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Subject: ***Biological Resources Letter Report for the Water and Storm Group 968 (WBS No. B-14099.02.02/B-15028.02.02), City of San Diego, California***

Dear Carrie Purcell:

This letter report provides an analysis of potential biological resource impacts associated with the proposed abandonment and replacement of several deteriorated water and storm drain pipelines (WBS No. B-14099.02.02/B-15028.02.02) located in the City of San Diego, California.

In accordance with the current San Diego Land Development Code Biology Guidelines (City of San Diego 2012), this survey letter report provides an introduction, a summary of the pertinent biological resource regulations, a project description, the survey methods, existing biological resources, special-status biological resources, project impacts (direct and indirect), and project mitigation. The project impacts, avoidance, and mitigation measures are discussed in accordance with the California Environmental Quality Act (CEQA), Clean Water Act (CWA), Migratory Bird Treaty Act (MBTA), California Fish and Wildlife Code, the *City of San Diego Final Multiple Species Conservation Program (MSCP) Subarea Plan* (City Subarea Plan) (City of San Diego 1997), and the City of San Diego's (City') Environmentally Sensitive Lands regulations.

INTRODUCTION

The proposed project addresses necessary water and storm drain pipeline improvements within the City, in the neighborhoods of Point Loma, Mission Valley, and City Heights. The project study area includes the following five project components, each including a 50-foot buffer (study area) and a 300-foot buffer for general habitat mapping:

1. **Site 4 (Camino del Rio North):** Replacement of an existing water main on the north side of Camino del Rio North, just west of the Interstate (I-) 8 and I-15 intersection.

2. **Site 5 (Silvergate Avenue):** Replacement of an existing water main along Silvergate Avenue, south of Rosecroft Lane and extending east to Kellogg Way; abandonment of an existing pipeline south of Kellogg Way and north of Rehberg Road.[1]
3. **Site 8 (Central Avenue):** Replacement of an existing water main parallel to and east of Central Avenue.
4. **Site 10 (Laurel Street):** Replacement of an existing water main and addition of a storm drain pipe between the southern terminus of Roseview Place, Laurel Street, and Home Avenue.
5. **Site 12 (39th Street):** Replacement of an existing water main between 39th Street, I-805, and Manzanita Drive; abandonment of a portion of this existing water main, south of the portion proposed for replacement.

The biological survey discussed in this letter report concentrated on identifying biological resources that may be subject to regulation under the City's MSCP Subarea Plan (City Subarea Plan), Section 404 of the CWA as administered by the U.S. Army Corps of Engineers (USACE), Section 401 of the CWA and the Porter Cologne Act as administered by Regional Water Quality Control Board (RWQCB), Sections 1600–1603 of the California Fish and Game Code as administered by the California Department of Fish and Wildlife (CDFW), and other potential special-status biological resources.

PROJECT LOCATION

The proposed project includes five sites in three general locations in the City of San Diego, California, in the neighborhoods of Point Loma, Mission Valley, and City Heights (Figure 1, Regional Map). Portions of the water and storm water pipeline improvement project are proposed to occur at five locations: (1) the north side of Camino del Rio North, just west of the I-8 and I-15 intersection; (2) along Silvergate Avenue and extending east between Rehberg Road and Silvergate Place; (3) between the southern terminus of Roseview Place, Laurel Street, and Home Avenue; and (4) parallel to and east of Central Avenue; (5) between 39th Street, I-805, and Manzanita Drive (Figure 2A through Figure 2C, Vicinity Map). The approximate centroid of the Camino del Rio North location is 32°46'46.50" north latitude, 117°06'58.66" west longitude; this site is on the U.S. Geological Service (USGS) 7.5-minute series topographic La Mesa quadrangle map Section 17, Range 2 West, Township 16 South. The approximate centroid of the Silvergate Avenue location is 32°42'29.42" north latitude, 117°14'43.00" west longitude; this

[1] Complete surveys of this area were not feasible due to access restrictions. Aerial mapping was used as needed to complete the vegetation mapping.

site is on the USGS 7.5-minute series topographic Point Loma quadrangle map Section 12, Range 4 West, Township 17 South. The approximate centroid of the Central Avenue location is 32°44’15.11" north latitude, 117°06’27.49" west longitude; this site is on the USGS 7.5-minute series topographic National City quadrangle map Section 32, Range 2 West, Township 16 South. The approximate centroid of the Laurel Street location is 32°43’52.28" north latitude, 117°05’53.10" west longitude; this site is on the USGS 7.5-minute series topographic National City quadrangle map Section 33, Range 2 West, Township 16 South and Section 04, Range 2 West, Township 17 South. The approximate centroid of the 39th Street location is 32°44’02.20" north latitude, 117°06’37.96" west longitude; this site is on the USGS 7.5-minute series topographic National City quadrangle map Section 32, Range 2 West, Township 16 South.

Topography and Land Uses

Site 4 (Camino del Rio North) is generally flat within the developed area, but the elevation varies in the northern portion of the site with north- and south-facing slopes where the San Diego River is located. The elevation range at the Camino del Rio North site is between 40 feet above mean sea level (AMSL) to 130 feet AMSL. The topography at Site 5 (Silvergate Avenue) site ranges from 75 feet AMSL at the southeastern portion near Jenkins Street to 405 feet AMSL at the northern portion along Silvergate Avenue. The topography at Site 8 (Central Avenue) site is generally sloping from north to south with an elevation range of 210 feet AMSL to 320 feet AMSL. At Site 10 (Laurel Street) site, the topography ranges from 160 feet AMSL to 290 feet AMSL. The topography at Site 12 (39th Street) site ranges from 175 feet AMSL to 290 feet AMSL. The lowest elevation point is within the dry channel at the bottom of the canyon south of 39th Street, and this canyon is surrounded by a north- and south-facing slope leading up to the urban development along 39th street and Manzanita Drive.

All five sites are vegetated with a mixed array of native and non-native ornamental vegetation associated with the urban setting. Given the urban setting, there is a fair amount of native habitat at all sites including Diegan coastal sage scrub, chamise chaparral, scrub oak chaparral, and southern willow scrub. Current land uses within and immediately surrounding the proposed project include single and multifamily residential uses, commercial development, and traffic from I-8 and I-15. The San Diego River is located north of the Camino del Rio North site, and there is a dry channel at the bottom of the canyon south of 39th Street and Central Avenue sites.

Soils

According to the San Diego County Soil Survey, 10 soil types were mapped in the study area and are described in the following subsections (Bowman 1973). Series descriptions are based on the Official Soil Series Descriptions (USDA 2017a) unless otherwise noted.

Clay Loam

The Salinas clay loam, 2% to 9% slopes, occurs within the study area. The Salinas series consists of deep, well-drained soils that formed in alluvium weathered from sandstone and shale. Salinas soils are on alluvial plains, fans, and terraces and have slopes of 0% to 9%. This series is characterized as slow to medium runoff with moderately slow permeability.

Cobbly Loam

Olivenhain cobbly loam, 30% to 50% slopes, occurs within the study area. The Olivenhain series soils are gently sloping to strongly sloping and are on dissected marine terraces at elevations of 100 to 600 feet. It is a member of the clayey-skeletal, kaolinitic, thermic family of Ultic Palexeralfs. Typically, Olivenhain soils have brown and reddish brown, medium acid, very cobbly loam A horizons, reddish brown and red, medium and strongly acid, very cobbly clay B2t horizons, grading to pinkish white cobbly loam C horizons. They are well-drained with slow or medium runoff and very slow permeability.

Fine Sandy Loam

Gaviota fine sandy loam, 9% to 30% slopes; Reiff fine sandy loam, 2% to 5% slopes; and Reiff fine sandy loam, 5% to 9% slopes, occur within the study area. The Gaviota series consists of very shallow or shallow, well-drained soils that formed in material weathered from hard sandstone or meta-sandstone. Gaviota soils are on hills and mountains and have slopes of 2% to 100%. They are well and excessively well drained with very low to very high runoff and moderately rapid permeability.

The Reiff series consists of very deep, well-drained soils formed in coarse- to medium-textured alluvium weathered from mixed sources. Reiff soils are on flood plains and alluvial fans with 0% to 9% slopes. They are well drained with very slow to slow runoff and moderately rapid permeability.

Gravelly Coarse Sand

Riverwash occurs within the study area. It is described as sandy, gravelly, or cobbly (Bowman 1973). It is excessively drained with rapid permeability (Bowman 1973).

Gravelly Loam

Redding-Urban land complex, 2% to 9% slopes, occurs within the study area. The Redding series consists of moderately deep to duripan, well- or moderately well-drained soils that formed in alluvium derived from mixed sources. They are on nearly level or dissected and undulating to hilly high terraces on 0% to 30% slopes.

Loamy Coarse Sand

Marina loamy coarse sand, 2% to 9% slopes, occurs within the study area. The Marina series consists of gently sloping to moderately steep areas on short rolling dune-like slopes at elevations of 100 to 700 feet. They formed in old sand dunes near the coast. They are somewhat excessively drained with slow to rapid runoff and moderate permeability.

Other

Made land and terrace escarpments occur within the study area. Bowman (1973) describes made land as areas that have been filled with excavated and transported soil material, dredged or paving material. Bowman (1973) describes terrace escarpments as steep to very steep escarpments or escarpment-like landscapes, typically occurring on terraces or alluvial fans between narrow floodplains and adjoining uplands.

REGIONAL RESOURCE PLANNING CONTEXT

The MSCP is a long-term regional conservation plan established to protect special-status species and habitats in San Diego County. The MSCP is divided into subarea plans that are implemented separately from one another. The project study area is within the City's Subarea Plan. This subarea encompasses 206,124 acres and is generally characterized by urban land use. The City Multiple Habitat Planning Area (MHPA) is a "hard line" preserve developed by the City in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The MHPA identifies biological core resource areas and corridors targeted for conservation, in which only limited development may occur (City of San Diego 1997).

For planning purposes, the City's MSCP Subarea Plan has been divided into five distinct areas: Southern Area, Eastern Area, Urban Areas, Northern Area, and Cornerstone Lands and San Pasqual Valley. The study area is designated within the "Urban Area" of City's MSCP Subarea Plan. Sites 8, 10, and 12 are located in some Environmentally Sensitive Lands; Sites 4, 8, and 12 are partially within lands designated as MHPA by the City's Subarea Plan. Site 5 is located within the City Coastal Zone Map No. C-908 as shown in Chapter 13, Article 2, Division 4 (City of San Diego 2014) (Figures 2A–2C).

METHODS

Data regarding biological and jurisdictional resources present within the study area were obtained through a review of pertinent literature and field reconnaissance; both are described in detail below.

Literature Review

Dudek reviewed the following data sources to assist with the biological and jurisdiction efforts:

- Natural Resource Conservation Service Websoil Survey (USDA 2016)
- CDFW California Natural Diversity Database (CNDDB) (CDFW 2016, 2017a)
- California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2016, 2017)
- MSCP (City of San Diego 1997)
- USGS National Hydrography Dataset (USGS 2016)
- USFWS Species Occurrence Data (USFWS 2016, 2017)
- San Diego Geographic Information Source (SanGIS) database (SanGIS 2016)

Field Reconnaissance

The field survey was performed by Dudek biologists Callie Amoaku and Monique O'Conner on December 7, 2016, and December 8, 2016 (Table 1). The biological survey was conducted in accordance with the City's Guidelines for Conducting Biological Surveys (City of San Diego 2012, Appendix II) and included the mapping of vegetation communities and land covers present in the study area, an evaluation of jurisdictional wetlands or waters, and an evaluation of the potential for special-status species to occur in the study area. A rare plant survey was conducted on May 2, 2017, by Erin Bergman (Table 1). Additional site visits were made to refine vegetation mapping (Table 1). Note that the study area is defined as the impact footprint for the

five sites plus a 50-foot-wide study corridor surrounding each site. A 300-foot buffer around each site was also evaluated (but not directly surveyed) for potential wildlife habitat within surrounding areas. This is intended to better facilitate a review of all potential direct and indirect impacts resulting from the project (i.e., trenching and staging areas).

Table 1
Survey Conditions

Date	Time	Personnel	Survey Conditions
12/7/2016	0845–1600	Callie Amoaku, Monique O'Conner	58 degrees Fahrenheit (°F)–64°F; 10%–50% cloud cover (cc); 0–1.5 mile per hour (mph) winds
12/8/2016	1200–1500	Callie Amoaku	63°F–65°F; 20% cc; 0–1 mph winds
5/2/2017	0818–1555	Erin Bergman	70°F–76°F; 0%–10% cc; 0–3 mph winds
11/2/2017	0800–1000	Mackenzie Forgey	62°F–66°F; 100% cc; 0–2 mph winds
1/10/2018	0900–1100	Mackenzie Forgey	62°F–65°F; 10% cc; 0–5 mph winds

Resource Mapping

The survey was conducted on foot to visually cover 100% of the study area. A 200-scale (i.e., 200 feet = 1 inch) aerial photograph map with an overlay of the project boundary was used to map the vegetation communities and record any special-status biological resources directly in the field. Also, the ESRI Collector application was used to electronically map the vegetation communities and record notes, and a Trimble GeoXT was used to accurately map the exact location of the unvegetated stream channel. Observable biological resources including perennial plants commonly accepted as regionally special status by the CNPS, CDFW, and USFWS were recorded on the field map and in the ESRI Collector application, where applicable. Additionally, an assessment and determination of potential for locally recognized special-status species (i.e., Narrow Endemic and Covered Species listed in the City's Subarea Plan) to occur on site was conducted. The information recorded onto the field maps, in the ESRI Collector application, and in the Trimble GeoXT (e.g., vegetation communities, land cover, and plant species locations) was subsequently digitized into a Geographic Information System (GIS) format.

The vegetation community and land cover mapping is based on categories used in the City's Biology Guidelines, which are based on a Holland (1986) classification system and revised Holland (Oberbauer et al. 2008). Areas on site supporting less than 20% native plant species cover were mapped as disturbed land, and areas supporting at least 20% native plant species, but fewer than 50% native cover, were mapped as a disturbed native vegetation community (e.g., disturbed coastal sage scrub). Vegetation community and land cover mapping was conducted at each work location.

Following completion of the field work, Dudek GIS Specialist Matthew Watson digitized the vegetation polygons using ArcGIS. Once in ArcGIS, the acreage of each vegetation community and land cover present on site was determined.

Jurisdictional Delineation

A jurisdictional delineation of "waters of the United States," including wetlands, under the jurisdiction of the USACE, CDFW, RWQCB, and City was conducted in the study area accordance with the *Wetland Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008). A predominance of a bed and bank with evidence of hydrology and/or hydrophytic vegetation, where associated with a stream channel, is used to define CDFW-regulated wetlands. The limits of areas under the jurisdiction of the City and RWQCB generally match those areas delineated as USACE-jurisdictional. However, stream channels with evidence of an ordinary high water mark (OHWM) that lack connectivity to waters of the United States may be considered to be under the jurisdiction of RWQCB and CDFW but not under the jurisdiction of USACE. Further, artificially created wetlands or seasonal drainages that lack wetlands vegetation (i.e., ephemeral and/or intermittent channels) do not meet the City's definition of a wetland per the San Diego Land Development Code Biology Guidelines (City of San Diego 2012). Erosional features are not considered regulated features by USACE, CDFW, RWQCB, or the City.

All of the sites were evaluated within the 50-foot study area for evidence of an OHWM, surface water, and hydrophytic vegetation.

Rare Plant Survey

The rare plant survey was conducted on May 2, 2017, during the bloom period for the majority of the rare plants that occur in the vicinity of the proposed project. Rare plants with potential to occur on site, but bloom outside of May are primarily limited to perennial shrubs or herbs that would have been identified during surveys. Field survey methods conformed to CNPS Botanical Survey Guidelines (CNPS 2001) and "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" (CDFG 2009). All plant species encountered during the field surveys were identified to subspecies or variety, if applicable, to determine sensitivity status. Latin and common names for plant species with a California Rare Plant Rank (CRPR) (formerly CNPS List) follow the online Inventory of Rare and Endangered Plants of California (CNPS 2017). For plant species without a CRPR, Latin and common names follow the Rebman and Simpson (2014). If a plant is not in Rebman and Simpson (2014), Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and

Naturalized Plants of California (Jepson Flora Project 2017) and common names follow the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service Plants Database (USDA 2017b). Target species encountered were recorded as polygons using a GPS with sub-meter accuracy and their population estimated.

Plants and Wildlife

The plant species encountered during the field survey were identified and recorded directly into a field notebook. Those species that could not be identified immediately were brought into the laboratory for further investigation. A compiled list of plant species observed in the study area is presented in Appendix A.

Wildlife species detected during the field survey by sight, calls, tracks, scat, or other signs were recorded directly onto a field notebook. Binoculars were used to aid in the identification of wildlife. In addition to species actually detected during the survey, expected wildlife use of the site was determined by known habitat preferences of local species and knowledge of their relative distributions in the area. A list of wildlife species observed in the study area is presented in Appendix B.

Latin and common names of animals follow Crother (2012) for reptiles and amphibians, American Ornithologists' Union (AOU 2016) for birds, Wilson and Reeder (2005) for mammals, and North American Butterfly Association (NABA 2016) and San Diego Natural History Museum (SDNHM 2002) for butterflies.

Special-Status Species

Special-status biological resources are those defined as follows: (1) species that have been given special recognition by federal, state, or local conservation agencies and organizations due to limited, declining, or threatened population sizes; (2) species and habitat types recognized by local and regional resource agencies as special status; (3) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; (4) wildlife corridors and habitat linkages; or (5) biological resources that may or may not be considered special status, but are regulated under local, state, and/or federal laws.

Searches of the CNPS online inventory database (CNPS 2016, 2017), CNDDB online inventory (CDFW 2016, 2017a), and USFWS occurrence data were conducted to assist in the determination of special-status plant and animal species potentially present on site. Specifically, both a one-quadrangle search and a nine-quadrangle search were conducted. In addition to these state database searches, species covered under the City's Subarea Plan, including Narrow

Endemic Species, were evaluated in relation to the project to assist in determining the level of potential to occur in the study area.

Survey Limitations

The vegetation mapping and jurisdictional delineation were conducted in the winter when most annuals are not in bloom. However, based on characteristics observed at each of the sites, this limitation would not have affected the jurisdictional determination. Perennial species were identifiable and used to determine the vegetation communities. The rare plant survey was conducted during the spring season, which resulted in detection and identification of most perennial plant species and spring or early summer blooming annuals. The surveys were scheduled in May to maximize detection of the special-status plants with potential to occur on site. Due to the timing of the surveys, early blooming spring or late blooming annuals may not have been detectable.

Each study area was surveyed entirely, with the exception of Site 5 (Silvergate Avenue), which was fenced along the south at the portion of the study area and required special access to the Space and Naval Warfare Systems Command (SPAWAR). Vegetation mapping was done where there was visual access from the street, but rare plant surveys were not conducted at this site. No native habitat occurs within the actual proposed project area, but the 50-foot buffer study area extends south into some native habitat within the SPAWAR. The only proposed project within the SPAWAR property is abandonment of an existing pipeline. Since the City will not be working within the SPAWAR property, no biological resources would be affected there.

RESULTS

The quantification of biological resources described herein pertains to the project study area (project components and 50-foot buffer), totaling approximately 15.24 acres.

Vegetation Communities/Land Cover Types

The vegetation communities and land cover types recorded in all five sites and their associated 50-foot buffer are described in detail below, their acreages are presented in Table 2, and their spatial distributions are presented on the Biological Resources Map (Figure 3A through Figure 3E, Biological Resources). Also included in Table 2 is the designation of vegetation community sensitivity, based on rarity and ecological importance, as identified by the City's Land Development Manual Biology Guidelines (2012).

Table 2
Vegetation Communities and Land Cover Types in the Project Study Area

Vegetation Community/Land Cover Type	Subarea Plan Tier1	Acreage					
		Site 4 (Camino del Rio North)	*Site 5 (Silvergate Avenue)*	*Site 8 (Central Ave)*	*Site 10 (Laurel Street)*	*Site 12 (39th Street)*	*Total*
Native Vegetation Communities							
Diegan Coastal Sage Scrub	II	—	0.01	0.13	0.09	0.59	**0.83**
Diegan Coastal Sage Scrub – Restoration	II	—	—	—	0.04	—	**0.04**
Disturbed Diegan Coastal Sage Scrub	II	—	—	—	0.17	0.01	**0.18**
Scrub Oak Chaparral	I	—	—	0.20	0.27	0.58	**1.06**
Non-Native Land Covers							
Disturbed Habitat	IV	—	—	0.74	0.19	0.30	**1.23**
Eucalyptus Woodland	IV	0.04	0.11	—	—	0.43	**0.58**
Ornamental	IV	—	1.34	—	—	—	**1.34**
Urban/Developed	IV	1.11	5.81	1.08	1.00	0.98	**9.99**
Acreage Totals[2]		**1.15**	**7.27**	**2.16**	**1.76**	**2.90**	**15.24**
Non-Wetland Waters/Streambed							
Unvegetated Channel[3]		**—**	**—**	**—**	**—**	**0.02 acres (251 linear feet)**	**0.02 acres (251 linear feet)**

1 City Subarea Plan tiers from City Biology Guidelines (City of San Diego 2012).
2 Totals may not sum due to rounding.
3 This feature is overlaid and should not be counted toward the total acreage.

Diegan coastal sage scrub is composed of a variety of soft, low shrubs, characteristically dominated by drought-deciduous species such as coastal sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and sages (*Salvia* spp.), with scattered evergreen shrubs, including lemonadeberry (*Rhus integrifolia*), and laurel sumac (*Malosma laurina*). This vegetation community typically develops on xeric slopes (Oberbauer et al. 2008).

Diegan coastal sage scrub was identified at the Central Avenue, Laurel Street, and 39th Street sites. At the Central Avenue site, this vegetation community was dominated by San Diego mountain-mahogany (*Cercocarpus minutiflorus*), lemonadeberry, and laurel sumac. At the Laurel Street site, this vegetation community was dominated by lemonadeberry and laurel sumac. At the 39th Street site, this vegetation community was dominated by lemonadeberry, laurel sumac, and thick leaf yerba

santa (*Eriodictyon crassifolium*). Diegan coastal sage scrub is ranked as Tier II habitat per the City's Land Development Manual Biology Guidelines (City of San Diego 2012).

Diegan coastal sage scrub restoration is similar in species composition to Diegan coastal sage scrub but appears to be an active restoration area based on evidence of weed removal and small coastal sage shrub plantings. Diegan coastal sage scrub is ranked as Tier II habitat per the City's Land Development Manual Biology Guidelines (City of San Diego 2012).

Disturbed Diegan coastal sage scrub is similar in species composition to Diegan coastal sage scrub but has higher cover of bare ground or non-native shrubs, forbs, and grasses. Disturbed coastal sage scrub often intergrades with annual grassland and disturbed habitat depending on the abundance of annual grasses or non-native forbs (Oberbauer et al. 2008).

Disturbed Diegan coastal sage scrub was identified at the Laurel Street site and was dominated by prickly Russian-thistle (*Salsola tragus*), lemonadeberry, California buckwheat, and laurel sumac. Disturbed Diegan coastal sage scrub is ranked as Tier II habitat per the City's Land Development Manual Biology Guidelines (City of San Diego 2012).

Disturbed habitat, according to Oberbauer et al. 2008, represents areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are not supported. Disturbed habitat refers to areas that are not developed yet are dominated by non-native plant species or lack vegetation, and they are generally the result of severe or repeated mechanical perturbation. This vegetation community is typically composed of invasive/non-native species such as thistles (*Centaurea*, *Cynara*, and *Salsola* spp.), telegraph weed (*Heterotheca grandiflora*), horehound (*Marrubium vulgare*), london rocket (*Sisymbrium irio*), radishes (*Raphanus* spp.), hottentot-fig (*Carpobrotus edulis*), daisies (*Glebionis* spp.), sweet fennel (*Foeniculum vulgare*), pampas grass (*Cortaderia* spp.), and fountain grass (*Pennisetum* spp.) (Oberbauer et al. 2008).

Disturbed habitat was identified at the Central Avenue, 39th Street, and Laurel Street sites. This community was composed primarily of prickly Russian-thistle and unvegetated, disturbed ground. Disturbed habitat is not regulated by the environmental resource agencies. This land cover is ranked as Tier IV habitat per the City's Land Development Manual Biology Guidelines (City of San Diego 2012). Thus, impacts to these areas would not require mitigation.

Eucalyptus woodland, although not recognized by Holland (1986) as a native plant community, is a distinct "naturalized" vegetation type that is fairly widespread throughout Southern California and is considered a non-native woodland habitat. It typically consists of monotypic stands of introduced

Australian eucalyptus trees (*Eucalyptus* spp.). The understory is either depauperate or absent owing to shade and the possible allelopathic (i.e., toxic) properties of the eucalyptus leaf litter. Although eucalyptus woodlands are of limited value to most native plants and animals, they frequently provide nesting and perching sites for several raptor species (Oberbauer et al. 2008).

This vegetation community was identified at the Camino del Rio North, Central Avenue, and 39th Street sites. At the Central Avenue and 39th Street sites, understory vegetation was depauperate. At the Camino del Rio North site, eucalyptus woodland was mapped along the south bank of the San Diego River, having a eucalyptus canopy, and an intermixed understory containing yellowwood (*Podocarpus* spp.), hottentot-fig, and sweet fennel. Eucalyptus woodland is ranked as Tier IV habitat per the City's Land Development Manual Biology Guidelines (2012). Thus, impacts to these areas would not require mitigation.

Ornamental plantings are typically mapped as urban/developed; however, due to the larger swath of ornamental trees and shrubs absent hardscaped areas in Site 5, it was mapped separately. This land cover consists primarily of non-native trees and ground covers, such as pines (*Pinus* spp.), yellowwood, pepper trees (*Schinus* spp.), and hottentot-fig.

Scrub oak chaparral is an evergreen chaparral typically dominated by scrub oak (*Quercus berberidifolia*), Nuttall's scrub oak (*Quercus dumosa*), and birch leaf mountain mahogany (*Cercocarpus betuloides*). Other characteristic species include Eastwood manzanita (*Arctostaphylos glandulosa*), ceanothus (*Ceanothus* spp.), California ash (*Fraxinus dipetala*), narrowleaf bedstraw (*Galium angustifolium*), canyon silktassel (*Garrya veatchii*), toyon (*Heteromeles arbutifolia*), honeysuckle (*Lonicera* spp.), chaparral pea (*Pickeringia montana*), holly leaf cherry (*Prunus ilicifolia*), interior live oak (*Quercus wislizeni* var. *frutescens*), California coffee berry (*Frangula californica*), and poison oak (*Toxicodendron diversilobum*). This vegetation community typically develops on mesic slopes (Oberbauer et al. 2008).

Scrub oak chaparral was identified at the Central Avenue, Laurel Street, and 39th Street sites. At the Central Avenue site, this vegetation community was primarily composed of scrub oak, toyon, chamise (*Adenostoma fasciculatum*), and San Diego mountain-mahogany. At the Laurel Street site, this vegetation community was primarily composed of scrub oak, Nuttall's scrub oak, and lemonadeberry. At the 39th Street site, the dominant species in this vegetation community was scrub oak, Nuttall's scrub oak, interior live oak, laurel sumac, and thick leaf yerba santa; the areas mapped as scrub oak chaparral at the 39th Street site appeared to have been recently revegetated with common Diegan coastal sage scrub species. Scrub oak chaparral is ranked as Tier I habitat per the City's Land Development Manual Biology Guidelines (City of San Diego 2012).

Urban/developed land, according to Oberbauer et al. (2008), represents areas that have been constructed upon or otherwise physically altered to an extent that native vegetation communities are not supported. This land cover type generally consists of semipermanent structures, homes, parking lots, pavement or hardscape, and landscaped areas that require maintenance and irrigation (e.g., ornamental greenbelts). Typically, this land cover type is unvegetated (Oberbauer et al. 2008).

Within the study area, developed land includes homes, associated structures, paved streets/sidewalks, and existing developed structures. Urban/developed land was identified at all five sites. Urban/developed land is not regulated by the environmental resource agencies and is often considered a disturbed category. This land cover is ranked as Tier IV habitat per the City's Land Development Manual Biology Guidelines (City of San Diego 2012). Thus, impacts to these areas would not require mitigation.

Jurisdictional Delineation

Due to lack of hydrophytic vegetation, soil samples and data station information were not collected. One unvegetated stream channel with 3 feet between OHWM was mapped within the study area at Site 12 (Figure 3E). The unvegetated streambed has a cobble bottom, a vertical bed and bank, and signs of scour and wracking. There are 0.02 acres (251 linear feet) of unvegetated stream channel within the 50-foot study area.

The channel is considered an unvegetated streambed under the jurisdiction of USACE, RWQCB, and CDFW pursuant to Sections 401 and 404 of the federal CWA and Sections 1600–1607 of the California Fish and Game Code. The channel is identified as a blue-line stream originating further east in Manzanita Canyon (Historic Aerials Online 2017; USGS 2016). The channel flows in a southwesterly direction and through a series of tributaries and connects to Chollas Creek, which flows into the Pacific Ocean at E. Harbor Drive and S. 32nd Street (USGS 2016). Because the streambed is a seasonal drainage feature that lacks wetland-dependent vegetation, it does not meet the definition of a City wetland.

Plants and Wildlife

A total of 105 species of native or naturalized plants were recorded within the 300-foot study area (see Appendix A).

A total of 13 wildlife species were recorded in the study area during the 2016 survey (Appendix B). The wildlife species observed are common, disturbance-adapted species typically found in urban and suburban settings, such as American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), and less goldfinch (*Spinus psaltria*). No mammals, reptiles, or

amphibians were observed during the survey. Two invertebrates, Sonoran blue (*Philotes sonorensis*) and cabbage white (*Pieris rapae*), were observed during the survey. There is minimal suitable habitat for small wildlife species (e.g., reptiles, amphibians, and small mammals) within the study area due to the percent cover of impervious surfaces, the sites' proximity to residential development, the isolated and fragmented context of the natural vegetation communities in the study area, and the disturbed nature of the immediately surrounding habitat. Overall, despite the proximity to San Diego River (Site 4), canyons (Sites 8, 10, and 12), and Chollas Creek (Site 12), the diversity of wildlife species in the study area is low due to the extent of existing development and urban setting of the study area.

Special-Status Species

Special-status plant and wildlife species refer to species regulated by federal, state, or local acts and guidelines. This report defines special-status species as follows:

- Federally listed threatened or endangered pursuant to the federal Endangered Species Act (16 U.S.C. Sections 1531 et seq.)
- State-listed threatened or endangered pursuant to the California Endangered Species Act (CDFW 2017b, 2017c)
- Plants or wildlife species described as special-status by CDFW (2017d, 2017e)
- Narrow Endemic and Covered Species listed in the City's Subarea Plan (City of San Diego 1997)

A search of CNPS and CNDDB records was used to develop the potential for special-status plant and wildlife species to occur in the study area due to the presence of suitable habitat within the study area (taking into consideration such things as vegetation communities, soils, elevation, and geographic range, and life form/blooming period). These two tables of special-status plant and wildlife species (i.e., federally, state, or locally listed species), their favorable habitat conditions, and their potential to occur on site based on the findings of the field investigations are presented in Appendices C and D, respectively. Species considered special status under the City's Subarea Plan, including Narrow Endemic Species, are also included in these appendices.

Special-Status Plant Species

No federally or state-listed species were observed during the survey. Two special-status plants were observed: wart-stemmed ceanothus (*Ceanothus verrucosus*) and Nuttall's scrub oak. Approximately 12 wart-stemmed ceanothus and 73 Nuttall's scrub oak individuals are mapped

on Site 12 within both the proposed work easement and the 50-foot buffer (Figure 3E). Approximately 55 Nuttall's scrub oak is also mapped in the center of Site 10 within the proposed work easement and 50-foot buffer (Figure 3D). No special-status species were observed at Sites 4 and 8; Site 5 could not be surveyed due to access restrictions. No special-status wildlife species were observed at any of the proposed project locations. Due to the limited amount of suitable habitat for these species, the generally disturbed nature of the sites, and proximity of urban development, the site conditions limit the potential for special-status plants and other special-status wildlife species to occur in the study area.

No other plant species presented in Appendix C were detected during the field survey; given the lack of unique soil types (e.g., clay, alkaline) and extent of developed/disturbed land covers, additional special-status plants are not expected or have low potential to occur in the study area.

Special-Status Wildlife Species

No special-status wildlife species were observed during surveys. Due to the limited amount of suitable habitat, the generally disturbed nature of the study area, and proximity of urban development, the conditions limit the potential for the majority of special-status wildlife species to occur in the study area.

Species with Moderate or High Potential to Occur

Several species presented in Appendix D have moderate or high potential to occur within the study area:

- Orange-throated whiptail (*Aspidoscelis hyperythra*) (Watch List (WL), Covered)
- San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*) (Species of Special Concern (SSC))
- Blainville's horned lizard (*Phrynosoma blainvillii*) (SSC, Covered)
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) (SSC)
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) (WL, Covered)
- Coastal California gnatcatcher (*Polioptila californica californica*) (federally threatened, SSC, Covered)
- Dulzura pocket mouse (*Chaetodipus californicus femoralis*) (SSC)
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) (SSC)
- San Diego desert woodrat (*Neotoma lepida intermedia*) (SSC)

These species and their potential to occur are described by site in Appendix D.

PROJECT DESCRIPTION

The proposed project would replace 8,380 linear feet of 8- and 12-inch-diameter cast iron and asbestos cement distribution water main with PVC pipe, replace 193 linear feet of 18-inch-diameter storm drain with PVC pipe, and abandon 4,560 linear feet of existing pipeline. The proposed project would also consist of installation of one hydrant, curb ramps, and resurfacing streets along the project alignment as required. All impacts are expected to be temporary, and staging areas would be confined to the work area shown in Figures 3A–3E. Much of the work would occur in developed areas (e.g., existing streets). This report focuses on work occurring within or adjacent to environmentally sensitive areas.

All non-disturbed work areas would be revegetated and restored to preconstruction state following construction of the project. A revegetation/erosion control report and plan sheet will be prepared in accordance with the City's Land Development Code requirements and MSCP Subarea Plan.

Specifically, the following project work would occur:

1. **Site 4 (Camino del Rio North):** The proposed work would include replacing an existing water main. Impacts would include a 10-foot-wide work area along the proposed water main replacement area to accommodate equipment, spoil piles, and the 6-foot-wide trench (Figure 3A).
2. **Site 5 (Silvergate Avenue):** The proposed work would include replacement of an existing water main, abandonment of a water main, and installation of sewer line. Impacts would include work areas ranging from 5 feet to 11 feet wide, and a 100-square-foot work area at the proposed terminus of the abandoned water main to accommodate equipment, spoil piles, and the 6-foot-wide trench (Figure 3B).
3. **Site 8 (Central Avenue):** The proposed work would include replacing an existing water main. Impacts would include a 10-foot-wide work area along the proposed water main replacement area to accommodate equipment, spoil piles, and the 6-foot-wide trench. Additionally, one hydrant would be installed, and an existing hydrant would be removed (Figure 3C).
4. **Site 10 (Laurel Street):** The proposed work would include replacing an existing water main and storm drain pipe. Impacts would be to work areas measuring 222 linear feet long by 15 feet wide, and 33 linear feet long by 10 feet wide along the proposed water main replacement on Laurel Street; 193 linear feet long by 32 feet wide, and 98 linear feet long by 10 feet wide on Roseview Place for the water main and storm drain

replacement to accommodate equipment, spoil piles, and the 6-foot-wide trench; and 171 linear feet long by 10 feet wide along Highland Avenue (Figure 3D).

