Results

No eggs of large branchiopod species were found in any of the 16 sampled depressions (i.e., depressions 2 through 17). The only invertebrate taxa observed in the soil samples included flatworms (*Turbellaria* sp.), water mites (*Hydracarina* sp.), roundworms (*Nematoda* sp.), and springtails (*Collembola* sp.). The memorandum from ECORP detailing these results is included as Attachment 2.

I certify that the information in this survey report and attached exhibits fully and accurately represents my work. If you have any questions, please contact me at 619-308-9333 ext. 112.

Sincerely,



Kayo Valenti
Biologist
USFWS Permit TE-797665-9

Attachments

cc: Darren Genova, City of San Diego
Juan Baligad, City of San Diego
Carly Gagen-Cheaney, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

References Cited

RECON Environmental, Inc. (RECON)

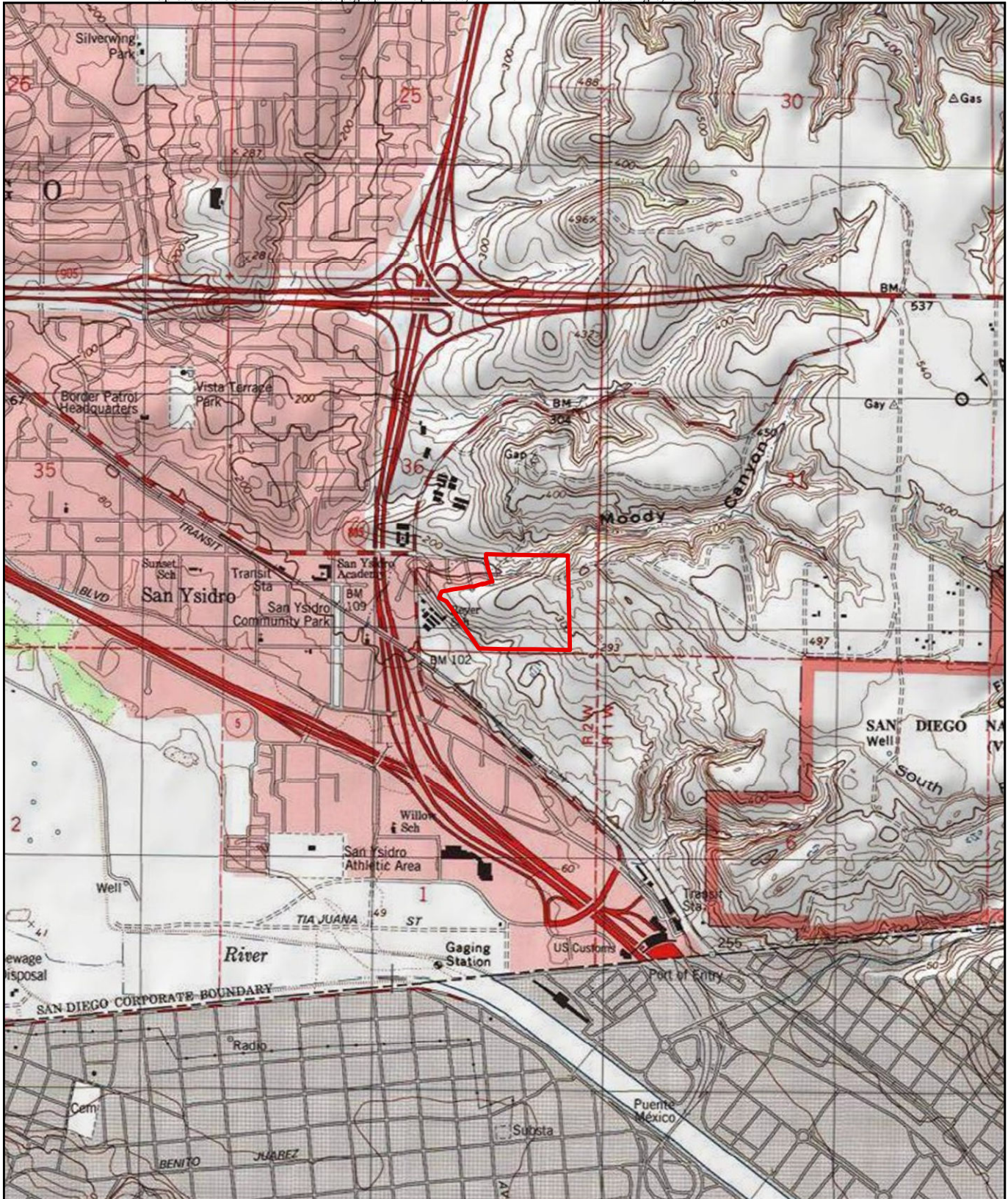
2017 Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project. June 7.

U.S. Fish and Wildlife Service (USFWS)

2015 Survey Guidelines for the Listed Large Branchiopods. May 31.

U.S. Geological Survey (USGS)

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Boundary

FIGURE 1

Project Location on USGS Map



- Project Boundary
- Ponded Depressions

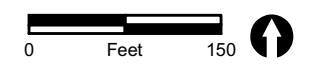


FIGURE 2
Location of Ponded Depressions

ATTACHMENTS

ATTACHMENT 1



An Employee-Owned Company

July 17, 2017

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a dry season survey for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. With your authorization, we propose to conduct the survey on August 7, 2017.

Although the project site does not include any previously known vernal pool complexes, a total of 17 ponded depressions were observed and surveyed for fairy shrimp within the project boundary during the 2016–2017 wet season (RECON 2017). One federally endangered vernal pool branchiopod species—San Diego fairy shrimp—was observed during the 2016–2017 wet season surveys within ponded depression 1 (see Figure 2). During the 2016–2017 wet season, the longest continuous inundation period observed for ponded depression 1 was approximately 14 days, which was not long enough to allow for detection of Riverside fairy shrimp, if present. As the total rainfall recorded during the 2016–2017 wet season was above average in the vicinity of the project site and throughout San Diego County, the inundation periods observed in 2016–2017 are likely to represent longer durations than are typically experienced on site. As the observed ponding in an above-average rainfall year was not sufficient to support Riverside fairy shrimp, it is unlikely that this ponded depression provides a favorable environment for this species. As the presence of San Diego Fairy shrimp has been confirmed in ponded depression 1 during wet season surveys and Riverside fairy shrimp is not expected to occur, we propose that ponded depression 1 be excluded from dry season sampling. The remaining 16 ponded depressions will be sampled in accordance with the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015). The dry season survey will be conducted by Kayo Valenti (TE-797665-9). Other biologists under supervision may include Andrew Smisek and Mandy Weston.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: The areas to be surveyed comprise 16 depressions (ponded depression 2 through 17) observed during wet season fairy shrimp surveys (RECON 2017; see Figure 2).

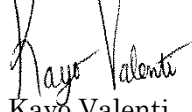
Assessor's Parcel Numbers (APN): The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
July 17, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days after completion of the analysis of dry season soil samples.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x112, or by e-mail at kvalenti@reconenvironmental.com.

Sincerely,



Kayo Valenti
Biologist
TE-797665-9

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

References Cited

RECON Environmental, Inc. (RECON)

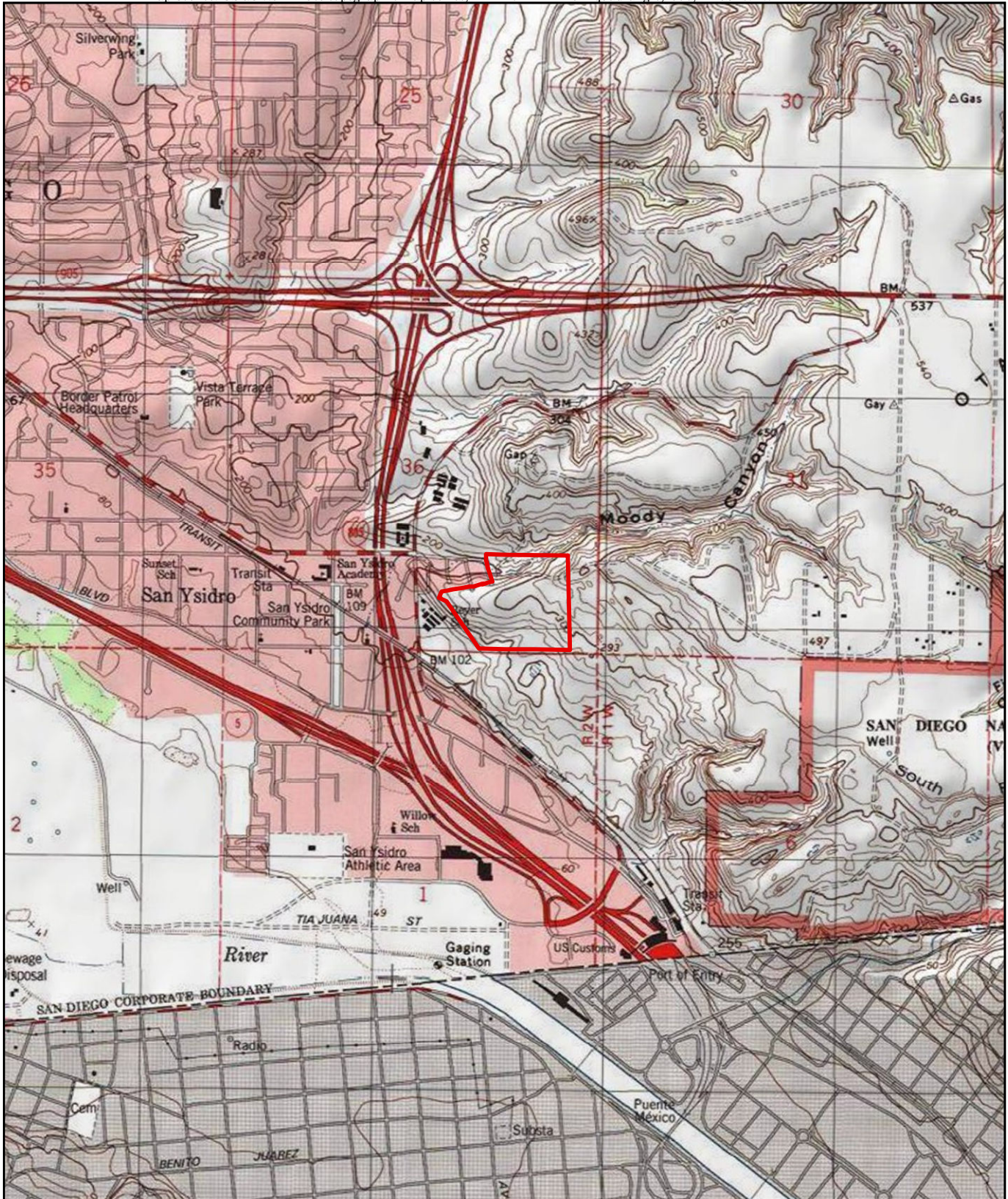
2017 Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project. June 7.

U.S. Fish and Wildlife Service

2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Boundary

FIGURE 1

Project Location on USGS Map



- Project Boundary
- Ponded Depressions



FIGURE 2
Location of Ponded Depressions

Brenna Ogg

From: Jennifer Gutierrez
Sent: Tuesday, July 18, 2017 8:02 AM
To: Kayo Valenti; Brenna Ogg
Subject: FW: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Please see below.

From: Gower, Patrick [mailto:patrick_gower@fws.gov]
Sent: Tuesday, July 18, 2017 8:01 AM
To: Jennifer Gutierrez
Cc: Zoutendyk, David; Stacey Love
Subject: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Thank you for the notification. Please consider this email our approval for you to commence dry season surveys for listed large branchiopods at this location using proposed methods described in the notification.

