Biological Technical Report for the

Questhaven Tentative Map Project

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ALDEN
ENVIRONMENTAL, INC

Biological Technical Report for the Questhaven Tentative Map Project

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SUMMARY

The Questhaven Tentative Map project site is approximately 69.1 acres in size and is located in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. The site is within the boundaries of the draft North County Multiple Species Conservation Program (NCMSCP) area; however, this plan has not been adopted and is not applicable to the project. While not required to comply with the draft plan requirements, this report does reference Draft NCMSCP background and biological information, as applicable.

The project consists of a Tentative Map, Density Bonus Permit, Site Plan Review, and an Administrative Permit for the site. The total number of lots proposed is 93, with 76 residential and 17 non-residential. The project would provide for development of 69 market-rate units and 7 reserved units for affordable housing (18.27 acres), 4 water quality detention basins (2.40 acres), 1 private park parcel (0.31 acres), 4 private road lots (4.34 acres), and 7 open space HOA lots for fire buffer area (10.77 acres). The project also includes a 50.3 acre biological open space area that would provide habitat mitigation for the project and be contiguous with open space lands to the south and west.

Project construction would result in direct and permanent impacts to approximately 98 percent of the Orcutt's brodiaea plants on site and 3.4 acres out of 3.8 acres mapped as suitable habitat for the species on site.

Project construction would result in direct and permanent impacts to approximately one-third of the Nuttall's scrub oaks on site.

Project construction would result in the direct and permanent removal of three locations where western spadefoot toads were observed and eight water holding basins (totaling 0.14 acre in area) suitable for spadefoot toad breeding. It would also result in the direct and permanent removal of 27.2 acres of habitat that could be used for non-breeding purposes. Construction could also cause direct injury/mortality to individual toads.

Project construction would result in the direct and permanent removal of 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed habitat on and off site occupied by the coastal California gnatcatcher. Project construction could also have temporary noise impacts on coastal California gnatcatcher nesting.

Project construction would result in the direct and permanent removal of 27.2 acres of habitat used, or potentially used, by the southern California rufous-crowned sparrow. Project construction could also have temporary noise impacts on this species.

Project construction would result in the removal of potential foraging and nesting habitat for the Cooper's hawk. Project construction could also have temporary noise impacts on Cooper's hawk nesting.

Impacts on and off site from the project to sensitive upland habitats that would require compensatory mitigation include 7.2 acres of Diegan coastal sage scrub (including -disturbed), 0.2 acre of scrub oak chaparral, 1.6 acres of mafic chamise chaparral, 2.8 acres of mafic southern mixed chaparral, and 15.4 acres of non-native grassland.

The project will impact sensitive habitat lands as outlined in the Resource Protection Ordinance. The impacted sensitive habitat lands include Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed, scrub oak chaparral, mafic chamise chaparral, mafic southern mixed chaparral, and non-native grassland.

Mitigation for the project's impacts was developed in coordination with the County, U.S. Fish and Wildlife Service and California Department of Fish and Wildlife and focuses on a functioning preserve mitigation strategy rather than relying on prescribed mitigation ratios. The project's proposed mitigation, therefore, includes on- and off-site (adjacent) habitat preservation and on- and off-site (adjacent) habitat restoration/preservation. Mitigation would be provided for significant impacts to a total of 27.2 acres of sensitive natural communities in a 50.3 acre biological preserve area including 44.4 acres of preserved habitat and 5.9 acres of restored habitat. The project's mitigation preserve would connect to other identified preserve areas to create a larger, overall habitat preserve that would not only compensate for the project's impacts but would be a beneficial biological resource in the western portion of unincorporated San Diego County. Implementation of mitigation would reduce the impacts to less-than-significant levels.

The project would not result in impacts to County RPO wetlands. The project would not result in significant impacts to wildlife movement and nursery sites.

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

Alden Environmental, Inc. (Alden) has completed a biological technical report for the proposed Questhaven Tentative Map (project) located on an approximately 69.1-acre site (project site or site) in the western portion of unincorporated San Diego County (County) within the San Dieguito Community Plan Area. The purpose of this report is to document the existing biological conditions on and in the immediate vicinity of the project site and provide an analysis of potential impacts to sensitive biological resources with respect to local, State of California (State), and federal policy. This report provides the biological resources technical documentation necessary for project review under the California Environmental Quality Act (CEQA) by the County Planning & Development Services (PDS).