5. **Site 12 (39th Street):** The proposed work would include replacing an existing water main and abandoning an existing water main. One segment would be replaced using trenchless drilling ("aqua pipe"), one new alignment segment would be installed using trenchless drilling, and one new alignment would be installed using an open trench. Four segments would be abandoned south of the water main replacement area. Impacts would include a 10-foot by 10-foot starting pit in the asphalt roadway on 39th Street; a 10-foot by 15-foot receiving pit in the canyon; a 6-foot-wide trench and 20-foot-wide work area along a portion of the proposed water main replacement off Manzanita Drive; and as a 100-square-foot work area at the proposed terminus of the abandoned water main to accommodate equipment (Figure 3E). Access to the canyon would be via existing footpaths and sewer access paths, and would not result in additional vegetation or plant impacts.

PROJECT IMPACTS

This section addresses direct and indirect impacts that would result from implementation of the project.

Direct impacts may include the permanent loss of on-site habitat and the plant and wildlife species that it contains, as well as the temporary loss of on-site habitat. Direct impacts were quantified by overlaying the proposed impact alignment (i.e., work areas as defined above) onto the biological resources map and evaluating the impacts by vegetation community. As stated above, all impacts are expected to be temporary direct impacts for purposes of identifying post-project conditions. However, based on the City's Biology Guidelines (City of San Diego 2012), all impacts are treated as permanent for purposes of determining mitigation requirements.

Indirect impacts refer to off-site and on-site effects that are short-term impacts (i.e., temporary) due to the project construction or long-term (i.e., permanent) design of the project and the effects it may have to adjacent resources. For this project, it is assumed that the potential indirect impacts resulting from construction activities may include dust, noise, and general human presence that may temporarily disrupt species and habitat vitality and construction-related soil erosion and runoff. No long-term indirect impacts are assumed to occur since the project would not result in a change of existing land use, noise, or human presence.

Direct Impacts

Vegetation Communities/Land Cover Types

Implementation of the proposed project would result in direct impacts to 1.10 acres. Table 3 provides a summary of these impacts.

Table 3
Impacts to Vegetation Communities and Land Cover Types in the Proposed Project Limits

Vegetation Community/Land Cover Type	Subarea Plan Tier[1]	Acreage					
		Site 4 (Camino del Rio North)	*Site 5 (Silvergate Avenue)*	*Site 8 (Central Avenue)*	*Site 10 (Laurel Street)*	*Site 12 (39th Street)*	*Total[2]*
Native Vegetation Communities							
Diegan Coastal Sage Scrub	II	—	—	0.01	0.02	<0.01	**0.03**
Diegan Coastal Sage Scrub – Restoration	II	—	—	—	<0.01	—	<0.01
Disturbed Diegan Coastal Sage Scrub	II	—	—	—	0.01	—	**0.01**
Scrub Oak Chaparral	I	—	—	0.01	0.06	—	**0.07**
Native Vegetation Communities Subtotal		*0*	*0*	*0.02*	*0.09*	*<0.01*	***0.12***
Non-Native Land Covers							
Disturbed Habitat	IV	—	—	0.09	0.10	—	**0.19**
Eucalyptus Woodland	IV	—	—	—	—	0.04	**0.04**
Ornamental	IV	—	0.04	—	—	—	**0.04**
Urban/Developed	IV	0.10	0.36	0.08	0.09	0.07	**0.71**
Non-Native Land Covers Subtotal		*0.10*	*0.40*	*0.17*	*0.19*	*0.11*	***0.98***
Acreage Totals[2]		**0.10**	**0.40**	**0.20**	**0.28**	**0.12**	**1.10**
Non-Wetland Waters/Streambed							
Unvegetated Channel		**—**	**—**	**—**	**—**	**—**	**—**

1 Vegetation Tiers are defined by the City's Biology Guidelines (City of San Diego 2012).
2 Numbers may not total precisely due to rounding.

Urban/developed lands, disturbed habitat, eucalyptus woodland, and ornamental plantings account for 89% of the impacts. With the exception of eucalyptus woodland, which can provide perching or nesting habitat for some wildlife species, these areas provide little native habitat value and foraging opportunities for wildlife. They are Tier IV vegetation communities as defined by the City's Biology Guidelines, and impacts to these vegetation communities/land covers would not be significant and no mitigation is required (City of San Diego 2012).

Direct impacts to scrub oak chaparral and Diegan coastal sage scrub (including disturbed) would total 0.12 acres and would be considered significant because the total combined impacts to these Tier I and II communities exceeds the 0.1-acre significance threshold established by the City's Biology Guidelines (City of San Diego 2012), and would require mitigation (**BIO-1**).

Jurisdictional Resources

There is an unvegetated streambed at Site 12 (39th Street). This aquatic resource is considered a jurisdictional streambed and as such is regulated by the USACE, RWQCB, and CDFW. Access to Sites 8 and 12 would be along an existing public utility department sewer access path (Figures 3C and 3E). The pipeline would be installed via trenchless drilling and, therefore, would not result in any impacts to this streambed.

Special-Status Plants

Wart-stemmed ceanothus (CRPR 2B.2; Covered Species) and Nuttall's scrub oak (CRPR 1B.1) were detected in the project study area during the 2017 survey. Nuttall's scrub oak overlaps the work areas on Site 10 (4 individuals) (Figure 3D). No additional special-status plant species were identified during the survey. No additional special-status plant species have a moderate or high potential to occur within the project study area, and due to the results of focused plant survey, the extent of vegetative disturbance, and lack of suitable substrate, special-status plant species are not expected to occur (Appendix C). Direct impacts to these plant species would be significant and would require mitigation (**BIO-2**).

Special-Status Wildlife

No special-status wildlife species were detected; however, there is moderate or high potential for orange-throated whiptail, San Diegan tiger whiptail, Blainville's horned lizard, coast patch-nosed snake (*Salvadora hexalepis virgultea*), Southern California rufous-crowned sparrow, Dulzura pocket mouse, northwestern San Diego pocket mouse (*Perognathus fallax fallax*), and San Diego desert woodrat to occur in the study area. These species are found in San Diego County and there is suitable habitat in the study area. Due to the proximity of the sites' to urban development and the limited size of the suitable foraging and nesting habitat, direct impacts to all habitat for these special-status wildlife species are not considered significant (Appendix D). Potential coastal California gnatcatcher habitat would be temporarily impacted in Site 8 (Central Avenue) and Site 12 (39th Street). If any coastal California gnatcatcher nests are directly impacted, this would be significant and require mitigation (**BIO-3**).

Although raptor species have the potential to occur in the study area, lands within the impact footprint are highly urbanized or disturbed and do not provide important habitat that would substantially affect any species from continuing to exist within the area.

Non-Special-Status Birds (Migratory Bird Treaty Act)

Most native nesting birds are protected under the MBTA (16 U.S.C. 703–712), and nesting raptors are afforded additional protection under California Fish and Game Code Section 3503.5. Non-special-status birds can nest on site. Direct impacts to active nests protected under the MBTA and/or California Fish and Game Code Section 3503.5 would be a significant impact (**BIO-4**).

Indirect Impacts

Vegetation Communities/Land Covers

Two native vegetation communities are mapped within the project impact footprint: coastal sage scrub (including disturbed) and scrub oak chaparral. Short-term indirect impacts that may affect adjacent native vegetation communities include dust, invasive plant species, and increased human presence. Therefore, short- and long-term indirect impacts to off-site, adjacent vegetation communities would be a significant impact (**BIO-5**).

Jurisdictional Resources

Site 12 supports an unvegetated stream channel regulated by the USACE, RWQCB, and CDFW as a non-wetlands waters of the United States and state. Waters of the United States and state are typically affected in the short term by dust, invasive plant species, and increased human presence and in the long term by changes in the velocity of runoff during and following construction, which could adversely affect the integrity of downstream resources causing erosion and sedimentation. Therefore, short- and long-term indirect impacts to off-site, adjacent jurisdictional waters would be a significant impact (**BIO-6**).

Special-Status Plants

Wart-stemmed ceanothus and Nuttall's scrub oak area mapped within the impact footprint and study area at Sites 10 and/or 12. Potential indirect impacts to these species would be similar to those described above for vegetation communities. Therefore, short- and long-term indirect impacts to off site, adjacent special-status plants would be a significant impact (**BIO-7**).

Special-Status Wildlife

Most of the indirect impacts to vegetation communities previously described can also affect special-status wildlife. Wildlife may also be indirectly affected in the short-term by construction-related noise, which can disrupt normal activities and subject wildlife to higher predation risks. Adverse edge effects can cause degradation of habitat quality through the invasion of pest species. Breeding birds can be significantly affected by short-term, construction-related noise, which can result in the disruption of foraging, nesting, and reproductive activities.

The study area supports suitable vegetation for bird nesting, including trees associated with the street and property landscaping, as well as native habitats (coastal sage scrub and scrub oak chaparral) that could provide nesting habitat for raptors and songbirds protected by the Migratory Bird Treaty Act. Indirect impacts from construction-related noise may occur to breeding wildlife if construction occurs during the breeding season (i.e., February 1 through September 15). Wildlife that would be significantly affected by noise, based on suitable habitat in the project vicinity and in accordance with the City's Land Development Manual Biology Guidelines (June 2012), may occur up to 300 feet from the project work areas. Species whose breeding/nesting may be significantly impacted by noise include all raptor species (regardless of location relative to the MHPA) and coastal California gnatcatcher (within the MHPA only). This impact would be significant absent mitigation (**BIO-8**).

Consistency with the MSCP

The following outlines the proposed project's consistency with applicable MSCP policies and guidelines as set forth in Section 1.4 and 1.5 of the City's MSCP Subarea Plan.

Approximately 0.02 acres of the area to be impacted is located within MHPA lands (Figures 3A–3E). Table 4 provides a summary of the MHPA lands within the different project sites. Direct impacts to the MHPA are minimal and represent the minimum necessary to facilitate the required water main and storm drain improvements.

Table 4
Impacts within MHPA Lands

Vegetation Community/Land Cover	Site 4	Site 8	Site 12
Diegan coastal sage scrub	—	—	<0.01
Disturbed habitat	—	<0.01	—
Scrub oak chaparral	—	0.01	—
Urban/developed	0.01	—	—
Total	**0.01**	**0.01**	**<0.01**

The MSCP establishes specific guidelines that limit activities that occur within the MHPA. In general, activities occurring within the MHPA must conform to these guidelines and, wherever feasible, should be located in the least sensitive areas.

In accordance with Section 1.4.1 (Compatible Land Uses) of the City's MSCP Subarea Plan, the following land uses are considered conditionally compatible with the biological goals and objectives of the MSCP, and thus are allowed within the City's MHPA (City of San Diego 1997):

- Passive recreation
- Utility lines and roads per the directives outlined in Section 1.4.2 of the MSCP
- Limited water facilities and other essential public facilities
- Limited low density residential uses
- Brush management (Zone 2)
- Limited agriculture

Because the project proposes to replace or abandon water facilities, which is considered a conditionally compatible use within the MHPA as outlined above, the project is consistent with Section 1.4.1 of the City's MSCP Subarea Plan.

Because of their importance and difficulty finding alternate locations, public infrastructure projects are often given special consideration by the MSCP. Section 1.4.2 (General Planning Policies and Design Guidelines) of the MSCP Subarea Plan outlines planning policies and design guidelines for various potential uses in MHPA lands (City of San Diego 1997). To document the proposed project's consistency with Section 1.4.2 of the City's Subarea Plan, a matrix has been prepared outlining the applicability of each policy and how the project intends on demonstrating consistency with said policy (Table 5). The City's MSCP Subarea Plan also contains policies found in Section 1.4.3 (Land Use Adjacency Guidelines) that are designed to help limit the impact of activities located adjacent to MHPAs (City of San Diego 1997).

The project is a compatible land use within the MHPA and follows the siting criteria outlined in Section 1.4.2 of the MSCP. Because a portion of the project occurs adjacent to and within the MHPA, the project is required to document compliance with the MSCP Land Use Adjacency Guidelines Section 1.4.3. A matrix has been prepared documenting the project's compliance with the MSCP (Table 5). The evaluation provided in the following matrix documents the applicable guidelines and the project's compliance with the MSCP.

Table 5
Project Consistency Determination with MSCP Land Use Adjacency Guidelines

MHPA Adjacency Guidelines Section 1.4.1 MSCP Subarea Plan*	Applicability	Implementation
The following land uses are considered conditionally compatible with the biological objectives of the MSCP and thus will be allowed within the City's MHPA: • Passive recreation • Utility lines and roads in compliance with policies described in Section 1.4.2 • Limited water facilities and other essential public facilities • Limited low density residential uses • Brush management (Zone 2) • Limited agriculture	The project proposes to replace or abandon water main and storm drain and therefore is a compatible land use within the City's MHPA.	N/A
MHPA Adjacency Guidelines Section 1.4.2 MSCP Subarea Plan*	**Applicability**	**Implementation**
Roads and Utilities		
All proposed utility lines (e.g., sewer, water, etc.) should be designed to avoid or minimize intrusion into the MHPA. These facilities should be routed through developed or developing areas rather than the MHPA, where possible. If no other routing is feasible, then the lines should follow previously existing roads, easements, rights-of-way and disturbed areas, minimizing habitat fragmentation.	Improvements to existing structures and facilities in MHPA lands at Sites 4, 8, and 12 are limited to 0.02 acres. The proposed improvements have been sited to occur in previously disturbed areas to minimize impacts to MHPA.	N/A
All new development for utilities and facilities within or crossing the MHPA shall be planned, designed, located and constructed to minimize environmental impacts. All such activities must avoid disturbing the habitat of MSCP covered species and wetlands. If avoidance is infeasible, mitigation will be required.	Minimal impacts to MHPA lands (i.e., 0.02 acres) are necessary to complete the proposed water improvements. However all work planned is associated with existing utilities and infrastructure and does not include the construction of new utilities and facilitates in MHPA lands. Impacts to California gnatcatcher could occur in MHPA lands at Site 8 and Site 12 if work is to occur during the breeding season.	Project construction will be phased to avoid the breeding season for California gnatcatcher (March 1–August 15) at Site 8 and Site 12. If avoidance of the breeding season at this location is infeasible, preconstruction protocol-level surveys for this species shall be conducted and proper noise attenuation features, nest buffers, and nest avoidance will be implemented in the event that nesting California gnatcatchers are observed within 300 feet of the work site.

Table 5
Project Consistency Determination with MSCP Land Use Adjacency Guidelines

MHPA Adjacency Guidelines Section 1.4.2 MSCP Subarea Plan*	Applicability	Implementation
Roads and Utilities		
Temporary construction areas and roads, staging areas, or permanent access roads must not disturb existing habitat unless determined to be unavoidable. All such activities must occur on existing agricultural lands or in other disturbed areas rather than in habitat. If temporary habitat disturbance is unavoidable, then restoration of, and/or mitigation for, the disturbed area after project completion will be required.	All vegetated areas temporarily disturbed by construction will be restored with native species.	The contractor shall permanently revegetate all disturbed areas.
Construction and maintenance activities in wildlife corridors must avoid significant disruption of corridor usage. Environmental documents and mitigation monitoring and reporting programs covering such development must clearly specify how this will be achieved, and construction plans must contain all the pertinent information and be readily available to crews in the field. Training of construction crews and field workers must be conducted to ensure that all conditions are met. A responsible party must be specified.	No direct impacts to wildlife corridors are anticipated.	N/A
Roads in the MHPA will be limited to those identified in Community Plan Circulation Elements, collector streets essential for area circulation, and necessary maintenance/emergency access roads. Local streets should not cross the MHPA except where needed to access isolated development areas.	The proposed project does not involve the construction of new roads, trails, or access paths.	N/A
Development of roads in canyon bottoms should be avoided whenever feasible. If an alternative location outside the MHPA is not feasible, then the road must be designed to cross the shortest length possible of the MHPA in order to minimize impacts and fragmentation of sensitive species and habitat. If roads cross the MHPA, they should provide for fully-functional wildlife movement capability. Bridges are the preferred method of providing for movement, although culverts in selected locations may be acceptable. Fencing, grading and plant cover should be provided where needed to protect and shield animals, and guide them away from roads to appropriate crossings.	The proposed project does not involve the construction of new roads, trails, or access paths.	N/A

Table 5
Project Consistency Determination with MSCP Land Use Adjacency Guidelines

MHPA Adjacency Guidelines Section 1.4.2 MSCP Subarea Plan*	Applicability	Implementation
Where possible, roads within the MHPA should be narrowed from existing design standards to minimize habitat fragmentation and disruption of wildlife movement and breeding areas. Roads must be located in lower quality habitat or disturbed areas to the extent possible.	The proposed project does not involve the construction of new roads, trails, or access paths.	N/A
Roads and Utilities		
For the most part, existing roads and utility lines are considered a compatible use within the MHPA and therefore will be maintained. Exceptions may occur where underutilized or duplicative road systems are determined not to be necessary as identified in the Framework Management.	The proposed project involves improvements to existing utility lines and associated infrastructure in MHPA lands at Sites 4, 8, and 12. Impacts to MHPA lands due to the proposed are minimal and are limited to the minimum amount necessary to complete the improvements.	N/A
Fencing, Lighting, and Storage		
Fencing or other barriers will be used where it is determined to be the best method to achieve conservation goals and adjacent to land uses incompatible with the MHPA. For example, use chain link or cattle wire to direct wildlife to appropriate corridor crossings, 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).	No fencing or permanent barriers are required or proposed.	N/A
Lighting shall be designed to avoid intrusion into the MHPA and effects on wildlife. Lighting in areas of wildlife crossings should be of low sodium or similar lighting. Signage will be limited to access and litter control and educational purposes.	No temporary or permanent lighting is required or proposed as part of the project.	N/A
Materials Storage		
Prohibit storage of materials (e.g., hazardous or toxic chemicals, equipment, etc.) within the MHPA and ensure appropriate storage per applicable regulations in any areas that may impact the MHPA, especially due to potential leakage.	Equipment storage and the storage of hazardous or toxic chemicals will not occur within the MHPA. Equipment storage and material stockpiling will occur in designated disturbed upland and developed lands.	The project development footprint within and adjacent to MHPA lands will be clearly delineated in the field by the contractor with temporary flagging and/or fencing.

Table 5
Project Consistency Determination with MSCP Land Use Adjacency Guidelines

MHPA Adjacency Guidelines Section 1.4.3 MSCP Subarea Plan	Applicability	Implementation
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.	Ground disturbance for the project will largely consist of utility trenching, which will create no runoff potential. Consistent with the City Storm Water Standards, existing previously legal drainage, which flows toward the MHPA, shall be minimized.	The MHPA boundary and the limits of ground disturbance shall be clearly delineated on the construction documents and surveyed by the contractor. At the conclusion of the project, the existing grade will be restored and the current drainage patterns will be unchanged.
Toxics		
Land uses, such as recreation and agriculture, that use chemicals or generate by-products such as manure, that are potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate measures to reduce impacts caused by the application and/or drainage of such materials into the MHPA.	No hazardous construction materials storage would be allowed, which could impact the adjacent MHPA (including fuel or sediment) and any drainage from the construction site must be clear of such materials. Consistent with the City Storm Water Standards, existing previously legal drainage, which flows toward the MHPA, shall be minimized.	The contractor shall ensure all areas for staging, storage of equipment and materials, trash, equipment maintenance, and other construction-related activities are within the limits of the project Area of Potential Effect.
Lighting		
Lighting of all developed areas 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.	No additional permanent lighting or night work is proposed for this project.	N/A

Table 5
Project Consistency Determination with MSCP Land Use Adjacency Guidelines

MHPA Adjacency Guidelines Section 1.4.3 MSCP Subarea Plan*	Applicability	Implementation
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 any other use 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.	Direct impacts to nesting water birds are not anticipated from the project description since no trees would be removed and there is no shore bird nesting habitat; however, other covered species have a moderate to high potential to forage, roost, and nest in the area and adjacent to the project vicinity at the project locations.	Protocol surveys may be required for potential impacts to certain avian species during their breeding season: California gnatcatcher within the MHPA only (3/1–8/15). Suitable, foraging and nesting habitat is present at Site 8 and Site 12 and in areas immediately bordering the work site. Least Bell's vireo (3/15–9/15): There is potential habitat outside of the study area but in the vicinity of Site 4 in the San Diego River. Southwestern willow flycatcher (5/1–8/30): There is potential habitat outside of the study area but in the vicinity of Site 4 in the San Diego River.
Barriers		
New development 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.	The proposed project involves the replacement and abandonment of water main lines and replacement of storm drain lines. However, the pipelines will be installed below ground and all areas temporarily disturbed by construction will be restored to preconstruction contours and conditions. No permanent barriers are required or proposed.	N/A

Table 5
Project Consistency Determination with MSCP Land Use Adjacency Guidelines

MHPA Adjacency Guidelines Section 1.4.3 MSCP Subarea Plan*	Applicability	Implementation
Invasives		
No invasive non-native plant species shall be introduced into areas adjacent to the MHPA.	Plant species within 100 feet of the MHPA shall comply with the Landscape Regulations (LDC142.0400 and per table 142-04F, Revegetation and Irrigation Requirements) and be non- invasive.	The contractor shall permanently revegetate all graded, disturbed, or eroded areas that will not be permanently paved or covered by structures using native species approved by the City.
Brush Management		
New residential development located adjacent to and topographically above the MHPA (e.g., along canyon edges) must be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside of the MHPA.	The project is not a structural development and would not create any new brush management zones.	N/A
Grading/Land Development		
Manufactured slopes associated with site development shall be included within the development footprint for projects within or adjacent to the MHPA.	No manufactures slopes are associated with the proposed project.	N/A
MHPA Framework Management Plan Section 1.5.2 MSCP Subarea Plan*	**Applicability**	**Implementation**
Restoration		
Restoration or revegetation undertaken in the MHPA shall be performed in a manner acceptable to the City. Where covered species status identifies the need for reintroduction and/or increasing the population, the covered species will be included in restoration/revegetation plans, as appropriate. Restoration or revegetation proposals will be required to prepare a plan that includes elements addressing financial responsibility, site preparation, planting specifications, maintenance, monitoring and success criteria, and remediation and contingency measures. Wetland restoration/revegetation proposals are subject to permit authorization by federal and state agencies.	The project will temporarily displace native sage scrub and chaparral habitats, developed and ornamental vegetation, and two special-status plants. Following project completion, the temporarily impacted areas will be revegetated and restored in place.	A revegetation plan has been prepared featuring native species that are typical of the area and erosion control features including silt fence and straw fiber rolls, where appropriate. The revegetation areas will be monitored and maintained for 25 months to ensure adequate establishment and sustainability of the plantings/seeding. This plan has been submitted to Development Services Department for review and approval.

* **Source:** City of San Diego 1997

Because direct impacts to MHPA lands associated with the project are minimal will be restored/revegetated, the project will not impact the goals and objectives of the City's Subarea Plan. Thus, the project is consistent with the guidelines and policies of the MSCP.

MITIGATION

This section describes the mitigation measures (MMs) required to offset direct and/or indirect impacts to Tier I or II vegetation communities, jurisdictional resources, special-status plants, coastal California gnatcatcher, and breeding birds protected under the federal MBTA, state Fish and Game Code, and MSCP. These mitigation measures will reduce identified and potential significant impacts to a level that is less than significant pursuant to CEQA.

BIO-1 Direct impacts to 0.12 acre of Tier I and II vegetation communities.

MM-1 To compensate for the loss of Tier I and II vegetation communities, the following mitigation described in Table 6 is required based on the City's mitigation ratios for mitigation land within the MHPA (City of San Diego 2012).

Table 6
Mitigation Requirements

Vegetation Community/Land Cover	Inside MHPA			Outside MHPA			Total Mitigation (Ac.)
	Impacts (Ac.)	*Ratio*	*Mitigation Required (Ac.)*	*Impacts (Ac.)*	*Ratio*	*Mitigation Required (Ac.)*	
Diegan coastal sage scrub	<0.01	1:1	0.01	0.03	1:1	0.03	0.04
Diegan Coastal Sage Scrub – Restoration	—	—	—	<0.01	1:1	0.01	0.01
Disturbed Diegan Coastal Sage Scrub	—	—	—	0.01	1:1	0.01	0.01
Scrub oak chaparral	0.01	2:1	0.02	0.06	1:1	0.06	0.08
Total	**0.01**	**—**	**0.03**	**0.11**	**—**	**0.11**	**0.14**

Mitigation will occur at an existing City of San Diego Public Utilities Department mitigation site.

BIO-2 Direct impacts to and Nuttall's scrub oak (4 individuals).

MM-2 Nuttall's Scrub oak will be incorporated into the revegetation plan to the greatest extent possible, while still maintaining compliance

with the City's Sewer and Water guidelines, which restrict the species that can be planted directly above or adjacent to a pipeline.

BIO-3, BIO-4, and BIO-5 Construction-related direct, temporary impacts to 0.07 acres of potential coastal California gnatcatcher habitat. Construction-related direct and indirect impacts may occur, if construction occurs during the avian breeding season (i.e., February 1 through September 15).

MM-3 The following general measures shall be implemented prior to construction to protect wildlife from construction-related impacts.

MM-3(a) **Biologist Verification** – The owner/permittee shall provide a letter to the City of San Diego's (City) Mitigation Monitoring Coordination (MMC) section stating that a Project Biologist (Qualified Biologist), as defined in the City's Biological Guidelines (City of San Diego 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.

1. **Preconstruction Meeting** – The Qualified Biologist shall attend the preconstruction 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.
2. **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 the City's Biology Guidelines; the Multiple Species Conservation Program (MSCP) Plan; the Environmentally Sensitive Lands ordinance; project permit conditions; CEQA; state and federal endangered species acts; and/or other local, state, or federal requirements.

3. **Biological Construction Mitigation/Monitoring Exhibit** – The Qualified Biologist shall present a Biological Construction Mitigation/Monitoring Exhibit (BCME), which includes the biological documents in item 2 above. It should also include the following: restoration/revegetation plans, plant salvage/relocation requirements (if applicable), avian or other wildlife surveys/survey schedules (including general avian nesting and U.S. Fish and Wildlife Service (USFWS) protocol), timing of surveys, avian construction avoidance areas/noise buffers/ barriers, other impact avoidance areas, and any subsequent requirements determined by the Qualified Biologist and the City Assistant 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.

4. **Avian Protection Requirements** – To avoid any direct impacts to raptors and/or any native/migratory birds, removal of habitat that supports active nests in the proposed area of disturbance should occur outside of 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 preconstruction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The preconstruction 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 preconstruction 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 laws (e.g., appropriate follow-up surveys, monitoring schedules, construction and noise barriers/buffers) 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 Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

5. **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 and fauna species, including nesting birds) during construction. Appropriate steps/care should be taken to minimize attraction of nest predators to the site.
6. **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 the avian and wetland buffers, flag system for removal of invasive species or retention of sensitive plants, and clarify acceptable access routes/methods and staging areas).

The following measures shall be implemented during construction to ensure impacts to breeding wildlife are avoided and/or minimized.

7. **Monitoring** – All construction (including access/staging areas) shall be restricted to areas previously identified, proposed for construction activities/staging, or previously disturbed as shown on 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 preconstruction surveys. In addition, the Qualified Biologist shall document field activity via the Consultant Site

Visit Record (CSVR). The CSVR shall be emailed to MMC on the first day of monitoring, the first week of each month, the last day of monitoring, and immediately in the case of any undocumented condition or discovery.

8. **Subsequent Resource Identification** – The Qualified Biologist shall note/act to prevent any new disturbances to habitat, flora, and/or fauna on site (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.
9. In the event that impacts exceed previously allowed amounts, additional impacts shall be mitigated in accordance with the City's Biology Guidelines, Environmentally Sensitive Lands regulations, MSCP Plan, 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.

MM-3(b) Prior to the preconstruction meeting, the City Manager (or appointed designee) shall verify that the Multiple Habitat Planning Area (MHPA) boundaries and the project requirements regarding the California gnatcatcher, as specified below, are shown on the construction plans.

No clearing, grubbing, grading, or other construction activities shall occur at the Central Avenue or Laurel Street sites during the California gnatcatcher breeding season (March 1 through August 15), until the following requirements have been met to the satisfaction of the City Manager:

1. A Qualified Biologist (possessing a valid Endangered Species Act Section 10(a)(1)(a) Recovery Permit) shall survey those habitat areas within the MHPA that would be subject to construction noise levels exceeding 60 decibels (dB(A)) hourly average for the presence of the California gnatcatcher. Surveys for California gnatcatcher shall be conducted pursuant to the

protocol survey guidelines established by the USFWS within the breeding season prior to the commencement of any construction. If California gnatcatchers are present, then the following conditions must be met:

a. From March 1 through August 15, no clearing, grubbing, or grading of occupied California gnatcatcher habitat shall be permitted. Areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; and

b. From March 1 through 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) hourly average at the edge of occupied California gnatcatcher habitat. An analysis showing that noise generated by construction activities would not exceed 60 dB(A) hourly average at the edge of occupied habitat must be completed by a Qualified Acoustician (possessing current noise engineer license or registration with monitoring noise level experience with listed animal species) and approved by the City Manager at least 2 weeks prior to the commencement of construction activities. Prior to the commencement of construction activities during the breeding season, areas restricted from such activities shall be staked or fenced under the supervision of a Qualified Biologist; or

c. At least 2 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) hourly average at the edge of habitat occupied by the California gnatcatcher. Concurrent with the commencement of construction activities and the construction of necessary noise 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) hourly average. 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) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. 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) hourly average or to the ambient noise level if it already exceeds 60 dB(A) hourly average. Such measures may include, but are not limited to, limitations on the placement of construction equipment and the simultaneous use of equipment.

2. If California gnatcatchers are not detected during the protocol survey, the Qualified Biologist shall submit substantial evidence to the City Manager and applicable resource agencies that demonstrates whether or not mitigation measures such as noise walls are necessary between March 1 and August 15 as follows:

   a. If this evidence indicates that the potential is high for California gnatcatcher to be present based on historical records or site conditions, then Condition 1(a) shall be adhered to as specified above.

   b. If this evidence concludes that no impacts to this species are anticipated, no mitigation measures would be necessary.

BIO-5, BIO-6, and BIO-7 Construction-related indirect impacts to vegetation communities, jurisdictional resources, and special-status plants may occur due to dust, invasive plant species, runoff, etc., both in the short and long terms. MM-4(a) addresses short-term, construction-related indirect impacts. MM-4(b) address long-term, post-construction-related indirect impacts.

MM-4(a) Typical construction best management practices (BMPs) shall limit the spread of dust, and the project Revegetation Plan shall establish a native plant community within any temporarily disturbed areas,

thus minimizing the potential for invasive plant species. Increased human presence is a potential short-term indirect impact. During construction, typical BMPs, such as having trash containers on site, a demarcated limit of work, and contractor education, shall limit the potential for trash and other human disturbance. The velocity of runoff may also change during construction and could potentially affect off-site sensitive vegetation communities. Under these conditions, the City shall incorporate methods to control runoff, including a Storm Water Pollution Prevention Plan (SWPPP) to meet National Pollution Discharge Elimination System (NPDES) regulations. However, if the project proposes less than 5,000 square feet of ground disturbance and has less than a 5-foot elevation change within each impact site, a Water Pollution Control Plan may be required instead.

MM-4(b) Habitat restoration shall also be completed at each project location, in accordance with the City's Biology Guidelines and Landscape Regulations (City of San Diego 2012). A Revegetation Plan shall be prepared by a qualified Biological or Restoration Specialist. Habitat restoration shall feature native species that are typical of the area, and erosion control features shall include silt fence and straw fiber rolls, where appropriate. The revegetation areas shall be monitored and maintained for 25 months to ensure adequate establishment and sustainability of the plantings/seeding.

If you have any questions regarding this report, please contact me via telephone at 760.479.4293 or via email at cford@dudek.com.

Sincerely,

Callie Amoaku

Callie Amoaku
Biologist

Att.: Figures 1–3E
Appendix A, List of Vascular Plant Species Observed within the Project Study Area
Appendix B, List of Wildlife Species Observed within the Project Study Area
Appendix C, Special-Status Plant Species Potentially Occurring within the Project Study Area
Appendix D, Special-Status Wildlife Species Potentially Occurring within the Project Study Area

Appendix E, Resumes

cc: Vipul Joshi, Dudek

ACKNOWLEDGEMENTS

Vegetation mapping and the jurisdictional delineation was completed by Callie Amoaku and Monique O'Conner. Erin Bergman conducted the rare plant surveys. This report was prepared by Callie Amoaku with senior review provided by Vipul Joshi. Editorial review was provided by Steve Taffolla and formatting by Devin Brookhart. Resumes for these individuals are provided in Appendix E.