Please send your survey report (hard copy at minimum) to Stacey Love.

Patrick Gower

Fish and Wildlife Biologist
Carlsbad Fish and Wildlife Office
(760) 431-9440 ext 352

ATTACHMENT 2

MEMORANDUM

TO: Ms. Brenna Ogg, Senior Biologist, RECON Environmental, Inc.

FROM: Mr. Peter Balfour, Vice President, ECORP Consulting, Inc.

DATE: October 10, 2017

RE: Beyer Park; San Diego, California - Dry Season Survey Analysis Results- Report (2017)

At the request of RECON Environmental, Inc. (RECON), ECORP Consulting, Inc. analyzed soil samples as part of an assessment-level dry season survey for federally-listed large branchiopod species at the Beyer Park Development Project, located in San Diego, California. RECON and ECORP received authorization to collect dry season soil samples via emails from the U.S. Fish and Wildlife Service (USFWS) dated July 18, 2017 (RECON Number 8359) and September 5, 2017 (Attachment A). The purpose of the investigation was to determine the presence of eggs of large branchiopod species (fairy shrimp) listed as threatened or endangered under the federal Endangered Species Act (ESA) (e.g., San Diego fairy shrimp [*Branchinecta sandiegoensis*] and Riverside fairy shrimp [*Streptocephalus woottoni*]). The soils were collected and analyzed under the authority of USFWS Recovery Permit No. TE-797665-9 (Kayo Valenti) and TE-012973-11 (ECORP), respectively.

METHODS

Soil samples were processed following methods outlined in the Guidelines (USFWS 2015). In ECORP's laboratory, a brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The soil material collected from each aquatic feature was placed into the brine solution, and worked by hand to break down soil structure. The organic material rising to the top of the brine solution was poured onto either a 710- or 600-micron-diameter pore-size sieve stacked atop a 150-micron-diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The organic material retained from the 150-micron-diameter pore-size sieve was then rinsed gently with lukewarm tap water, and then removed and thinly distributed into plastic petri dishes.

Under the supervision of permitted biologist Peter Balfour, all sieved fractions were microscopically inspected for the presence of large branchiopod eggs. Evidence of other aquatic invertebrates encountered was also noted on the lab data sheet.

RESULTS

ECORP processed soil samples from a total of 16 aquatic features. No large branchiopods eggs were found. Other invertebrate taxa observed in the soil samples included micro-Turbellaria, Hydracarina, Nematoda, and Collembola. A data sheet is attached as Attachment B.

If you have any questions, please let me know. Thank you.

"We certify that the information in this survey report and attached exhibits fully and accurately represents our work."



10 October 2017

Peter Balfour

Date



10 October 2017

Daniel Wong

Date

REFERENCES

U.S. Fish and Wildlife Service (USFWS). 2015. Survey guidelines for the listed large branchiopods. 24 pp. Dated: 31 May 2015.

LIST OF ATTACHMENTS

Attachment A – U.S. Fish and Wildlife Service Authorization

Attachment B – Dry Season Data Sheet

ATTACHMENT A

U.S. Fish and Wildlife Service Authorization

Laura Hesse

From: Peter Balfour
Sent: Wednesday, September 20, 2017 10:07 AM
To: Daniel Wong
Subject: FW: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Follow Up Flag: Follow up
Flag Status: Flagged

Peter Balfour

Vice President



Ph: 916-782-9100 ♦ Fax: 916-782-9134

From: Love, Stacey [mailto:stacey_love@fws.gov]
Sent: Tuesday, September 05, 2017 10:40 AM
To: Brenna Ogg
Cc: patrick_gower@fws.gov; david_zoutendyk@fws.gov; Kayo Valenti; Peter Balfour
Subject: Re: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Hi Brenna,

Thank you. I have confirmed that ECORP is authorized to conduct these activities and consider this to be their notification. To clarify regarding our approval, we only require it for the sampling in the field.

Regards,
Stacey

On Tue, Sep 5, 2017 at 9:55 AM, Brenna Ogg <bogg@reconenvironmental.com> wrote:

Good morning,

We are just following up on our dry season collections for Beyer Park. We have transferred the samples to ECORP (permit number TE O12973-11) for lab analysis. Samples will be returned to us when the lab analysis is complete.

Please confirm receipt of this email and authorization to proceed.

Thank you,

Brenna A. Ogg

Senior Biologist
RECON Environmental, Inc.

1927 Fifth Avenue, San Diego, CA 92101
P 619-308-9333 ext. 118
F 619-308-9334

C 619-301-7137

From: Jennifer Gutierrez
Sent: Tuesday, July 18, 2017 8:02 AM
To: Kayo Valenti; Brenna Ogg
Subject: FW: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Please see below.

From: Gower, Patrick [mailto:patrick_gower@fws.gov]
Sent: Tuesday, July 18, 2017 8:01 AM
To: Jennifer Gutierrez
Cc: Zoutendyk, David; Stacey Love
Subject: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Thank you for the notification. Please consider this email our approval for you to commence dry season surveys for listed large branchiopods at this location using proposed methods described in the notification.

Please send your survey report (hard copy at minimum) to Stacey Love.

Patrick Gower

Fish and Wildlife Biologist

Carlsbad Fish and Wildlife Office

(760) 431-9440 ext 352

--

Stacey Love

Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
(incl. Palm Springs suboffice)

U.S. Fish and Wildlife Service

2177 Salk Avenue, Ste. 250

Carlsbad, CA 92008

(760) 431-9440 x 263

stacey_love@fws.gov

[CFWO Recovery Permits web page](#)

Permittees: Please include your permit number in all correspondence and reporting, thank you.

ATTACHMENT B

Dry Season Data Sheet

Vernal Pool Branchiopod Dry Season Data Sheet

Project Name: Bayes Park

Permitted Biologist: Peter Balfour

Project Number:

Pool No.	Sample Processing Personnel	Date Collected	Date Viewed	Insect Exo-Skeletons	Micro-Turbellaria Live/Cysts	Cladocera Ephyppia	Ostracods Live/Carapaces	Copepods Live	Large Branchiopod Eggs				Hydracarina Live	Nematoda	Collembola
									<i>Branchinecta</i> sp.	<i>Lepidurus packardii</i>	<i>Linderiella occidentalis</i>	<i>Eulimnadia diversa</i>			
Pool-2	Wong	8/7/2017	9/21/17	X											X
Pool-3				X											X
Pool-4				X											X
Pool-5				X											X
Pool-6				X											X
Pool-7				X											X
Pool-8				X											X
Pool-9				X											X
Pool-10				X											X
Pool-11				X											X
Pool-12				X											X
Pool-13				X											X
Pool-14				X	X										X
Pool-15				X									X		X
Pool-16				X									X		X
Pool-17				X									X		X

Note: Large branchiopod egg abundance denoted as follows: L = low abundance, estimate of 1-10 eggs/sampled feature; M = medium abundance, estimate of 11-50 eggs/sampled feature; H = high abundance, estimate of more than 50 eggs/sampled feature.



An Employee-Owned Company

January 12, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Coastal California Gnatcatcher Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a presence/absence survey for the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*) within the proposed Beyer Park Development Project (Project) site. The Project site is located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures.

Surveys will be conducted according to the current *Coastal California Gnatcatcher (Polioptila californica californica) Presence/Absence Survey Guidelines* (USFWS 1997). Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Beth Procsal, Erin McKinney, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); Erik LaCoste (TE-027736-5); Crysta Dickson (TE-067347-5); Gretchen Cummings (TE-031850-4); Monica Alfaro (TE-051242-2); and Garrett Huffman (TE-20185A-1). As the Project site is within an active Natural Community Conservation Planning area, we propose to conduct three survey visits between February 15 and August 30, 2017. Personnel conducting these surveys and the exact survey schedule are to be determined based on staff availability and weather conditions, but each surveyor will possess a valid USFWS permit. The final schedule and staffing will be reported in the post-survey report.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: Based on preliminary vegetation mapping conducted in June 2016, the areas to be surveyed comprise approximately 62 acres of habitat within the project site and surrounding 300-foot buffer (see Figure 2). The actual survey area will be documented in the post-survey report.

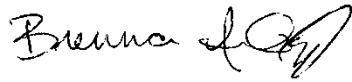
Assessor's Parcel Numbers (APN): The project site comprises APNs 63817018, 63817019, and 63807071. The surrounding 300-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, and 63828017; and the entirety of 66613005 and 66613008.

Ms. Stacey Love
Page 2
January 12, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 45 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333, extension 118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,



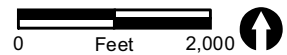
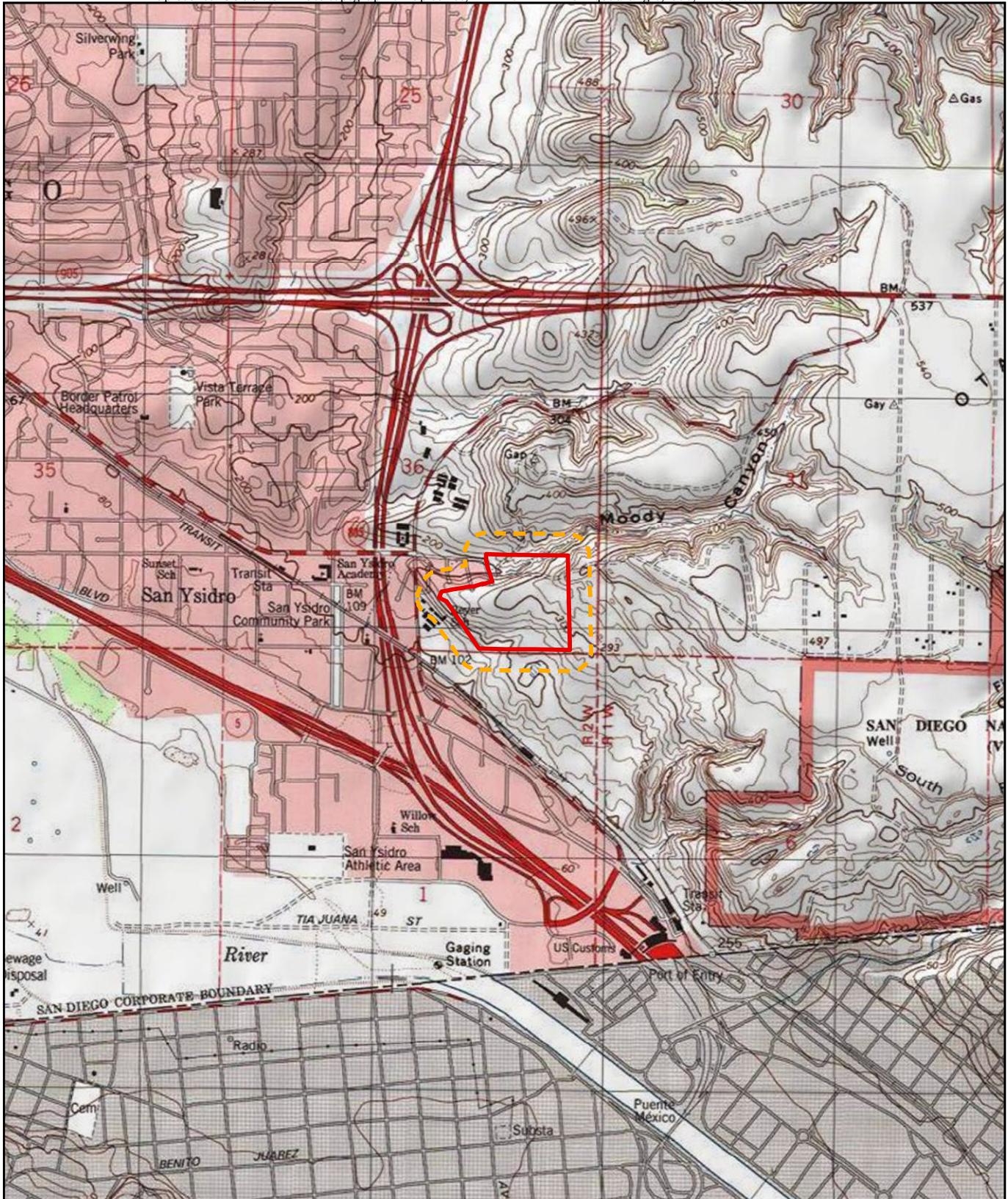
Brenna Ogg
Senior Biologist
TE-134338-3, SC-9997

BAO:jg

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Christine Beck, California Department of Fish and Wildlife

References Cited

- U.S. Fish and Wildlife Service
1997 Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines. February 28.
- U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.





-  Project Boundary
-  Survey Area

FIGURE 1
Beyer Park Development Project
2017 Coastal California Gnatcatcher
Survey Location on USGS Map



Project Boundary
Survey Area



FIGURE 2

Beyer Park Development Project
2017 Coastal California Gnatcatcher
Survey Location on Aerial Photograph



An Employee-Owned Company

July 17, 2017

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-survey Notification of Dry Season Fairy Shrimp Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a dry season survey for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. With your authorization, we propose to conduct the survey on August 7, 2017.

Although the project site does not include any previously known vernal pool complexes, a total of 17 ponded depressions were observed and surveyed for fairy shrimp within the project boundary during the 2016–2017 wet season (RECON 2017). One federally endangered vernal pool branchiopod species—San Diego fairy shrimp—was observed during the 2016–2017 wet season surveys within ponded depression 1 (see Figure 2). During the 2016–2017 wet season, the longest continuous inundation period observed for ponded depression 1 was approximately 14 days, which was not long enough to allow for detection of Riverside fairy shrimp, if present. As the total rainfall recorded during the 2016–2017 wet season was above average in the vicinity of the project site and throughout San Diego County, the inundation periods observed in 2016–2017 are likely to represent longer durations than are typically experienced on site. As the observed ponding in an above-average rainfall year was not sufficient to support Riverside fairy shrimp, it is unlikely that this ponded depression provides a favorable environment for this species. As the presence of San Diego Fairy shrimp has been confirmed in ponded depression 1 during wet season surveys and Riverside fairy shrimp is not expected to occur, we propose that ponded depression 1 be excluded from dry season sampling. The remaining 16 ponded depressions will be sampled in accordance with the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015). The dry season survey will be conducted by Kayo Valenti (TE-797665-9). Other biologists under supervision may include Andrew Smisek and Mandy Weston.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: The areas to be surveyed comprise 16 depressions (ponded depression 2 through 17) observed during wet season fairy shrimp surveys (RECON 2017; see Figure 2).

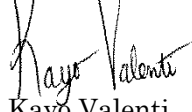
Assessor's Parcel Numbers (APN): The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
July 17, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days after completion of the analysis of dry season soil samples.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x112, or by e-mail at kvalenti@reconenvironmental.com.

Sincerely,



Kayo Valenti
Biologist
TE-797665-9

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego
Justin Garcia, California Department of Fish and Wildlife

References Cited

RECON Environmental, Inc. (RECON)

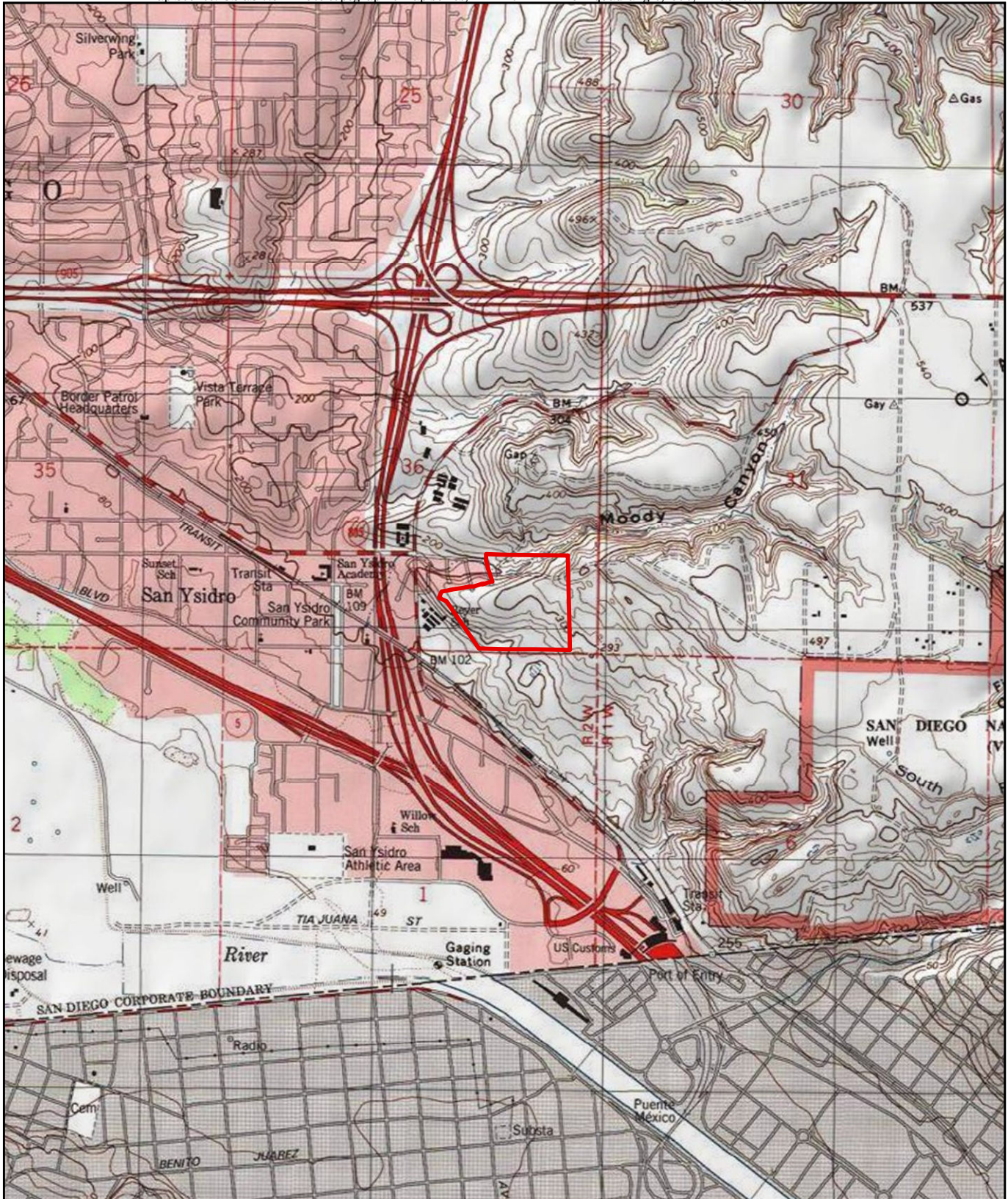
2017 Post-survey Report for 2016–2017 Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project. June 7.

U.S. Fish and Wildlife Service

2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey

1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



 Project Boundary

FIGURE 1

Project Location on USGS Map





-  Project Boundary
-  Ponded Depressions



FIGURE 2
Location of Ponded Depressions



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January 12, 2017

Ms. Stacey Love
Recovery Permit Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Quino Checkerspot Butterfly Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct a presence/absence survey for the federally listed as endangered Quino checkerspot butterfly (*Euphydryas editha quino*) within the proposed Beyer Park Development Project (project) site. The project site is located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures.

The site assessment and surveys will be conducted according to current *Quino Checkerspot Butterfly Survey Guidelines* (USFWS 2014). Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Brian Parker, Alex Fromer, Anna Leavitt, Erin McKinney, Jeannine Ross, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); Erik LaCoste (TE-027736-5); Crysta Dickson (TE-067347-5); Gretchen Cummings (TE-031850-4); Monica Alfaro (TE-051242-2); and Garrett Huffman (TE-20185A-1). We propose to conduct the habitat assessment during the week of February 6, 2017, and to begin weekly surveys during the week of February 13, 2017. Personnel conducting these surveys and the survey schedule are subject to change based on staff availability and weather conditions, but all surveyors will possess valid permits. Any changes or adjustments to staff would be reported in the post-survey report.

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: Based on preliminary vegetation mapping conducted in June 2016, the areas to be surveyed comprise approximately 55 acres of habitat within the project site and surrounding 100-foot buffer (see Figure 2). The actual survey area will be documented in the post-survey report.

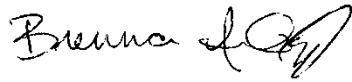
Assessor's Parcel Numbers (APN): The project site comprises APNs 63817018, 63817019, and 63807071. The surrounding 100-foot buffer (excluding developed areas) includes portions of APNs 63807068, 63807074, 66613009, 66613006, 66613004, 66613028, 63817014, 63828017, and 66613008; and the entirety of 66613005.

Ms. Stacey Love
Page 2
January 12, 2017

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 45 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333, extension 118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenna Ogg", with a stylized flourish at the end.

Brenna Ogg
Senior Biologist
TE-134338-3, SC-9997

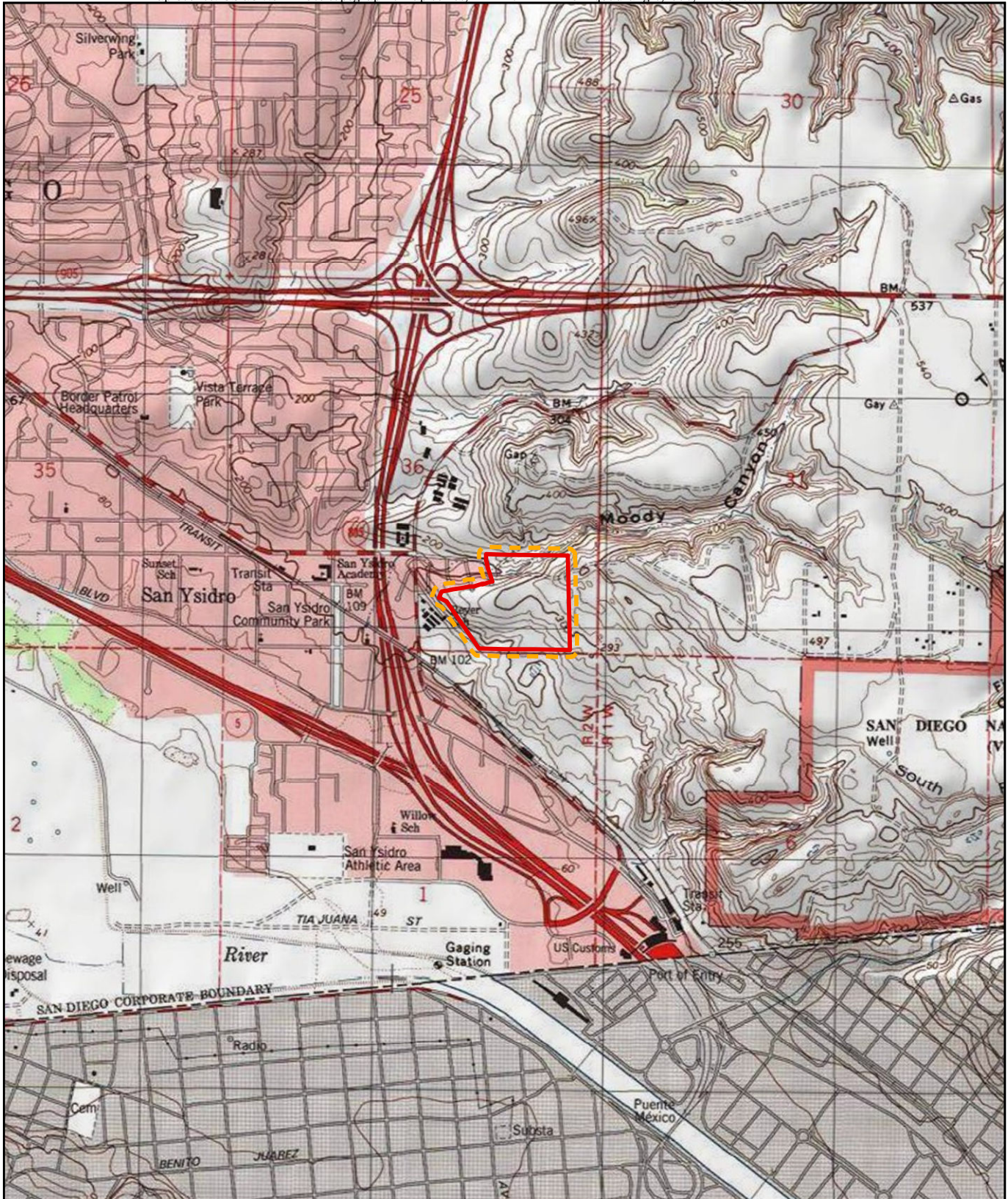
BAO:jg



cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

U.S. Fish and Wildlife Service
2014 Quino Checkerspot Butterfly Survey Guidelines. December 15.