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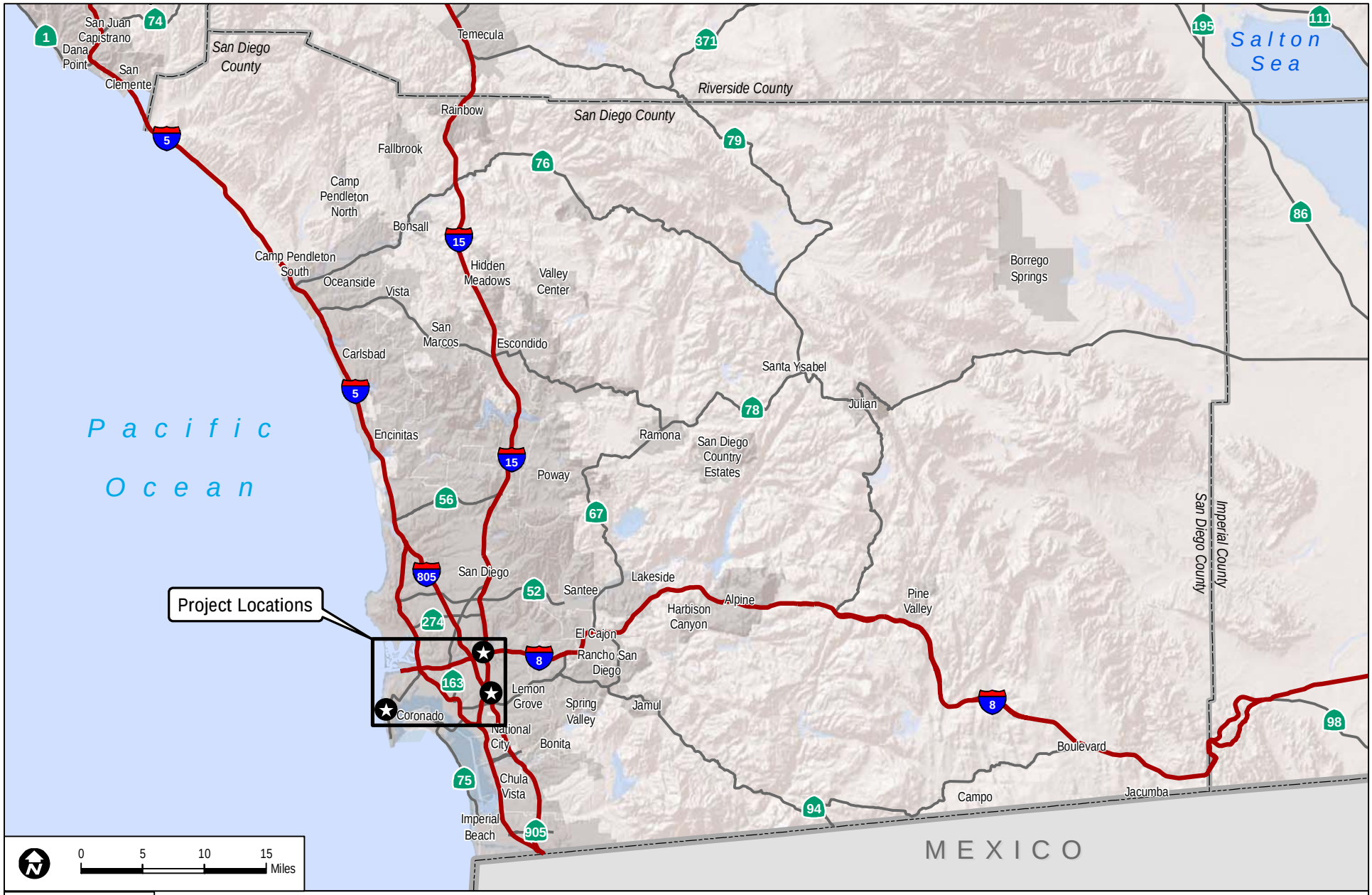

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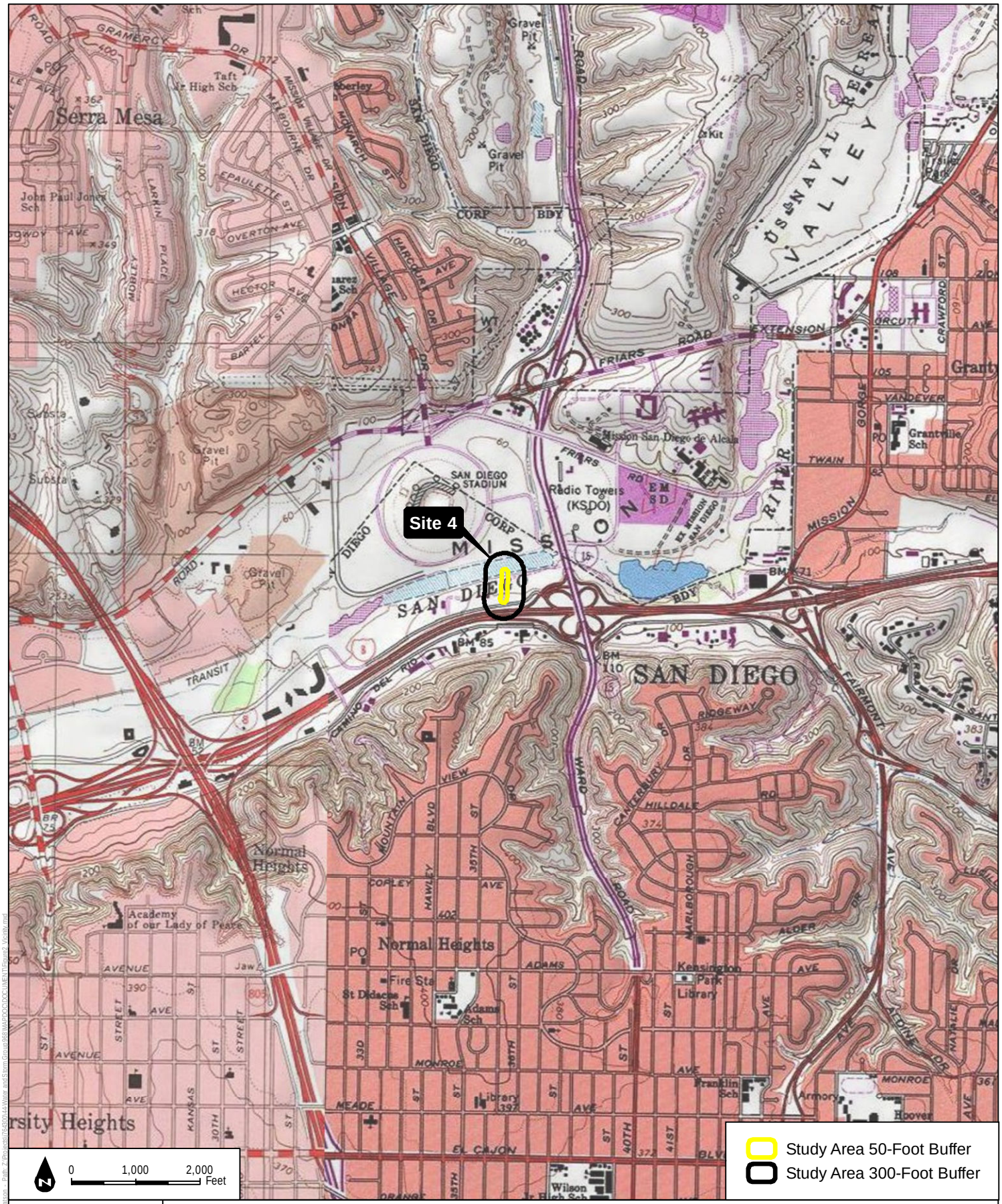
FIGURE 1

Regional Map

City of San Diego - Water And Storm Group 968 Project



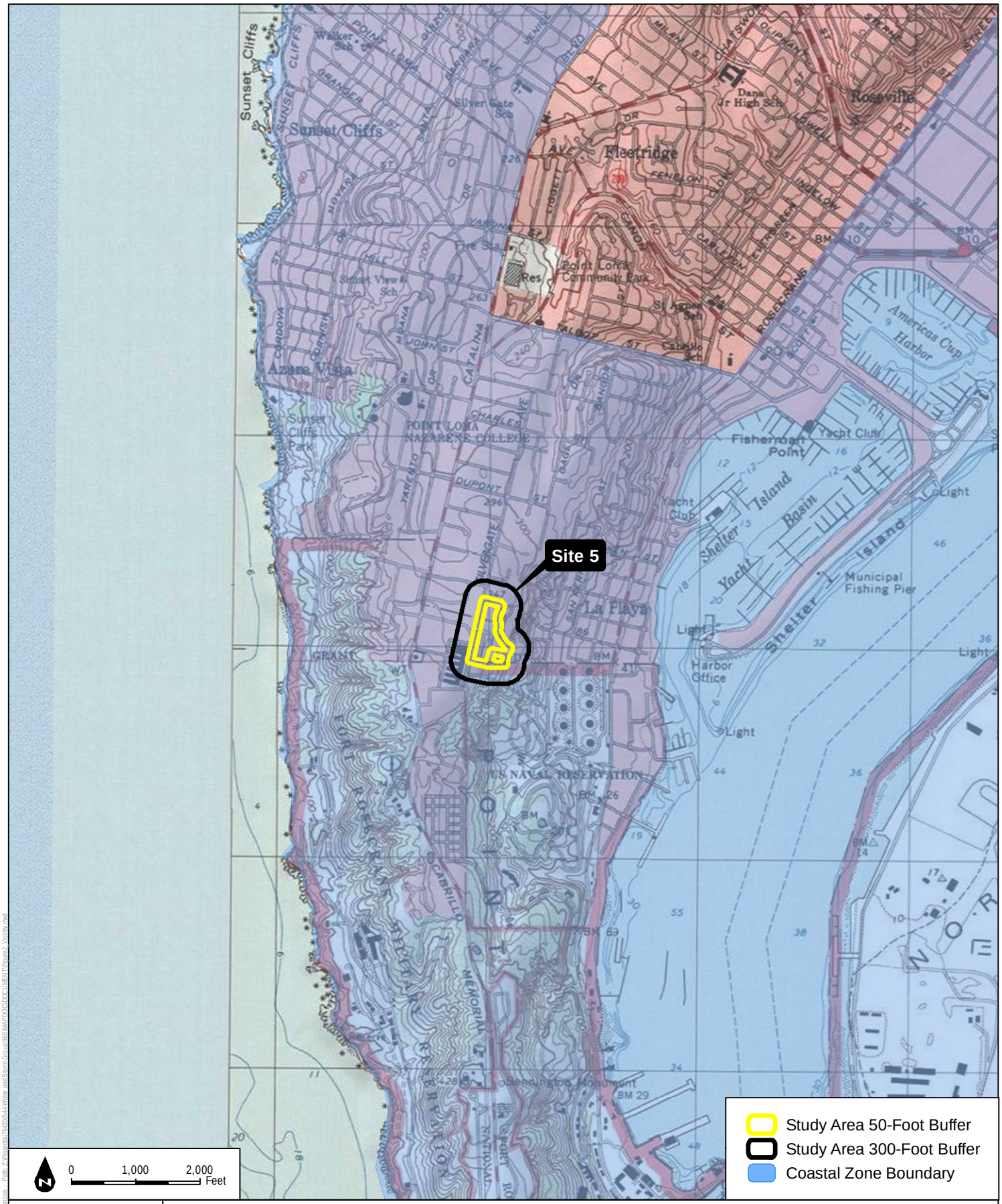
SOURCE: USGS 7.5-Minute Series La Mesa Quadrangle.

FIGURE 2A

Vicinity Map

DUDEK

City of San Diego - Water And Storm Group 968 Project



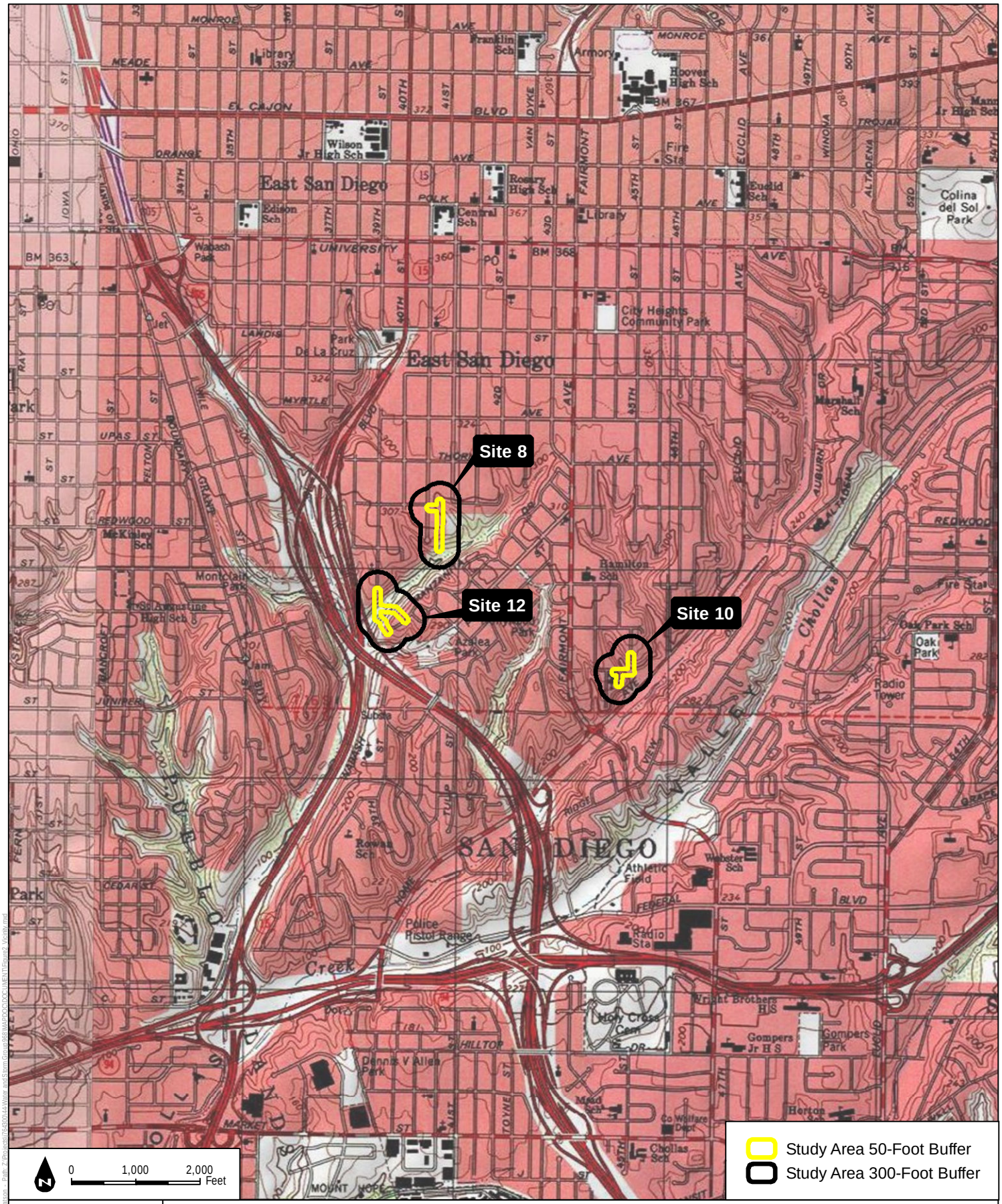
SOURCE: USGS 7.5-Minute Series Point Loma Quadrangle.

FIGURE 2B

Vicinity Map

City of San Diego - Water And Storm Group 968 Project

DUDEK



SOURCE: USGS 7.5-Minute Series National City Quadrangle.

FIGURE 2C

Vicinity Map

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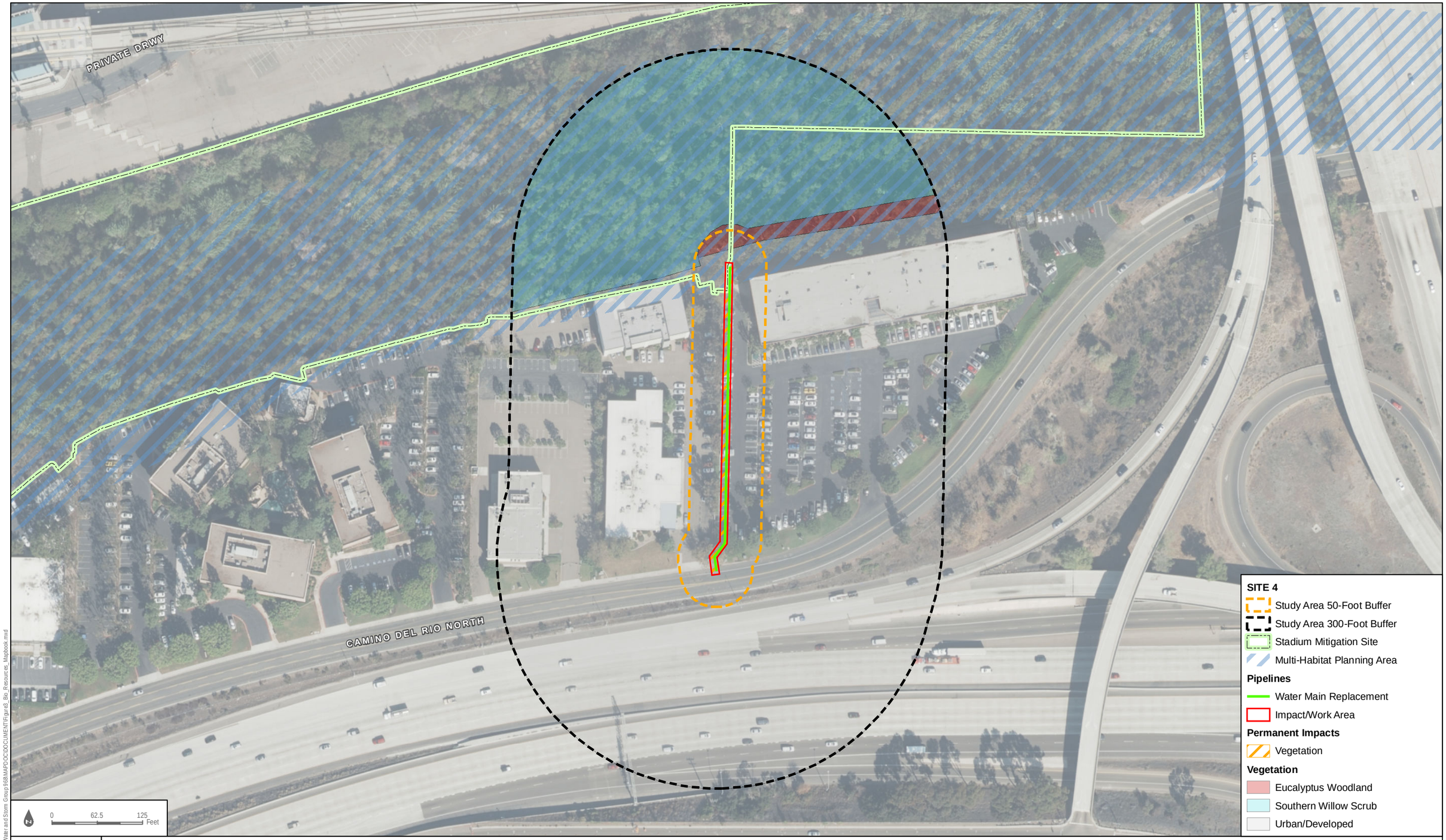
City of San Diego - Water And Storm Group 968 Project



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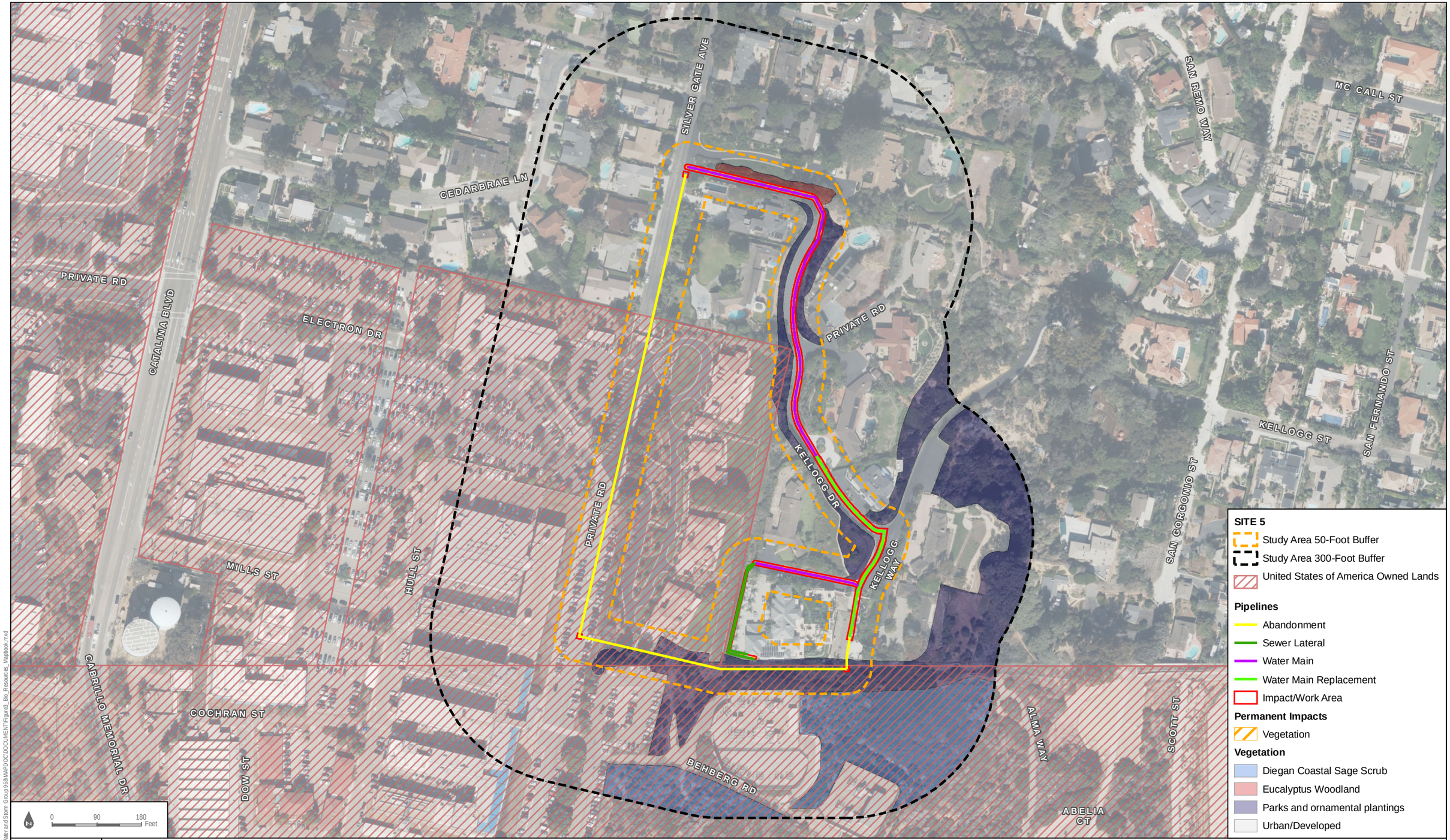
SOURCE: SANGIS, SANDAG 2017

FIGURE 3A

Biological Resources

7643-44

City of San Diego - Water And Storm Group 968 Project - Site 4 - Community: Mission Valley



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SOURCE: SANGIS, SANDAG 2017

FIGURE 3B

Biological Resources

7643-44

City of San Diego - Water And Storm Group 968 Project - Site 5 - Community: Peninsula

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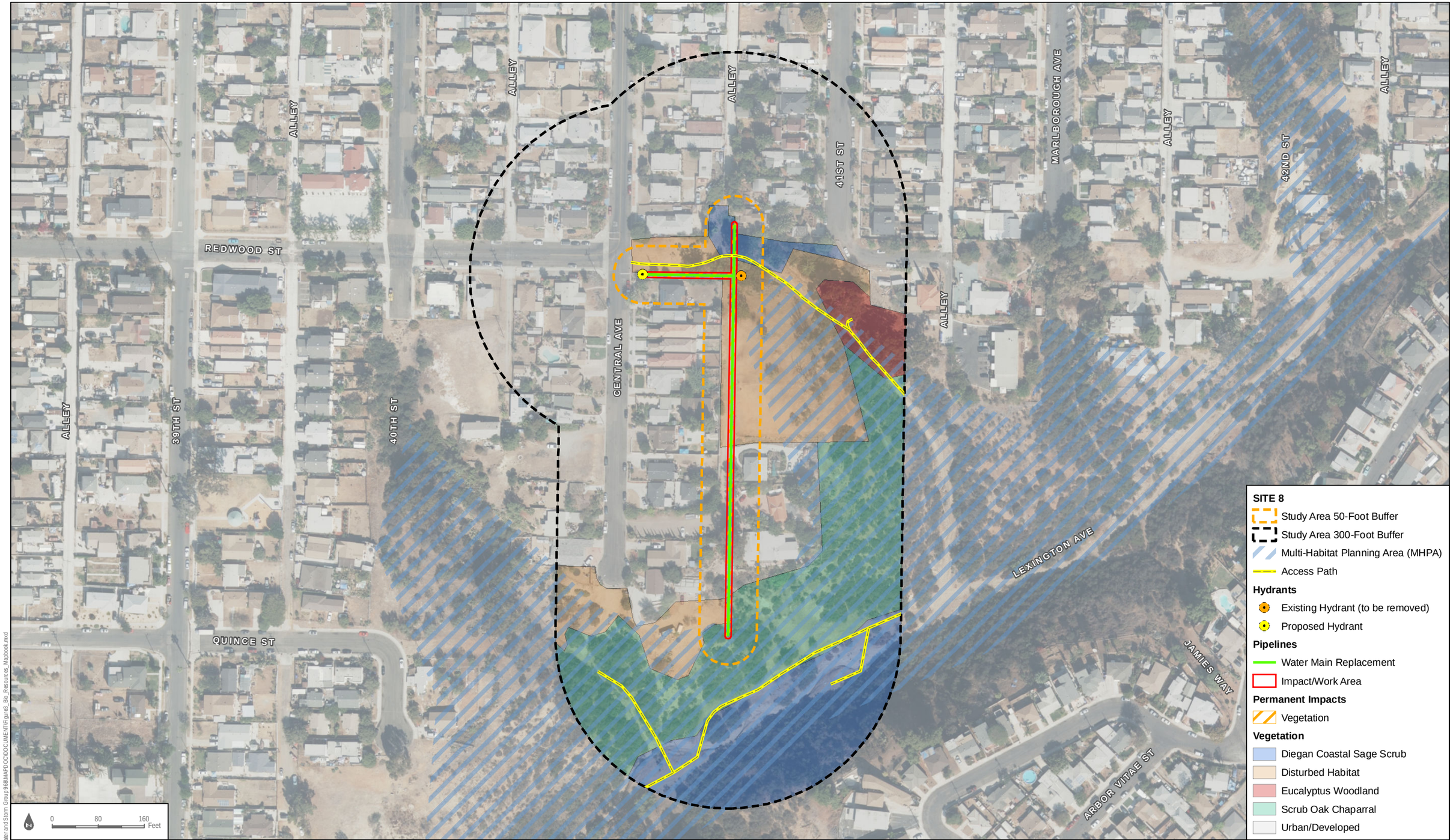

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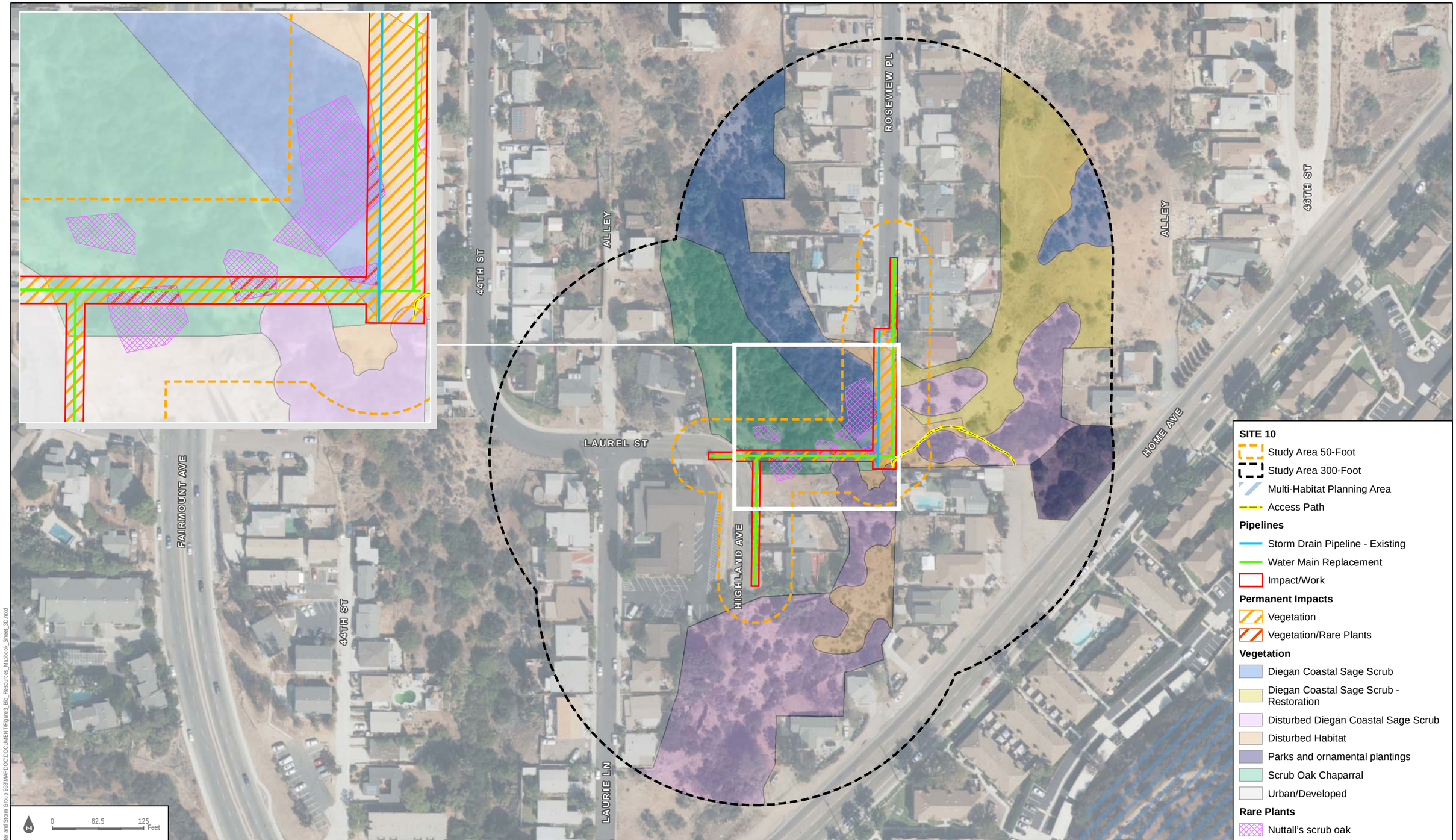
7643-44

SOURCE: SANGIS, SANDAG 2017

FIGURE 3C

Biological Resources

City of San Diego - Water And Storm Group 968 Project - Site 8 - Community: Mid-City Heights



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SOURCE: SANGIS, SANDAG 2017

7643-44

FIGURE 3D

Biological Resources

City of San Diego - Water And Storm Group 968 Project - Site 10 - Community: Mid-City Heights

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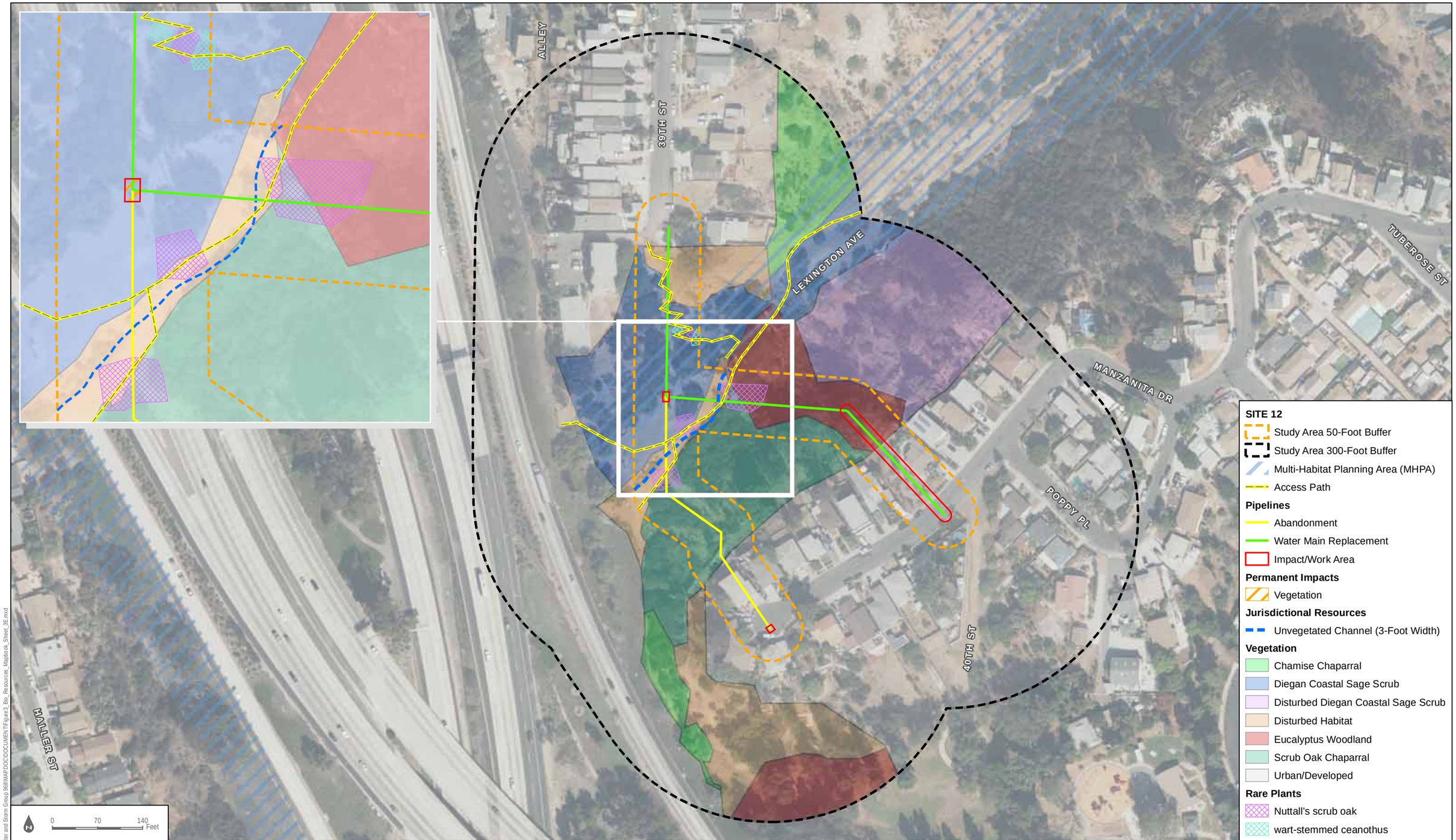

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SOURCE: SANGIS, SANDAG 2017

7643-44

FIGURE 3E

Biological Resources

City of San Diego - Water And Storm Group 968 Project - Site 12 - Community: None Specified

APPENDIX A

List of Vascular Plant Species Observed within the Project Study Area

APPENDIX A
List of Vascular Plant Species Observed within the Project Study Area

VASCULAR SPECIES

GYMNOSPERMS AND GNETOPHYTES

PINACEAE—PINE FAMILY

* *Pinus* sp.—pine

PODOCARPACEAE—PODOCARPUS FAMILY

* *Podocarpus* sp.—yellowwood

MONOCOTS

AGAVACEAE—AGAVE FAMILY

Yucca schidigera—Mohave yucca

ARECACEAE—PALM FAMILY

* *Washingtonia robusta*—Mexican fan palm

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis—tall flatsedge

* *Cyperus involucratus*—African umbrella plant

POACEAE—GRASS FAMILY

* *Avena barbata*—slender wild oat
* *Ehrharta erecta*—panic veldt grass
* *Arundo donax*—giant reed
* *Brachypodium distachyon*—purple falsebrome
* *Bromus diandrus*—ripgut grass
* *Cynodon dactylon*— bermuda grass
* *Hordeum murinum*—mouse barley
* *Lamarckia aurea*—golden-top
* *Melinis repens* ssp. *repens*—natal grass
* *Poa annua*—annual bluegrass
* *Stipa miliacea*—no common name
* *Piptatherum miliaceum* —smilo grass
* *Pennisetum setaceum*— African fountain grass
* *Lolium perenne* —perennial ryegrass

EUDICOTS

ADOXACEAE—MUSKROOT FAMILY

Sambucus mexicana —blue elderberry

AIZOACEAE—FIG-MARIGOLD FAMILY

* *Carpobrotus chilensis*—sea-fig

* *Carpobrotus edulis*— hottentot-fig

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina—laurel sumac

* *Schinus molle*—Peruvian pepper tree

* *Schinus terebinthifolius*—Brazilian pepper tree

Rhus integrifolia—lemonadeberry

APIACEAE—CARROT FAMILY

* *Foeniculum vulgare*— sweet fennel

APOCYNACEAE—DOGBANE FAMILY

* *Nerium oleander*—oleander

ASTERACEAE—SUNFLOWER FAMILY

* *Sonchus oleraceus*—common sow-thistle

Artemisia douglasiana—douglas mugwort

Baccharis sarothroides— broom baccharis

Brickellia californica—California brickellbush

Deinandra fasciculata— fascicled tarweed

Heterotheca grandiflora—telegraph weed

Pseudognaphalium beneolens—fragrant everlasting

Gnaphalium californicum—California everlasting

* *Bidens pilosa* var. *pilosa* —common beggar's tick, Spanish needles

* *Centaurea melitensis*—tocalote

* *Conyza bonariensis*— flax-leaf fleabane

* *Chrysanthemum coronarium*—garland/crown daisy

* *Hedypnois cretica*—crete hedypnois

* *Lactuca serriola*—prickly lettuce

* *Sonchus asper*—prickly sow-thistle

Encelia californica—California encelia

Artemisia californica—coastal sagebrush

Xanthium strumarium—cocklebur

Isocoma menziesii—Menzies's golden bush
Baccharis salicifolia—mule-fat, seep-willow
Artemisia dracunculus— tarragon, dragon sagewort

BORAGINACEAE—BORAGE FAMILY

Eriodictyon crassifolium var. *crassifolium*—felt-leaf yerba santa

BRASSICACEAE—MUSTARD FAMILY

* *Sisymbrium irio*—london rocket
* *Cardamine hirsuta*—hairy bittercress
* *Hirschfeldia incana*—short-pod mustard
* *Raphanus raphanistrum*—jointed charlock
* *Raphanus sativus*—wild radish

CACTACEAE—CACTUS FAMILY

Mammillaria dioica—fish-hook cactus
Opuntia littoralis—coast prickly-pear

CAPRIFOLIACEAE—HONEYSUCKLE FAMILY

Lonicera subspicata—southern honeysuckle

CHENOPODIACEAE—GOOSEFOOT FAMILY

* *Chenopodium album*— lamb's quarters
* *Salsola tragus*—prickly Russian-thistle, tumbleweed

CONVOLVULACEAE—MORNING-GLORY FAMILY

Calystegia macrostegia—island false bindweed

CRASSULACEAE—STONECROP FAMILY

* *Crassula argentea*—jade plant

CUCURBITACEAE—GOURD FAMILY

Marah macrocarpus var. *macrocarpus*—manroot, wild-cucumber

EUPHORBIACEAE—SPURGE FAMILY

* *Chamaesyce maculata*—spotted spurge
* *Ricinus communis*—castor bean

FABACEAE—LEGUME FAMILY

* *Melilotus indicus*—Indian sweetclover
Lotus scoparius—deer weed
* *Acacia* sp.—wattle

FAGACEAE—OAK FAMILY

Quercus berberidifolia—scrub oak
Quercus wislizeni var. *frutescens*—interior live oak, scrub live oak
Quercus ×*acutidens*—Torrey's scrub oak
Quercus dumosa—Nuttall's scrub oak

GERANIACEAE—GERANIUM FAMILY

* *Erodium cicutarium*—red-stem filaree/storksbill
* *Geranium molle*—dove-foot geranium

LAMIACEAE—MINT FAMILY

Salvia mellifera—black sage
* *Marrubium vulgare*—horehound

MALVACEAE—MALLOW FAMILY

* *Malva parviflora*—cheeseweed

MYRSINACEAE—MYRSINE FAMILY

* *Anagallis arvensis*—scarlet pimpernel, poor man's weatherglass

MYRTACEAE—MYRTLE FAMILY

* *Eucalyptus sideroxylon*—red iron bark
* *Eucalyptus* sp.—eucalyptus

OXALIDACEAE—OXALIS FAMILY

* *Oxalis pes-caprae*—bermuda-buttercup

PLATANACEAE—PLANE TREE, SYCAMORE FAMILY

Platanus racemosa—western sycamore

PLUMBAGINACEAE—LEADWORT FAMILY

* *Plumbago auriculata*—cape leadwort

POLYGONACEAE—BUCKWHEAT FAMILY

Eriogonum fasciculatum var. *fasciculatum*—coast California buckwheat
* *Polygonum arenastrum*—common knotweed, doorweed
* *Rumex crispus*—curly dock
Eriogonum fasciculatum—California buckwheat

RHAMNACEAE—BUCKTHORN FAMILY

Ceanothus tomentosus—ramona-lilac
Ceanothus verrucosus—wart-stemmed ceanothus

ROSACEAE—ROSE FAMILY

Adenostoma fasciculatum—chamise
Cercocarpus minutiflorus— San Diego mountain-mahogany
Heteromeles arbutifolia—toyon, Christmas berry
Prunus ilicifolia ssp. *ilicifolia*—islay, holly-leaf cherry
Rubus ursinus—California blackberry
Prunus ilicifolia—holly leaf cherry

SALICACEAE—WILLOW FAMILY

Salix laevigata—red willow
Salix lasiolepis—arroyo willow
Populus fremontii ssp. *fremontii*—western cottonwood
Salix gooddingii— Goodding's black willow

SAURURACEAE—LIZARD'S-TAIL FAMILY

Anemopsis californica—yerba mansa

SOLANACEAE—NIGHTSHADE FAMILY

Solanum douglasii—Douglas's nightshade
Solanum parishii—Parish's nightshade
* *Nicotiana glauca*—tree tobacco

URTICACEAE—NETTLE FAMILY

* *Urtica urens*—dwarf nettle

* Signifies introduced (non-native) species.

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APPENDIX B

List of Wildlife Species Observed within the Project Study Area

APPENDIX B
List of Wildlife Species Observed within the Project Study Area

BIRD

BUSHTITS

AEGITHALIDAE—LONG-TAILED TITS AND BUSHTITS

Psaltriparus minimus—bushtit

FINCHES

FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES

Spinus psaltria—lesser goldfinch

FLYCATCHERS

TYRANNIDAE—TYRANT FLYCATCHERS

Sayornis nigricans—black phoebe

Tyrannus vociferans—Cassin's kingbird

HAWKS

ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES

Buteo jamaicensis—red-tailed hawk

HUMMINGBIRDS

TROCHILIDAE—HUMMINGBIRDS

Calypte anna—Anna's hummingbird

JAYS, MAGPIES, AND CROWS

CORVIDAE—CROWS AND JAYS

Aphelocoma californica—California scrub-jay

Corvus brachyrhynchos—American crow

MOCKINGBIRDS AND THRASHERS

MIMIDAE—MOCKINGBIRDS AND THRASHERS

Mimus polyglottos—northern mockingbird

PIGEONS AND DOVES

COLUMBIDAE—PIGEONS AND DOVES

* *Columba livia*—rock pigeon (rock dove)

WOOD WARBLERS AND ALLIES

PARULIDAE—WOOD-WARBLERS

Setophaga coronata—yellow-rumped warbler

INVERTEBRATE

BUTTERFLIES

LYCAENIDAE—BLUES, HAIRSTREAKS, AND COPPERS

Philotes sonorensis—Sonoran blue

PIERIDAE—WHITES AND SULFURS

Pieris rapae—cabbage white

* Signifies introduced (non-native) species.

APPENDIX C

Special-Status Plant Species Potentially Occurring within the Project Study Area

APPENDIX C
Special-Status Plant Species Potentially Occurring within the Project Study Area

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Abronia maritima red sand-verbena	None/None/4.2/ None	Coastal dunes/perennial herb/Feb–Nov/0–330	Not expected to occur. No suitable vegetation present.				
Acanthomintha ilicifolia San Diego thorn-mint[1]	FT/SE/1B.1/ Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay, openings/annual herb/Apr–June/30–3,150	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Acmispon prostrates Nuttall's acmispon[1]	None/None/1B.1/ Covered	Coastal dunes, coastal scrub (sandy)/annual herb/Mar–June(July)/0–35	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Adolphia californica California adolphia[1]	None/None/2B.1/ None	Chaparral, coastal scrub, valley and foothill grassland; clay/perennial deciduous shrub/Dec–May/30–2,430	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Agave shawii var. *shawii* Shaw's agave	None/None/2B.1/ Covered, Narrow Endemic	Coastal bluff scrub, coastal scrub; maritime succulent scrub/perennial leaf succulent/Sep–May/5–395	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Ambrosia chenopodiifolia San Diego bur-sage[1]	None/None/2B.1/ None	Coastal scrub/perennial shrub/Apr–June/180–510	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Ambrosia monogyra singlewhorl burrobrush[1]	None/None/2B.2/ None	Chaparral, Sonoran desert scrub; sandy/perennial shrub/Aug–Nov/30–1,640	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Ambrosia pumila San Diego ambrosia[1]	FE/None/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; sandy loam or clay, often in disturbed areas, sometimes alkaline/perennial rhizomatous herb/Apr–Oct/65–1,360	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Aphanisma blitoides aphanisma[1]	None/None/1B.2/ Covered	Coastal bluff scrub, coastal dunes, coastal scrub; sandy or gravelly/annual herb/Feb–June/0–1,000	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Arctostaphylos glandulosa ssp. *crassifolia* Del Mar manzanita[1]	FE/None/1B.1/ Covered	Chaparral (maritime, sandy)/perennial evergreen shrub/Dec–June/0–1,200	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Arctostaphylos otayensis Otay manzanita	None/None/1B.2/ Covered	Chaparral, cismontane woodland; metavolcanic/ perennial evergreen shrub/Jan–Apr/900–5,575	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Artemisia palmeri San Diego sagewort[1]	None/None/4.2/ None	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; sandy, mesic/perennial deciduous shrub/(Feb)May–Sep/45–3,000	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Asplenium vespertinum western spleenwort[1]	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub; rocky/perennial rhizomatous herb/Feb–June/590–3,280	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Astragalus deanei Dean's milk-vetch[1]	None/None/1B.1/ Covered	Chaparral, cismontane woodland, coastal scrub, riparian forest/perennial herb/Feb–May/245–2,280	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Astragalus tener var. *titi* coastal dunes milk-vetch	FE/SE/1B.1/ Covered	Coastal bluff scrub (sandy), coastal dunes, coastal prairie (mesic); often vernally mesic areas/annual herb/Mar–May/ 0–165	Not expected to occur. No suitable vegetation present.				
Atriplex coulteri Coulter's saltbush[1]	None/None/1B.2/ None	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; alkaline or clay/perennial herb/Mar–Oct/ 5–1,510	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Atriplex pacifica South Coast saltscale[1]	None/None/1B.2/ None	Coastal bluff scrub, coastal dunes, coastal scrub, playas/annual herb/Mar–Oct/ 0–460	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Baccharis vanessae Encinitas baccharis	FT/SE/1B.1/ Covered, Narrow Endemic	Chaparral (maritime), cismontane woodland; sandstone/perennial deciduous shrub/Aug, Oct, Nov/195–2,360	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Bahiopsis laciniata San Diego County viguiera[1]	None/None/4.2/ None	Chaparral, coastal scrub/perennial shrub/Feb–June(Aug)/195–2,460	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Berberis nevinii Nevin's barberry	FE/SE/1B.1/ Covered, Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, riparian scrub; sandy or gravelly/perennial evergreen shrub/(Feb)Mar–June/225–2,705	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Bergerocactus emoryi golden-spined cereus[1]	None/None/2B.2/ None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy/perennial stem succulent/May–June/5–1,295	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Bloomeria clevelandii San Diego goldenstar[1]	None/None/1B.1/ Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial bulbiferous herb/Apr–May/160–1,525	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Brodiaea filifolia thread-leaved brodiaea	FT/SE/1B.1/ Covered, Narrow Endemic	Chaparral (openings), cismontane woodland, coastal scrub, playas, valley and foothill grassland, vernal pools; often clay/perennial bulbiferous herb/Mar–June/80–3,675	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Brodiaea orcuttii Orcutt's brodiaea[1]	None/None/1B.1/ Covered	Closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, vernal pools; mesic, clay/perennial bulbiferous herb/May–July/95–5,550	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Calandrinia breweri Brewer's calandrinia	None/None/4.2/ None	Chaparral, coastal scrub; sandy or loamy, disturbed sites and burns/annual herb/(Jan)Mar–June/30–4,005	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
California macrophylla round-leaved filaree[1]	None/None/1B.2/ None	Cismontane woodland, valley and foothill grassland; clay/annual herb/Mar–May/ 45–3,935	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present..	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Calochortus dunnii Dunn's mariposa lily	None/SR/1B.2/ Covered, Narrow Endemic	Closed-cone coniferous forest, chaparral, valley and foothill grassland; gabbroic or metavolcanic, rocky/perennial bulbiferous herb/(Feb)Apr–June/605–6,005	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Camissoniopsis lewisii Lewis' evening-primrose[1]	None/None/3/ None	Coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay/annual herb/Mar–May(June)/0–985	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Castilleja plagiotoma Mojave paintbrush	None/None/4.3/ None	Great Basin scrub (alluvial), Joshua tree woodland, lower montane coniferous forest, pinyon and juniper woodland/perennial herb (hemiparasitic)/Apr–June/980–8,200	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.				
Ceanothus cyaneus Lakeside ceanothus	None/None/1B.2/ Covered, Narrow Endemic	Closed-cone coniferous forest, chaparral/perennial evergreen shrub/Apr–June/770–2,475	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Ceanothus otayensis Otay Mountain ceanothus[1]	None/None/1B.2/ None	Chaparral (metavolcanic or gabbroic)/perennial evergreen shrub/Jan–Apr/1,965–3,610	Not expected to occur. The site is outside of the species' known elevation range.				
Ceanothus verrucosus wart-stemmed ceanothus[1]	None/None/2B.2/ Covered	Chaparral/perennial evergreen shrub/Dec–May/0–1,245	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Observed.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Centromadia parryi ssp. *australis* southern tarplant	None/None/1B.1/ None	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools/annual herb/May–Nov/ 0–1,575	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Centromadia pungens ssp. *laevis* smooth tarplant	None/None/1B.1/ None	Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland; alkaline/annual herb/Apr–Sep/0–2,100	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Chaenactis glabriuscula var. *orcuttiana* Orcutt's pincushion	None/None/1B.1/ None	Coastal bluff scrub (sandy), coastal dunes/annual herb/Jan–Aug/0–330	Not expected to occur. No suitable vegetation present.				
Chamaebatia australis southern mountain misery[1]	None/None/4.2/ None	Chaparral (gabbroic or metavolcanic)/perennial evergreen shrub/Nov–May/980–3,345	Not expected to occur. The site is outside of the species' known elevation range.				
Chloropyron maritimum ssp. *maritimum* salt marsh bird's-beak[1]	FE/SE/1B.2/ Covered	Coastal dunes, marshes and swamps (coastal salt)/annual herb (hemiparasitic)/May–Oct(Nov)/0–100	Not expected to occur. No suitable vegetation present.				
Chorizanthe leptotheca Peninsular spineflower	None/None/4.2/ None	Chaparral, coastal scrub, lower montane coniferous forest; alluvial fan, granitic/annual herb/May–Aug/980–6,235	Not expected to occur. The site is outside of the species' known elevation range.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Chorizanthe orcuttiana Orcutt's spineflower	FE/SE/1B.1/None	Closed-cone coniferous forest, chaparral (maritime), coastal scrub; sandy openings/annual herb/Mar–May/5–410	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Chorizanthe polygonoides var. *longispina* long-spined spineflower[1]	None/None/1B.2/ None	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools; often clay/annual herb/Apr–July/95–5,020	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Cistanthe maritima seaside cistanthe	None/None/4.2/ None	Coastal bluff scrub, coastal scrub, valley and foothill grassland; sandy/annual herb/(Feb)Mar–June(Aug)/15–985	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Clarkia delicate delicate clarkia[1]	None/None/1B.2/ None	Chaparral, cismontane woodland; often gabbroic/annual herb/Apr–June/770–3,280	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Clinopodium chandleri San Miguel savory	None/None/1B.2/ Covered	Chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; rocky, gabbroic or metavolcanic/perennial shrub/Mar–July/390–3,525	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Comarostaphylis diversifolia ssp. *diversifolia* summer holly[1]	None/None/1B.2/ None	Chaparral, cismontane woodland/perennial evergreen shrub/Apr–June/95–2,590	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Convolvulus simulans small-flowered morning-glory[1]	None/None/4.2/ None	Chaparral (openings), coastal scrub, valley and foothill grassland; clay, serpentinite seeps/annual herb/Mar–July/95–2,430	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Corethrogyne filaginifolia var. *incana* San Diego sand aster[1]	None/None/1B.1/ None	Coastal bluff scrub, chaparral, coastal scrub/perennial herb/June–Sep/5–375	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Low potential to occur. Although surveys were conducted prior to the typical bloom period, the herb is still identifiable, and no *Corethrogyne filaginifolia* species were observed.	Low potential to occur. Although surveys were conducted prior to the typical bloom period, the herb is still identifiable and no *Corethrogyne filaginifolia* species were observed.	Low potential to occur. Although surveys were conducted prior to the typical bloom period, the herb is still identifiable and no *Corethrogyne filaginifolia* species were observed.
Corethrogyne filaginifolia var. *linifolia* Del Mar Mesa sand aster	None/None/1B.1/ Covered	Coastal bluff scrub, chaparral (maritime, openings), coastal scrub; sandy/perennial herb/May, July, Aug, Sep/45–490	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Cylindropuntia californica var. *californica* snake cholla[1]	None/None/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub/perennial stem succulent/Apr–May/95–490	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Deinandra conjugens Otay tarplant[1]	FT/SE/1B.1/ Covered, Narrow Endemic	Coastal scrub, valley and foothill grassland; clay/annual herb/(Apr)May–June/80–985	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Deinandra paniculata paniculate tarplant[1]	None/None/4.2/ None	Coastal scrub, valley and foothill grassland, vernal pools; usually vernally mesic, sometimes sandy/annual herb/(Mar)Apr–Nov/80–3,085	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Dichondra occidentalis western dichondra[1]	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/perennial rhizomatous herb/(Jan)Mar–July/160–1,640	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Dicranostegia orcuttiana Orcutt's bird's-beak[1]	None/None/2B.1/ Covered	Coastal scrub/annual herb (hemiparasitic)/(Mar)Apr–July(Sep)/30–1,150	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Diplacus aridus low bush monkeyflower	None/None/4.3/ None	Chaparral (rocky), Sonoran desert scrub/perennial evergreen shrub/Apr–July/2,460–3,935	Not expected to occur. The site is outside of the species' known elevation range.				
Dudleya attenuata ssp. *attenuate* Orcutt's dudleya	None/None/2B.1/ None	Coastal bluff scrub, chaparral, coastal scrub; rocky or gravelly/perennial herb/May–July/5–165	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	None/None/1B.1/ None	Coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; rocky, often clay or serpentinite/perennial herb/Apr–June/15–1,475	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Dudleya brevifolia short-leaved dudleya	None/SE/1B.1/ Covered, Narrow Endemic	Chaparral (maritime, openings), coastal scrub; Torrey sandstone/perennial herb/Apr–May/95–820	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Dudleya variegata variegated dudleya[1]	None/None/1B.2/ Covered, Narrow Endemic	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/perennial herb/Apr–June/5–1,905	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Dudleya viscida sticky dudleya	None/None/1B.2/ Covered	Coastal bluff scrub, chaparral, cismontane woodland, coastal scrub; rocky/perennial herb/May–June/30–1,805	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Ericameria palmeri var. *palmeri* Palmer's goldenbush[1]	None/None/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub; mesic/perennial evergreen shrub/(July)Sep–Nov/95–1,970	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Eriodictyon sessilifolium sessile-leaved yerba stanta	None/None/2B.1/ None	Coastal scrub; volcanic/perennial shrub/July/555–560	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Eryngium aristulatum var. *parishii* San Diego button-celery[1]	FE/SE/1B.1/ Covered	Coastal scrub, valley and foothill grassland, vernal pools; mesic/annual/perennial herb/Apr–June/65–2,035	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Erysimum ammophilum sand-loving wallflower	None/None/1B.2/ Covered	Chaparral (maritime), coastal dunes, coastal scrub; sandy, openings/perennial herb/Feb–June/0–195	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Erythranthe diffusa Palomar monkeyflower	None/None/4.3/ None	Chaparral, lower montane coniferous forest; sandy or gravelly/annual herb/Apr–June/4,000–6,005	Not expected to occur. The site is outside of the species' known elevation range.				
Euphorbia misera cliff spurge[1]	None/None/2B.2/ None	Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky/perennial shrub/Dec–Aug(Oct)/30–1,640	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Ferocactus viridescens San Diego barrel cactus[1]	None/None/2B.1/ Covered	Chaparral, coastal scrub, valley and foothill grassland, vernal pools/perennial stem succulent/May–June/5–1,475	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Frankenia palmeri Palmer's frankenia[1]	None/None/2B.1/ None	Coastal dunes, marshes and swamps (coastal salt), playas/perennial herb/May–July/0–35	Not expected to occur. No suitable vegetation present.				
Fremontodendron mexicanum Mexican flannelbush	FE/SR/1B.1/ Covered	Closed-cone coniferous forest, chaparral, cismontane woodland; gabbroic, metavolcanic, or serpentinite/ perennial evergreen shrub/Mar–June/30–2,350	Not expected to occur. No suitable vegetation present.	Low potential to occur. Habitat at this site is unsuitable.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Galium proliferum desert bedstraw	None/None/2B.2/ None	Joshua tree woodland, Mojavean desert scrub, pinyon and juniper woodland; rocky, carbonate (limestone)/annual herb/Mar–June/3,900–5,350	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable vegetation present.				
Geothallus tuberosus Campbell's liverwort	None/None/1B.1/ None	Coastal scrub (mesic), vernal pools; soil/ephemeral liverwort/30–1,970	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Low potential to occur. There are no vernal pools on site.	Low potential to occur. There are no vernal pools on site.	Low potential to occur. There are no vernal pools on site.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Githopsis diffusa ssp. *filicaulis* Mission Canyon bluecup[1]	None/None/3.1/ None	Chaparral (mesic, disturbed areas)/annual herb/Apr–June/1,475–2,295	Not expected to occur. The site is outside of the species' known elevation range.				
Grindelia hallii San Diego gumplant[1]	None/None/1B.2/ None	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland/perennial herb/May–Oct/605–5,725	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Harpagonella palmeri Palmer's grapplinghook[1]	None/None/4.2/ None	Chaparral, coastal scrub, valley and foothill grassland; clay; open grassy areas within shrubland/annual herb/Mar–May/65–3,135	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Hesperocyparis forbesii Tecate cypress	None/None/1B.1/ Covered	Closed-cone coniferous forest, chaparral; clay, gabbroic or metavolcanic/perennial evergreen tree/260–4,920	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Heterotheca sessiliflora ssp. *sessiliflora* beach goldenaster[1]	None/None/1B.1/ None	Chaparral (coastal), coastal dunes, coastal scrub/perennial herb/Mar–Dec/0–4,020	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Holocarpha virgata ssp. *elongata* graceful tarplant[1]	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland/annual herb/May–Nov/195–3,610	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Hordeum intercedens vernal barley[1]	None/None/3.2/ None	Coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), vernal pools/annual herb/Mar–June/15–3,280	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Horkelia truncata Ramona horkelia	None/None/1B.3/ None	Chaparral, cismontane woodland; clay, gabbroic/perennial herb/May–June/1,310–4,265	Not expected to occur. The site is outside of the species' known elevation range.				
Hosackia crassifolia var. *otayensis* Otay Mountain lotus	None/None/1B.1/ None	Chaparral (metavolcanic, often in disturbed areas)/perennial herb/May–Aug/1,245–3,295	Not expected to occur. The site is outside of the species' known elevation range.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Isocoma menziesii var. *decumbens* decumbent goldenbush[1]	None/None/1B.2/ None	Chaparral, coastal scrub (sandy, often in disturbed areas)/perennial shrub/Apr–Nov/30–445	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Iva hayesiana San Diego marsh-elder[1]	None/None/2B.2/ None	Marshes and swamps, playas/perennial herb/Apr–Oct/30–1,640	Not expected to occur. No suitable vegetation present.				
Juncus acutus ssp. *leopoldii* southwestern spiny rush[1]	None/None/4.2/ None	Coastal dunes (mesic), meadows and seeps (alkaline seeps), marshes and swamps (coastal salt)/perennial rhizomatous herb/(Mar)May–June/5–2,955	Not expected to occur. No suitable vegetation present.				
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields[1]	None/None/1B.1/ None	Marshes and swamps (coastal salt), playas, vernal pools/annual herb/Feb–June/0–4,005	Not expected to occur. No suitable vegetation present.				
Lepechinia cardiophylla heart-leaved pitcher sage[1]	None/None/1B.2/ Covered, Narrow Endemic	Closed-cone coniferous forest, chaparral, cismontane woodland/perennial shrub/Apr–July/1,705–4,495	Not expected to occur. The site is outside of the species' known elevation range.				
Lepechinia gander Gander's pitcher sage	None/None/1B.3/ Covered, Narrow Endemic	Closed-cone coniferous forest, chaparral, coastal scrub, valley and foothill grassland; gabbroic or metavolcanic/perennial shrub/June–July/1,000–3,295	Not expected to occur. The site is outside of the species' known elevation range.				

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Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Lepidium virginicum var. *robinsonii* Robinson's pepper-grass[1]	None/None/4.3/ None	Chaparral, coastal scrub/annual herb/Jan–July/0–2,905	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Leptosyne maritima sea dahlia	None/None/2B.2/ None	Coastal bluff scrub, coastal scrub/perennial herb/Mar–May/15–490	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Lilium humboldtii ssp. *ocellatum* ocellated Humboldt lily	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland; openings/perennial bulbiferous herb/Mar–July(Aug)/95–5,905	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Lycium californicum California box-thorn[1]	None/None/4.2/ None	Coastal bluff scrub, coastal scrub/perennial shrub/(Dec)Mar, June, July, Aug/15–490	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Microseris douglasii ssp. *platycarpha* small-flowered microseris	None/None/4.2/ None	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay/annual herb/Mar–May/45–3,510	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Mobergia calculiformis light gray lichen	None/None/3/ None	Coastal scrub (?); On rocks/crustose lichen (saxicolous)/30–35	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Monardella hypoleuca ssp. *lanata* felt-leaved monardella	None/None/1B.2/ Covered	Chaparral, cismontane woodland/perennial rhizomatous herb/June–Aug/980–5,165	Not expected to occur. The site is outside of the species' known elevation range and there is no suitable habitat Sites 4 and 5.				
Monardella stoneana Jennifer's monardella	None/None/1B.2/ None	Closed-cone coniferous forest, chaparral, coastal scrub, riparian scrub; usually rocky intermittent streambeds/perennial herb/June–Sep/30–2,590	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

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Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Monardella viminea willowy monardella[1]	FE/SE/1B.1/ Covered, Narrow Endemic	Chaparral, coastal scrub, riparian forest, riparian scrub, riparian woodland; alluvial ephemeral washes/perennial herb/June–Aug/160–740	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Mucronea californica California spineflower	None/None/4.2/ None	Chaparral, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; sandy/annual herb/Mar–July(Aug)/0–4,595	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Myosurus minimus ssp. *apus* little mousetail[1]	None/None/3.1/ Covered	Valley and foothill grassland, vernal pools (alkaline)/annual herb/Mar–June/65–2,100	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Nama stenocarpa mud nama[1]	None/None/2B.2/ None	Marshes and swamps (lake margins, riverbanks)/annual / perennial herb/Jan–July/15–1,640	Not expected to occur. No suitable vegetation present.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Navarretia fossalis spreading navarretia[1]	FT/None/1B.1/ Covered	Chenopod scrub, marshes and swamps (assorted shallow freshwater), playas, vernal pools/annual herb/Apr–June/95–2,150	Not expected to occur. No suitable vegetation present.				
Navarretia prostrata prostrate vernal pool navarretia[1]	None/None/1B.1/ None	Coastal scrub, meadows and seeps, valley and foothill grassland (alkaline), vernal pools; mesic/annual herb/Apr–July/5–3,970	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. There are no vernal pools or mesic habitats on site. This species would have been identified during plant surveys.	Not expected to occur. There are no vernal pools or mesic habitats on site. This species would have been identified during plant surveys.	Not expected to occur. There are no vernal pools or mesic habitats on site. This species would have been identified during plant surveys.
Nemacaulis denudata var. *denudate* coast woolly-heads[1]	None/None/1B.2/ None	Coastal dunes/annual herb/Apr–Sep/0–330	Not expected to occur. No suitable vegetation present.				
Nemacaulis denudata var. *gracilis* slender cottonheads	None/None/2B.2/ None	Coastal dunes, desert dunes, Sonoran desert scrub/annual herb/(Mar)Apr–May/-160–1,310	Not expected to occur. No suitable vegetation present.				
Nolina interrata Dehesa nolina	None/SE/1B.1/ Covered, Narrow Endemic	Chaparral (gabbroic, metavolcanic, or serpentinite)/perennial herb/June–July/605–2,805	Not expected to occur. No suitable vegetation present.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Ophioglossum californicum California adder's-tongue	None/None/4.2/ None	Chaparral, valley and foothill grassland, vernal pools (margins); mesic/perennial rhizomatous herb/(Dec)Jan–June/195–1,720	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. There are no vernal pools or mesic habitats on site. This species would have been identified during plant surveys.	Not expected to occur. There are no vernal pools or mesic habitats on site. This species would have been identified during plant surveys.	Not expected to occur. There are no vernal pools or mesic habitats on site. This species would have been identified during plant surveys.
Orcuttia californica California Orcutt grass	FE/SE/1B.1/ Covered	Vernal pools/annual herb/Apr–Aug/45–2,165	Not expected to occur. No suitable vegetation present.				
Ornithostaphylos oppositifolia Baja California birdbush	None/SE/2B.1/ None	Chaparral/perennial evergreen shrub/Jan–Apr/180–2,625	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Orobanche parishii ssp. *brachyloba* short-lobed broomrape	None/None/4.2/ None	Coastal bluff scrub, coastal dunes, coastal scrub; sandy/perennial herb (parasitic)/Apr–Oct/5–1,000	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Packera gander Gander's ragwort	None/SR/1B.2/ Covered	Chaparral (burns, gabbroic outcrops)/perennial herb/Apr–June/1310–3,935	Not expected to occur. The site is outside of the species' known elevation range.				
Pentachaeta aurea ssp. *aurea* golden-rayed pentachaeta[1]	None/None/4.2/ None	Chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, riparian woodland, valley and foothill grassland/annual herb/Mar–July/260–6,070	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Phacelia ramosissima var. *austrolitoralis* south coast branching phacelia	None/None/3.2/ None	Chaparral, coastal dunes, coastal scrub, marshes and swamps (coastal salt); sandy, sometimes rocky/perennial herb/Mar–Aug/15–985	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Phacelia stellaris Brand's star phacelia	None/None/1B.1/ None	Coastal dunes, coastal scrub/annual herb/Mar–June/0–1,310	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Pickeringia montana var. *tomentosa* woolly chaparral-pea	None/None/4.3/ None	Chaparral; gabbroic, granitic, clay/evergreen shrub/May–Aug/0–5,575	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Pinus torreyana ssp. *torreyana* Torrey pine	None/None/1B.2/ Covered	Closed-cone coniferous forest, chaparral; sandstone/perennial evergreen tree/95–525	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Piperia cooperi chaparral rein orchid	None/None/4.2/ None	Chaparral, cismontane woodland, valley and foothill grassland/perennial herb/Mar–June/45–5,200	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Pogogyne abramsii San Diego mesa mint[1]	FE/SE/1B.1/ Covered	Vernal pools/annual herb/Mar–July/295–655	Not expected to occur. No suitable vegetation present.				
Pogogyne nudiuscula Otay Mesa mint[1]	FE/SE/1B.1/ Covered	Vernal pools/annual herb/May–July/295–820	Not expected to occur. No suitable vegetation present.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Pseudognaphalium leucocephalum white rabbit-tobacco	None/None/2B.2/ None	Chaparral, cismontane woodland, coastal scrub, riparian woodland; sandy, gravelly/perennial herb/(July)Aug–Nov(Dec)/0–6,890	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Quercus cedrosensis Cedros Island oak	None/None/2B.2/ None	Closed-cone coniferous forest, chaparral, coastal scrub/perennial evergreen tree/Apr–May/835–3,150	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Quercus dumosa Nuttall's scrub oak[1]	None/None/1B.1/ None	Closed-cone coniferous forest, chaparral, coastal scrub; sandy, clay loam/perennial evergreen shrub/Feb–Apr(May–Aug)/45–1,310	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Observed.	Observed.
Quercus engelmannii Engelmann oak	None/None/4.2/ None	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland/perennial deciduous tree/Mar–June/160–4,265	Not expected to occur. No suitable vegetation present.	Not expected to occur. Habitat at this site is unsuitable.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Ribes viburnifolium Santa Catalina Island currant	None/None/1B.2/ None	Chaparral, cismontane woodland/perennial evergreen shrub/Feb–Apr/95–1,150	Not expected to occur. No suitable vegetation present.	Low potential to occur. Habitat at this site is unsuitable.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Romneya coulteri Coulter's matilija poppy	None/None/4.2/ None	Chaparral, coastal scrub; often in burns/perennial rhizomatous herb/Mar–July/65–3,935	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Rosa minutifolia small-leaved rose	None/SE/2B.1/ Covered	Chaparral, coastal scrub/perennial deciduous shrub/Jan–June/490–525	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Salvia munzii Munz's sage[1]	None/None/2B.2/ None	Chaparral, coastal scrub/perennial evergreen shrub/Feb–Apr/375–3,495	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Selaginella cinerascens ashy spike-moss[1]	None/None/4.1/ None	Chaparral, coastal scrub/perennial rhizomatous herb/65–2,100	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Senecio aphanactis chaparral ragwort[1]	None/None/2B.2/ None	Chaparral, cismontane woodland, coastal scrub; sometimes alkaline/annual herb/Jan–Apr(May)/45–2,625	Not expected to occur. No suitable vegetation present.	Low potential to occur. Habitat at this site is unsuitable.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Sidalcea neomexicana salt spring checkerbloom	None/None/2B.2/ None	Chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, playas; alkaline, mesic/perennial herb/Mar–June/45–5,020	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Sphaerocarpos drewei bottle liverwort	None/None/1B.1/ None	Chaparral, coastal scrub; openings, soil/ephemeral liverwort/295–1,970	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Stemodia durantifolia purple stemodia[1]	None/None/2B.1/ None	Sonoran desert scrub (often mesic, sandy)/perennial herb/(Jan)Apr, June, Aug, Sep, Oct, Dec/590–985	Not expected to occur. No suitable vegetation present.				
Stipa diegoensis San Diego County needle grass[1]	None/None/4.2/ None	Chaparral, coastal scrub; rocky, often mesic/perennial herb/Feb–June/30–2,625	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Streptanthus bernardinus Laguna Mountains jewelflower[1]	None/None/4.3/ None	Chaparral, lower montane coniferous forest/perennial herb/May–Aug/2,195–8,200	Not expected to occur. The site is outside of the species' known elevation range.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Stylocline citroleum oil neststraw[1]	None/None/1B.1/ None	Chenopod scrub, coastal scrub, valley and foothill grassland; clay/annual herb/Mar–Apr/160–1,310	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Low potential to occur. There is one record for this species in the vicinity from 1883 which was mapped in the general vicinity of San Diego (CNDDB 2017). Based on the lack of other records for this species in the general vicinity, there is low potential for this species to occur on site.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Suaeda esteroa estuary seablite[1]	None/None/1B.2/ None	Marshes and swamps (coastal salt)/perennial herb/(May)July–Oct(Jan)/0–15	Not expected to occur. No suitable vegetation present.				

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Suaeda taxifolia woolly seablite	None/None/4.2/ None	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt)/perennial evergreen shrub/Jan–Dec/0–165	Not expected to occur. No suitable vegetation present.				
Tetracoccus dioicus Parry's tetracoccus[1]	None/None/1B.2/ Covered	Chaparral, coastal scrub/perennial deciduous shrub/Apr–May/540–3,280	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Texosporium sancti-jacobi woven-spored lichen[1]	None/None/3/ None	Chaparral (openings); on soil, small mammal pellets, dead twigs, and on *Selaginella* spp./crustose lichen (terricolous)/195–2,165	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.
Tortula californica California screw-moss	None/None/1B.2/ None	Chenopod scrub, valley and foothill grassland; sandy, soil/moss/30–4,790	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

Special-Status Plant Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State/ CRPR/MSCP County Subarea Plan)	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (feet)	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Triquetrella californica coastal triquetrella	None/None/1B.2/ None	Coastal bluff scrub, coastal scrub; soil/moss/30–330	Not expected to occur. No suitable vegetation present.	Not expected to occur. No suitable vegetation present.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.	Not expected to occur. This species would have been identified during plant surveys.

[1] Species is known to occur within the vicinity (La Mesa and/or National City quadrangle).