U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.



-  Project Boundary
-  Survey Area

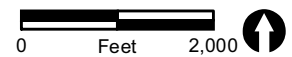


FIGURE 1
Beyer Park Development Project
2017 Quino Checkerspot Butterfly
Survey Location on USGS Map



Project Boundary
Survey Area

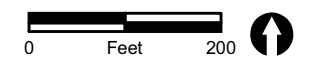


FIGURE 2
Beyer Park Development Project
2017 Quino Checkerspot Butterfly
Survey Location on Aerial Photograph



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December 22, 2016

Ms. Stacey Love
Recovery Permits Coordinator
Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Pre-Survey Notification of Wet Season Fairy Shrimp Surveys for the Beyer Park Development Project – **Request for Waiver of 15-day Notification** (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of our intent to conduct wet season surveys for sensitive vernal pool branchiopods, including San Diego fairy shrimp (*Branchinecta sandiegonensis*) and Riverside fairy shrimp (*Streptocephalus woottonii*). Surveys will be conducted within the proposed Beyer Park Development Project site, located in the communities of San Ysidro and Otay Mesa in the city of San Diego, California (Figures 1 and 2). Survey results will be used to assess potential project impacts and identify appropriate avoidance, minimization, and/or mitigation measures. As multiple substantial (greater than 0.50 inch) rain events have already occurred this season, resulting in ponding within known vernal pool complexes in San Diego County, we are requesting a waiver of the 15-day notification. With your authorization, we propose to conduct the first survey on December 29, 2016.

Although the project site does not include any known vernal pool complexes, during a previous biological survey, two depressions with signs of ponding were observed within the project site. The surveys will focus on these two depressions. However, if other ponded depressions are observed within the project site during the course of the surveys, these depressions may be included. Brenna Ogg (TE-134338-3) will serve as the lead biologist/surveyor. Other surveyors may include Kayo Valenti, Anna Bennett, and Wendy Loeffler (TE-797665-9); Darin Busby (TE-115393-3); Melissa Busby (TE-080779-2); and Erik LaCoste (TE-027736-5). However, personnel conducting these surveys are subject to change based on staff availability. Any changes or adjustments to staff would be reported in the post-survey report. Surveys will be conducted according to the current USFWS Survey Guidelines for the Large Listed Branchiopods (USFWS 2015).

Name of project: Beyer Park Development Project

Location: The 44-acre project site is located on undeveloped City of San Diego park land, southeast of the eastern terminus of Beyer Boulevard in the city of San Diego. The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 1; U.S. Geological Survey 1996).

Survey Area/Acreage: The areas to be surveyed comprise two depressions observed during a biological survey conducted on June 13, 2016 (see Figure 2). The actual survey area will be documented in the post-survey report.

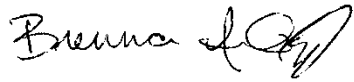
Assessor's Parcel Numbers (APN): The survey area comprises APNs 63817018, 63817019, and 63807071.

Ms. Stacey Love
Page 2
December 22, 2016

A post-survey report detailing the results of this season's survey will be submitted to the USFWS within 90 days of survey completion.

If you have any questions concerning the contents of this pre-survey notification letter, please contact me at (619) 308-9333 x118, or by e-mail at bogg@reconenvironmental.com.

Sincerely,

A handwritten signature in black ink, appearing to read "Brenna Ogg", with a stylized flourish at the end.

Brenna Ogg
Senior Biologist
TE-134338-3

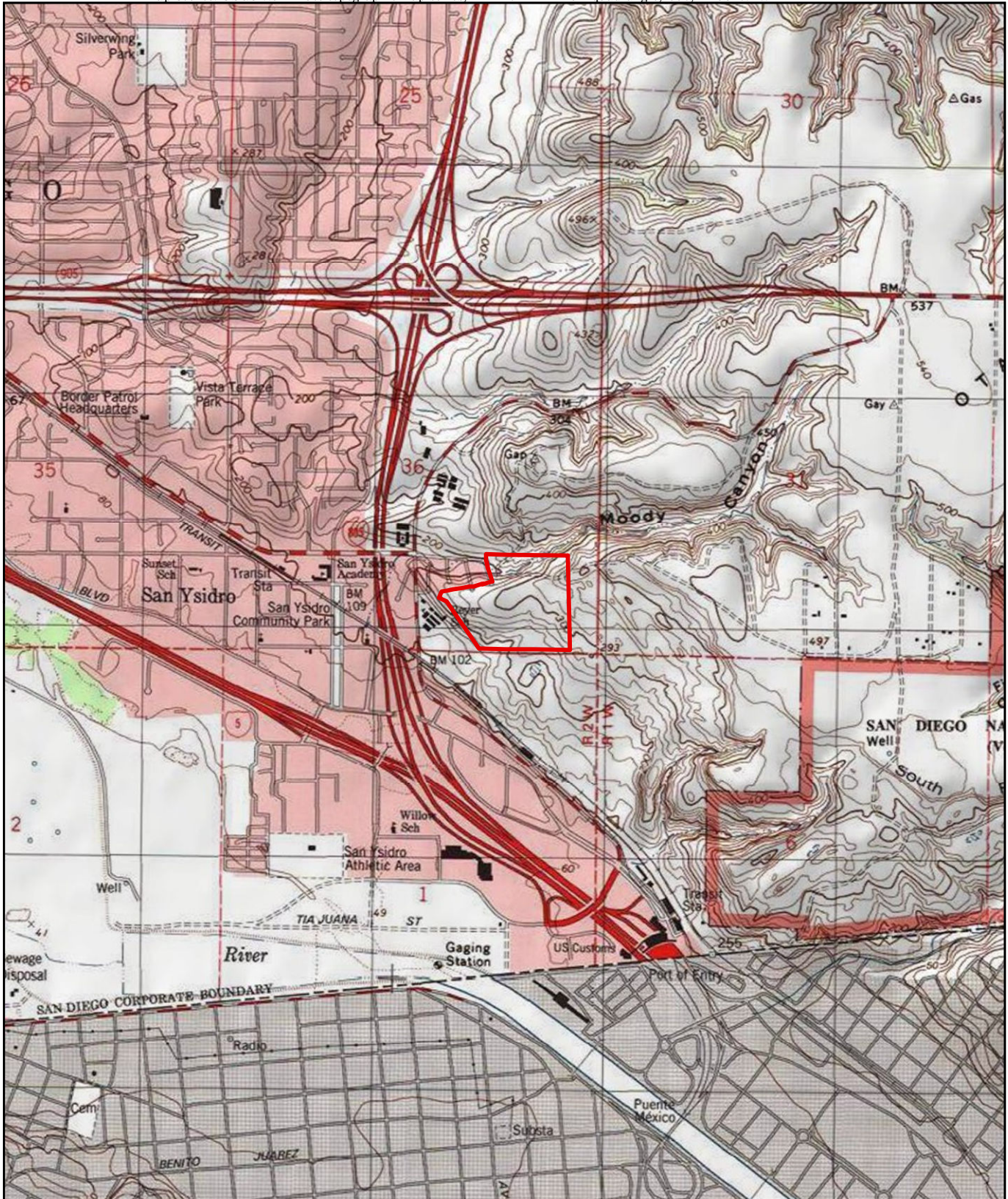
BAO:sh

cc: Darren Genova, City of San Diego
Gretchen Eichar, City of San Diego

References Cited

U.S. Fish and Wildlife Service
2015 Survey Guidelines for the Large Listed Branchiopods. May 31.

U.S. Geological Survey
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.






 Project Boundary

FIGURE 1

Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on USGS Map



-  Project Boundary
-  Depressions to be Surveyed

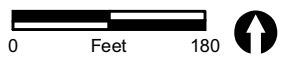


FIGURE 2
Beyer Park Development Project
2016-2017 Wet Season Fairy Shrimp
Survey Location on Aerial Photograph



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July 17, 2017

Ms. Stacey Love
Recovery Permit Coordinator
U.S. Fish and Wildlife Service
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Reference: Results of the 2017 Quino Checkerspot Butterfly Presence/Absence Survey for the Beyer Park Development Project (RECON Number 8359)

Dear Ms. Love:

This letter is to notify the U.S. Fish and Wildlife Service (USFWS) of the results of the 2017 focused presence/absence survey for the federally endangered Quino checkerspot butterfly (*Euphydryas editha quino*; QCB) conducted for the City of San Diego's Beyer Park Development Project (project). The survey methods, site assessment, and survey results are discussed in detail below. No QCB were detected within the project survey area during 2017 presence/absence surveys.

The 44-acre project site is located east and southeast of the eastern terminus of Beyer Boulevard in the community of San Ysidro in the City of San Diego, California (Figures 1, 2, and 3). The project site is found in the southeast quarter of Section 36, Township 18 South, Range 02 West, of the U.S. Geological Survey 7.5-minute topographic map, Imperial Beach quadrangle (see Figure 2; U.S. Geological Survey [USGS] 1996). The project site comprises Assessor's Parcel Numbers (APNs) 63817018, 63817019, and 63807071.

USFWS recommends that site assessments be conducted for all projects within the QCB's potential range (USFWS 2014) to determine if a site contains areas where QCB surveys are recommended. Areas excluded from surveys include orchards, developed areas, infill parcels, active agricultural fields, and areas of closed canopy woody vegetation, such as dense forest, riparian vegetation, and shrublands (USFWS 2014). The project site is within QCB Survey Area as designated by the USFWS survey guidelines (USFWS 2014) and supports vegetation recommended for QCB surveys by USFWS.

Prior to March 3, 2017, right of entry had not been granted for any off-site land within the 100-foot survey buffer. Thus, at the time of the site assessment and first two focused surveys, only areas within the project boundary were accessible. The survey area was expanded to include the majority of the 100-foot buffer to the north and east (i.e., adjacent portions of the County of San Diego's Furby-North Preserve) on March 3, 2017, when right of entry was granted for that parcel.