Status Legend:
FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State listed as endangered
SR: State Rare
CRPR 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere
CRPR 3: Plants about which more information is needed – A review list
CRPR 4: Plants of limited distribution – A Watch List
.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20–80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

APPENDIX D

Special-Status Wildlife Species Potentially Occurring within the Project Study Area

APPENDIX D
Special-Status Wildlife Species Potentially Occurring within the Project Study Area

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Amphibians							
Anaxyrus californicus arroyo toad	FE/SSC/ Covered	Semi-arid areas near washes, sandy riverbanks, riparian areas, palm oasis, Joshua tree, mixed chaparral and sagebrush; stream channels for breeding (typically third order); adjacent stream terraces and uplands for foraging and wintering	Not expected to occur. No suitable vegetation present.				
Rana draytonii California red-legged frog	FT/SSC/ Covered	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent vegetation associated with deep, still or slow-moving water; uses adjacent uplands	Not expected to occur. No suitable vegetation present.				
Spea hammondii western spadefoot[1]	None/SSC/ None	Primarily grassland and vernal pools, but also in ephemeral wetlands that persist at least 3 weeks in chaparral, coastal scrub, valley–foothill woodlands, pastures, and other agriculture	Not expected to occur. No suitable vegetation present.				
Reptiles							
Actinemys marmorata western pond turtle	None/SSC/ Covered	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking study areas; adjacent uplands used for nesting and during winter	Not expected to occur. No suitable vegetation present.				
Anniella stebbinsi southern California legless lizard	None/SSC/ None	Coastal dunes, stabilized dunes, beaches, dry washes, valley–foothill, chaparral, and scrubs; pine, oak, and riparian woodlands; associated with sparse vegetation and moist sandy or loose, loamy soils	Low potential to occur due to developed area; may occur in or near the San Diego River.	Not expected to occur. No suitable vegetation present.	Low potential to occur due to limited suitable habitat in the study area.		

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Arizona elegans occidentalis California glossy snake[1]	None/SSC/ None	Commonly occurs in desert regions throughout Southern California; prefers open sandy areas with scattered brush; also found in rocky areas	Low potential to occur. There are no suitable open sandy areas within the study area.				
Aspidoscelis hyperythra orange-throated whiptail[1]	None/WL/ Covered	Low-elevation coastal scrub, chaparral, and valley–foothill hardwood	Not expected to occur. No suitable vegetation present.		Moderate potential to occur in shrub habitat.		
Aspidoscelis tigris stejnegeri San Diegan tiger whiptail[1]	None/SSC/ None	Hot and dry areas with sparse foliage, including chaparral, woodland, and riparian areas	Low potential to occur. No suitable vegetation present.		High potential to occur. This species is relatively common in San Diego County and in chaparral habitat.		
Chelonia mydas green sea turtle[1]	FT/None/ None	Shallow waters of lagoons, bays, estuaries, mangroves, eelgrass, and seaweed beds	Not expected to occur. No suitable habitat present.				
Coluber fuliginosus Baja California coachwhip[1]	None/SSC/ None	In California, restricted to southern San Diego County, where it is known from grassland and coastal sage scrub; open areas in grassland and coastal sage scrub	Not expected to occur. This species' range is farther south along the Mexico border.				
Crotalus ruber red diamondback rattlesnake[1]	None/SSC/ None	Coastal scrub, chaparral, oak and pine woodlands, rocky grasslands, cultivated areas, and desert flats	Not expected to occur. No suitable vegetation present.	Low potential to occur. There are limited suitable rocky areas within the study area.	Low potential to occur. There are limited suitable rocky areas within the study area.		
Diadophis punctatus similis San Diego ringneck snake	None/None/ None	Moist habitats, including wet meadows, rocky hillsides, gardens, farmland grassland, chaparral, mixed-conifer forest, and woodland habitats	Not expected to occur. No suitable meadow or moist habitat areas present.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Phrynosoma blainvillii Blainville's horned lizard[1]	None/SSC/ Covered	Open areas of sandy soil in valleys, foothills, and semi-arid mountains, including coastal scrub, chaparral, valley–foothill hardwood, conifer, riparian, pine–cypress, juniper, and annual grassland habitats	Not expected to occur. No suitable vegetation present.		Moderate potential to occur in shrub habitat.		
Plestiodon skiltonianus interparietalis Coronado skink[1]	None/WL/ None	Woodlands, grasslands, pine forests, and chaparral; rocky areas near water	Not expected to occur. No suitable vegetation present.	Low potential to occur. There is no suitable habitat near water within the study area.			
Salvadora hexalepis virgultea coast patch-nosed snake[1]	None/SSC/ None	Brushy or shrubby vegetation; requires small mammal burrows for refuge and overwintering	Not expected to occur. No suitable vegetation present.	Moderate potential to occur in shrub habitat.			
Thamnophis hammondii two-striped gartersnake[1]	None/SSC/ None	Streams, creeks, pools, streams with rocky beds, ponds, lakes, vernal pools	Not expected to occur. No suitable vegetation present.				
Birds							
Accipiter cooperii (nesting) Cooper's hawk	None/WL/ Covered	Nests and forages in dense stands of live oak, riparian woodlands, or other woodland habitats often near water	Low potential to occur to nest in the study area; may forage in the study area.				
Agelaius tricolor (nesting colony) tricolored blackbird[1]	BCC/SE, SSC/Covered	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	Not expected to nest. No suitable vegetation present.				
Aimophila ruficeps canescens Southern California	None/WL/ Covered	Nests and forages in open coastal scrub and chaparral with low cover of scattered scrub interspersed with rocky and grassy patches	Not expected to nest. No suitable vegetation	Moderate potential to occur in shrub habitat.			

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
rufous-crowned sparrow[1]			present.				
Ammodramus savannarum (nesting) grasshopper sparrow	None/SSC/ None	Nests and forages in moderately open grassland with tall forbs or scattered shrubs used for perches	Not expected to nest. No suitable vegetation present.				
Aquila chrysaetos (nesting and wintering) golden eagle	BCC/FP, WL/Covered	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	Not expected to occur on site. No suitable vegetation present.				
Artemisiospiza belli Bell's sage sparrow	BCC/WL/Non e	Nests and forages in coastal scrub and dry chaparral; typically in large, unfragmented patches dominated by chamise; nests in more dense patches but uses more open habitat in winter	Not expected to occur. No suitable vegetation present.		Moderate potential to occur in shrub habitat.		
Athene cunicularia (burrow study areas and some wintering study areas) burrowing owl[1]	BCC/SSC/ Covered	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	Not expected to occur. No suitable vegetation present.				
Branta Canadensis Canada goose	None/None/ Covered	Lakes, rivers, ponds, and other bodies of water; yards, park lawns, and agricultural fields	Not expected to occur. No suitable vegetation present.				
Buteo regalis (wintering) ferruginous hawk	BCC/WL/ Covered	Winters and forages in open, dry country, grasslands, open fields, agriculture	Not expected to occur. No suitable vegetation present.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Buteo swainsoni (nesting) Swainson's hawk[1]	BCC/ST/ Covered	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	Not expected to nest. No suitable vegetation present.				
Campylorhynchus brunneicapillus sandiegensis (San Diego and Orange Counties only) coastal cactus wren[1]	BCC/SSC/ Covered	Southern cactus scrub patches	Not expected to occur. No suitable vegetation present.				
Charadrius alexandrinus nivosus (nesting) western snowy plover[1]	FT, BCC/SSC/ Covered	On coasts nests on sandy marine and estuarine shores; in the interior, nests on sandy, barren or sparsely vegetated flats near saline or alkaline lakes, reservoirs, and ponds	Not expected to occur. No suitable vegetation present.				
*Charadrius montanus (*wintering) mountain plover	BCC/SSC/ Covered	Winters in shortgrass prairies, plowed fields, open sagebrush, and sandy deserts	Not expected to occur. No suitable vegetation present.				
Circus hudsonius (nesting) northern harrier	None/SSC/ Covered	Nests in open wetlands (marshy meadows; wet, lightly grazed pastures; old fields; freshwater and brackish marshes); also in drier habitats (grassland and grain fields); forages in grassland, scrubs, rangelands, emergent wetlands, and other open habitats	Not expected to nest. No suitable nesting habitat present. May forage within the study area.				
Coccyzus americanus occidentalis (nesting) western yellow-billed cuckoo[1]	FT, BCC/SE/None	Nests in dense, wide riparian woodlands and forest with well-developed understories	Not expected to nest. No suitable vegetation present within the study area.	Not expected to nest. No suitable vegetation present.			

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
			Riparian vegetation is present in the San Diego River north of the study area.				
Egretta rufescens reddish egret	None/None/ Covered	Freshwater marsh with emergent vegetation; in the Central Valley primarily nests and forages in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation	Not expected to occur. No suitable vegetation present.				
Elanus leucurus (nesting) white-tailed kite	None/FP/ None	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	Not expected to nest. No suitable vegetation present within the study area. Riparian vegetation is present in the San Diego River north of the study area.	Not expected to nest within the study area; may forage in the study area.			
Empidonax traillii extimus (nesting) southwestern willow flycatcher	FE/SE/ Covered	Nests in dense riparian habitats along streams, reservoirs, or wetlands; uses variety of riparian and shrubland habitats during migration	Not expected to nest. No suitable vegetation present within the study area. Riparian vegetation is present in the	Not expected to nest within the study area; may forage in the study area.			

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
			San Diego River north of the study area.				
Eremophila alpestris actia California horned lark	None/WL/ None	Nests and forages in grasslands, disturbed lands, agriculture, and beaches; nests in alpine fell fields of the Sierra Nevada	Not expected to occur. No suitable vegetation present.				
Falco mexicanus (nesting) prairie falcon[1]	BCC/WL/Non e	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	Not expected to nest. No suitable vegetation present.				
Falco peregrinus anatum (nesting) American peregrine falcon	FDL, BCC/SDL, FP/Covered	Nests on cliffs, buildings, and bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	Not expected to nest. No suitable vegetation or habitat present.				
Haliaeetus leucocephalus (nesting and wintering) bald eagle	FDL, BCC/SE, FP/Covered	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	Not expected to nest. No suitable vegetation present.				
Icteria virens (nesting) yellow-breasted chat	None/SSC/ None	Nests and forages in dense, relatively wide riparian woodlands and thickets of willows, vine tangles, and dense brush	Not expected to nest. No suitable vegetation present within the study area. Riparian vegetation is present in the San Diego River north of the study area.	Not expected to nest. There is no suitable wide riparian woodland habitat within the study area.			

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Ixobrychus exilis (nesting) least bittern[1]	BCC/SSC/ None	Nests in freshwater and brackish marshes with dense, tall growth of aquatic and semi-aquatic vegetation	Not expected to nest. No suitable vegetation present.				
Laterallus jamaicensis coturniculus California black rail[1]	BCC/ST, FP/None	Tidal marshes, shallow freshwater margins, wet meadows, and flooded grassy vegetation; suitable habitats are often supplied by canal leakage in Sierra Nevada foothill populations	Not expected to occur. No suitable vegetation present.				
Numenius americanus (nesting) long-billed curlew	BCC/WL/ Covered	Nests in grazed, mixed grass, and short-grass prairies; localized nesting along the California coast; winters and forages in coastal estuaries, mudflats, open grassland, and cropland	Not expected to occur. No suitable vegetation present.				
Pandion haliaetus (nesting) osprey	None/WL/ None	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	Not expected to nest. No suitable vegetation present.				
Passerculus sandwichensis beldingi Belding's savannah sparrow[1]	None/SE/ Covered	Nests and forages in coastal saltmarsh dominated by pickleweed (*Salicornia* spp.)	Not expected to occur. No suitable vegetation present.				
Passerculus sandwichensis rostratus (wintering) large-billed savannah sparrow	None/SSC/ Covered	Nests and forages in open, low saltmarsh vegetation, including low halophytic scrub	Not expected to occur. No suitable vegetation present.				
Pelecanus occidentalis californicus (nesting	FDL/SDL, FP/Covered	Forages in warm coastal marine and estuarine environments; in California, nests on dry, rocky offshore islands	Not expected to nest. No suitable vegetation present.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
colonies and communal roosts) California brown pelican							
Phalacrocorax auritus (nesting colony) double-crested cormorant	None/WL/ None	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, and open coastlines; winter habitat includes lakes, rivers, and coastal areas	Not expected to occur. No suitable vegetation present.				
Plegadis chihi (nesting colony) white-faced ibis	None/WL/ Covered	Nests in shallow marshes with areas of emergent vegetation; winter foraging in shallow lacustrine waters, flooded agricultural fields, muddy ground of wet meadows, marshes, ponds, lakes, rivers, flooded fields, and estuaries	Not expected to nest. The study area is outside of the species' known geographic range and there is no suitable vegetation present.				
Polioptila californica coastal California gnatcatcher[1]	FT/SSC/ Covered	Nests and forages in various sage scrub communities, often dominated by coastal sagebrush and buckwheat; generally avoids nesting in areas with a slope of greater than 40%; majority of nesting at less than 1,000 feet above mean sea level	Not expected to occur in the study area. No suitable vegetation present.		Moderate potential to occur within the study area. There is coastal sage scrub in the northern portion of the study area; however, it is surrounded	Moderate potential to occur within the study area. There is coastal sage scrub in the study area; however, it is surrounded by development, disturbed habitat and scrub oak	Moderate potential to occur within the study area. There is coastal sage scrub in the study area; however, it is surrounded by development, disturbed habitat, eucalyptus woodland,

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
					by development, disturbed habitat and eucalyptus woodland. Habitat in the canyon is primarily scrub oak, which is too dense for California gnatcatcher. No California gnatcatchers have been recorded in this canyon (CNDDB 2017; USFWS 2017).	woodland. Habitat in the area includes coastal sage scrub (including disturbed). No California gnatcatchers have been recorded in the surrounding undeveloped land (CNDDB 2017; USFWS 2017).	and scrub oak woodland. Habitat in the canyon includes both disturbed coastal sage scrub and scrub oak. No California gnatcatchers have been recorded in this canyon (CNDDB 2017; USFWS 2017).
Rallus obsoletus levipes Ridgway's rail[1]	FE/SE, FP/Covered	Coastal wetlands, brackish areas, coastal saline emergent wetlands	Not expected to occur. No suitable vegetation present.				
Setophaga petechia (nesting) yellow warbler[1]	BCC/SSC/ None	Nests and forages in riparian and oak woodlands, montane chaparral, open ponderosa pine, and mixed-conifer habitats	Not expected to nest. No suitable vegetation present.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Sialia mexicana western bluebird	None/None/ Covered	Nests in old-growth red fir, mixed-conifer, and lodegpole pine habitats near wet meadows used for foraging	Not expected to occur. No suitable vegetation present.				
Sternula antillarum browni (nesting colony) California least tern[1]	FE/SE, FP/Covered	Forages in shallow estuaries and lagoons; nests on sandy beaches or exposed tidal flats	Not expected to nest. No suitable vegetation present.				
Thalasseus elegans (nesting colony) elegant tern	None/WL/ Covered	Inshore coastal waters, bays, estuaries, and harbors; forages over open water	Not expected to nest. No suitable vegetation present.				
Vireo bellii pusillus (nesting) least Bell's vireo[1]	FE/SE/ Covered	Nests and forages in low, dense riparian thickets along water or along dry parts of intermittent streams; forages in riparian and adjacent shrubland late in nesting season	Not expected to nest. No suitable vegetation present within the study area. Riparian vegetation is present in the San Diego River north of the study area.	Not expected to occur. No suitable vegetation present.			
Mammals							
Antrozous pallidus pallid bat[1]	None/SSC/ None	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in artificial structures and trees	Low potential to roost; potential to forage throughout area.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Chaetodipus californicus femoralis Dulzura pocket mouse[1]	None/SSC/ None	Open habitat, coastal scrub, chaparral, oak woodland, chamise chaparral, mixed-conifer habitats; disturbance specialist; 0 to 3,000 feet above mean sea level	Not expected to occur. No suitable vegetation present.		Moderate potential to occur in shrub habitat within the study area.		
Chaetodipus fallax northwestern San Diego pocket mouse[1]	None/SSC/ None	Coastal scrub, mixed chaparral, sagebrush, desert wash, desert scrub, desert succulent shrub, pinyon–juniper, and annual grassland	Not expected to occur. No suitable vegetation present.		Moderate potential to occur in shrub habitat within the study area.		
Choeronycteris mexicana Mexican long-tongued bat[1]	None/SSC/ None	Desert and montane riparian, desert succulent scrub, desert scrub, and pinyon–juniper woodland; roosts in caves, mines, and buildings	Not expected to occur. No suitable vegetation present.				
Corynorhinus townsendii Townsend's big-eared bat	None/SSC/ None	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, built structures, and tunnels	Low potential to roost; potential to forage throughout area.				
Euderma maculatum spotted bat	None/SSC/ None	Foothills, mountains, desert regions of Southern California, including arid deserts, grasslands, and mixed-conifer forests; roosts in rock crevices and cliffs; feeds over water and along washes	Low potential to roost; potential to forage throughout area.				
Eumops perotis californicus western mastiff bat[1]	None/SSC/ None	Chaparral, coastal and desert scrub, coniferous and deciduous forest and woodland; roosts in crevices in rocky canyons and cliffs where the canyon or cliff is vertical or nearly vertical, trees, and tunnels	Low potential to roost; potential to forage throughout area.				
Lasionycteris noctivagans silver-haired bat	None/None/ None	Old-growth forest, maternity roosts in trees, large snags 50 feet aboveground; hibernates in hollow trees, rock crevices, buildings, mines, caves, and under sloughing bark;	Low potential to roost; potential to forage throughout area.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
		forages in or near coniferous or mixed deciduous forest, stream or river drainages					
Lasiurus blossevillii western red bat[1]	None/SSC/ None	Forest, woodland, riparian, mesquite bosque, and orchards, including fig, apricot, peach, pear, almond, walnut, and orange; roosts in tree canopy	Low potential to roost; potential to forage throughout area.				
Lasiurus cinereus hoary bat[1]	None/None/ None	Forest, woodland riparian, and wetland habitats; also juniper scrub, riparian forest, and desert scrub in arid areas; roosts in tree foliage and sometimes cavities, such as woodpecker holes	Low potential to roost; potential to forage throughout area.				
Lasiurus xanthinus western yellow bat[1]	None/SSC/ None	Valley–foothill riparian, desert riparian, desert wash, and palm oasis habitats; below 2,000 feet above mean sea level; roosts in riparian areas and palms	Not expected to occur. No suitable vegetation present.				
Lepus californicus bennettii San Diego black-tailed jackrabbit[1]	None/SSC/ None	Arid habitats with open ground; grasslands, coastal scrub, agriculture, disturbed areas, and rangelands	Not expected to occur. No suitable vegetation present.		Low potential to occur. The study area is likely too urbanized for this species.		
Myotis ciliolabrum western small-footed myotis	None/None/ None	Arid woodlands and shrublands, but near water; roosts in caves, crevices, mines, abandoned buildings	Low potential to roost; potential to forage throughout area.				
Myotis evotis long-eared myotis	None/None/ None	Brush, woodland, and forest habitats from sea level to 9,000 feet above mean sea level; prefers coniferous habitats; forages along habitat edges, in open habitats, and over water; roosts in buildings, crevices, under bark, and snags; uses caves as night roosts	Low potential to roost; potential to forage throughout area.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Myotis yumanensis Yuma myotis[1]	None/None/ None	Riparian, arid scrublands and deserts, and forests associated with water (streams, rivers, tinajas); roosts in bridges, buildings, cliff crevices, caves, mines, and trees	Not expected to occur. No suitable vegetation present.	Low potential to occur. There is no suitable stream habitat within the study area.			
Neotoma lepida intermedia San Diego desert woodrat[1]	None/SSC/ None	Coastal scrub, desert scrub, chaparral, cacti, rocky areas	Not expected to occur. No suitable vegetation present.		Moderate potential to occur in shrub habitat within the study area.		
Nyctinomops femorosaccus pocketed free-tailed bat[1]	None/SSC/ None	Pinyon–juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oases; roosts in high cliffs or rock outcrops with drop-offs, caverns, and buildings	Not expected to occur. No suitable vegetation present.				
Nyctinomops macrotis big free-tailed bat[1]	None/SSC/ None	Rocky areas; roosts in caves, holes in trees, buildings, and crevices on cliffs and rocky outcrops; forages over water	Low potential to roost; potential to forage throughout area.				
Odocoileus hemionus mule deer	None/None/ Covered	Coastal sage scrub, chaparral, riparian, woodlands, and forest; often browses in open area adjacent to cover throughout California, except deserts and intensely farmed areas	Not expected to occur. No suitable vegetation present and highly urbanized area.				Low potential to occur in the canyon at this location.
Perognathus longimembris pacificus Pacific pocket mouse	FE/SSC/None	Fine-grained sandy substrates in open coastal strand, coastal dunes, and river alluvium	Not expected to occur. No suitable vegetation present.				

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Puma concolor cougar	None/None/ Covered	Scrubs, chaparral, riparian, woodland, and forest; rests in rocky areas and on cliffs and ledges that provide cover; most abundant in riparian areas and brushy stages of most habitats throughout California, except deserts	Not expected to occur. No suitable vegetation present and highly urbanized area.				
Taxidea taxus American badger[1]	None/SSC/ Covered	Dry, open, treeless areas; grasslands, coastal scrub, agriculture, and pastures, especially with friable soils	Not expected to occur. No suitable vegetation present and highly urbanized area				
Invertebrates							
Branchinecta sandiegonensis San Diego fairy shrimp[1]	FE/None/ Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No vernal pools present.				
Callophrys thornei Thorne's hairstreak	None/None/ Covered	Interior cypress woodland dominated by host plant *Hesperocyparis forbesii* (Tecate cypress)	Not expected to occur. No suitable vegetation present.				
Euphydryas editha quino Quino checkerspot butterfly[1]	FE/None/None	Annual forblands, grassland, open coastal scrub and chaparral; often soils with cryptogamic crusts and fine-textured clay; host plants include *Plantago erecta*, *Antirrhinum coulterianum*, and *Plantago patagonica* (Silverado Occurrence Complex)	Not expected to occur. No host plants were observed within the study area.	Not expected to occur. No suitable vegetation present.	Not expected to occur. No host plants were observed within the study area.		

Special-Status Wildlife Species Potential to Occur Within the Project Area

Species (Scientific Name/Common Name)	Status (Federal/State /San Diego MSCP South County)	Habitat	Potential to Occur within the 50-Foot Study Area				
			Site 4	*Site 5*	*Site 8*	*Site 10*	*Site 12*
Lycaena hermes Hermes copper[1]	FC/None/ None	Mixed woodlands, chaparral, and coastal scrub	Not expected to occur. *Rhamnus crocea*, the host plant for this species, was not observed within the study area.	Not expected to occur. No suitable vegetation present.	Not expected to occur. *Rhamnus crocea*, the host plant for this species, was not observed within the study area.		
Panoquina errans wandering skipper	None/None/ Covered	Saltmarsh	Not expected to occur. No suitable vegetation present.				
Streptocephalus woottoni Riverside fairy shrimp	FE/None/ Covered	Vernal pools, non-vegetated ephemeral pools	Not expected to occur. No vernal pools present.				

[1] Species is known to occur within the vicinity (La Mesa and/or National City Quadrangle).

Status Notes:
FE: Federally Endangered
FT: Federally Threatened
FC: Federal Candidate
FDL: Federally Delisted
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State Endangered
ST: State Threatened
SDL: State Delisted

APPENDIX E

Resumes

Callie Amoaku

Senior Biologist/Project Manager

Callie Amoaku is a biologist with over 11 years' professional experience as an environmental analyst specializing in field surveys and report preparation. Mrs. Amoaku is committed to professional management of environmental resources, including land conservation. As a biologist with Dudek, she has coordinated large survey efforts; and research and prepared biological sections for environmental impact reports (EIRs), biological technical reports (BTRs), and focused survey reports. She has also performed wildlife and plant surveys, vegetation mapping, and jurisdictional delineations throughout Southern California.

EDUCATION

California Polytechnic State University, San Luis Obispo
BS, Environmental Management and Protection/Minor in GIS, Cum Laude, 2006

CERTIFICATIONS

USFWS Federal 10a Survey Permit No. TE-36118B-1

- Quino Checkerspot Butterfly Surveys
- Casey's June Beetle

CDFW Plant Voucher Collecting Permit No. 2081(a)-15-108-V

PROFESSIONAL AFFILIATIONS

The Western Section of the Wildlife Society, Southern California Chapter, Vice President (2015–Present)

Project Experience

Development

Ivanhoe Ranch, Pv Ivanhoe LLC, El Cajon, California. Currently serves as project manager for the biology-related tasks. Conducted vegetation mapping, habitat assessment and host plant mapping for Quino checkerspot butterfly (*Euphydryas editha quino*) and Hermes copper (*Lycaena hermes*) butterfly, conducted focused protocol surveys for Quino checkerspot butterfly and Hermes copper butterfly, and conducted habitat assessment and focused protocol surveys for burrowing owl (*Athene cunicularia*) and least Bell's vireo (*Vireo bellii pusillus*). Prepared a biological analysis letter report for the Major Project Pre-Application package; attends County of San Diego meetings; assists client with mitigation planning.

Camelot, The Camelot Project Owner LLC, San Diego County, California. As project assistant, conducted a formal wetlands jurisdictional delineation and mapped wetlands and stream channels. Conducted general biological reconnaissance surveys throughout the 67-acre site. Several special-status species were mapped, including white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), loggerhead shrike (*Lanius ludovicianus*), and California adolphia (*Adolphia californica*).

West Oaks Due Diligence, Carlsbad West Oaks Project Owner LLC, San Diego County, California. Conducted a formal wetland delineation and vegetation mapping for a 12.5-acre project site in Carlsbad.

Estero Trail, County of Sonoma, California. Conducted a formal wetland delineation in Sonoma County for a proposed residential project. Mapped a variety of wetland meadow habitats, including *Carex obnupta* Herbaceous Alliance, *Juncus (balticus, mexicanus)* Herbaceous Alliance, and *Salix lasiolepis* Shrubland Alliance.

Silveira Property, Marin County, California. Conducted a formal wetland delineation in Marin County. Mapped a variety of seasonal wetlands, an estuarine wetland, and isolated wetlands.

Borrego Springs Gildred Site, The Gildred Companies, San Diego County, California. Conducted field work for this project (vegetation mapping and formal jurisdictional delineation); prepared BTR per the County of San Diego's guidelines. Responded to public comments on the biology section of the EIR.

Bonita Glen Drive Project Studies, Silvergate Development, Chula Vista, California. As project manager, prepared a BTR in accordance with the City of Chula Vista's Subarea Plan and manages other

technical studies supporting the Mitigated Negative Declaration (MND). Assists client with City coordination and mitigation planning.

Grapevine Project, Tejon Ranch, Kern County, California. Served as project task manager and field lead to conduct least Bell's vireo, special-status mammals, wildlife camera studies, bat surveys, and habitat assessments for a variety of federally and state-listed wildlife species. Served as project task manager and field lead to conduct a formal wetlands jurisdictional delineation and mapped wetlands and waters in accordance with regulations and guidance from the U.S. Army Corps of Engineers (ACOE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). The jurisdictional delineation and determination included extensive literature review of historic aerials and topographic maps, the National Hydrography Dataset, and the National Wetlands Inventory; field surveying a 15,315-acre study area; and delineating approximately 130 acres of potentially jurisdictional features. Also performed vegetation mapping, rare plant surveys, and habitat assessments for a variety of federally and state-listed wildlife species. Ongoing duties include preparation of a detailed BTR and 20 associated reports and appendices, data management and review, and project management.

Grandview Street Project, Axelson and Corn, San Diego County, California. As project manager, coordinated wildlife surveys, prepared the BTR, and assisted the client with additional regulatory issues.

Tejon Mountain Village, Kern County, California. As project assistant and biologist, performed surveys for special-status plants, including population counts and mapping with Global Positioning System (GPS) units on the 28,000-acre project site. Assisted in preparation of the biological resources report for California Environmental Quality Act (CEQA) documentation, including wildlife species, and portions of the draft EIR.

Proctor Valley Village 14 and Preserve, Jackson Pendo Development, San Diego County, California. Assisted in the jurisdictional delineation; rare plant surveys, including mapping of the federally threatened and state-endangered Otay tarplant (*Deinandra conjugens*); habitat mapping and focused Hermes copper butterfly surveys; and preparation of the BTR in accordance with the County of San Diego guidelines.

Newhall Biological and Environmental Documentation, Newhall Land and Farming Company, Santa Clarita, California. As project assistant, assisted in writing numerous BTRs and biological sections of EIRs with detailed information about special-status wildlife species. Assisted in preparing the Comprehensive Mitigation Implementation Plan, which consisted of organizing multiple data sets and mitigation measures. Coordinated and performed biological surveys for spineflower (*Chorizanthe*), a state-endangered and sensitive plant species, which included population counts and using GPS coordinates to locate the boundaries of the populations. Also performed biological monitoring of known spineflower populations, including population counts and point-intercept transects, and performed vegetation mapping for multiple vegetation classes.

Newland Sierra, San Diego, California. As field biologist, conducted vegetation mapping, a jurisdictional wetlands delineation, and focused rare plant surveys. Assisted in preparation of the BTR and biology section of the EIR; responded to public comments on the Draft EIR.

Lone Oak Road, The Marker Company, Vista, California. As project task manager and field lead, conducted a formal wetlands jurisdictional delineation and mapped wetlands and waters under the jurisdiction of ACOE, RWQCB, and CDFW; performed vegetation mapping; prepared the biological resources letter report; and coordinated additional field surveys.

Bear Valley Parkway Project, Spieth-Wohlford, Escondido, California. As project task manager and field lead, conducted a formal wetlands jurisdictional delineation and mapped wetlands and waters under the jurisdiction of ACOE, RWQCB, and CDFW; performed vegetation mapping; and prepared the biological resources letter report.

Warner Ranch, WHP Warner Ranch LP, San Diego County, California. As project assistant, conducted a formal jurisdictional wetland delineation and surveys for special-status plants over approximately 80 acres within the 566-acre project site. Primary author of the BTR, written in compliance with the County of San Diego's guidelines for format and determining significance. Prepared the Conceptual Resource Mitigation Plan. Attended multiple County of San Diego meetings and assisted in additional research. Coordinated field surveys. Assisted in the preparation of the biological section of the EIR and response to comments on the EIR.

Otay Ranch, JPB Development, San Diego County, California. As project assistant, assisted in writing a multi-project BTR and preparing permits for 401 Water Quality Certification, 404 Pre-Construction Notification for a Nationwide Permit, and 1600 Streambed Alteration Agreement. Organized data from multiple years of focused surveys and coordinated graphics for the permit applications. Assisted in general biological surveys, including focused Quino checkerspot butterfly surveys; rare plant surveys focused on mapping the federally threatened and state-endangered Otay tarplant; and construction monitoring.

Rough Acres Ranch, Hamann Companies, San Diego County, California. Conducted two focused survey passes for rare plants, and mapped large populations of Jacumba milk-vetch (*Astragalus douglasii*). Also mapped sticky geraea (*Geraea viscida*) and Tecate tarplant (*Deinandra floribunda*). Conducted vegetation mapping to Holland classification system.

Sycuan Slope Repair Project, Sycuan Band of Kumeyaay Nation, El Cajon, California. Served as field biologist to conduct a formal wetlands jurisdictional delineation and mapped wetlands and waters under the jurisdiction of ACOE.

Yokohl Ranch, Yokohl Ranch Company, Visalia, California. Performed quadrat surveys along 50-meter (164-foot) transects to collect species density information for spiny-sepaled button celery (*Eryngium spinosepalum*).

City of San Marcos, County of San Diego, California. As project biologist, conducted focused surveys for least Bell's vireo along San Marcos Creek. Several special-status species were detected, including least Bell's vireo, yellow-breasted chat (*Icteria virens*), and yellow warbler (*Dendroica petechia*). Assisted in preparation of a Regional General Permit for the City of San Marcos.

Hallmark Project, Hallmark Communities, San Diego County, California. As project lead, conducted biological reconnaissance surveys and prepared a biological constraints analysis and BTR for the proposed residential development project.

ARCO AM/PM, Bonsall Service Station, San Diego County, California. As project assistant, conducted general biological reconnaissance surveys throughout the site. Prepared a biological resources letter report summarizing the results and proposed impacts from the project.

Sumida Property, San Diego County, California. As field biologists, conducted general biological reconnaissance surveys throughout the site. Prepared a biological resources letter report summarizing the results and proposed impacts from the project. Mapped the extent of CDFW riparian habitat.

Colton Reclamation Facility, CalPortland Company, Riverside County, California. Served as project manager for collecting vegetation data for future reclamation of the mining facility. Conducted vegetation mapping for the undeveloped project site and collected data for density, percentage cover, and species richness along 50-meter transects. Prepared a summary memorandum describing the methods and results.

Focused Wildlife Surveys, Yaqui Pass and Viking Farms, Borrego Springs, California. As field assistant, conducted general nocturnal and diurnal surveys with a focus on special-status wildlife species on two proposed development properties. Conducted general plants surveys with a focus on special-status plant species.

Mid-County Parkway Project, County of Riverside, California. Field biologist for study area (approximately 1.1 to 4 miles in width and approximately 32 miles in length). Performed multiple focused surveys for least Bell's vireo and other special-status wildlife surveys for the mitigation areas. Identified nests for Cooper's hawk (*Accipiter cooperi*) and red-tailed hawk (*Buteo jamaicensis*). Conducted general plants surveys with a focus on special-status plant species for the mitigation areas.

Trabuco Canyon, The Planning Center, County of Orange, California. As project biologist, conducted focused surveys for least Bell's vireo on the 1,110-acre site in Orange County. Involved hiking in steep, rough terrain and collecting standardized data on field maps.

Ferber Ranch (Trabuco Canyon), Orange County, California. As project assistant, assisted with special-status plant surveys and focused surveys for least Bell's vireo. Involved steep, rough terrain and collecting standardized data on field maps.

High Tech Project, High Tech High Learning, City of Chula Vista, California. As field assistant, reviewed southwestern willow flycatcher (*Empidonax traillii extimus*) and least Bell's vireo survey records and assisted with writing the focused survey report.

Mid-Coast Corridor Transit Project, San Diego Association of Governments and California Department of Transportation, San Diego County, California. Conducted a jurisdictional delineation for the proposed project.

Brown-Headed Cowbird Trapping Program, The Crossings at Carlsbad Golf Course, City of Carlsbad, California. Responsible for daily operation and maintenance of brown-headed cowbird (*Molothrus ater*) trapping within the golf course. The trapping program is a U.S. Fish and Wildlife Service (USFWS) requirement as mitigation for impacts to habitat for federally listed species, including least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher (*Polioptila californica*).

Energy

Campo Wind Energy Environmental Surveys, Western Natural Resources LLC, San Diego County, California. Conducted a formal wetland delineation and vegetation mapping in eastern San Diego County on tribal lands. This delineation included mapping of numerous ephemeral drainages as well as herbaceous wetlands.

Dodge Flat Solar Environmental Licensing, NextEra Energy Resources, Washoe County, Nevada. Conducted a formal wetland delineation and determination based on the regulations and guidance of the Wetland Delineation Manual (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Version 2.0) (ACOE 2008) and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States: A Delineation Manual* (Lichvar and McColley 2008). While not required by the state of Nevada, the *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (CEC 2014) were also reviewed as part of the delineation because the project site has similar geomorphic processes as those addressed in the CEC 2014 guidelines.

Sanborn Solar Energy Project, Kern County, California. Served as field lead for the formal jurisdictional delineation. Specifically, the wetland delineation included mapping waters defined in the Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants (CEC 2014) in addition to the ACOE methods. Also conducted vegetation mapping and focused rare plant surveys.

Edwards Solar, Terra-Gen Power LLC, Edwards Air Force Base (AFB), California. Served as field lead for the formal jurisdictional delineation at Edwards AFB. Specifically, the wetland delineation included mapping waters defined in the Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants (CEC 2014). Prepared the jurisdictional delineation report describing the methods and results of this survey.

Jacumba Solar, NextEra Energy Resources, San Diego County, California. Served as project assistant for biology-related tasks. Conducted vegetation mapping in accordance with County of San Diego guidelines; a habitat assessment and focused surveys for Quino checkerspot butterfly; mapped rare plants during focused surveys; and conducted a formal wetland delineation and determination based on the regulations and guidance of ACOE, RWQCB, and CDFW. The delineation included mapping waters defined in the *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (CEC 2014) in addition to the ACOE methods.

Prepared the County of San Diego BTR and associated reports; assisted with the biological resources section of the EIR and response to public comments. Successfully permitted the 304-acre solar project and the project applicant was issued a Nationwide Permit Verification through NWP 51, Land-Based Renewable Energy Generation Facilities through ACOE; a Stream Alteration Agreement through CDFW; and a Water Quality Certification through RWQCB. The permitting process included obtaining a linear foot waiver through ACOE and coordination with the State Historic Preservation Office (SHPO).

Tierra Del Sol Solar Project, Tierra Del Sol Solar Farm, San Diego County, California. As project assistant and field biologist, conducted vegetation mapping and focused rare plant surveys, and assisted the permitted Quino checkerspot butterfly biologist during focused surveys for the 420-acre solar development site located within an unincorporated section of San Diego County. Prepared the biological resources technical report in accordance with the County of San Diego's guidelines, and attended public outreach meetings.

Rugged Solar Farm, San Diego County, California. As project assistant and field biologist, conducted a formal wetland delineation and determination based on the regulations of ACOE, RWQCB, and CDFW for the 765-acre solar development site located within an unincorporated section of San Diego County. Conducted vegetation mapping, prepared the biological resources technical report in accordance with the County of San Diego's guidelines, and attended public outreach meetings.

Tehachapi Renewable Transmission Project, Southern California Edison (SCE), Los Angeles and San Bernardino Counties, California. As biologist, assisted senior botanists in conducting surveys for special-status plant species and vegetation mapping. This included mapping vegetation communities and plant species using the Trimble Yuma geographic information system (GIS)/GPS Data Collection System. Served as biological monitor for construction-related activities. Attended construction-monitoring workshop and Worker Environmental Awareness Program/safety training. Construction-monitoring activities included morning and evening sweeps of the construction areas, and monitoring crews for compliance during vegetation removal, mobilization, and tower setup activities. Other activities included establishing Environmentally Sensitive Areas for active nests, and monitoring and updating active nests. Reported new nests observed. Field Reporting Environmental Database reports were completed each day to record daily monitoring activities and nest updates.

Ocotillo Wells Solar Farm, The Gildred Companies, San Diego County, California. As project task manager and field biologist, performed a formal jurisdictional delineation and mapped a series of ephemeral stream channels throughout the property. Prepared the biological resources technical report in accordance with the County of San Diego's guidelines.

Devers Transmission Line, SCE, Riverside County, California. As field assistant, performed mapping of jurisdictional drainages and vegetation for future transmission line towers in the Sonoran Desert. Task included familiarity with the flora and fauna of the desert, vegetation keys, and field mapping forms. More than 500 towers were mapped in a 4-month period. Also conducted monitoring for geotechnical testing over a 3-month period to assist with avoidance of sensitive areas and monitor for desert tortoise (*Gopherus agassizii*), Coachella Valley fringe-toed lizard (*Uma inornata*), and nesting raptors.

East County (ECO) Substation/Tule Wind/Energia Sierra Juarez Gen-Tie Project EIR/Environmental Impact Statement (EIS), San Diego Gas & Electric, San Diego County, California. As project assistant, assisted in review of environmental and focused survey reports for multiple years and various project sites. Assisted in the preparation of EIR/EIS biological resources section as required by the California Public Utilities Commission and Bureau of Land Management. Project includes a substation, approximately 14 miles of new transmission line, and rebuild of the Boulevard Substation. In addition to addressing the new substation project, the EIR/EIS also addressed, as "connected actions," a wind energy project encompassing approximately 15,000 acres, and a generation tie-in required for a transmission line to connect to a wind energy project in Baja California, Mexico. Also attended project planning meetings and provided guidance on key biological issues. Assisted in response to comments and revisions to the Draft EIR/EIS.

Hazard Tree Removal Project, SCE, San Bernardino and San Jacinto Mountains, San Bernardino and Riverside Counties, California. The project area encompasses 106 square miles, an estimated 62,000 acres of tree removal, more than 22,000 power poles, and 538 linear miles of utility lines. As biologist, performs biological monitoring for trees affected by bark beetle infestations, including special-status plant surveys and nesting wildlife species, and provides recommendations for removing trees in environmentally sensitive areas (i.e., riparian zones). In addition, assisted in biological monitoring for trees affected by the 2007 fires in the Lake Arrowhead area.

Focused Field Surveys and Monitoring, SCE, San Bernardino County, California. As a field assistant, performed focused surveys for special-status species, including burrowing owl and desert tortoise in areas designated for new tower construction. Served as a construction monitor for pole removal and replacement,

conducting an environmental tailboard meeting, documenting special-status species, avoiding vegetation and special-status species, and ensuring removal of all trash, including microtrash.

Daggett Ridge Wind Energy Project EIS/EIR, Bureau of Land Management and County of San Bernardino, San Bernardino County, California. Served as project assistant for preparation of the joint EIS/EIR for the proposed Daggett Ridge Wind Energy Project, which involves an 82.5 MW wind energy-generating facility on approximately 2,000 acres of federal and private lands in the Barstow/Daggett unincorporated area of San Bernardino County.

Prado 12 Kilovolt, SCE, Riverside County, California. As field biologist, conducted a general biological reconnaissance survey for a series of proposed pole maintenance activities. Conducted a formal wetlands jurisdictional delineation for ACOE wetlands and waters. Prepared a preliminary jurisdictional report.

Fingal Transmission Line, SCE, Riverside County, California. Assisted with special-status plant species surveys along an existing transmission line to provide data in cases where emergency work that impacted special-status plant species would need to be conducted.

Holcomb Valley Boy Scout Ranch Emergency Tower Repair, SCE, San Bernardino County, California. Served as biological monitor for pole installation activities in biologically sensitive areas to ensure avoidance of impacts to potentially occurring U.S. Forest Service threatened, endangered, and sensitive species such as ash-gray paintbrush (*Castilleja cinerea*), southern mountain buckwheat (*Eriogonum kennedyi* var. *austromontanum*), and California dandelion (*Taraxacum californicum*).

Resource Management

Casey's June Beetles Project, USFWS, Riverside County, California. Conducted trapping surveys for Casey's June beetle (*Dinacoma caseyi*) in Palm Springs Wash for the USFWS. Handled and documented Casey's June beetles.

Foss Lake Vector Habitat Remediation Plan, Center of Natural Lands Management, San Diego County, California. As project task manager for biological resource tasks, conducted vegetation mapping and a formal wetlands jurisdictional delineation, and assisted with least Bell's vireo surveys. Prepared the BTR.

Habitat Assessment, Riverside Conservation Agency, Riverside County, California. As field assistant, performed a habitat assessment for Quino checkerspot butterfly, a federally endangered species. The habitat assessment consisted of documenting butterfly species and surveying for Quino host plants.

Salton Sea Species Conservation Habitat Project, Cardno ENTRIX, Imperial County, California. As project assistant, assisted in species research for designing a series of ponds adjacent to the Salton Sea that will provide habitat for target bird species. Assisted in preparing the biological assessment.

Rancho Mission Viejo, Orange County, California. Conducted focused coastal cactus wren (*Campylorhynchus brunneicapillus*) surveys within suitable habitat. Multiple cactus wrens were observed and mapped.

Morro Bay National Estuary Program, Morro Bay, California. As a water quality testing volunteer, performed water quality testing, including testing for nitrogen, phosphates, dissolved oxygen, turbidity, pH, and flow (using FloMaster).

Multiple Species Conservation Program Section, City of San Diego, California. Performed biological surveys for native vegetation using a hand-held GIS unit and uploaded new GIS information into the database. Reviewed plans for properties within the Multiple Habitat Plan area, ensuring that the correct

guidelines were followed for a given plan (e.g., riparian buffer zones, landscape plans). Revised management plans per comments from local organizations and agencies. Organized property information for land put into a trust as part of mitigation measures.

Championship Off-Road Racing Project, City of Chula Vista, California. Conducted monitoring during races to assess the impacts of race activity on known occurrences of special-status bird species. Yellow-breasted chat was observed.

Transportation

Brown-Headed Cowbird Trapping Program, Oceanside-to-Escondido Rail Project, North County Transit District, City of Oceanside, San Diego County, California. Responsible for daily operation and maintenance of a brown-headed cowbird (*Molothrus ater*) trapping program along Loma Alta Creek in the City of Oceanside. The trapping program is a USFWS requirement as mitigation for impacts to habitat for federally listed species, including least Bell's vireo, southwestern willow flycatcher, and California gnatcatcher.

Water/Wastewater

North Avenue Channel Protection Project, Oceanside, California. As field biologist and project assistant, performed a formal wetlands jurisdictional delineation and mapped wetlands and waters under the jurisdiction of ACOE, RWQCB, and CDFW, and also mapped vegetation. Additional duties included preparation of the BTR; preparation of the joint permit applications for a 404 Pre-Construction Notification for a Nationwide Permit, 401 Water Quality Certification, and 1600 Streambed Alteration Agreement; attending site visits and meetings with ACOE, RWQCB, and CDFW; and ongoing coordination to obtain project authorizations.

Buena Vista Creek, San Diego County, California. Served as a field biologist to conduct a formal wetlands jurisdictional delineation and mapped wetlands and waters under the jurisdiction of ACOE, RWQCB, CDFW, and the California Coastal Commission. Conducted weekly nesting bird surveys during invasive species removal. Identified the nest of Anna's hummingbird (*Calypte anna*) and established a buffer around the nest until it was inactive.

City of San Diego, Pamo Valley Control Site, San Diego County, California. Conducted riparian bird and nesting bird surveys along Santa Ysabel Creek. Additional duties included preparation of the BTR.

Upper Santa Ana River Wash Plan, Riverside County, California. As field assistant, revised the BTR and response to comments for the Upper Santa Ana River Wash Plan. This included compiling data from multiple sources, conducting habitat suitability models for special-status species, coordinating graphics, and writing the report.

City of Carlsbad Sewer Extension, City of Carlsbad, California. As project manager, managed and conducted the jurisdictional delineation and biological reconnaissance survey, and prepared the BTR for two sewer extension projects within San Diego Multiple Species Habitat Conservation Plan areas. Coordinated monitoring during construction activities to avoid impacts to nesting birds, jurisdictional waters, and California adolphia.

Newhall Land and Farming Company Project, Santa Clara River Watershed Basin Analysis, Counties of Ventura and Los Angeles, California. As project assistant, researched permits issued by ACOE and CDFW, and other documents related to the Santa Clara River Watershed Basin Analysis

project regarding impacts to jurisdictional waters and sensitive plant and wildlife species and the mitigation for these impacts.

San Joaquin Marsh Natural Treatment System, Irvine Ranch Water District, Orange County, California. As a field biologist and project assistant, assisted in preparation of agency permit applications. Performed surveys for special-status wildlife species, and mapped white-tailed kite, Caspian tern (*Hydroprogne caspia*), and osprey (*Pandion haliaetus*).

Cañada Gobernadora Multipurpose Basin Project, Santa Margarita Water District, Rancho Santa Margarita, California. As project assistant, assisted writing the BTR for the Cañada Gobernadora Multipurpose Basin project, which is located next to the Cañada Gobernadora Creek and north of the Gobernadora Ecological Reserve Area.

South Orange County Wastewater Authority, Laguna Niguel, Orange County, California. Conducted biological construction monitoring for the emergency repair of export sludge, force main pipelines adjacent to Aliso Creek to ensure compliance with conditions within the Coastal Development Permit and Regional General Permit.

San Timoteo Creek Alternative Discharge Outfall, Yucaipa Valley Water District, Riverside and San Bernardino Counties, California. Conducted biological monitoring for construction of the non-potable water outfall on San Timoteo Creek to ensure compliance with conditions within the Section 1602 Streambed Alteration Agreement. Monitoring included photo documentation and completion of a Site Observation Report.

San Vicente Dam Project, San Diego County, California. Served as a biological monitor and conducted environmental training for new employees. Performed construction monitoring for removal of vegetation, including relocating snakes and common poorwill (*Phalaenoptilus nuttallii*).

Miramar Trunk Sewer Replacement and Permanent Access Project, City of San Diego Metropolitan Wastewater Department (MWWD), San Diego, California. As field assistant, performed construction monitoring for special-status wildlife species for the sewer replacement in Rose Canyon.

As-Needed Biological Services, San Diego MWWD, San Diego, California. Served as project assistant. Reviewed and analyzed plant survey forms and incorporated pertinent information into a biological report.

Aliso Creek Water Quality SUPER Project, South Orange County Wastewater Authority, Laguna Niguel, California. As project assistant, reviewed southwestern willow flycatcher and least Bell's vireo survey records and assisted with writing the focused survey report.

Specialized Training

- The Western Section of the Wildlife Society Annual Conference. February 2017. Reno, Nevada.
- The Western Section of the Wildlife Society Annual Conference. February 2016. Pomona, California.
- The Western Section of the Wildlife Society Annual Conference. January 2015. Santa Rosa, California.
- The Western Section of the Wildlife Society Annual Conference. January 2013. Sacramento, California.
- Desert Washes and Waters Training and Field Workshop. January 2013. Coachella Valley, California.
- San Joaquin Kit Fox Ecology, Conservation, and Survey Techniques. The Western Section of the Wildlife Society. July 2013.

- Arid Saline Wetlands Training and Field Workshop. March 2012. Coachella Valley, California.
- Introduction to Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop. Desert Tortoise Council Workshop. November 2011. Ridgecrest, California.
- 40-Hour Wetland Delineation Training, Wetland Training Institute. July 2011.
- The Western Section of the Wildlife Society Annual Conference. February 2011. Riverside, California.
- The Western Section of the Wildlife Society Annual Conference. January 2010. Visalia, California.
- Plant Families Identification: Series IV. Rancho Santa Ana Botanical Garden. Claremont, California. 2010.
- Flora of Joshua Tree. Desert Institute. 2010. Joshua Tree National Park, California.
- Orange County Trackers. Basic Tracking and Observing Class. Orange County Trackers. October 2009. Irvine, California.
- San Diego Natural History Museum. "*Rhamnaceae*." February 2009. San Diego, California.
- Basic Raptor Identification: Southern California Diurnal Raptors. Sea and Sage Audubon Society. February 2009. Huntington Beach, California.
- Birds of Southern California. Sea and Sage Audubon Society. November 2008–January 2009.Huntington Beach, California.
- Plant Terminology and Identification in San Diego County. San Diego State University and Field. April 2008. California.
- Observing Birds Workshop. Sea and Sage Audubon Society. January–March 2008. Huntington Beach, California.
- Introduction to the Morphology and Identification of Flowering Plants. Friends of the Jepson Herbarium. March 2007. University of California, Berkeley.
- Association of Environmental Professionals CEQA Workshop. November 2006.

Erin Bergman

Biologist/Certified Arborist

Erin Bergman has 14 years' experience in biological research and ecology. She has worked in a several communities, including the Pacific Northwest, Puerto Rico, the Midwest, Arizona, Nevada, and throughout California. She currently works as a biologist performing are variety of services including vegetation mapping (Keeler-Wolf Vegetation Classification System/Holland) and weed mapping/monitoring, wetland monitoring (including the California Rapid Assessment Method (CRAM)), general rare plant surveys for the military, solar projects and wind projects. Ms. Bergman conducts monitoring of vernal pools, completes bird surveys, and studies rangeland ecosystems while monitoring grazing.

She works on focused rare desert plant surveys, restoration efforts (focused mainly in riparian habitats, vernal pool communities, southern mountains regions, and both the Sonoran and Mojave desert) and specializes in biological monitoring on construction-related projects. She also manages field efforts related to Quino checkerspot butterfly (*Euphydryas editha quino*), burrowing owl, California vernal pool branchiopod, and California gnatcatcher (*Polioptila californica*) surveys and field wetland delineations. Ms. Bergman also focuses research and consulting in agricultural sciences where she is working with agricultural leases' to select farms and farming practices best suited to promote water quality, water use, and natural resource planning.

Ms. Bergman has experience working with a variety of clients, including San Diego Gas and Electric (SDG&E), City of Laguna Niguel, Marine Corps Base (MCB) Camp Pendleton, Marine Corps Air Station Miramar, State and County Parks, San Diego Association of Governments (SANDAG), California Department of Transportation (Caltrans), and confidential solar and wind clients. She has experience with the California Environmental Quality Act and National Environmental Policy Acts (CEQA/NEPA) and writing sections of the following reports: environmental impact report (EIR), environmental assessment, biological technical report (BTR), natural environment study (NES), pre-activity study report, biological resources report (BRR), and biological assessment. Ms. Bergman writes 10(a) reports, restoration reports, monitoring memos, works on data collection, data analysis, and data management.

EDUCATION

Oregon State University
Undergraduate Coursework, Agricultural Science and Rangeland Management, Ongoing

San Diego State University
MS, Biology/Ecology, 2009

Portland State University
BS, Organismal Biology, 2007

Gonzaga University
BA, Health and Fitness/Philosophy, Art Minor, 2002

BE/Secondary Teaching Certificate, Health, Physical Education, Art, Science, and Philosophy, 2002

CERTIFICATIONS

CRAM Practitioner South Coast
- Estuarine Module, Vernal Pool Systems, and Riverine Systems

Authorization to Collect Voucher, State-Listed Endangered and Threatened Plants Permit No. 2081 (a)-11-35-V-2011

U.S. Fish and Wildlife Service Recovery Permit No. TE-820658
- Quino Checkerspot Butterfly (2010)
- Vernal Pool Branchiopods (2013)
- California Gnatcatcher-(2014)
- Flat tailed horned lizard Relocation of Species Permit (2014)

International Society of Arboriculture, Certified Arborist No. 201–WE 9349A

Department of Pesticide Regulation Licensing/Certification Program, Certified Pesticide Applicator License Qualified Applicator Permit No. QAC 133983

Rangeland Management Certification, Oregon State

Emergency Response Certification: AED, CPR, Oxygen Administration, PDT (current)

RSO Certification (current)

PROFESSIONAL AFFILIATIONS

Association for Tropical Biology and Conservation

American Association for the Advancement of Science

California Native Plant Society

San Diego Farm Bureau

Project Experience

Development

Otay Ranch Village Four Development Project EIR and CEQA Compliance, Otay Valley Quarry, LLC, Chula Vista, California. Serving as a field biologist conducting field surveys for butterfly species, rare plants, and host plants for the Quino checkerspot butterfly for a proposed residential development project. Additional biological monitoring and surveying tasks include jurisdictional delineation, focused wildlife surveys, and preparation of a biological resources report.

Education

Arctostaphylos Taxonomic Studies, Contra Costa and Monterey Counties, California. Ms. Bergman studied under University of California (UC), Berkeley program for *Arctostaphylos*. This program focused on taxonomic and ecological characteristics of the particular genus. Ms. Bergman studied under *Arctostaphylos* experts, Mike Vasey PhD. and Tom Parker PhD. specifically researching the Arbutoideae group from an evolutionary context. Ms. Bergman studied rare *Arctostaphylos* like pallid manzanita (*A. pallida*) both in the field and taxonomically. Additionally, Ms. Bergman focused on unusual characters of the *Arctostaphylos* genus reflecting the role of *Arctostaphylos* in the history of California taxonomy.

California State Parks Fire Recovery Management Plan, San Diego, California. Ms. Bergman designed a fire recovery plan based on the management of fuel loads at Cuyamaca Rancho State Park. Ms. Bergman determined the number of species that had survived after reviewing burn severity levels throughout the state park. These severity levels were due to fuel load levels. Ms. Bergman found that larger numbers of non-native grasses were found in more severely burned sites and she designed a tree planting and management strategy for future planting (specifically pine) because the oak species were recovering naturally.

Cuyamaca Restoration Project GIS ArcMap Analysis of Conifers, California State Parks and San Diego State University (SDSU), San Diego, California. Performed research on individual vegetation, vegetation communities, soils, fire history, topography, substrate, seedling/sapling clumping, animal caching, and age determination. Gained experience with Systat, Global Positioning System (GPS), Endnote software, and grant writing.

Ivy Removal and Restoration, Portland Parks and Recreation, No Ivy League, Portland, Oregon. Worked in Forest Park on an urban ecology project studying the effects of the invasive English ivy (*Hedera helix*) on native plant diversity. Studied the bryophyte populations where English ivy was most invasive. Also assisted in the removal of English ivy from sections of the park.

Determining the Genetic Structure of Saltgrass, Portland State University, Oregon. Propagated saltgrass (*Distichilis spicata*) for genetic structure research. Assisted in researching the genetic structure of a wetland grass and its role in maintaining spatial segregation of the sexes to stabilize wetland ecosystems.

Determining the Invasive Effects on Broadleaf Cattail, Portland State University, Oregon. Studied a variety of invasive nonnative grasses in local waterways and how these grasses can affect the reproductive effort of broadleaf cattail (*Typha latifolia*), a native species.

Opal Creek Ancient Forest Center Rare Plant Mapping, Cascade Mountains, Salem, Oregon. Studied *Goodyera* and *Listera* species in relation to varying land use history while comparing O-horizon depth, soil moisture, light levels, canopy cover, and plant diversity.

Sea World Adventure Parks, San Diego, California. While working in the Conservation Education Department, assisted with marine mammal and fish education, and served as a tour guide.

Energy

Jacumba Solar Project, Jacumba, California Performed nectar plant mapping, host plant mapping, Quino checkerspot butterfly surveys and bird surveys for the an approximately 500-acre site. (2014-current)

Joshua Tree Surveys, Cinco Solar, Mojave, California. Mapped Joshua trees on the ground for a 50-acre solar project. Each Joshua Tree required individual data collection on site for potential removal and relocation. Determined diameter at breast height and recorded factors related to the condition of the Joshua Trees.

General Rare Plant Surveys, Cinco Solar, Mojave, California. Completed rare plant surveys for a 150-acre site and participated in wetland delineation work for this project.

Confidential Solar Project, Boulevard, California. Serving as a biologist and certified arborist assessed oak tree populations to determine their health. A variety of oak trees and scrub oak populations were found on-site. Reviewed morphological characteristics of oak species, disease, pathogens, branch structure, soils, recruitment, and issues regarding oak species related to cattle grazing. Participated in writing the final documents related to oak assessments.

Quino Checkerspot Butterfly Protocol Surveys, Invenergy Wind California, Campo, California. Organized field crews of independent butterfly biologists to conduct surveys in areas throughout the Campo Reservation. As a biologist, conducted Quino checkerspot butterfly surveys with permitted biologists throughout the reservation and recorded host plant populations. Host plants found in the eastern part of San Diego County included Coulter's snapdragon (*Antirrhinum coulterianum*) and Chinese houses (*Collinsia concolor*).

Rare Plant and Vegetation Mapping Protocol Surveys, Invenergy Wind California, Campo, California. Participated in the botany effort during focused rare plant surveys at the Campo Reservation. Rare plants were documented with individual GPS locations and population numbers. Additionally, vegetation communities were recorded as habitat changed.

Quino Checkerspot Butterfly Surveys, Concentrix/Soitec Solar, Boulevard, California. Served as a biologist having a detailed understanding of the Quino checkerspot protocol information published by U.S. Fish and Wildlife Service (USFWS). Organized independent biologists to run surveys for Quino checkerspot, responsible for biology team scheduling and meetings. Provided training on the use of GPS to independent biologists, organized data, collected all data, and downloaded data into a large database for reporting. Performed field surveys, searched for, and recorded Quino checkerspot host plants in Eastern San Diego County, which included blooming specimens of Coulter's snapdragon and Chinese houses. Recorded remnant specimens of short-bracted bird's-beak. Wrote 45-day reports for USFWS and participated in writing the biological resources report.

Rare Plant Surveys, Confidential Solar Project, Boulevard, California. As botanist, organized botanical field surveys for AECOM and independent botanists. Studied rare plant specimens from Eastern San Diego County at the San Diego Natural History Museum. Performed field surveys for rare plants and assisted in management of rare plant data collection. Also, participated in writing the BRR.

80-Megawatt LAN East Solar and LAN West Solar Project, Rugged Solar, Boulevard, California. Prepared the documentation related to these two separate solar projects.

Palen/Blythe Section 7 Incidental Take Permit, Solar Millennium, Mojave Desert, Blythe, California. As a field biologist, participated in the botany effort during a focused rare plant survey for six special-status plants that had the potential to occur within the impact area of solar energy sites located in the Mojave Desert. More than 2,000 acres of land was surveyed for the target rare plant species, in addition to the 1-mile buffer zone. Vegetation mapping and an inventory of special-status wildlife were conducted with a focus on the desert tortoise.

Natural Communities Conservation Plan (NCCP) Enhancement and Monitoring Project, SDG&E, San Diego County, California. As project biologist, provided field survey and reporting support to SDG&E Land Planning and Natural Resources for habitat enhancement and monitoring associated with impacts as a result of routine operations and maintenance activities associated with electricity transmission and distribution lines within the SDG&E service territory. This project involved identifying temporary impact areas that required enhancement activities per the requirements of SDG&E's Subregional NCCP and monitoring the success of sites that have received habitat enhancement treatments or are recovering through natural recruitment. Specific duties included field surveys for sensitive plants and wildlife, assessing and delineating least-impact access routes and work areas, recommending mitigation measures, and writing project-specific reports.

NCCP Enhancement and Monitoring, SDG&E, San Diego, California. As a biologist monitored work crews to avoid NCCP-listed species including wildlife and plant species. Ms. Bergman also monitored ongoing passive restoration at SDG&E work sites.

NCCP On-Call Services, SDG&E, San Diego County, California. As biologist, performed fieldwork and document preparation for on-call support to SDG&E's Land Planning and Natural Resources Department for planned and emergency operations and maintenance activities associated with electricity transmission and distribution lines within San Diego and Orange Counties. This project involved evaluating potential biological impacts from operations and maintenance activities being conducted under SDG&E's Subregional NCCP. A thorough understanding of SDG&E operations and maintenance activities and operational protocols of the NCCP was required. The project consists of ongoing multiple task orders.

Manzanita Crestwood to Boulevard Transmission Line, SDG&E, Boulevard, California. Conducted field surveys for butterfly species, rare plants, and host plants for the Quino checkerspot butterfly along transmission line. Also mapped vegetation communities along transmission line.

Sunrise Powerlink Restoration Services, SDG&E, San Diego County, California. Participated in the field effort to survey all SDG&E tower sites before towers were slated to be constructed. This pre-vegetation survey served as documentation for the restoration efforts following tower construction in temporary impact areas. Individual species were recorded in each temporary impact area. Also performed post-impact surveys to determine the area of impact to each temporary site.

Sunrise Powerlink Restoration Services Seed Collection, SDG&E, San Diego County, California. Participated in the field effort to collect seed from over 100 plant species from mountains west to the desert. Collected seeds from a variety of annuals and perennials.

Military

Growth the Force Environmental Studies, Naval Facilities Engineering Command (NAVFAC) Southwest, Marine Corps Base (MCB) Camp Pendleton, California. As a biologist, performed vegetation mapping and rare plant survey efforts for a base-wide development project and assisted in the preparation of related NEPA documentation.

Button-Celery Survey, NAVFAC Southwest, MCB Camp Pendleton, California. Conducted field surveys for Pendleton button-celery (*Eryngium pendletonense*), a rare endemic plant species. Assisted in the preparation of the final deliverable.

Brodiaea Surveys, NAVFAC Southwest, MCB Camp Pendleton, California. Conducted field surveys for threadleaf brodiaea (*threadleaf brodiaea*), a rare endemic plant species, and participated in data downloading.

Grow the Force Fairy Shrimp Surveys, NAVFAC Southwest, MCB Camp Pendleton, California. As biologist, participated in fairy shrimp (*Branchinectidae* sp.) surveys throughout the base and assisted in surveying more than 100 pools with fairy shrimp.

Post-Exotic Removal Riparian Habitat Monitoring Plan, NAVFAC Southwest, MCB Camp Pendleton, California. Participated in the implementation of the riparian Habitat Monitoring Plan (HMP) in three rivers on the Camp Pendleton MCB. The HMP assessed the success of a post-exotic species removal program in the 100-year floodplain of the Santa Margarita River, San Mateo Creek, and Las Flores Creek. This included 156 vegetation transects and 36 CRAM assessment areas. Comparison to success standards, recommendations on the exotic removal program, and improvements to the HMP were provided in the HMP. Additional analysis comparing sensitive species data to time since treatment was conducted and included in the HMP as an appendix.

Biological Monitoring of Vernal Pools for SDG&E, MCB, Miramar, California. Ms. Bergman performed surveys for vernal pools on the Miramar MCB. She documented each vernal pool and monitored grading on MCB for SDG&E. Monitoring spanned over 4 months. Flagging and monitoring took place during both the wet and dry season.

Biological Monitoring of Nesting Birds, SDG&E, MCB Camp Pendleton, California. Ms. Bergman performed monitoring for all road grading that had the potential for California gnatcatcher. This included all areas with coastal sage scrub. Areas with the presence of California gnatcatcher were avoided. Ms. Bergman also monitored areas with high levels of erosion for erosion control work.

Biological Monitoring of Arroyo Toad Habitat Sierra Training Area for SDG&E, MCB, Camp Pendleton, California. Ms. Bergman worked in habitat with Arroyo toad to have crews avoid areas where habitat was present and take measures to avoid any disturbance activities.

Wire Mountain Gnatcatcher Surveys, MCB, Camp Pendleton, California. Assisted birding specialists with California gnatcatcher surveys near Wire Mountain. Worked in coastal sage scrub and disturbed communities where numerous California gnatcatcher were seen.

Recreation

El Monte Valley Nature Park EIR, Endangered Habitats Conservancy, Lakeside, California. This project involves an EIR and associated technical studies for a mineral extraction and 460-acre habitat

restoration project within the El Monte River Valley. As biologist, followed crews across the park as they worked to create new trails for park guests and helped to flag native chaparral vegetation requested to be preserved by park management.

Residual Dry Matter (RDM) Grassland Research and Monitoring Rangeland Study, County of San Diego, Ramona, California. As biologist, worked with a certified rangeland specialist to determine what effect the cattle had grazing on the Ramona Grassland Preserve. Collected residual dry matter samples for analysis, provided recommendations, and assisted in the preparation of documents. Managed rangeland management studies, surveys, and documentation tasks and created a monitoring program for newly acquired areas of the Ramona Grassland Preserve. Managed field crews in plant sample collection and wrote all required documents.

RDM Research and Monitoring Rangeland Study, County of San Diego, Santa Ysabel, California. As a biologist, worked with a certified rangeland specialist conducting visual assessments to determine the impacts and benefits of cattle grazing on the Eastern and Western Santa Ysabel open space preserves. Trained rangers on the process of collecting RDM samples on the Santa Ysabel Preserve and taught the process of collection, weighing, and calculation. As a result, of the training provided Rangers at the preserve are able to complete all RDM tasks. Also provided recommendations, assisted in the preparation of documents, and completed all documentation related to the 2011 RDM studies.

Wilderness Gardens Preserve Brodiaea and Thistle Survey, County of San Diego, Pauma Valley, California. Surveyed the county park Wilderness Gardens preserve for both *Brodiaea filifolia* and *Brodiaea terrestris* ssp. *kernensis*. Also surveyed for any weed disturbances that were near potential *Brodiaea terrestris* ssp. *kernensis* populations. Weeds that were assigned to be surveyed for included all *Centaurea* species. *Centaurea melitensis* was observed.

Resource Management

Fanita Ranch Project, HomeFed Fanita Ranch LLC, Santee, California. Conducted general and focused biological surveys and habitat delineations on the 2,500-acre Fanita Ranch for the landowner in support of a general plan amendment (GPA), specific plan, rezone, and tentative map being processed through the City of Santee. Conducted general wildlife surveys, nectar and host plant surveys, rare plant surveys and protocol level surveys for the California gnatcatcher and Quino checkerspot butterfly.

As-Needed Watershed and Resource Protection, City of San Diego, California. The City of San Diego Public Utilities Department contracted with Dudek to provide as-needed environmental services for projects related to watersheds, reservoirs, groundwater, and resource protection. Ms. Bergman focused work on resource protection and water quality with relation to agricultural systems. She performed an analysis of agricultural types with potential to lease land within the San Pasqual Valley. She reviewed literature on a variety of agricultural types, while creating a rating system to quantify water quality, water use, and resource protection. A farm ranking system was produced for initial farm assessment and continual farm lease management.

As-Needed Environmental Services, City of San Diego, California. The City of San Diego contracted with Dudek to provide as-needed environmental planning services to support the City's engineering and capital improvement program (CIP) and ancillary projects. Ms. Bergman provided services ensuring planning and permitting activities were in compliance with jurisdictional regulations. She worked on projects related to water and sewer, transportation, storm drains, and restoration activities, and specifically

provided compliance reporting (including as-built plan preparation) during maintenance of Murphy Canyon and Sorrento Valley channel maintenance projects. She also worked as a biological and air quality monitor for these projects.

Rangeland Monitoring Bakersfield Metropolitan Sanitary Landfill (BENA SLF), Bakersfield, California. The BENA SLF consists of 2,285 acres of land of which 963 acres are reserved for mitigation. Grazing is used within the 963 acres of mitigation lands of which Ms. Bergman completes rangeland monitoring tasks and reporting (2014-current).

City and County of San Francisco (SFPUC and SFCDS) Laguna Honda Reservoir Northern (Franciscan) Coastal Scrub Restoration, San Francisco, California. Ms. Bergman completed the field effort for rare plant surveys and vegetation mapping of the Laguna Honda Reservoir. The project involved the restoration of approximately 5-acres of Northern (Franciscan) Coastal Scrub within the Reservoir watershed. The project involves removal of target invasive exotics and revegetation of native scrub habitat. The native scrub habitat revegetation is being accomplished through a combination of exotic removal, native plant volunteer recruitment and active planting and seeding. Compiled baseline assessment of vegetation and prepared restoration report. Monitoring included establishment of native plants, control of nonnative weed species, and general wildlife use of the project area. Success criteria was determined through the collection of annual transect data, analysis, and compare to project success standards using confidence intervals. Conducted a power analysis to increase monitoring efficiency and determined that monitoring effort could be reduced and still achieve 90 percent power. Prepared projects documentation and annual reports.

Mesa Mint Grassland Restoration, Back County Land Trust, Alpine, California. Working on grassland restoration specially focusing on mesa mint populations in large grassland expanses of Alpine, California, for the backcountry land trust. Work is focused on field surveys and seed collection.

Railroad Plant Salvage Project, SANDAG, San Ysidro, California. Project consists of salvaging six species of rare plants. As a biologist, led crews in the collection of seed and general plant salvage. Also worked on seed collection throughout the site.

Otay Sweetwater Revegetation Project, SANDAG, Otay, California. Project consists of monitoring the restoration occurring at the Otay Revegetation site. As biologist, monitored the site for weed infestation and marked all weed species with a GPS for removal. Also assisted in photo documentation of the field site.

Dennery Canyon Vernal Pool Restoration Project for D and D Wildlife Habitat Restoration, Otay Mesa, California. Worked on restoration for a 45-acre vernal pool site in Otay Mesa. Worked on plant propagation, rare plant surveys, plant collections, burrowing owl surveys, seed dispersing methods, and butterfly surveys. The success of this project set a new standard for vernal pool restoration in the San Diego area.

Santa Ana River Land Management, Army Corps of Engineers (ACOE) Los Angeles District, Corona, California. Assisted in the initial steps of fieldwork preparation and organization relating to property ownership and designating random points for wildlife surveys and vegetation monitoring.

Dennery West Biological Mitigation, SANDAG, Otay Mesa, California. As a biologist, worked on wildlife surveys. Focused butterfly surveys were conducted with other permitted biologists to determine if

the Quino checkerspot butterfly would inhabit the restoration site. Also propagated host plants for the Quino checkerspot. Created vegetation maps of dotseed plantain (*Plantago erecta*) and purple owls clover (*Castilleja exserta*) occurring on the site. Managed field crews and report writing for Quino checkerspot monitoring in the second year. Focused on fieldwork related to vegetation transects, California gnatcatcher and Quino checkerspot surveys on the restoration site. Wrote 45-day reports and wrote the wildlife species sections of the report for SANDAG.