QCB Biology

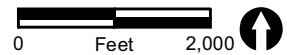
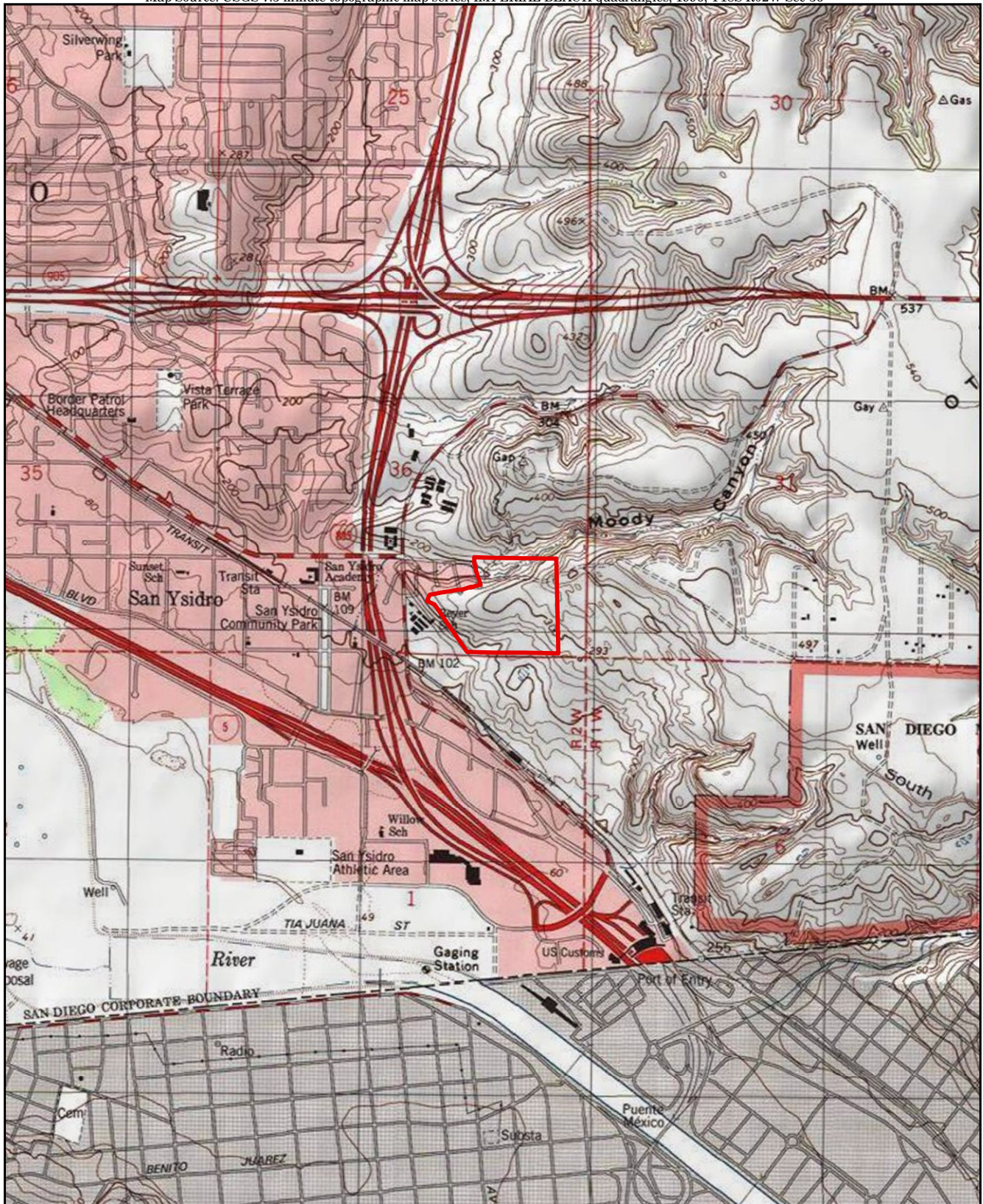
QCB, a member the brush-footed butterfly family (Nymphalidae), was federally listed as endangered in January 1997 (USFWS 1997). It is one of 12 subspecies of the *Euphydryas editha* checkerspot and was formerly known as *E. e. wrightii*.

Historically, QCB ranged from Los Angeles and western San Bernardino counties; south through Orange, western Riverside, and San Diego counties; and into northern Baja California, Mexico. As of 2010, QCB were known to occur in portions of southwestern Riverside County, southern San Diego County, and northern Baja California (Faulkner and Klein 2010). Both the larval and adult stages have specific habitat requirements, and habitat loss and degradation are considered the cause of the dramatic decline in the



✱ Project Location

FIGURE 1
Regional Location




 Project Boundary

FIGURE 2

Project Location on USGS Map



- Project Boundary
- QCB Survey Area
- Excluded QCB Survey Area
- Not Surveyed/Private Property
- QCB Host Plants (Population in Label)**
- Dot-seed Plantain (*Plantago erecta*)

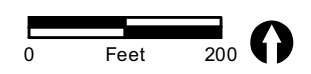


FIGURE 3
Habitat Assessment and Survey Area

species. These habitats have been impacted due to development, invasive non-native vegetation, overgrazing, poorly planned fire management practices, extreme adverse weather, over-collection by butterfly collectors, and off-road vehicles (USFWS 1997).

The QCB's distribution is defined primarily by that of its primary larval host plant, dot-seed plantain (*Plantago erecta*). Female QCBs have also been observed depositing eggs on woolly plantain (*Plantago patagonica*), white snapdragon (*Antirrhinum coulterianum*), thread-leaved bird's-beak (*Cordylanthus rigidus*), purple owl's clover (*Castilleja exserta*), and Chinese houses (*Collinsia* sp.) (USFWS 2014; Faulkner and Klein 2010). Adults use a variety of low-growing annuals that bloom during the QCB flight period as nectar sources, including goldfields (*Lasthenia* spp.), popcornflower (*Cryptantha* and *Plagiobothrys* spp.), gilia (*Gilia* spp.), ground-pink (*Linanthus dianthiflorus*), chia (*Salvia columbariae*), wild onion (*Allium* spp.), lomatium (*Lomatium* spp.), goldenstar (*Bloomeria* and *Muilla* spp.), and yarrow (*Achillea millefolium*) (USFWS 2002; Faulkner and Klein 2010). Some native perennials, including California buckwheat (*Eriogonum fasciculatum*), sugar bush (*Rhus ovata*), and skunk bush (*Rhus aromatica*), are also utilized (Faulkner and Klein 2010). QCB will use a variety of sparsely vegetated habitats, including open coastal sage scrub and chaparral, vernal pool complexes, oak woodland, and desert pinyon-juniper woodland. Densely vegetated areas and extensive open grasslands are not known to support QCB (Mattoni et al. 1997). Quino checkerspot butterfly exhibits a preference for low-growing vegetation interspersed with barren spots, as its thermodynamic needs require it to avoid shaded areas and flight below the canopy level (Osborne and Redak 2000; USFWS 2002).

Typically, there is one adult generation of QCB per year, with a four- to six-week flight period beginning between mid-February and early March and continuing through May (Faulkner and Klein 2010), although the timing of the flight period can vary considerably from year to year depending on rainfall and temperature patterns. Adult life span averages 10 to 14 days, and emergence is staggered (USFWS 2002). The full life cycle of a QCB includes egg, larva, pupa, and adult – with larval stages divided into five to seven instars. Adult QCBs spend their time searching for mates, feeding on nectar, defending territories, basking in the sun, and in the case of females, searching for sites to deposit eggs (USFWS 2002).

Methods

Site Assessment Methods

RECON biologist Brenna Ogg conducted a site assessment within the project boundary on February 9, 2017, to identify suitable QCB survey areas, as defined in the USFWS survey guidelines and the recovery plan (USFWS 2014 and 2003, respectively). Ms. Ogg is authorized to conduct presence/absence QCB surveys under USFWS 10(a)(1)(A) permit TE 134338-3. Suitable QCB survey areas and populations of larval host plants were mapped in the field, using either a sub-meter accuracy global positioning system unit or by hand on a one-inch-equals-200-feet color aerial photograph of the site flown in July 2016.

At the time of the site assessment, right of entry had not been granted for any of the off-site properties within the 100-foot survey buffer. Habitat suitability of these off-site properties was assessed from the edge of the project boundary where visual line-of-sight was possible and by interpretation of aerial photography where it was not (i.e., the top and east-facing portions of hills to the east of the project site).

Right of entry was granted to the County's Furby-North Preserve parcel (APN 639-070-74) on March 3, 2017, allowing for direct access to the majority of the 100-foot buffer to the north and east. During the first subsequent focused survey (i.e., on March 9, 2017), the habitat suitability determinations made during the initial site assessment were confirmed for all areas within this portion of the off-site survey buffer.

Presence/Absence Survey Methods

Presence/absence adult flight season surveys for QCB were conducted in accordance the Quino Checkerspot Butterfly Survey Guidelines (USFWS 2014) by RECON biologists Brian Parker and Alex Fromer under

USFWS 10(a)(1)(A) permit TE 797665 and Diana Saucedo under USFWS 10(a)(1)(A) permit TE 221287-1. Weekly surveys were conducted starting the third week of February 2017. As no QCBs were observed, surveys continued weekly until the end of the season, which is defined as the second Saturday in May (Table 1).

Table 1					
2017 QCB Survey Dates, Personnel, Times, Conditions, and Acres Surveyed per Hour					
Date	Survey	Personnel	Beginning Time and Conditions	Ending Time and Conditions	Acres/ Hour
02/9/17	SA	BAO	11:15 A.M.	4:10 P.M.	n/a
02/21/17	QCB #1	BDP	9:00 A.M.; 64° F; winds 0-2 mph 0% cloud cover	2:15 P.M.; 71° F; winds 4-8 mph 50% cloud cover	8.3
03/1/17	QCB #2	BDP	9:30 A.M.; 62° F; winds 4-6 mph 0% cloud cover	2:40 P.M.; 70° F; winds 6-7 mph 0% cloud cover	8.4
03/09/17	QCB #3	BDP DGS	9:15 A.M.; 74° F; winds 0 mph; 5% cloud cover	2:00 P.M.; 73° F; winds 8-10 mph; 0% cloud cover	5.1
03/14/17	QCB #4	BDP	9:30 A.M.; 73° F; winds 1-3 mph; 25% cloud cover	3:00 P.M.; 76° F; winds 8-10 mph; 10% cloud cover	8.8
03/21/17	QCB #5	BDP DGS	9:25 A.M.; 62° F; winds 3-5 mph; 5% cloud cover	1:00 P.M.; 72° F; winds 4-6 mph; 15% cloud cover	6.9
03/28/17	QCB #6	DGS APF	10:00 A.M.; 68° F; winds 0-1 mph; 0% cloud cover	2:00 P.M.; 74° F; winds 4-6 mph; 0% cloud cover	6.1
04/04/17	QCB #7	DGS APF	10:00 A.M.; 65° F; winds 1-3 mph; 0% cloud cover	1:40 P.M.; 68° F; winds 4-6 mph; 00% cloud cover	6.6
04/11/17	QCB #8	BDP DGS	9:50 A.M.; 63° F; winds 0-1 mph; 0% cloud cover	1:55 P.M.; 72° F; winds 4-7 mph; 0% cloud cover	6.0
04/18/15	QCB #9	BDP	9:25 A.M.; 73° F; winds 5-7 mph; 50% cloud cover	2:45 P.M.; 77° F; winds 4-8 mph; 5% cloud cover	9.1
04/24/15	QCB #10	BDP DGS	10:00 A.M.; 71° F; winds 3-6 mph; 75% cloud cover	1:25 P.M.; 73° F; winds 5-70 mph; 60% cloud cover	7.1
05/1/17	QCB #11	BDP	9:00 A.M.; 72° F; winds 5-7 mph; 0% cloud cover	12:25 P.M.; 78° F; winds 6-8 mph; 0% cloud cover	7.7
		DGS	9:30 A.M.; 74° F; winds 5-7 mph; 0% cloud cover	12:25 P.M.; 78° F; winds 6-8 mph; 0% cloud cover	
05/11/17	QCB #12	BDP	8:40 A.M.; 64° F; winds 0-2 mph; 25% cloud cover	12:00 P.M.; 73° F; winds 8-12 mph; 35% cloud cover	7.7
		DGS	9:00 A.M.; 63° F; winds 0-1 mph; 10% cloud cover	12:00 P.M.; 73° F; winds 8-12 mph; 35% cloud cover	

SA = Site Assessment; QCB = Quino checkerspot butterfly
°F = degrees Fahrenheit at ground level; mph = miles per hour
APF = Alex Fromer; BAO = Brenna Ogg; BDP = Brian Parker; DGS = Diana Saucedo

At the start of the survey period, right of entry had not been provided for any off-site properties. On March 3, 2017 (prior to Survey 3), right of entry was provided for the County of San Diego's Furby–North Preserve parcel; however, right of entry was not granted for any other adjacent parcels, which are all private property. Thus, for Surveys 1 and 2, the survey area consisted of 43.5 acres of suitable QCB habitat within the 44-acre project site, and thereafter, the survey area increased to 48.6 acres of suitable habitat within the project site and surrounding 100-foot buffer to the north and east. All potentially suitable QCB habitat was surveyed while walking at a slow pace, and all butterfly species and blooming plant species were noted during each visit. Field notes are provided in Attachment 1.

Results

Site Assessment

Within the QCB survey area, elevations range from 120 feet above mean sea level in a drainage in the northwestern portion of the survey area to 396 feet above mean sea level on a hill in the eastern portion of the survey area. The northern and eastern portions of the survey area are characterized by two large hills, separated by Moody Canyon, which runs east–west through the northern portion of the survey area. The steep north-, south-, and west-facing slopes associated with these hills transition in the south and west into multiple terraces, with a steep manufactured slope along the western edge. A large portion of the vegetation within the survey area has been subjected to recent and historic disturbance and unauthorized activity (e.g., off-highway vehicle use, pedestrian traffic, transient camps).

Vegetation communities/land cover types (following Holland 1986 as updated by Oberbauer et al. [2008] and City of San Diego [2012]) within the survey area include Diegan coastal sage scrub (including disturbed), maritime succulent scrub (including disturbed), disturbed land, and urban/developed land. The total area of suitable QCB habitat within the survey area, including habitat within the off-site Furby–North Preserve, is approximately 48.6 acres (see Figure 3); this includes all Diegan coastal sage scrub, the majority of the maritime succulent scrub, and disturbed land on-site. Areas excluded from the QCB survey include a dense patch of cactus-dominated maritime succulent scrub on a south-facing slope in the northern portion of the site, a closed-canopy patch of mule fat scrub in the northwestern portion of the site, and all urban/developed areas. Vegetation communities included in the survey area are described in detail below.

Diegan coastal sage scrub is present in the western portion of the survey area and in a small portion of Moody Canyon in the northern portion of the survey area. In the western stands, the Diegan coastal sage scrub comprises a mix of California buckwheat, California sagebrush (*Artemisia californica*), broom baccharis (*Baccharis sarothroides*), and laurel sumac (*Malosma laurina*). Vegetation cover is generally above 70 percent, and typical shrub height is between two and four feet with the occasional taller laurel sumac and broom baccharis. The Diegan coastal sage scrub that occurs along Moody Canyon in the northern portion of the survey area is taller, denser, and dominated by lemonade berry (*Rhus integrifolia*).

Disturbed Diegan coastal sage scrub occurs along the manufactured slope at the edge of the project boundary, in a swale at the northwestern edge of the project boundary, and in other scattered areas that show sign of previous human-caused soil disturbance and ongoing disturbance from unauthorized pedestrian activity and dumping. The species composition is similar to the undisturbed stands of Diegan coastal sage scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia (*Acacia* sp.), saltcedar (*Tamarix ramosissima*), tree tobacco (*Nicotiana glauca*), castor bean (*Ricinus communis*), and non-native grasses.

Maritime succulent scrub is the dominant vegetation community within the survey area. In the northwestern portion of the survey area, the maritime succulent scrub is dominated by coast cholla (*Cylindropuntia prolifera*) with waterjacket (*Lycium andersonii*), California box-thorn (*L. californicum*), cliff spurge (*Euphorbia misera*), and jojoba (*Simmondsia chinensis*) occurring as common species. The combined vegetative cover of cactus and shrub species is at or above 75 percent, and typical shrub height is between two and four feet. Throughout the remainder of the maritime succulent scrub in the survey area, the coast

cholla occurs in scattered patches; common shrub species include San Diego bur-sage (*Ambrosia chenopodiifolia*), jojoba, cliff spurge, coast prickly pear (*Opuntia littoralis*), California buckwheat, San Diego viguiera (*Bahiopsis laciniata*), California sagebrush, and fish-hook cactus (*Mammillaria dioica*).

Similar to the disturbed Diegan coastal sage scrub, the disturbed maritime succulent scrub occurs in areas that have been subjected to human-caused disturbance and non-native plant species invasion. The species composition is similar to the undisturbed stands of maritime succulent scrub. However, the overall vegetation density and height are lower, and there is a greater occurrence of non-native plant species including acacia, fountain grass (*Pennisetum setaceum*), garland daisy (*Glebionis coronaria*), and non-native grasses.

Disturbed land consists of a complex of dirt roads and unauthorized off-road vehicle trails traversing the site, as well as a series of open areas characterized by exotic vegetation. The vegetated portions of disturbed land are dominated primarily by garland daisy and Russian thistle (*Salsola tragus*), with scattered non-native grasses. A large saltcedar is present in a terminal depression at the west end of Moody Canyon in the western portion of the site.

Presence/Absence Surveys

One larval host plant species, dot-seed plantain, was observed in patches ranging in size from approximately 50 to over 1,000 individuals throughout the survey area (see Figure 3). Most of these patches were located within maritime succulent scrub on the hills in the central and eastern portion of the survey area; however, three small patches were found in disturbed Diegan coastal sage scrub in the western portion of the survey area. Generally, the dot-seed plantain was found in openings in scrub habitats, in areas with moderate native wildflower cover. Despite the many signs of disturbance, the survey area supports a substantial number of potential nectar sources, including known nectar sources such as *Allium*, *Amsinckia*, *Cryptantha*, *Dichelostemma*, *Eriogonum*, *Lasthenia*, *Linanthus*, and *Plagiobothrys* species. A list of flowering plants observed during the protocol surveys is presented in Table 2.

Scientific Name	Common Name
<i>Acmispon strigosus</i>	bishop's lotus
<i>Allium haematochiton</i>	red-skin onion
<i>Ambrosia chenopodiifolia</i>	San Diego bur-sage
<i>Amsinckia menziesii</i>	rancher's fiddleneck
<i>Bahiopsis laciniata</i>	San Diego viguiera
<i>Brassica nigra</i>	black mustard
<i>Camissoniopsis bistorta</i>	California sun cup
<i>Cryptantha</i> sp.	cryptantha
<i>Daucus pusillus</i>	rattlesnake weed
<i>Deinandra conjugens</i>	Otay tarplant
<i>Deinandra fasciculata</i>	fascicled tarweed
<i>Delphinium parryi</i>	blue larkspur
<i>Dichelostemma capitatum</i>	blue dicks
<i>Encelia californica</i>	California encelia
<i>Erodium cicutarium</i>	red-stem filaree
<i>Eriogonum fasciculatum</i>	California buckwheat
<i>Eriophyllum confertiflorum</i> var. <i>confertiflorum</i>	long-stem golden-yarrow
<i>Glebionis coronaria</i>	garland daisy
<i>Hirschfeldia incana</i>	short-pod mustard
<i>Lasthenia gracilis</i>	common goldfields
<i>Linanthus dianthiflorus</i>	farinose ground pink

Table 2 Flowering Plants within the Survey Area	
Scientific Name	Common Name
<i>Logfia gallica</i>	daggerleaf cottonrose
<i>Lupinus truncatus</i>	collar lupine
<i>Mammillaria dioica</i>	fish-hook cactus
<i>Medicago polymorpha</i>	California burclover
<i>Melilotus sp.</i>	sweet clover
<i>Mesembryanthemum crystallinum</i>	crystalline iceplant
<i>Nemophila menziesii</i>	Menzies' baby blue-eyes
<i>Nuttallanthus texanus</i>	blue toadflax
<i>Oncosiphon piluliferum</i>	stinknet
<i>Oxalis sp.</i>	oxalis
<i>Papaver heterophyllum</i>	wind poppy
<i>Pectocarya sp.</i>	pectocarya
<i>Peritoma arborea</i>	bladderpod
<i>Phacelia cicutaria</i>	caterpillar phacelia
<i>Phacelia grandiflora</i>	giant-flowered phacelia
<i>Plantago erecta</i>	dot-seed plantain
<i>Plagiobothrys sp.</i>	popcornflower
<i>Pseudognaphalium biolettii</i>	bicolor cudweed
<i>Sonchus asper</i>	prickly sow thistle
<i>Verbena menthifolia</i>	mint-leaf vervain

A total of 1,360 butterfly observations, representing a minimum of 27 butterfly species, were recorded during the 2017 presence/absence surveys; however, QCB was not detected (Table 3). Habitat within the survey area was generally suitable for QCB despite the high level of human-caused disturbance in some areas. The most common species observed was cabbage white (*Pieris rapae*), which generally increased in numbers throughout the survey period. Pacific Sara orangetip (*Anthocharis sara sara*) was also very abundant in the survey area, and showed a peak population in Weeks 7 and 8. Other common butterflies included funereal duskywing (*Erynnis funeralis*), which was present in moderate numbers throughout the survey period, western tailed blue (*Everes amyntula*), which was most common in the middle portion of the survey period, and western pygmy blue (*Brephidium exile*), which peaked in Weeks 8 and 9.

If you have any questions, please feel free to contact me at bparker@reconenvironmental.com or at 619.308.9333 extension 109.