Vegetation Classification System Development, SANDAG, San Diego, California. Collected data on plant community compositions, describing the most abundant vegetation at random points throughout the county. In addition, recorded all the vegetation in that local area to tough books (mini computers). A variety of data was collected, ranging from on-site plant species, integrated photos of the community, percent cover of vegetation, slope and aspect, latitude and longitude data, and site notes. Soils were keyed out using a soil key and recorded at each site similar to soils keyed in wetland delineations.

Invasive Nonnative Species Plant Mapping, SANDAG, San Diego, California. SANDAG is currently developing a regional framework and strategy for the management of invasive plants for approximately 1.3 million acres of Western San Diego County. Under a separate contract, SANDAG has tasked a project team of invasive plant experts with developing this plan. Ms. Bergman is working to create a new database of geospatially linked data to consolidate the attributes of the existing dataset and add additional fields useful for the management and interpretation of invasive species distribution. Will also participate in the field effort, which will verify the accuracy of the mapping effort.

Tecate Cypress Mapping, SANDAG, San Diego, California. SANDAG seeks to acquire baseline knowledge of the distribution and status of Tecate cypress within San Diego County. Participated in the mapping effort related to this species.

Borderfield State Park Long-Term Monitoring Project, Audubon Society, San Diego, California. Led biologists and volunteers in bird and vegetation monitoring. Monitoring included transects in a variety of habitats, such as dunes, salt marsh, upland habitats, chaparral, coastal sage scrub, and riparian communities.

Saprophytic Orchid Distribution in Old Growth Rain Forest, National Science Foundation, Rio Grande, Puerto Rico. Researched saprophytic orchids with relation to land use history. Analyzed location and distribution of plant species, managed data with JMP and STATISTICA, ran Excel programs to analyze large distributions, and analyzed leaf litter and soils samples, which resulted in published work.

Chollas Creek Cactus Wren Habitat Restoration, Groundworks San Diego, National City, California. As a biologist, organized and completed the vegetation mapping for this site. Plants that provided habitat for the cactus wren were of particular focus, and nests were recorded. These included cactus that were of older stature with many spines (*Cylindropuntia* sp.). Focused attention on *Rhamnus crocea* species due to its importance as a host plant for the Hermes copper (*Lycaena hermes*) butterfly. All other rare plants were recorded individually, or population size was recorded. The majority of rare plants found at the site were San Diego barrel cactus (*Ferocactus viridescens*) and California adolphia (*Adolphia californica*).

Wilderness Gardens Preserve Argentine Ant Survey, County of San Diego, Pauma Valley, California. Ant surveys were done per U.S. Geological Survey protocol to determine ant Species located with *Brodiaea terrestris* ssp. *kernensis*. Baited ants on note card with butter cookies to determine if any non-native ants were observed in sections of the park with meadows.

Transportation

Bay Area Toll Authority (BATA) and Caltrans District 4- Bay Area Bridge Eastern Span Tree Installation, Oakland, California Worked with another certified arborist identifying tree selection, health, and extractions for Phoenix canariensis to be placed within the touch down and toll plaza areas of the new Eastern span of the Bay Bridge. Responsibilities included health and hazard assessment inspections of selected palms across the state of California, sampling and testing for pathogens (*Fusarium oxysporum*) and reviewing environmental data.

St. Paul's Cathedral EIR, Caltrans, San Diego, California. This project-level EIR was prepared to evaluate the environmental effects of the proposed St. Paul's Cathedral and Residences project. As a biologist, provided knowledge and identification of ornamental plants from Mediterranean climates that surrounded the project site, ranging from South Africa to Australia.

Escondido Creek Wetland Riparian Flood Avoidance Dredge Expansion Project, San Diego County Water Authority, California. As a certified arborist collected data for over 500 ornamental trees. Documented all the species and recorded the nativity status. Some trees were to be removed prior to dredging activities.

Lonestar Vernal Pool Monitoring, Caltrans, Otay, California. Managed all field work and reporting, conducted field surveys to map and monitor over 130 pools with vernal pool plants. Organized all data related to the project and completed all reports during the wet and dry seasons.

Dennery Canyon Vernal Pool Restoration Project Seed Bulking and Plant Propagation, Caltrans, Otay Mesa, California. Project consists of enhancement and construction of more than 30 vernal pools and adjacent upland habitat for Quino checkerspot butterfly habitat. As biologist, assisted in the collection of seed of several vernal pool plant species, worked on seed bulking of sensitive plant species, and propagated both vernal pool plants and upland plants in the annex.

State Route (SR) 125 South Restoration Site, Caltrans and South Bay Expressway, San Diego, California. As biologist worked on the mitigation for construction of SR-125 to include vernal pool restoration, and Quino checkerspot butterfly and cactus wren (*Campylorhynchus brunneicapillus*) habitat restoration. Provided qualitative and quantitative botanical surveys of vernal pools and Quino checkerspot habitats, and worked on the propagation of rare plants specific to Otay Mesa.

Otay Truck Trail Road Expansion Vegetation Mapping and Biological Surveys, SANDAG and Caltrans, Otay, California. As biologist worked on a field assessment reviewing rare plants and soils, and wildlife. Organized and completed the vegetation map for the site. Participated in and wrote the NES associated with this project. Organized and completed Quino checkerspot butterfly and western burrowing owl protocol surveys for the project site.

U.S. Route 95 (US-95) Constraints Analysis, Arizona Department of Transportation (ADOT) Yuma, Arizona. As a biologist worked on a field assessment to map out the vegetation communities and constraints analysis for rare plants and wildlife along US-95 in Yuma, Arizona. Directed the rare plant surveys for the project site and wrote sections of the constraints analysis.

Miramar Gnatcatcher Surveys, Caltrans, San Diego, California. Assisted birding specialists with California gnatcatcher surveys and worked in coastal sage scrub where numerous California gnatcatcher were seen.

Culvert Repair Project Gnatcatcher Surveys, Caltrans, Camp Pendleton, California. Assisted birding specialists with California gnatcatcher surveys on coastal bluff scrub and coastal sage scrub habitat while monitoring crews working on culvert repairs.

SR-126 Widening Project Biological Survey and Monitoring, County of Los Angeles-Department of Public Works, Los Angeles, California. Completed rare plant surveys, general wildlife surveys, and vegetation mapping and monitoring for construction at the SR-126 widening site. Specifically worked on racking legless lizard populations and relocating them to a CDFW approved location. Collected over 15 legless lizards for relocation and collected some of the native perennials for mitigation sites.

Interstate 10 (I-10) Jurisdictional Delineation (JD), ADOT, Tucson, Arizona. As biologist, worked on a field assessment mapping washes and drainages across 404 I-10 in Tucson and assisted with the JD.

Water/Wastewater/Agriculture

San Pasqual Valley Agricultural Assessment, City of San Diego, California. Performed agricultural selection and assessment of over 25 farm types with relation to water quality, water use and natural resource impacts. Created a database for rating agricultural systems for continual farm management and initial farm assessment.

Wetland/Riparian Enhancement Project, San Diego County Water Authority, Escondido, California. As a botanist and restoration ecologist, assisted in the monitoring of 21 acres of wetland/riparian enhancement within a conservation easement established within the 100-year floodplain of Escondido Creek.

Sulphur Creek Restoration Project, City of Laguna Niguel, Laguna Niguel, California. This project was designed to create, restore, and enhance wetland and riparian communities and establish a native sage scrub buffer along a 1.5-mile stretch of Sulphur Creek in the Aliso Creek Watershed. Performed annual vegetation surveys and data collection. Year 1 annual monitoring and baseline data collection were completed in June 2008 for each of the project components (Upper Sulphur Creek and Lower Sulphur Creek). Performed vegetation mapping for the project sites and participated in document preparation.

Santa Ana River Mainstem Project Habitat Monitoring, Agri-Chemical Supply, Norco, California. As biologist, participated in the botanical effort of monitoring vegetation communities before a large-scale removal of invasive species was to occur. Performed field vegetation analysis on transects next to the Santa Ana River, which provided information on the percent cover of species, with a focus on nonnative invasive, such as giant reed (*Arundo donax*) and broadleaved pepperweed (*Lepidium latifolium*), which are having a detrimental effect on the river.

Otay Conveyance Pipeline Project, Otay Water District, San Diego County, California. As a biologist, completed rare plant surveys, vegetation mapping, burrowing owl (*Athene cunicularia*) and Quino checkerspot butterfly surveys.

Santa Ana River Marsh Restoration, USFWS, Orange County, California. As a biologist, conducted a floristic inventory and vegetation mapping within the Santa Ana River Marsh Restoration Area.

Lake Wohlford Dam Replacement, City of Escondido, San Diego County, California. As a biologist, participated in the botany field effort, including vegetation mapping and focused rare plant and wildlife species surveys for project site and 500-foot buffer.

Van Norman Vegetation Mapping and Rare Plant Surveys, Los Angeles Department of Water and Power, Los Angeles, California. Completed all vegetation mapping and rare plant surveys for a dredging project that the Los Angeles Department of Water and Power had to perform. It needed to clear vegetation right next to the stream bed. Also monitored for vegetation removal having crews avoid any bird populations.

Santa Ana River Valley Nonnative Vegetation Removal and Bird Survey Project, Norco, California. Served as a biologist assisting with bird use counts and assisting in focused protocol-level surveys for the least Bell's vireo as part of a 5-year study to measure the effects of invasive nonnative vegetation removal within a 250-acre section of the Santa Ana River Valley on Federally listed and resident bird species.

Laurel Ridge Storm Drain Biological Assessment, City of San Diego, California. As a biologist worked on a field assessment reviewing the rare plants, soils, and wildlife at Laurel Ridge, and directed the rare plant surveys for project site, wrote a constraints analysis, and the BTR.

Publications

Franklin, Janet and Bergman, E. 2011. Patterns of Pine Regeneration Following a Large, Severe Wildfire in the Mountains of Southern California. The Journal of Canadian Forestry (41): 810–821.

Bergman, E. and Ackerman, J.D. 2006. Land Use History Affects the Distribution of a Saprophytic Orchid *(Wullschlaegelia calcarata)* in Puerto Rico's Tabonuco Forest Biotropica.

Teaching Positions

- Instructor, Vernal Pool CRAM –Plant identification for vernal pools
- Instructor, San Diego State 201 B Biological Sciences for science majors

Specialized Training

- Wetland training Institute -wetland delineation training-2015
- Desert Tortoise Council Handling Feb. 2014- Workshop completed-observed authorized demonstrations and requirements
- Tarweeds (UC Berkeley) 2012
- Carex (UC Berkeley) 2012
- Juncus (UC Berkeley) 2012
- Rare Flora of the Panamint Mountains (Death Valley-UC Berkeley) 2011
- Advanced Grasses (UC Berkeley) 2011
- MSCP Rare plant Monitoring Workshop 2010
- Mojave Desert Fall Blooming Endemic Plant Workshop (CNPS) -2009

Devin Brookhart

Publications Specialist Lead

EDUCATION

University of California, San Diego

BA, Political Science, Public Law Emphasis, 2011

Devin Brookhart is the Publications Specialist Lead with over 6 years' experience in various aspects of publishing, including producing, designing, editing, and proofreading documents. Her experience includes publications project management, supervising other team members, providing quality control, executing extensive layout and design work in the Adobe Creative Suite, and developing processes and procedures to facilitate operations. Ms. Brookhart is detail-oriented, has excellent communication skills, and prides herself on accomplishing a job well done. She is especially attentive to deadlines and understands the necessity of proper time management, always striving to improve efficiency wherever possible.

As the production lead, she has been involved in the formatting, proofreading, and production of biological assessments (BAs), biological resources technical reports (BTRs), environmental impact reports (EIRs), environmental impact statements (EISs), initial study/mitigated negative declarations (IS/MNDs), and proposals. Additionally, Ms. Brookhart makes work assignments, coordinates the production of large deliverables, provides status, analyzes processes, and oversees quality control of the Publications formatting and production group. Work assignment duties include planning, scheduling, conducting, and coordinating document production efforts between production staff and technical staff, project managers, legal staff, and clients to ensure that work is completed according to established requirements and schedules.

Selected Project Experience

- City of Palo Alto U.S. Highway 101 Overpass and Reach Trail at Adobe Creek Project Environmental Impact Report/Environmental Impact Assessment.
- Desert Renewable Energy Conservation Plan (DRECP).
- Environmental Impact Report/Environmental Impact Statement for the Master Special Use Permit and Permit to Construct Power Line Replacement Projects for the California Public Utilities Commission, the United States Department of Agriculture, and the Forest Service (Cleveland National Forest).
- Soitec Solar Development Project Environmental Impact Report.
- University Villages Environmental Impact Report.
- Villa Storia Environmental Impact Report.
- Village 2 Environmental Impact Report.
- Yuba-Sutter Regional Conservation Plan Environmental Impact Report/Environmental Impact Statement.

Wine and Viticulture Facility Environmental Documents, California Polytechnic University, San Luis Obipso, California. Technical publisher in charge of production for an Initial Study (IS) for the proposed Wine and Viticulture facility on the Cal Poly campus.

Replacement Housing and Dining Facility EIR, Cal Poly Pomona, California. Lead publications expert for the production of EIR for new campus student housing and dining commons. The existing dining facility and several existing residence halls have reached their usable life and need replacement. The project entails construction of seven new housing buildings, a new state-of-the-art food preparation/dining commons facility, a new central plant, transportation improvements, and other ancillary recreation and open space areas around the new building complex. Due to the age and architectural status of several of the existing housing facilities,

significant, immitigable impacts to historic resources will be documented. Traffic and transportation impacts are also documented in the EIR.

Administrative Building Replacement MND, Cal Poly Pomona, California. Lead for production of an MND for the proposed amendment to the 2000 Campus Master Plan for the construction and relocation of the Administration Replacement Project. Several existing administrative departments and services in the Classroom Laboratory and Administration (CLA) Building need seismic retrofits. The university has determined that it would be more cost effective to construct a new Administration Building and relocate the departments and services in the CLA building to the new Administration Building.

Specific Plan EIR, Chapman University, Orange County, California. Technical publisher in charge of production for an EIR for the University's Specific Plan (SP) Update, that served as the University's Master Plan for growth and development within the City of Orange.

Master Plan Update CEWQA Documents, Coast Community College District, Orange County, California. Lead publications expert for the production for two EIRs, one MND, and three categorical exemptions for the recently completed comprehensive master plan update by Coast Community College District (CCCD). The work spans several geographic locations and involves the Cities of Newport Beach, Costa Mesa, Westminster, Garden Grove, and Huntington Beach. Issues range from traffic and parking; adjacent neighbor concerns associated with noise, traffic, and parking; to general growth inducement.

Relevant Previous Experience

Publications Assistant, Dudek, 2011–2014. As a Publications Assistant for Dudek, Ms. Brookhart formatted and produced myriad technical documents and marketing proposals. Her work involved bringing documents into Dudek's templates, creating PDFs with integrated graphics and navigation, producing materials, coordinating with external print vendors, designing PowerPoint presentations, quality checks on digital and hard copy deliverables, and technical troubleshooting within the Microsoft Office and Adobe Creative suites.

Custom Project Editor, University Readers Inc., 2011–2012. As a custom project editor, Ms. Brookhart was responsible for all custom textbook project management for the greater San Diego area. Her duties included extensive project workflow oversight, client retention, supervision of production team assistants, quality control checks on printed and digital products, maintenance of positive relationships with publishing partners, and production design work in the Adobe Creative Suite. Ms. Brookhart specialized in maintaining and improving program relationships with large business schools and received a Recognition of Service Award for departmental excellence in December 2011.

Editor-in-Chief, The Great Oak Gazette, 2004–2007. As editor-in-chief, Ms. Brookhart oversaw a staff of 30 for the monthly publication of a student newspaper. Her responsibilities included editorial oversight of all publications, production design work in the Adobe Creative Suite, copyediting, graphic design of advertisements, publication marketing, development and execution of advertising contracts, article writing, journalistic photography, workshop planning, educational instruction of publication staff members, and public relations management.

Vipul Joshi

Senior Project Manager, Ecologist

Vipul Joshi is a senior project manager and ecologist with 19 years' professional experience specializing in natural resources management planning. Mr. Joshi focuses on providing ecological and management solutions to clients responsible for sustaining multiple natural resources on lands throughout California. Mr. Joshi has a background and training in botanical surveying, permit acquisition, permit compliance, and project management. He is experienced with Southern California flora and environmental regulations. Mr. Joshi also has extensive experience in managing constraints analysis, entitlement processing, permit acquisition, and biological construction monitoring for a variety of public and private projects.

EDUCATION

University of California, San Diego
BS, Evolution, Behavior, and Ecology, 1997

CERTIFICATIONS

Quino Checkerspot Butterfly and Vernal Pool Branchiopods (Fairy Shrimp) Surveys, USFWS Federal Permit No.TE-019949-2

PROFESSIONAL AFFILIATIONS

California Native Plant Society

Ecological Society of America

U.S. Green Building Council

Mr. Joshi has specific experience with California Environmental Quality Act (CEQA) processing with a variety of local jurisdictions; state and federal Endangered Species Act permit processing; wetlands permitting, including nationwide and individual permits from the U.S. Army Corps of Engineers (ACOE); and management of permit compliance. Specific biological survey skills include rare plant surveys, focused presence/absence surveys for the state-listed and federally listed Quino checkerspot butterfly (*Euphydryas editha quino*) and vernal pool fairy shrimp (*Branchinecta lynchi*), project-level vegetation mapping, wetlands delineation, vernal pool identification, vernal pool watershed mapping, and general biological assessment of functions and values.

Project Experience

Development

Tejon Mountain Village, Tejon Mountain Village, LLC, Kern County, California. Responsible for development of the vegetation mapping protocol and documentation of physical characteristics of the site, including hydrology, soils, climate, and geography. The Tejon Mountain Village project consists of 28,000 acres of undeveloped land on the southern border of Kern County. Also the lead biologist in developing the resource management plan (RMP) for the project. The RMP will describe the comprehensive long-term management of natural resources, including biological, cultural, geologic, hydrologic, and agricultural resources.

Resource Management and Development Plan, Newhall Land and Farming Co., Los Angeles and Ventura Counties, California. Lead biologist for the development of the resource management and development plan, which is a comprehensive document describing regulated impacts and mitigation for the 12,000-acre study area. In addition to describing in detail various infrastructure development components of the project, was responsible for compiling and integrating various mitigation measures into a systematic preserve management and monitoring plan that ensures the long-term preservation of multiple species and habitats.

Roselle Street Technology Center, CLL-Roselle LLC, San Diego, California. Provided project management for entitlement processing on a 15-acre site adjacent to Soledad Canyon Creek. Tasks included negotiation with wetlands resource agencies to allow encroachment into required coastal wetlands buffer.

Our Lady of Mount Carmel Catholic Church, Catholic Diocese of San Diego, San Diego, California. Conducted baseline vegetation surveys, wetlands delineation, rare plants survey, vernal pool identification, and vernal pool watershed mapping. Drafted a biological resources technical report for a mitigated negative declaration (MND) and participated in community meetings and response to comments. Drafted resource management plan for on-site open space management and avoidance of long-term impacts to adjacent U.S. Fish and Wildlife Service (USFWS) National Wildlife Refuge property. Prepared and processed wetlands permit applications with ACOE, California Department of Fish and Game (CDFG), and Regional Water Quality Control Board (RWQCB), including locating appropriate mitigation and acquiring permits.

Lux Art Institute, Carltas Company, Encinitas, California. Provided biological resource mapping, including vegetation mapping, wetlands delineation, and rare plant survey for 20-acre property. Provided constraints analysis, evaluation of project impacts pursuant to a habitat loss permit under Section 4(d) of the federal Endangered Species Act, and management of permit compliance.

Fry's Electronics, San Marcos, California. Provided initial vernal pool identification and mapping utilizing portable global positioning system (GPS) and conducted wetlands delineation and rare plant mapping. Rare plant mapping included pool-by-pool floral inventory and mapping of state- and federally listed endemic vernal pool plant species.

Eastlake Village Center North, Eastlake LLC, Chula Vista, California. Provided wetlands delineation, wetlands avoidance recommendations, and resource agency confirmation for 100-acre commercial center.

San Jacinto Valley, Riverside County Flood Protection District, Riverside County, California. Provided biological resource mapping, wetlands delineation, and rare plant survey for endemic alkali species within San Jacinto River floodplain.

Otay Ranch, Otay Ranch Company, Chula Vista, California. Provided biological resource surveys and documentation for various developments covering over 4,000 acres of vacant land. Tasks included vegetation mapping, rare plant surveys, wetlands delineations, fairy shrimp surveys, and Quino checkerspot butterfly surveys. Provided biological resources technical report pursuant to CEQA documentation and assisted in preparation of second-tier environmental impact report (EIR), development of wetlands and endangered species permitting strategies, and preparation and processing of Section 404 Nationwide Permits 14 and 39, Section 401 Water Quality Certification, Section 1601 Streambed Alteration Agreement, and Section 7 Biological Opinion. Managed compliance with various permit conditions.

Tejon Industrial Complex Comanche Point Mitigation Area, Tejon Ranch Corporation, Kern County, California. Provided baseline biological resource and mitigation planning assessment for a 3,300-acre mitigation area on Tejon Ranch. Prepared a property analysis record for initial and ongoing costs of management per the requirements of a USFWS biological opinion for the project.

Viking Farms and Yaqui Ranch, GDC Development, Borrego Springs, California. Served as lead botanist preparing vegetation mapping, wetlands delineation, and focused rare plant surveys for approximately 1,000 acres on two properties supporting Sonoran desert habitats.

Planning Areas Nos. 1, 2, 18, and 19, The Irvine Community Development Company, Irvine, California. Provided vegetation mapping, wetlands delineation, and rare plant mapping for over 5,000 acres of vacant land.

Native Grassland Mapping Project, Rancho Mission Viejo Company, Mission Viejo, California. Provided native/non-native grassland assessment for over 5,000 acres of vacant land.

McCrink Ranch, McCrink Ranch LLC, Santa Fe Valley, California. Provided project management, wetlands delineation, wetlands permitting strategy, and wetland mitigation identification for a 600-acre multiuse master-planned community with over 20 acres of potential wetland impacts.

Sunset Ridge, Shapouri & Associates, Riverside County, California. Provided project management for EIR and environmental assessment for 1,100 units on 800 acres of land supporting sensitive biological resources, including a regional habitat linkage.

Lago San Marcos, Toll Brothers Inc., San Marcos, California. Provided project management for mixed-use development on 200-acre property within a critical regional habitat linkage. Project tasks included biological resource mapping, scoping of EIR with various subconsultants, and entitlement planning.

Fanita Ranch, Barratt American, Santee, California. Provided vegetation mapping, rare plant surveys, and wetlands delineation for a 2,000-acre property.

Newhall Ranch Specific Plan Biological Surveys, Newhall Land and Farming Company, Santa Clarita, California. Provided rare plant surveys, including focused surveys for the endangered San Fernando Valley spineflower (*Chorizanthe parryi var. fernandina*), on more than 10,000 acres.

Ferber Ranch (Trabuco Canyon), The Planning Center, Orange County, California. Conducted vegetation mapping, jurisdictional wetlands delineation, and focused rare plant surveys in 2005 and 2006 for Trabuco Canyon Project, which encompasses over 1,110 acres.

University Commons, Brookfield Homes, San Marcos, California. Provided project management of environmental permit compliance for mixed-use development. Managed ongoing biological construction monitoring for compliance with Section 401 Water Quality Certification, Section 404 Nationwide Permit 39, Section 1603 Streambed Alteration Agreement, and Section 7 Biological Opinion.

Midbayfront Development Project, City of Chula Vista, California.. Provided biological resource mapping review for 4 million square feet of commercial and residential development on San Diego Bay.

Cielo del Norte, Cielo del Norte LLC, San Diego County, California. Served as project manager for 500-acre development in a critical preserve planning area. Provided baseline vegetation and rare plant surveys, biological technical report, EIR biological sections, Section 404, 401, and 1602 wetlands permits, and Section 4(d) Habitat Loss Permit. Participated in multiple screencheck EIR processing with the County of San Diego. Evaluated and negotiated off-site mitigation on six parcels throughout San Diego County. Prepared habitat management plans and property analysis records for three mitigation parcels totaling over 500 acres of biological open space.

Canyon View/Poinsettia Lane, Acacia Investments LLC, City of Carlsbad, California. Served as project manager for a 40-acre proposed residential development, extension of Poinsettia Lane, and biological open space area. Performed botanical surveys, including vegetation mapping, detailed exotics mapping, jurisdictional wetlands delineation, rare plant surveys, habitat restoration surveys, and protocol surveys for San Diego fairy shrimp. Prepared various reports for analysis of project impacts (including alternative development plans) by the City of Carlsbad (pursuant to CEQA and the City's Habitat Management Plan) and by state and federal resource agencies (pursuant to the federal Clean Water Act, California Fish and Game Code, and state Porter-Cologne Act).

Portola Hills, Portola Hills LLC, Orange County, California. Managed botanical surveys and jurisdictional wetlands delineation for an approximately 200-acre private landholding in the foothills of the Santa Ana Mountains. Performed field surveys and analyzed potential for occurrence of rare, threatened, and endangered plant species.

Higgins (Chesapeake) Estates, Rilington Communities, San Marcos, California. Provided project management capabilities for entitlement and permit processing for medium-scale residential development. Assignments include project planning, resource mapping, impact assessment pursuant to CEQA, permitting strategy, permit acquisition/negotiations for Section 401 Water Quality Certification, Section 1601 Streambed Alteration Agreement, Section 404 Nationwide Permit 39, and Section 4(d) Habitat Loss Permit, mitigation identification, and management of permit compliance.

Rancho Coronado Village North, D.R. Horton, San Marcos, California. Provided general biological survey and report in conformance with a final map condition. Processed Section 4(d) Habitat Loss Permit exemption with City of San Marcos, USFWS, and CDFG for additional brush management areas. Processing included evaluation of previous mining permits, CEQA documentation, historical clearing and grading, and current environmental laws and regulations. Managed environmental permit compliance via biological construction monitoring.

Copley Property, City of San Marcos, California. Provided jurisdictional wetlands delineation of riparian habitat and four vernal pool basins on a 20-acre property. Monitored ponding conditions during the winter and, after ponding was determined to be insufficient, coordinated and assisted in dry season sampling of vernal pool basins for presence/absence of listed fairy shrimp species.

Nickel Creek, Rilington Communities, Ramona, California. Provided baseline vegetation, wetlands delineation, and rare plant mapping for a 14-acre multifamily residential development on the Santa Maria River. Coordinated with architect on least impactive development design and coordinated with County of San Diego to design a multiuse trail connection along the river while avoiding impacts to jurisdictional waters. Provided biological resources technical report evaluating project impacts pursuant to CEQA.

San Ysidro Low Income Housing Development, City of San Diego, California. Assisted in wetlands permitting of low-income housing development. Identified suitable revegetation mitigation areas within Otay River adjacent to historic quarry operations. Oversaw approval of mitigation site by City of San Diego, City of Chula Vista, and wetlands resource agencies.

Manchester Avenue Residential Development, Chang Development LLC, Encinitas, California. Provided project management for entitlement processing of medium-scale residential subdivision on coastal property supporting a number of rare vegetation communities and plant species. Project capabilities included vegetation mapping, rare plant surveys, wetlands delineation, impact assessment pursuant to CEQA, and permitting strategy for impacts to jurisdictional wetlands and state- and federally endangered species.

Summit at Carlsbad, Pacific Properties, Carlsbad, California. Provided project management for wetlands permit processing of multifamily residential development. Tasks included wetlands delineation, permitting strategy, mitigation identification, biological construction monitoring, and management of permit compliance of Section 401 Water Quality Certification, Section 1601 Streambed Alteration Agreement, and Section 404 Nationwide Permit 39. Managed environmental permit compliance via biological construction monitoring.

El Apajo (Positano) Estates, Christopher Hill Development Inc., Fairbanks Ranch, San Diego County, California. Provided project management for wetlands permit processing and permit compliance for estate residential development. Tasks included wetlands delineation; mitigation identification; negotiation and processing of Section 404 Individual Permit, Section 401 Water Quality Certification, and Section 1601 Streambed Alteration Agreement; avoidance of potential Section 7 consultation; and development of a perpetual management plan for a 25-acre wetlands preserve area on the San Dieguito River incorporating part of the Coast-to-Crest Trail. Managed environmental permit compliance via biological construction monitoring.

Ramblas de las Flores, Bankers Union Trust, Rancho Santa Fe, California. Provided project management of entitlement processing for a medium-scale residential development on a 60-acre site supporting multiple sensitive biological resources. Tasks included vegetation mapping, wetlands delineation, rare plant mapping, and impact assessment pursuant to CEQA.

Shaw Project, Shapouri & Associates, Santa Fe Valley, California. Provided project management for biological resources analysis of 250-acre residential development. Tasks included evaluation of Multiple Species Conservation Program (MSCP) Multiple Habitat Planning Area (MHPA) boundary adjustment.

Waldenmayer Lot Split, Norbert and Corrine Waldenmayer, Vista, California. Provided vegetation mapping and findings in support of issuance of a habitat loss permit pursuant to Section 4(d) of federal Endangered Species Act.

Chocolate Mountain Ranch, Chocolate Mountain Ranch Estates, San Diego County, California. Provided biological resource mapping, wetlands delineation, impact analysis, documentation pursuant to CEQA, and analysis of conformance with biological mitigation ordinance of County MSCP for 300-acre residential development bordering Cleveland National Forest.

Del Mar Surf and Turf, Caruso Property Management Inc., Del Mar, California. Provided wetlands delineation and constraints analysis for proposed development adjacent to San Dieguito Lagoon.

Keystone Wildomar Development, Keystone Development, Wildomar, California. Provided wetlands delineation and permit strategy for planned residential development.

Levatino Property, Pacific Gulf Properties, Carlsbad, California. Provided biological resource mapping, rare plant surveys, and wetlands delineation for 20-acre property. Evaluated development constraints in consideration of regional planning efforts and state and federal regulations.

Maldanado Property, Western Pacific Housing, Carlsbad, California. Provided biological resource mapping, rare plant surveys, and wetlands delineation for 50-acre property. Evaluated development constraints in consideration of regional planning efforts and state and federal regulations.

Manzanita Partners, Jack Henthorn & Associates, Carlsbad, California. Provided biological resources mapping, vernal pool surveys, and wetlands delineation for 50-acre property.

Mediterranean Village, MaNipe LLC, San Diego, California. Provided biological resource mapping, wetlands delineation, and impact analysis pursuant to CEQA.

Palos Vista Biological Survey, Palos Vista LLC, Escondido, California. Provided biological resource mapping and wetlands delineation for 500-acre residential development.

Santa Fe Meadows, Shapouri & Associates, Santa Fe Valley, California. Provided vegetation mapping, rare plant survey, and wetlands delineation for 40-acre residential development area.

Schleuniger Property, Highgrove Development, Riverside County, California. Assisted in wetlands delineation, permit preparation, and processing pursuant to Section 404 Nationwide Permit 26, Section 401 Water Quality Certification, and Section 1601 Streambed Alteration Agreement.

Torrey Ranch, Garden Communities/TR II LLC, San Diego, California. Provided wetlands delineation, vegetation mapping, grassland assessment, and wetlands permit preparation and processing pursuant to Section 404 Nationwide Permit 26, Section 1601 Streambed Alteration Agreement, and Section 404 Water Quality Certification.

Via de la Valle Project, Shapouri & Associates, San Diego, California. Provided biological resource mapping, wetlands delineation, rare plant survey, and development constraints analysis for 20-acre property on steep hillsides adjacent to San Dieguito Lagoon.

Vineyards, Shapouri & Associates, Rancho Santa Fe, California. Provided biological resource mapping, wetlands delineation, rare plant survey, and development constraints analysis for 50-acre property.

Willowbrook Project, Norton Construction, Oceanside, California. Provided biological resource mapping and evaluation of project impacts pursuant to CEQA and Section 4(d) of the federal Endangered Species Act.

Zagara Property, Mr. John Zagara, Rancho Santa Fe, California. Provided biological resource mapping, wetlands delineation, and constraints analysis for property supporting coastal wetlands.

Education

Social and Behavioral Sciences Building, California State University, San Marcos, San Diego County, California. Provided project management for wetlands permit acquisition (Sections 401, 404, and 1600) and permit compliance. Tasks included fast-track scheduling, negotiating mitigation, developing a habitat restoration plan, providing required pre-construction notifications, and monitoring construction activities for permit compliance.

Westview High School, Poway Unified School District, San Diego County, California. Provided jurisdictional wetlands delineation and permit preparation, including Section 404 Individual Permit, Section 401 Water Quality Certification, and Section 1601 Streambed Alteration Agreement, and assisted in permit processing, mitigation identification, and development of a habitat restoration plan. Developed and evaluated detailed alternatives analysis related to wetland impact avoidance and minimization.

Cathedral Catholic High School, Catholic Diocese of San Diego, San Diego, California. Provided project management for wetlands permitting and construction permit compliance. Tasks included wetlands delineation and permit preparation and processing, including Section 404 Nationwide Permit 39, Section 401 Water Quality Certification, Section 1601 Streambed Alteration Agreement, mitigation identification, and management of biological construction monitoring.

Student Housing Facility, California State University San Marcos, San Diego County, California. Provided project management for wetlands permit acquisition (Sections 401, 404, and 1603) and biological construction monitoring. Tasks included fast-track scheduling, negotiating mitigation, developing a habitat restoration plan, providing required pre-construction notifications, and monitoring construction activities for permit compliance.

Campus Master Plan Update, San Diego State University, San Diego, California. Assessed biological conditions throughout the campus related to the Campus Master Plan update. Coordinated general botanical and wildlife surveys of campus development areas. Provided written assessment of existing conditions and potential impacts for CEQA documentation.

Ocean Knolls Elementary School, City of Encinitas, California. Provided biological resource mapping for constraints analysis and mitigation evaluation within natural canyon and disturbed areas surrounding school.

Grauer School, City of Encinitas, California. Provided biological resource mapping and analysis of project impacts under CEQA and a habitat loss permit pursuant to Section 4(d) of the federal Endangered Species Act.

Energy

Valley–Rainbow 500-Kilovolt Interconnect Project, California Public Utilities Commission, Riverside and San Diego Counties, California. Accumulated and analyzed data regarding potential biological impacts related to various project components, including the 30-mile 500-kilovolt transmission line, throughout Riverside and San Diego counties. Drafted biological resources technical report to document existing conditions and potential direct, indirect, and cumulative effects and to determine significance pursuant to CEQA.

Hazard Tree Removal Project, Southern California Edison (SCE), San Bernardino and San Jacinto Mountains, Riverside and San Bernardino Counties, California. Serves as primary botanist. Responsible for conducting biological surveys along all Edison circuits within the San Bernardino and San Jacinto Mountains prior to removal of bark-beetle-infested trees, drought-stressed trees, and other damaged trees from the vicinity of its poles, lines, and other facilities. The project area encompasses 106 square miles, an estimated 62,000 acres of tree removal, 22,000+ power poles, and 538 linear miles of utility lines. Responsibilities include project meetings, coordinating work schedule, coordinating with SCE personnel and U.S. Forest Service (USFS) biologists regarding site-specific sensitivities, conducting biological surveys of all lines within San Bernardino National Forest, and writing biological assessments for the USFS.

Pole and Utilities Replacement Project, SCE, Orange, Riverside, Los Angeles, Kern, Santa Barbara, Ventura, and San Bernardino Counties, California. Served as primary botanist. Responsibilities included conducting habitat assessments for sensitive plant species at multiple locations. Responsibilities included project meetings, coordinating work schedules, coordinating with SCE personnel and USFS biologists regarding site-specific sensitivities, and writing biological assessments for the USFS.