Sincerely,



Brian Parker
 Biologist/Associate Project Manager

BDP:eab

cc: Darren Genova, City of San Diego
 Gretchen Eichar, City of San Diego
 Justin Garcia, California Department of Fish and Wildlife

Table 3
Butterflies Observed within the Survey Area

Scientific Name	Common Name	Survey Number											
		1	2	3	4	5	6	7	8	9	10	11	12
N/A	unidentified white	1		1	3	2	6	12					8
N/A	unidentified blue							8					
<i>Anthocharis cethura</i>	desert orangetip						5	15	3				
<i>Anthocharis sara sara</i>	Pacific Sara orangetip		3	8	4	11	34	37	37	33	23	7	1
<i>Apodemia mormo virgulti</i>	Behr's metalmark			1		5	8	7	18	9	7	3	4
<i>Brephidium exile</i>	western pygmy blue			7	5	8	8	2	13	12	9	25	16
<i>Callophrys augustinus</i>	brown elfin					2							
<i>Chlosyne gabbii</i>	Gabb's checkerspot							1					
<i>Coenonympha californica californica</i>	common California ringlet		1										
<i>Colias eurytheme</i>	orange sulphur											10	6
<i>Colias</i> sp.	unidentified sulphur										2	3	3
<i>Danaus plexippus</i>	monarch					1							
<i>Erynnis funeralis</i>	funereal duskywing			12	5	21	18	9	12	7	9	6	16
<i>Everes amyntula</i>	western tailed-blue								27	24	22	20	19
<i>Glaucopsyche lygdamus australis</i>	southern blue	1				4	7	22		4			
<i>Hylephila phyleus muertovalle</i>	fiery skipper												1
<i>Icaricia acmon</i>	Acmon blue	1	4				1			2	13	5	1
<i>Junonia coenia grisea</i>	common buckeye								1	2		1	1
<i>Leptotes marina</i>	marine blue								1	3	8	4	
<i>Limenitis lorquini</i>	Lorquin's admiral					1							
<i>Nymphalis antiopa</i>	mourning cloak		1									2	4
<i>Papilio eurymedon</i>	pale swallowtail												5
<i>Papilio zelicaon</i>	anise swallowtail	1		2	1	1		2	3	3	3	10	21
<i>Pieris rapae</i>	cabbage white			1	4	12	20	37	31	32	35	98	97
<i>Pontia sisymbrii</i>	spring white								7	3	2	2	47
<i>Pyrgus communis</i>	checkered skipper											1	4
<i>Strymon melinus</i>	gray hairstreak			1		2			2		5	5	
<i>Vanessa</i> sp.	unidentified lady						3						2
<i>Vanessa annabella</i>	west coast lady			4	3	5	1	1	2	3	5	3	4
<i>Vanessa atalanta rubria</i>	red admiral						2					3	9
<i>Vanessa cardui</i>	painted lady		2	10	3	4	8	2			1		
TOTAL		4	11	47	28	79	121	155	157	137	144	208	269

Ms. Stacey Love
Page 11
July 17, 2017

Certification

I certify that the information in this survey report and attached exhibits fully and accurately represent my work.

Date: July 17, 2017

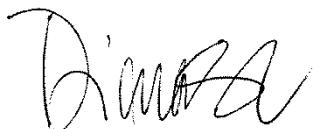


Signed: _____
Brian Parker, Biologist/Associate Project Manager
USFWS Permit #TE 797665
Report Author and Surveyor

Other Surveyors:



Signed: _____
Alexander Fromer, Biologist
USFWS Permit #TE 797665



Signed: _____
Diana Saucedo, Biologist
USFWS Permit #TE 221287-1



Signed: _____
Brenna Ogg, Senior Biologist
USFWS Permit #TE 134338-3

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2003 Recovery Plan for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). Portland, Oregon.

2014 Quino Checkerspot Butterfly Survey Guidelines. December 15.
- U.S. Geological Survey (USGS)
1996 Imperial Beach Quadrangle 7.5-Minute Topographic Map.

ATTACHMENT 1

Date 2/21/17 Time Weather 09:00 / 14:15
 Location 8359 OCT 31/ 64 71
 Notes 0% 50%
 0.2 4.8

Chrysanth Mal par
 Pickleweed Dic Capp.
 Sch Bar BEA Nig
 Cen meo Der FAS
 Jugosa Sonchus
 Bac Sae Sisy mbum
 Ero Cic. Gra coh
 Arabid Lepidium

Bulky herb
 Anise ST
 Acmon
 UNK Wht
 Southern Blue

Leafy kept PLAEBO
 Cyl pro Cytosagalm
 Atroplex Log Gal Mal Lam
 Misery Cryptath Jade Plant
 Vitis Cla Per Ero Bot
 Opulit Medicago Eri Fns (stand.)
 Ams Men (moss) Agave corn x2
 Bromus Astragalus P. ERIO GENF
 Beh lac N. glia AMGLA
 Sal tra TAM PAR Pennisetum
 Eri con Fse Vul Mammaleum
 Blw int Eri Cac. Camissonopsis
 Arr inc FER VIR
 Har Inc Pectocarya

Few plants in
 Moist - wet
 but waterlogged
 in some places
 in open scrub
 (moss) - soil
 present. Soil
 looks like
 some heavy
 stuff
 (moss) - soil
 present. Soil
 looks like
 some heavy
 stuff

Rite in the Rain.

ROAD
 (A.P.)

Date 3/1/17 Time Weather 0930
 Location Bayan Park OCB #2 62° 151 440
 46 10
 0% 0-7
 0% 0%

Notes

Atriplex	San Asp °	
Mes 12	DIC Cap °	Butterflies
Chrysoth	San OLS	Sneat ° °
SASTRA	Bra Nig	
Hir Inc	CRA Con	Acmon ° °
Cylops (A)	LINDIA °	PL °
Ams Men °	Chl Par	
UOJOSA	Lep Nit	Mary Clark °
Epo CK	Plago °	Anglet °
CON MEA	CLA FER	
Lac Ser	Ene CAL °	
Ric Com	SABAR	
ART (A)	CHIA (Not Fever)	
BAC SAR	Arenopsis	
BMPR	Mes	
Avena	BAHLA	
Medicago	Oxalis °	Motorcycle + SUV
Rhu INT	Logan	at site
Bac SAR	RA Sell	
Astragalus	ERI Fas	
Mictra	Fer Vir	
Agave sp.	Mam DR	beverage h
Der fas	Opuntia	Cam/serapen
P. m. v.	ACMKA	Was for

Date 3/9/17 Time Weather 0915 | 1400
 Location Bayou Park OCB #3 74° | 73°
 Notes 5% cc 0% cc
 0 mph 8-10 mph
 12:00 → 78°

Plants

Mes 1	Bro Nug	
Chrysanth	Dir CAP	
Sch bar	Bro Maud	CABBW
Cyl Cal	Hr Inc	SARA L
Arms MEN	Sen ASP	
Mar Vul	BAH Laz	PL L
Mes cry	Rho Int	
Der son	Plagw	Pygmy BF
Rha cro	Bac sal	
Misog	Pse (light)	Wht
Jajota	Foe Vul	WCL
Gen mel	Astragalus	FDW
Aneca	Bac sar	Behr MMM
Atriplex	Ric Lem	Anise ST
Mam Dio	Bro Dr.	
Ant Cal	Cameleonopsis	
Ero cir	Phacelia	
Crypt	cup (son)	NIGRA Lupinus
Sed kra	log bac	ERIPAS Solanum (bush)
Mar ma	LepNT	met Ind Lamarchen
Sil gal	Asterum	Chrysom Oxa Res-c
San ole	ERO BOT	CRICER

8359

QCB#3

03/09/17

12:15

79

46

5% CC

BDP

2:00

73

7-10

5% CC

DGS

Sunny

PYGMY BLUE

||

FUN DUSKY WING

|||||

SARA ORANGE TIP

||

WEST COAST LADY

|||

GRAY HAIR STREAK

|

PAINTED LADY

|||

ANISE SWALLOWTAIL

|

SPHINX MOTH

||

WILDLIFE INC.

GRRO

CAGN+

8359

QCB#3

03/09/17

SM

~~Astragalus~~

FB

CSS

Mellilotus

SB

Lotus scoparius

FB

Graphium

FB

Plantago erecta SB

Chrysom

SB/FB

- 50 plants

Enc cal

FB

- threats: human

Brassica

FB

foot traffic, erosion

Hirschfeldia

FB

trash.

Amsinckia

FB

- New PT in GPS

Camissonia bi

SB

Cryptantha

SB

Date 3/14/17 Time

Weather 0930 1500

Location Beyer #4

73 76

Notes

1-3 2-10

25% 10%

Amisnicic

Plagio

Cryptanth

Chaenactis

SALCEL

DICCAP

LINDA

Pha Cic

Plantago

Camissonopsis

Lupinus Skinny

ERIFAS

Butterflies

SARA ::

White ::

FYN DW ::

CABBW ::

Pygmy Bl ::

PL ::

WCL ::

ANISE

Date 3/21 Time Weather 09:25 13 05
 Location Seyer #15 62° 72
 3.5 4.6

Notes

Plants

Gle cor Saltra
 Ercic lolum
 Mes 1 Jojoba.
 Mesary Yucca^{whi}
 Bac srf Lup srf
 Bac srf Bra Nig
 Cyl cal Cen mel
 BMR Sch bar
 Foe vul Htz sfo
 Nic gh Pse cal
 Bro dia Log gal
 Jol go Eri gas

576 | 10-15

Butterflies

Pygmy i:
 Unid W:
 SARA OT h:
 Southam B:
 CABB W:
 Behr i:
 Fun DW
 WCL "

Roc con Psa (M^{1/2}) Emm Ren Rumex Rensat
 Melobates Bra (trq?) ~~Poa~~ Opy Lit Iso Men
 Astragalus Lamarckia Liverwort Sel cen Log gal
 Art cal Oxalis p-c Plago Mirae Acmyls
 Atropax SA Mol Misary Flaere Lup (long)
 Rho int Cey lor Ans Men Sonda Pectocary
 Cra con Hel mth Phaeic ~~Mamm~~ Cor Fil
 Hordeum De Fos Sen ASP Cheese Mel Lau
 Lep nit MAM Dio Dic CAP Shi pul Acaan
 Avena Bah ka paw Pus Camiss

8359

QCBS: BEYER BLVD 03/21/17

9:25 62°F 0-1 5% CC

13:05 72°F 4-6, 8g 10-15% CC

monarch	
Behr's metal mark	
Saka orange tip	###
pigmy blue	###
Cabbage white	####
NC lady	
Funerid dusky wing	### ##
Anise swallowtail	
Common admiral	
Painted lady	
brownie fin	
grey hawk streak	
southern blue	

Northeast side

10:45 66°F 0-low BF activity 0-1 mph 0% a

south west side

12:00 65°F 4 mph, 6 mph gust 0-low BF act.

03/21/17

QCBS: 8359

host plantnectar plants

Pieris (FB)	Ams int (FB)
prev. dist area in buffer	Bras. nig FB
NNG, NN-forbs	Cryptantha FB
DCSS habitat	Diagio FB
	Ero cil FB
	Nemophila FB
	Phac FB
	Mel ind FB
	Alli hema FB (FB)
	x Las cal (SB) / Lin dia
	NNG, Bro mad rub.
Euc hry bip (SB)	DCSS habitat
Emme pond varp. (SB)	crypto crusts w/ Craccon, Cryp. Sp. Scap plant, Ero but
	Bahiopsis lac. (SB)
	Papa hete (FB)
incidental mil allife (sensitive)	
CAWK	Am gla (FB)
CAZL	Quaplic (FB)

PROJECT NAME (JN XXXX)
 QCB Focused Surveys YEAR
 BEYER PARK

Name: Alex Fromer

Date: 3/28/17

Grid/Map #: _____ Survey Week #: 6

Starting conditions: Time: 10:10 Temp (oF): 65 Cloud Cover: 0% Wind Speed: 0-1 MPH

Ending Conditions: Time: 2:00 Temp (oF): 74 Cloud Cover: 0% Wind Speed: 4-6 w/6 to 8

Butterflies Observed	# Obs (general tally)	Host & Potential Nectar Plants	Phenology*
SARA'S O.T.		<i>Plantago erecta</i> (Observed: (Y) / N)	FB
LADY SP.		<i>Castilleja exserta</i> (Observed: Y / N)	
PYGMY BLUE		<i>Plantago patag.</i> (Observed: Y / N)	
BEHR'S MA		<i>Antirrhinum coult.</i> (Observed: Y / N)	
WHITE SP.		<i>Cordylanthus rig.</i> (Observed: Y / N)	
DUSKY SP.		<i>Collinsia heter.</i> (Observed: Y / N)	
S. BLUE		<i>Lasthenia gracilis</i> (Observed: Y / N)	
W.C. LADY		<i>Layia sp.</i> (Observed: Y / N)	
ANISE S.T.		<i>Cryptantha sp.</i> (Observed: (Y) / N)	FB
PAINTED LADY		<i>Allium sp.</i> (Observed: (Y) / N)	PB
		<i>Linanthus dianth.</i> (Observed: (Y) / N)	FB
		PSEUDOLUNA	FB
		LOT 500	FB
		FILAGO	FB
		ERU FAT	SB
		LUPINE	FB
		CRYSANTHEMUM	FB
		BAHIOPSES	FB
		DICHELOSIS	FB
		AMSTINKIA	FB
		NUT TEX	FB
		ENC CAL	FB

*Notes regarding if vegetative (V), starting to bloom (SB), full bloom (FB), fruits and flowers (FF), post-bloom (PB), desiccated (D)

General Notes (include any details on QCB observed and photographs taken as appropriate):

10:00 68°F 0-1 mph 0% cc
14:00 74°F 4-6, 98 0% CC

safety audit 11:45-12:15 onsite in habitat

cabbage white	###F###	###	###
red admiral			
Sara orangetip	###	###	### III
painted lady	###		
pigmy blue			
berris metalmark	###		
fanonial duskywing	###	###	###
desert orangetip	###		
southern blue			

032817

8359 GCB#6 BEYER 032817 DGS/APF

host plant

nectar plant

(FB)

Placere (FB)

Chrysanthemum sp.

almost drying up.