Municipal

Salt Creek Gravity Sewer, City of Chula Vista, California. Developed project alternatives and permitting strategy with City of Chula Vista and project engineers for 11-mile gravity sewer along north edge of Otay River Valley. Provided baseline vegetation mapping, wetlands delineation, and rare plant surveys. Prepared biological technical report and EIR biological evaluation for CEQA compliance. Submitted and coordinated

acquisition of Section 404 Nationwide Permit 12, Section 401 Water Quality Certification, Section 1603 Streambed Alteration Agreement, and Section 7 Biological Opinion, including identification of mitigation alternatives. Coordinated construction monitoring and permit compliance.

North Agua Hedionda Sewer Rehabilitation, City of Carlsbad, California. Provided project management for 0.5-mile sewer relocation project from initial constraints analysis, environmental permitting, and compliance monitoring. Assignments included vegetation mapping, tidal wetlands delineation, rare plant surveys, development of engineering alternatives, permitting strategies, public scoping meetings, analysis of alternative impacts, EIR biological resources documentation, tidal wetlands mitigation identification, Section 404 Nationwide Permit 14, Section 401 Water Quality Certification, Section 1603 Streambed Alteration Agreement, Coastal Development Permit, Section 7 Biological Opinion, compliance monitoring and reporting during construction, and overall project planning in terms of scheduling and budget.

La Golondrina and La Costa Meadows Sewer Lines, City of Carlsbad, California. Provided biological surveys and report evaluation potential impacts for microtunnel project in terms of CEQA, the Carlsbad Habitat Management Plan, Section 401/404 of the federal Clean Water Act, and Section 1600 of the state Fish and Game Code.

Wolf Canyon Gravity Sewer, City of Chula Vista, California. Responsible for wetlands delineation, vegetation mapping, and biological constraints analysis for an approximately 3-mile gravity sewer line through critical regional reserve area.

San Luis Rey Emergency Sewer Repair, Rainbow Municipal Water District, San Luis Rey River, California. Provided wetlands permitting oversight (Section 404 Nationwide Permit 12, Section 401 Water Quality Certification, and Section 1603 Streambed Alteration Agreement), mitigation strategy, and management of biological monitoring for emergency sewer repair traversing the river.

Bonita Pipeline, County of San Diego, California. Provided biological resources mapping, wetlands delineation, CEQA documentation, and mitigation strategy for multiple-segment sewer replacement in the central part of the city.

Drainage Master Plan, City of Vista, California. Provided evaluation of potential biological resource impacts for over 700 future infrastructure projects throughout the City of Vista, including through habitat preserve areas. Developed evaluation criteria and mitigation measures for potentially significant impacts for programmatic EIR.

Escondido Gravity Sewer Emergency, City of Harmony Grove, California. Provided assessment of post-emergency impacts, preparation, and processing of Section 404 Nationwide Permit, Section 1601 Streambed Alteration Agreement, and Section 401 Water Quality Certification, and mitigation identification for multiple location emergency sewer repairs following El Niño storms.

Ladera Ranch Wastewater Conveyance System, City of Rancho Mission Viejo, California. Provided wetlands delineation and biological resource mapping for multiple component projects. Determined methods of sensitive resource avoidance.

Resource Management

Salton Sea Species Conservation Habitat Project, California Department of Fish and Wildlife (CDFW), Imperial County, California. Dudek is a subconsultant to Cardno ENTRIX, providing the CDFW and California Department of Water Resources assistance in the planning, design, and permitting of this wildlife habitat restoration project. Mr. Joshi is the lead regulatory permitting specialist responsible for preparation of applications and processing of permits under the state and federal Endangered Species Acts, federal Clean Water Act, and state Fish and Game Code. He successfully completed a 404(b)(1) Alternatives Analysis and Section 7 Consultation for desert pupfish, to assist the Army Corps of Engineers in determining the Least Environmentally Damaging Practicable Alternative (LEDPA) for the project. This led to issuance of a 10-year permit to allow the staged implementation of a project that will ultimately affect up to 2,700 acres of jurisdictional waters of the US. The project consists of creating approximately 3,700 acres of new saline pond habitat near the confluence of the New River and the Salton Sea. The project would result in the establishment of new shallow water habitat for fish and fish-eating bird species that use the Salton Sea for breeding, migratory stopover, and residential habitat.

San Jacinto Wildlife Area Management Plan/ Initial Study/Environmental Documentation, California Wildlife Foundation, Riverside County, California. Served as project manager for preparation of a land management plan (LMP) and associated CEQA and National Environmental Policy Act (NEPA) documentation for a 21,000-acre open space area owned and managed by the CDFG. The contract was administered by the California Wildlife Foundation and funded by the Wildlife Conservation Board. Dudek was involved in establishing existing and long-term management goals, identifying measurable and meaningful project benchmarks, and exploring desired outreach efforts. Provided overall project management and coordination for the team and conducted a literature/document compilation and review of management plans, land use policies, and relevant technical reports to address CEQA Initial Study Checklist (and possible NEPA) issues. Managed numerous public outreach meetings, biological reconnaissance surveys, agency consultations, and preparation of the LMP. The LMP addressed the conservation and management of soil types, vegetation, wildlife habitats, sensitive species, farmlands, hydrology, total maximum daily loads of water quality constituents, invasive weeds, fire management, existing utilities and infrastructure, erosion and sedimentation, hazardous materials, public access and recreation, vehicular access, and visitor interpretation and education facilities.

LaBorde Canyon Off-Highway Vehicle Park Study, Riverside County Transportation and Land Management Agency, Riverside County, California. Provided baseline vegetation mapping and plant species inventory.

Camino Ruiz Neighborhood Park, Parks and Recreation Department, City of San Diego, California. Provided biological resources technical report for EIR processing of a neighborhood park on Los Peñasquitos Canyon preserve. Work included analysis of multiple park alternatives, land use adjacency guidelines, and analysis of MHPA boundary adjustment.

Otay Preserve, City of Chula Vista, California. Served as lead botanist establishing baseline biological conditions for a 1,350-acre open space preserve. Services provided included vegetation mapping, rare plant survey, non-native invasive species mapping, and reporting.

Habitat Management Plan, City of Carlsbad, California. Provided evaluation of species coverage for over 30 plant and animal species based on multifaceted regional conservation plan.

Multiple Species and Habitat Conservation Plan (HCP), Western Riverside County, California. Provided habitat account, plant species accounts, and wetlands policy for regional HCP.

Chula Vista Subarea Plan, City of Chula Vista, California. Provided biological resource analysis of plan impacts for EIR pursuant to CEQA.

Revegetation Monitoring, City of San Diego, California. Assisted in the collection of data within revegetated wetlands in accordance with monitoring criteria of the City of San Diego and wetlands resource agencies.

Oak Tree Mitigation, Ramona Water District, City of Ramona, California. Collected data for final 3 years of 5-year monitoring period. Provided annual reports to County of San Diego and quarterly reports to the Ramona Water District. Coordinated final signoff by the County of San Diego of fulfillment of mitigation requirements.

Lake Val Sereno, Rancho Santa Fe, California. Conducted wetlands delineation of a 50-acre riparian habitat area on Escondido Creek and identified areas where habitat restoration and enhancement could occur. Conducted jurisdictional determination with ACOE staff.

Pauma Valley Preserve, Pauma Valley, California. Conducted biological resource mapping and habitat conservation evaluation for a 1,000-acre potential habitat mitigation bank.

Rancho Santa Fe Park, Rancho Santa Fe, California. Conducted wetlands delineation and vegetation mapping for 1-mile stretch of San Dieguito River for purposes of determining potential for wetlands mitigation bank.

The Escondido Creek Conservancy Parcel, Harmony Grove, California. Provided wetlands delineation, vegetation mapping, and identification of wetlands restoration and enhancement opportunities within a 76-acre parcel.

Black Mountain MHPA, San Diego County, California. Conducted biological resources inventory of a 2,000-acre preserve area as part of required MSCP monitoring/management plan.

Lake Calavera, City of Carlsbad, California. Conducted biological resource mapping and inventory for a 500-acre preserve area as part of regional HCP planning process.

Wilson Valley, Anza, Riverside County, California. Conducted Quino checkerspot butterfly surveys on a 1,000-acre property.

Transportation

San Marcos Creek Roadway Improvements Project, City of San Marcos, California. Delineated wetlands, prepared vegetation map, and conducted rare plant surveys along San Marcos Creek from State Route 78 to Lake San Marcos.

State Route 125 South, California Department of Transportation/California Transportation Ventures, Southern California. Provided support in preparation of Section 7 Biological Assessment and permit compliance negotiations. Conducted vegetation mapping and rare plant and Quino checkerspot butterfly surveys for various mitigation site alternatives. Drafted conceptual revegetation and management plans for various mitigation sites, including sites on south edge of Otay River Valley, Otay Mesa, and Otay Mountain.

Mid-County Parkway, Riverside County Transportation Commission, Riverside County, California. Provided focused rare plant and fairy shrimp surveys for potential alignment alternative study for a proposed 32-mile transportation corridor.

Linda Vista Road Extension, City of San Marcos, California. Provided project management for biological resource constraints assessment of three road extensions. Tasks included vegetation mapping, wetlands delineation, and identification of future survey requirements and biological constraints for various alignment alternatives.

Fire Station Access Road, Horizon Christian Fellowship, Fairbanks Ranch, California. Provided project management for wetlands resource constraints analysis for bridge and access road. Provided wetlands delineation and resource avoidance recommendations.

Rancho Santa Fe Road Realignment, City of Carlsbad, California. Provided assistance with wetlands permitting and project management of environmental permit compliance for joint locally/federally funded project. Permitting including preparation and processing of Section 401 Water Quality Certification, Section 404 Nationwide Permits 14, 18, and 33, and a Section 1601 Streambed Alteration Agreement. Assisted in preparation of CEQA/NEPA documentation. Managed ongoing biological construction monitoring and environmental permit compliance, including compliance with regional Section 10 HCP.

Olympic Parkway, City of Chula Vista, California. Provided management of biological construction monitoring and permit compliance during construction of approximately 8-mile, four-lane roadway.

Vista Sorrento Parkway, City of San Diego, California. Provided wetlands delineation and wetlands permitting pursuant to a Section 401 Water Quality Certification, Section 404 Nationwide Permit 14, and a Section 1601 Streambed Alteration Agreement.

Water/Wastewater

San Diego River and San Vicente Creek Groundwater and Biological Resource Baseline Study, Public Utilities Department, City of San Diego, California. Serving as project manager to develop and implement a 2-year groundwater and biological resources baseline survey to acquire data for environmental evaluation of potential groundwater production wells within alluvial aquifers of two drainage systems.

Tijuana River Valley Wetlands Mitigation Project, San Diego County Water Authority (SDCWA), San Diego County, California. Provided services to the SDCWA to establish a wetlands mitigation bank in the Tijuana River Valley. The wetlands established would be used for the mitigation of the SDCWA's ongoing and proposed water supply and storage facilities projects (particularly the raising of the San Vicente Reservoir) to increase the emergency water supply sources in its service area. Provided biological resource surveys documentation pursuant to CEQA evaluation, and permit applications and processing with the ACOE, RWQCB, CDFG, and City of San Diego. Provided Public Notice and agency negotiation for an Umbrella Bank Enabling Instrument approving a county-wide banking system to mitigate the SDCWA's 30-year capital improvement and maintenance and operations program.

Yucaipa Non-Potable Water Distribution System, Yucaipa Valley Water District, San Bernardino and Riverside Counties, California. Provided baseline vegetation mapping, wetlands delineation, and rare plant surveys for 500-acre riparian study area.

Moreno–Lakeside Pipeline, SDCWA, San Diego County, California. Responsible for wetlands delineation, permitting, mitigation identification, and negotiations for 8-mile water distribution pipeline. Permit preparation and acquisition included Section 404 Nationwide Permit 12, Section 401 Water Quality Certification, Section 1603 Streambed Alteration Agreement, and Section 7 Biological Opinion.

Water and Sewer Master Plan, City of Carlsbad, California. Provided evaluation of potential biological resource impacts for over 60 future infrastructure projects throughout the City of Carlsbad, including coastal preserve areas. Developed evaluation criteria and mitigation measures for potentially significant impacts for programmatic EIR.

Assessment District 19, Eastern Municipal Water District, Rancho California, California. Provided wetlands delineation and recommendations for wetlands impacts avoidance for water pipeline installation, and road-surfacing project.

San Joaquin Reservoir Project, Irvine Ranch Water District, Irvine, California. Responsible for evaluating potential biological impacts pursuant to CEQA for an EIR for the conversion of the 3,000-acre-foot potable-water reservoir to a reclaimed water storage reservoir. Project included multiple infrastructure upgrades.

La Costa Golf Course Reclaimed Water Line, City of Carlsbad, California. Provided wetlands delineation, wetlands permitting avoidance, and evaluation of biological resources impacts pursuant to CEQA for an MND.

Lake Matthews Vegetation Clearing, Metropolitan Water District, Riverside County, California. Provided evaluation of potential regulated biological resources within two proposed vegetation clearing areas.

Pipe 6, Metropolitan Water District, Riverside County, California. Conducted rare plant surveys and Quino checkerspot butterfly surveys over approximately 20-mile-long alignment.

4S Ranch Water Storage Facility, Olivenhain Municipal Water District, Rancho Bernardo, California. Conducted vegetation mapping, wetlands delineation, impact analysis pursuant to CEQA for an MND and pursuant to a Section 404 Nationwide Permit, Section 1603 Streambed Alteration Agreement, and Section 401 Water Quality Certification.

Santa Fe Valley Force Main, Rancho Santa Fe Community Service District, Santa Fe Valley, California. Provided wetlands delineation, permit preparation, and processing pursuant to Section 404 Nationwide Permit 12, Section 1603 Streambed Alteration Agreement, and Section 401 Water Quality Certification.

Foussant Well Demolition, City of Carlsbad, California. Provided biological resource mapping for multiple-well demolition project. Tasks included development of permit strategy, evaluation of project impacts for an MND, and avoidance of impacts to least Bell's vireo and arroyo toad.

Emergency Channel Maintenance, City of San Diego, California. Served as project manager for as-needed biological services contract. Arranged staffing and implemented biological assessment of emergency channel and storm drain maintenance activities. Assessed and recommended impact minimization and avoidance measures including implementation of best management practices to reduce stormwater runoff pollution. Provided on-call, 24/7 service. Provided wetlands delineation and impact

assessment documentation in support of emergency permit applications to the ACOE, CDFG, RWQCB, and California Coastal Commission. Provided monitoring reports to document permit compliance.

Tijuana River Valley Emergency Channel Maintenance Project, City of San Diego, California. Served as project manager for implementation of emergency maintenance activities within 1.5 miles of drainage channels within the Tijuana River Valley. Services included processing of Section 404 Individual Permit, issued within 3 weeks of Notice to Proceed on the project, compliance monitoring for a 7-day-per-week construction schedule, and after-the-fact negotiations with USFWS regarding avoidance of light-footed clapper rail.

Poway Creek Silt Removal, City of Poway, California. Provided baseline surveys, project management, and permit acquisition for creek silt removal affecting over 3 acres of riparian habitat. Assignments included resource mapping, development of least impactive feasible alternative with project engineer, evaluation of project for an MND, and wetlands permit preparation and processing for Section 404 Individual Permit, Section 1603 Streambed Alteration Agreement, and Section 401 Water Quality Certification.

Perris Valley Storm Drain, Lateral B, Riverside County Flood Control and Water Conservation District, Riverside County, California. Provided wetlands delineation of 2-mile-long, open flood-control channel for deepening and widening. Analyzed CEQA and wetlands permitting strategies and provided biological resources technical report and wetlands permit applications for Section 404 Nationwide Permits 3, 12, and 14, Section 1603 Streambed Alteration Agreement, and Section 401 Water Quality Certification. Met with ACOE staff to confirm wetlands delineation.

Canada Gobernadora Multipurpose Basin Project, Santa Margarita Water District, Orange County, California. Conducted rare plant surveys that included a focused survey for San Diego tarplant (*Deinandra* [*Hemizonia*] *paniculata*), southern tarplant (*Centromadia parryi* spp. *australis*), and many-stemmed dudleya (*Dudleya multicaulis*).

Hale Avenue Resource Recovery Facility (HARRF) Flood Control Project, City of Escondido, California. Prepared Section 404, Section 401, and Section 1601 permit applications and assisted in the preparation of an MND for the proposed Escondido Creek enhancement and flood protection project adjacent to the HARRF. The proposed project consists of raising the existing levees and widening the existing stream channel, resulting in impacts to over 4 acres of "waters of the United States," including wetlands, under the jurisdiction of the ACOE and CDFG. Managed biological monitoring and permit compliance during initial construction phases.

Wetlands Permitting, El Camino Memorial Park, City of San Diego, California. Provided project management services for after-the-fact permitting of emergency bank protection activities along Carroll Canyon Creek with the ACOE, CDFG, RWQCB, and City of San Diego. Services provided included wetland delineation, permit applications, permit processing, and preparation of a conceptual wetlands mitigation plan.

Lower Rosan Arroyo Trabuco Wetlands Mitigation Project, City of San Juan Capistrano, California. Conducted wetlands delineation and wetlands mitigation identification for conversion of concrete channel to 5-acre natural bottom flood control and wetland mitigation area.

Palomar Transfer Station, City of Carlsbad, California. Provided biological resource mapping, wetlands delineation, and avoidance recommendations for expansion of a regional waste transfer station.

Monique O'Conner

Biologist

Monique O'Conner is a biologist with 1.5 years' professional experience in general biological resource surveys, rare plant surveys, vegetation mapping, various wildlife surveys, and data collection/analysis. She has excellent field skills and has experience specifically with vegetation mapping, rare plant surveys, assorted wildlife surveys, and biological monitoring. She has strong writing skills and assists with various biological report preparations.

EDUCATION

University of California, Santa Barbara

BS, Environmental Studies, 2015

CERTIFICATIONS

CDFW, Caulerpa Surveyor (exp. 9/20/18)

PADI Advanced Diver

PADI Rescue Diver

First Aid and CPR

PROFESSIONAL AFFILIATIONS

AEP

Project Experience

Development

Warner Ranch Biological Consulting Services, WHP Warner Ranch LP, Pala, California. Conducted rare plant surveys.

Pala Mesa Project, Beazer Homes Holding Corporation, Fallbrook, California. Conducted biological monitoring for planned development at the Pala Mesa site.

Proctor Valley Villages 14, Chula Vista, California. Assisted with preparation of Biological Technical Report (BTR).

Fanita Ranch Project, HomeFed Fanita Rancho LLC, Santee, California. Assisted with jurisdictional wetland delineation field work in accordance with the methods prescribed in the 1987 U.S. Army Corps of Engineers (ACOE) Wetlands Delineation Manual, the 2008 Regional Supplement to the ACOE Wetland Delineation Manual: Arid West Region (Version 2.0), and the 2008 ACOE and U.S. Environmental Protection Agency (EPA) Rapanos Guidance. Project involved vegetation mapping and soil classification. Also assisted with California gnatcatcher (*Polioptila californica*) surveys.

West Coyote Hills, Chevron Land and Development Company, Orange County, California. Assisted with California gnatcatcher surveys.

Yokohl Ranch Project, The Yokohl Ranch Company LLC, Tulare County, California. Assisted with preparation of cumulative impacts report.

Education

2016 Facilities Master Plan Update, MiraCosta Community College District, Oceanside, California. Conducted pre-construction nesting bird and bat surveys.

Energy

Solar Energy Project, Sanborn Solar LLC, Kern County, California. Conducted rare plant surveys.

Municipal

San Diego Association of Governments (SANDAG) Continuing Services Agreement, AECOM Technical Services Inc., San Diego County, California. Conducted biological monitoring for

construction activities such as vegetation removal and establishment of work limits. Worked as an approved USFWS-approved Ridgway's rail (Rallus obsoletus) monitor to conduct daily flushes.

Resource Management

Upper Oso Habitat Restoration Project, Habitat Restoration Sciences Inc., Rancho Santa Margarita, California. Assisted with botanical data collection at this active restoration site.

Casey's June Beetle Project, U.S. Fish and Wildlife Service (USFWS), Riverside County, California. Assisted with Casey's June beetle surveys (*Dinacoma caseyi*) in Palm Desert, California.

Avian and Vegetation Pilot Monitoring Studies for the Southern Habitat Reserve, Rancho Mission Viejo Land Trust, Orange County, California. Assisted with avian point-count surveys.

Transportation

Mid-Coast Corridor Project, PGH Wong Engineering, San Diego County, California. Worked as a USFWS-approved Ridgway's rail monitor and conducted daily flushes.

California High-Speed Rail Preconstruction, Dragados-Flatiron Joint Venture, Fresno, California. Assisted with Environmental Mitigation Management and Assessment (EMMA) report preparation for demolition, geotechnical, and potholing locations in addition to data management for wetland delineation, EMMA reports, mitigation measures, and various other components. Also assisted with as-needed project staffing.

Tribal

Natural Resources Management Plan (NRMP), Sycuan Band of Kumeyaay Nation, El Cajon, California. Conducted vegetation mapping, botanical data collection, and data analysis and assisted with updating NRMP documents.

Water/Wastewater

Coast Highway 101 Sewer Pump Station Rehab, City of Encinitas, California. Served as the lead biological monitor. Conducted environmental awareness trainings and daily biological monitoring site visits, and assisted in the preparation of the biological monitoring report.

Master Stormwater Maintenance Program, Michael Baker International, San Diego, California. Conducted biological monitoring for channel maintenance and vegetation removal at the Smythe Channel. This included guiding the crew on the removal of non-native species.

Industrial Stormwater Monitoring Support, Frog Environmental, San Diego County, California. Conducted stormwater sampling and monitoring at various industrial facilities in the San Diego area.

Monterey Bay Regional Water Project Environmental Impact Report (EIR)/Environmental Impact Statement (EIS), California State Lands Commission, Monterey County, California. Assisted with preparation of the Terrestrial Biological Resources Report.

On-Call Environmental Services, Los Angeles Department of Water and Power (LADWP), California. Assisted with preconstruction arroyo toad (*Bufo californicus*) surveys at the Castaic Power Plant site. Conducted biological monitoring for the Castaic Power Plant maintenance project.

Sewer Master Plan, Rincon del Diablo Municipal Water District, Escondido, California. Assisted with preparation of Biological Resources chapter in the EIR.

California Department of Transportation (Caltrans) Stormwater Monitoring Services, Amec Foster Wheeler, Irvine, California. Conducted stormwater monitoring and sampling at assigned runoff detention basins in Irvine, California.

As-Needed Environmental Services, City of San Diego, California. Assisted with preparation of 60-day report and BTR. Conducted site visits for biological construction monitoring and post-maintenance updates for Chollas Creek and Sorrento Channel. Conducted vernal pool polygon mapping along various portions of the San Vicente Pure Water Pipeline.

Operations and Maintenance (O&M) EIRs, Metropolitan Water District of Southern California (MWD), Orange and San Bernardino Counties, California. Assisted with the habitat assessment for the Western San Bernardino Distribution System Infrastructure Protection Program (DSIPP) impact footprint. Conducted vegetation community/land cover mapping and field verification surveys for modeled habitat where special-status plant species have a potential to occur.

Storm Water Facility Maintenance Project, City of San Marcos, California. Assisted with annual report writing through compiling information and data from site observation reports, permits, photos, etc.

As-Needed and Emergency Consultant Services, City of San Diego, California. Assisted with preparation of Biological Resources Letter Report for the Replacement Sewer and Water Pipeline Project. Assisted with database searches and determinations for species potential to occur, and field work including biological reconnaissance surveying, vegetation mapping, biological construction monitoring, and jurisdictional wetland delineation.

Specialized Training

- Noise monitor training, May 2016. Dudek, Encinitas, California.
- Advanced California Environmental Quality Act (CEQA) workshop, February 2016. Association of Environmental Professionals (AEP), San Diego, California.

Steve Taffolla

Technical Editor

EDUCATION

University of California, Berkeley
BA, English, 2008

PROFESSIONAL AFFILIATIONS

Phi Beta Kappa

Steve Taffolla is a technical editor with over 6 years' editorial experience, specializing in the preparation of complex, multidisciplinary environmental documents. As a member of the Dudek team, Mr. Taffolla has been the principal technical editor for numerous California Environmental Quality Act (CEQA) documents, including initial studies (ISs), mitigated negative declarations (MNDs), and environmental impact reports (EIRs). He is also responsible for reviewing air quality, biological resources, hydrology, and visual quality technical reports.

Mr. Taffolla ensures consistency in project terminology, documentation, and style, specializing in document management and task coordination among numerous project contributors. He possesses a profound understanding and respect for deadlines, time management, and scheduling, working with project managers to complete reports on time and within budget.

Project Experience

Development

Yokohl Ranch Development Project, County of Tulare, California. Currently serving as lead technical editor for preparation of a programmatic and project-level EIR for the 36,000-acre Yokohl Ranch development project in Tulare County, California. Tasks include integrating contributions from various project team members, including technical and legal staff, while ensuring consistent tone, style, and terminology throughout the document. The project proposes development in three major phases, each corresponding to a separate subarea (Area Development Plans I, II, and III), which would occur over a period of 20 to 30 years. Key issues include aesthetics, biology, cultural resources, and water supply.

Tejon Mountain Village, Tejon Mountain Village LLC, Kern County, California. Provided editorial support for a 2081 incidental take permit application in accordance with the California Endangered Species Act. Developed project-specific style guidance, edited revised text, and helped compile the document prior to submittal. Dudek is assisting Tejon Mountain Village LLC's master-planned community development by providing comprehensive environmental design and planning services for a 28,000-acre study area in Kern County. Environmental services include biological surveys, a sustainability plan, a geographic information system (GIS) database, a fire behavior modeling and protection plan, permitting, and hydrologic studies.

Gateway at the Mile Project, Sudberry Properties Inc. and the City of National City, San Diego County, California. Served as lead editor for the draft IS/MND and visual quality technical report for the Gateway project. Developed project-specific style guidance and worked closely with the project manager to establish a consistent approach to documentation of visual data. Dudek provided environmental services to meet CEQA requirements for the project, a commercial development located on an approximately 26-acre site primarily within the City of National City, California.

Rancho de Paseo Valencia Project, City of Corona, Riverside County, California. Served as lead editor for the draft EIR for the Rancho de Paseo Valencia development project, overseeing editorial review of the document by multiple technical editors. Also managed the project's overall deliverable schedule.

Dudek has been contracted by the City of Corona to provide an EIR for this 65.4-acre, single-family residential subdivision at the southerly boundary of the City of Corona. Dudek will also be responsible for the mitigation monitoring and reporting program.

Education

Campus Master Plan EIR, California State Polytechnic University, Pomona, California. Provided editorial support by reviewing several sections of the EIR and developing the document's template. The university contracted Dudek to provide professional services and CEQA documentation for the Campus Master Plan, which required the preparation of a comprehensive program EIR. Dudek assisted the university in preparing the program EIR and evaluating the cumulative impacts, growth-inducing impacts, and irreversible significant effects on the environment of subsequent campus projects.

Moreno Valley College Parking Garage Structure, Riverside Community College District, Riverside, California. Served as lead editor for the draft IS/MND, ensuring uniform terminology, style, and documentation under a tight deadline. The Riverside Community College District proposes to construct a new parking garage within the boundaries of the existing Moreno Valley College located in Moreno Valley, California. Due to the continued growth of the college and the existing need for additional on-site parking, the district has determined that a new parking structure is required at that location.

Energy

Desert Renewable Energy Conservation Plan (DRECP), California Energy Commission, Southern California. Edited numerous wildlife and plant species profiles prepared in support of the DRECP Baseline Biology Report. The California Energy Commission and the California Natural Resources Agency (California Department of Fish and Game) selected Dudek to prepare the Habitat Conservation Plan/Natural Community Conservation Plan for the DRECP. The DRECP was established by Governor Schwarzenegger's Executive Order S-14-08, which identifies targets for increasing California's renewable energy portfolio. When completed, the DRECP is expected to further these objectives and accelerate the processing of renewable projects in the California desert (Mojave and Colorado Deserts), encompassing parts of six counties.

East County Substation/Tule Wind/Energia Sierra Juarez Gen-Tie Projects EIR/Environmental Impact Statement (EIS), California Public Utilities Commission (CPUC) and Bureau of Land Management (BLM), San Diego County, California. Provided editorial support for various sections of the EIR/EIS as required by the CPUC and BLM for San Diego Gas & Electric's East County Substation project, which includes a 500/230/138-kilovolt (kV) substation, approximately 14 miles of new 138 kV transmission line, and rebuild of the Boulevard Substation. Also prepared documents for the administrative record and organized public comment letters. The final EIR/EIS was published in October 2011, and the BLM published its Record of Decision on the Tule Wind Project in December 2011. The CPUC certified the final EIR in April 2012.

Wind Energy Ordinance Amendment, County of San Diego, California. Lead technical editor for the Wind Energy Ordinance Amendment EIR responsible for reviewing sections of the EIR and ensuring consistency with the County of San Diego's document-preparation and editorial standards. The Department of Planning and Land Use contracted Dudek as part of an as-needed staffing agreement to prepare a program EIR for the County's zoning ordinance amendment related to wind energy systems. After previously preparing an MND for the ordinance, and after circulation for public review and receipt of comment letters from community planning groups, local residents, and other stakeholders, the Department of Planning and Land Use decided to prepare a program EIR to address potential impacts associated with implementation of the new ordinance revisions.

Devers to Palo Verde No. 2 Transmission Line Project, Southern California Edison, Riverside and San Bernardino Counties, California. Provided editorial support for the project, which involved reviewing the joint permit applications and jurisdictional delineation report. Southern California Edison contracted Dudek to conduct biological surveys for several specific endangered species along the route of the proposed Devers to Palo Verde No. 2 Electrical Transmission Line. Preliminary and final reports were prepared for each species in accordance with state and federal protocol for submission to the required resource agencies in California.

Daggett Ridge Wind Energy Project EIS/EIR, BLM and County of San Bernardino, San Bernardino County, California. Provided editorial support for preparation of the joint EIS/EIR for the proposed Daggett Ridge Wind Farm, an 82.5-megawatt (MW) wind energy-generating facility on approximately 2,000 acres of federal and private lands in the Barstow/Daggett unincorporated area of San Bernardino County. Also quality checked sections reviewed by other technical editors.

Siskiyou Telephone Company Godfrey Ranch Project, CPUC and Siskiyou Telephone Company, Siskiyou County, California. Served as lead technical editor, developing document management techniques in addition to conducting a full-scale editorial review. Guided the document through the administrative draft to public review. Siskiyou Telephone Company intends to provide telephone and broadband service capability to residences in the Godfrey Ranch area. The project would place a telecommunication cable within a conduit along Cecilville Road, U.S. Forest Service 39N30, and a short section (0.1 mile) of a private road.

Central Valley Gas Storage Project, CPUC and Central Valley Gas Storage LLC, Colusa County, California. Served as lead technical editor, conducting a complete editorial review of the IS/MND and providing documentation and administrative support to the project manager. Also edited all responses to public comments and coordinated publication of the final MND. Central Valley Gas Storage LLC proposes to convert, construct, and operate the depleted Princeton Gas Field as a natural gas storage facility. The project would provide natural gas storage by injecting natural gas into the Princeton Gas Field, a depleted natural gas reservoir located approximately 2,200 feet underground.

Sacramento Natural Gas Storage (SNGS) Project, CPUC and SNGS LLC, Sacramento County, California. Assisted with editorial tasks for responses to comments, including editing for grammar, punctuation, and style, as well as resolving questions about documentation. The project involves injecting natural gas into the Florin Gas Field, which is located 3,800 feet below the earth's surface in residential, industrial, commercial, and agricultural areas in the City of Sacramento and portions of Sacramento County. Dudek responded to the high volume of public comments and prepared all CEQA documents necessary to complete the EIR.

Resource Management

Salton Sea Species Conservation Habitat Project, California Department of Water Resources/California Department of Fish and Game, Imperial and Riverside Counties, California. Currently serving as lead technical editor for regulatory permitting documents required for the project. Tasks include ensuring consistency in data and terminology across multiple permitting documents and leading the production effort for submittal to the relevant agencies. The project consists of creating approximately 2,400 acres of new saline pond habitat near the confluence of the New and Alamo Rivers and the Salton Sea. The project would result in the establishment of new shallow water habitat for fish and fish-eating bird species that use the Salton Sea for breeding, migratory stopover, and residential habitat.

Transportation

San Diego Association of Governments (SANDAG) Environmental On-Call Services for Rail Projects, RailPros, San Diego County, California. Provided editorial review for a number of project documents, including the Design Criteria Manual and project study reports (PSRs). Dudek is performing a range of professional environmental services, including peer review of the Draft Water Quality Technical Report and the Draft Cultural and Historical Inventory and Impacts Assessment Report for the Sorrento to Miramar, Phase 1, Curve Realignment and Second Track Project; preparation of environmental sections for the Design Criteria Manual for the Los Angeles to San Diego (LOSSAN) Rail Corridor; and preparation of PSRs for 20 project sites along the LOSSAN Rail Corridor, including a number of double-track segments, pedestrian crossings, and parking lots.

College Boulevard Bridge Widening Project, City of Oceanside, California. Served as lead technical editor for this MND. The project entails widening College Boulevard Bridge from four to six lanes. The purpose of the proposed project is to widen both the College Boulevard Bridge and approach roadways to facilitate improved circulation and reduce existing congestion on the local roadway system. The proposed improvements would require modifications to College Boulevard from the bridge to Adams Street and at the College Boulevard/North River Road intersection. Several existing public facilities, including utilities, sidewalks, and the San Luis Rey River Bike Trail located along the southern bank of the San Luis Rey River, would be modified to accommodate the widened bridge/roadway.

Water/Wastewater

Wastewater Treatment Plant Upgrade Project, Seeley County Water District, Imperial County, California. Led the editorial review process for this project's EIR and associated technical reports. Provided document management services and coordinated production in addition to the editorial review. Seeley County Water District hired Dudek to design and environmentally permit its wastewater treatment plant upgrade project. The proposed project would entail improvements to the secondary treatment components, in addition to construction of new components, to bring all treated effluent up to California Health and Safety Code Title 22 recycled water standards.

Cañada Gobernadora Multipurpose Basin Project, Santa Margarita Water District, Orange County, California. Served as the lead technical editor, performing a full-scale editorial review of the project's MND. Created the project-specific style sheet and reviewed the document for readability and consistency. The Santa Margarita Water District, in partnership with Rancho Mission Viejo LLC, proposes to construct the Cañada Gobernadora Multipurpose Basin on approximately 35 acres of land. The basin would capture and naturally treat urban runoff and storm flows to reduce downstream erosion and sedimentation, address excessive surface water and groundwater, and improve water quality in Gobernadora Creek.

Relevant Previous Experience

Focus Academy, English Language and Composition Tutor, Irvine, California

- Developed lessons in vocabulary, grammar, and essay writing for English language learners
- Scheduled daily sessions and tailored content to students' particular learning needs
- Managed a wide range of interpersonal relationships with parents, students, and coworkers

University of California Office of the President, Department of Communications Staff, Oakland, California

- Researched for and had material published in the University's publications, including *Introducing the University* (2009–2010), *Answers for Transfers* (2009–2010), and *UC Notes* (various)
- Composed and edited content for the University's website, www.universityofcalifornia.edu
- Conducted extensive independent research via Internet and telephone for myriad projects
- Evaluated facts and figures, and provided detailed analyses of results from such research

Southwestern College Sun Newspaper, Staff Writer/News Editor, Chula Vista, California

- Conducted interviews with campus faculty, staff, administrators, and community leaders
- Edited others' work using Microsoft Word's "Track Changes" for accuracy, flow, grammar, and Associated Press style
- Organized and led staff and editorial meetings

Southwestern College, Face-to-Face and Online Writing Tutor, Chula Vista, California

- Tutored various forms of composition, including argumentative, expository, creative, and journalistic
- Created a blog, *The House of Tutor*, for fellow tutors to share questions and experiences
- Facilitated an original writing workshop for students in March 2006
- Telecommuted from Berkeley, California, as an online writing tutor from August 2006 to December 2007