Melilind

(GPS mapped @ NWN)

Medi poly

Corner of gate

Eroic

Crypto crusts pres.

Cinac bic

Cras con

Astr

open patches in kar.

Acmo glab.

Shrubs w/ NING sparse

Bra nig

Bahi lac. Enc. cal.

Placere senescent & dry

Dich cap

@ centre of site

Scindendrasp. (SB)

& N-facing slope

N-facing hillside

habitat

Lin dian (FB)

~~SS~~ MSS

Las cal (FB)

CSS

crypto crusts in CSS

DCSS

Cras con

Dich cap

open sparse

Harp palm (mapped)

Logfia Placere

Near Placere top.

Amisk.

Near encampment

04/04/17 QCB# 7, BEYER BLVD DGS, APF

10:00 65°F 1-3 mph 0% cc

13:40 68°F 4-6 mph 0% cc

BUTTERFLIES

Savannah tip	###-###-###-###-
Funeral duskywing	###-
Cabbage white	###-###-###-###-###-###-###-###
Southern blue	###-###-###-###
Pigmy blue	
Behr's metalmark	###
Anise swallowtail	
Desert orange tip	###-###-
Cabb's checkerspot	
printed lady	

Sphinx moth ###

<u>Host plant</u>	<u>Flowering</u>	<u>Nectar sp.</u>
Flare - flowering and fruiting -	Chrysanthemum	FB
Some senescent.	Medi poly	FB
Same near encampment -	Acmo glab	FB
	Onoph cal	SB
	Bahi laci	FB
<u>West side pop:</u>	Dich capi	FB
	Branig.	FB
<u>Southern pop: also</u>	pha gva.	FB
fruiting & flowering.	Fuccal	FB
Almost obscured by	Ams.	FB
Lepidium Gyto	Sami.	SB
Crust + Crac Cona.	Lin dia	FB
Deinandra sp. now vegetative	Northern pop:	
	flowering & fruiting	
<u>Eastern pop: new pop (?) mapped</u>	dry and	
sun. flowering (5-10 pl.)	senescent in	
	old road.	
Note: Lupines setting seed.		
Southern pacific rattlesnake.		
AMKE BUOW GRRO		
CA ₄ N(0) CAWE(V) → NOMO(0, BR0 4S(17)		
Visual on Person(0) camped in pepper.		

Date 4/11/17 Time _____ Weather 0950 1335
 Location S359 Beyer 3 63° 73
 50% 0%
 Notes 0-1 4-7

Coronopsis Sal Col
 Pinnaculo Stinknet

Eucalc

Astragalus

Mel ind

Pse ken

Acmbk

Dat wri

Eur Fas

Hirinc

Bra nig

Gen mel

Comissouf

Die CAP

Pha Cic

SARA LK

Ams men

Lup Hir

Lup ?*

Cryostatm

Calendmar

Son ASP

Am STR

WTB

Pygmy B Li

Behr ☒ ::

~~Southam B~~ ☒ :

Cabbage ☒ ☒ ::

Buckeye ☒ °

Grey HS °

Sp WHt ☒ Li

Marine B °

WCL ;

SARA ☒ ::

Anise :

04/11/17

BEYER BLVD

09:50 63°F 0%occ 0-1mph
 13:35 72°F 0%occ 4-7 mph

BUTTERFLIES

Cabbage white IIII IIII IIII II
~~Common blue~~
 Pinyon blue IIII II
 Anise Swallowtail I
 Behr's metalmark IIII
 Sara orangetip IIII IIII IIII IIII IIII
 Funckia duskywing IIII IIII II
~~Common blue~~ western tailed
 Marine blue IIII II blue
 Gray hairstreak IIII I
 Desert orangetip IIII
 Spring white IIII

MOTH

Cynthia moth IIII

04/11/17

Flowering plants

Chrysanthemum FB/PB
 Medicago PB
 Astragalus PB
 Gnaphalium PB
 Acroglab FB/PB
 Eriofasc SB
 Bahi laci FB
 Amisk intc. FB
 Lup. FB
 Dich. cap. FB
 Sani. FB

Nectar plants

Lastical FB
 Lin dia FB

Cryptanthasp. FB, Bloomeria clevelandii
 Crocea

Food plant

Platere FF (North facing slope only)
 Senescent in road

NOTE: Noxious weed: Oncosiphon
 STINKNET piluliferum

Date 4/18/17 Time

Weather 09:25 | 14:15

Location Beyond

73 | 77
5-7 | 4-8
50% | 5%

Notes

1230 77 | 14.6 20%

- Glebionis * ENO CAL
- Brau Nig Verbena FUN DW LI
- Mar Lolo SAC CAL CABBAGE ☒ ☒ ☒ :
- Gen Mel PHA CIC WT Blue ☒ ☒ : :
- BRO CIC Pygmy B. ☒ :
- Mel Ind South B : : :
- Gummosopis Buckeye :
- Am GLA SARA OT ☒ ☒ ☒ : :
- ^{H4P} ~~Am~~ GLA MARINE B : :
- Eri Con Behr MM ☒
- Eri Fns ACMON :
- Dic Cap WCL :
- Des Fns SPA W : :
- Cryptantho Anise ST : :
- BAW LAC
- Lin Dia
- Pla Fes
- Dev Pusi
- Las Cal
- Pseudo
- Lupin tree
- BLO CRD

Date 4/24/17 Time Weather 1000 1325
 Location Bayers Park 71° 73°
 Notes 75% 60%
 3-6 5-7

Chaparral
 Preen Cow

Em Fr

Crypta Th

Dei Fan

Eric Car

Bra Nyg

Bath Lac

Len Mel

Eco Cic

Bladderpod

Acn Mic

Aem Gk

Ana Aev

Pha Cic

Stinknet

Kerbas

Sol Col

AmS Mel

WTB I:

MARINE :

CABB W :

ACMON I:

Behr :

FUNDW :

Pygmy I:

~~Gray HS~~

GRAY HS :

SARAOI I:

Die CAF :

SPR W :

WEL :

042417

QCB#10

8359

DGS/BAP

9:30 68°F, too cloudy 90%cc 42 miles

not TD, 2-4 mph, g to 6

10:00 71°F ground temp, 3-6 mph
75% cc

Behr's metal mark	###
Western tailed blue	###
functional dusky wing	###
marble blue	
Caldwells white	###
acmon blue	###
pygmy blue	
bainted lady	
gray hawk streak	
sulphur	
Sara orange tip	###
anis swallowtail	
west coast lady	

flowering pl:	Sphinx moth	###
acmon glab	bahilaci	###
erio conf.	onc cal	plan pat. (dry)
erio fasc.		

chry (glebionus sp.) 13:25 60% high haze
bras nig 5-7 mph, 73°F

Date 5/1/17 Time _____ Weather 0900 :225
 Location Bayer Park CEB # 720 78
 Notes _____ 5-7 0-8
 _____ 0-6 0-6

Atriplex	Del Par	
Eri FAS		ANISE ST ✓ ✓
Glebionis		Pygmy b <input checked="" type="checkbox"/> 10
Dev FAS		W/ Blue <input checked="" type="checkbox"/>
Gen Mel		✓ SKIP
(Acm glk)		Marine B :
Commissar/apsis		Cabb ✓ <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> 10
Dev P/S		GRAY ITS :
Mir Inc		ACMON :
Bah Lac		Behr PM :
Amb p/s		Spr W :
Eri cr		Morning Creak ✓
Bra Nig		Sil fur :
Pha Cic		WCL :
Cryptanth		ANISE ST ✓ ✓
Verbena		Red Admiral :
ERI con		Sara OT W
Stinknot		Burkeye ✓
DICAP		FUN DW ✓
Ana BRV		
Dev con		
Mescey		

Bright Purple/reddish form

835a

QCB #11

05017
DYS, BAP

0930	74	57	0% cl
1230	78	68	0% cl

western tailed blue			1
marine blue			
pigmy blue			
cabbage white			
gray hairstreak			
funeral duskywing			
behv's metal mark			
orange silpnuv			
mourning cloak			
wise swallowtail			
red admiral			

blooming spp.

En fas

Chrysanthemum

Hirs inca

Bra nig

Bahilac

Delp parv

Dein conq

Ere conf.

pulled stake net out
@ top of hill above
near gate on N-
East side

Other spp.

Southern Pacific rat

western fence liz

CAGN - W slope

family coming to
south side

Date 5/12/17 Time Weather 0840 1200
 Location 2359 OCB #12 64° 73°
 Notes 25% 35%
 0-2 8-12 mph

Glebionis
 Dot Wri
 Euc Crc
 Air Inc
 Em Fms
 ATRIPLEX
 Camissoniopsis
 Cen Mel
 Cal Mac
 Des Fes
 Barn Lac
 Cryptantha
 Pha Crc
 Une W
 Buckeye
 Lady
 FUN DOW
 WT B
 CABB W L
 Pygmy B
 Sgr MM ::
 Sulfor :
 Red Admiral ::
 Lady
 Morn Ck
 SRR W ::
 Anise ST ::
 WCL
 Orange Sulfor

11 May 17

QCB #12

8359

Beyer Park

0900 63°F 0-1 mph 10% cc
 1200 73°F 8-12 mph, g 16 mph 35% cc

cabbage white IIII IIII IIII IIII IIII IIII IIII
 IIII IIII IIII IIII IIII

Spring white IIII IIII IIII IIII IIII IIII IIII IIII
 IIII

pale swallowtail IIII
 checkered white IIII

funeral duskywing IIII
 mourning cloak IIII

anise swallowtail IIII IIII IIII II

Cava orange tip I
 red admiral IIII

orange sulfur IIII No host plant obs.

prong blue IIII II
~~hardtweck~~ I
 L. sulfur

acmon blue I
 west coast lady IIII
 fiery skipper I

blooming:
 bahi laci
 phac gran

11 May 17

LBV #3 (V)

8359

0845 63°F 0-1 mph 10% cc
 0900 63°F 0-1 mph 10% cc

- WSJA
- COHA
- HOPI
- NOMO
- RTHA
- ANHA
- LEGO
- SAPH
- BLPH
- CATO
- RUTH
- BEWR
- BUSH
- RSHA
- MODD
- OCWA
- CACIN*
- AMCK
- SPTD

No LBVI observed.