1.2 PROJECT LOCATION AND DESCRIPTION

1.2.1 Project Location

The approximately 69.1-acre project site is located in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. The project site is located immediately south and west of the City of San Marcos and east of the City of Carlsbad. Interstate 5 is located approximately 5.3 miles west of the project site. Specifically, the project site is located south of San Elijo Road and east of Denning Drive (Figures 1 and 2). The project site encompasses Assessor's Parcel Number 223-080-46-00 and is located in the west half of the northwest quarter of Section 33, Township 12 South, Range 3 West, San Bernardino Meridian on the U.S. Geological Survey (USGS) 7.5-minute Rancho Santa Fe quadrangle map (Figure 2).

1.2.2 Project Description

The project consists of a Tentative Map, Density Bonus Permit, Site Plan Review, and an Administrative Permit for the site. The total number of lots proposed is 93, with 76 residential and 17 non-residential. The project would provide for development of 69 market-rate units and 7 reserved units for affordable housing (18.27 acres), 4 water quality detention basins (2.40 acres), 1 private park parcel (0.31 acres), 4 private road lots (4.34 acres), and 7 open space HOA lots for fire buffer area (10.77 acres). The project also includes a 50.3 acre biological open space area that would provide habitat mitigation for the project and be contiguous with open space lands to the south and west.

In accordance with the Consolidated Fire Code (County 2020), fire protection for the project would be provided that includes a fire fuel modification zone that is 100-feet wide and includes 20 feet of the level, single-family residential home pads. The Limited Building Zone overlaps with the fire fuel modification zone.

The project is designed to cluster development in the northeastern portion of the project site in order to allow for the development of residential uses while providing biological open space in the remainder of the site. The project would connect to existing utilities within San Elijo Road and utilities along the project's easterly boundary. Access to the project would be provided via two access connections to San Elijo Road at different points along the project frontage. Primary access to the site would be provided via Street D, Street E, and San Elijo Road. A secondary right-in, right-out access to San Elijo Road from Street B would be located at the northwest corner of the site.

1.3 METHODS

1.3.1 Literature Review

Prior to conducting biological field surveys, a search of the California Natural Diversity Database (CNDDB) for information regarding special status (sensitive) species known to occur within five miles of the project site was performed, as well as a review of U.S. Fish & Wildlife Service (USFWS) and SanBIOS databases.

1.3.2 General Biological Survey

Alden Environmental, Inc. (Alden) initially conducted a field investigation of the project site to map existing biological resources and identify potential constraints to development on July 31, 2014. The entire site was surveyed on foot with the aid of binoculars, and plant and animal species observed were recorded in field notes. Animal identifications were made in the field by direct, visual observation or indirectly by detection of calls, burrows, tracks, or scat. Plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs. Representative photographs of the site were taken, with select photographs included in this report as Appendix A. Vegetation was mapped on 1"=200' scale aerial imagery of the site.

Then, on June 10 and 11, 2020, Alden updated the 2014 vegetation mapping on site and mapped vegetation in a 100-foot-wide zone around the site per County mapping requirements. Again, plant and animal species observed or otherwise detected were recorded in field notes. The site was examined for evidence of potential jurisdictional waters and wetlands, including vernal pools. Potential jurisdictional features were mapped. In addition to the general biological survey and vegetation mapping, Alden conducted a special status plant species survey, surveys for the coastal California gnatcatcher (CAGN; *Polioptila californica californica*), burrowing owl (BUOW; *Athene cunicularia*), and Crotch's bumble bee (CBB; *Bombus crotchii*). A habitat assessment for the Hermes copper butterfly (*Lycaena hermes*) also was conducted. Lastly, Alden visited the site following rainfall events to look for evidence of potential water holding basins with the potential to serve as habitat for the western spadefoot toad. Table 1 provides a summary of the biological surveys conducted for the project. CNDDB field forms for sensitive species observations are included as Appendix B.

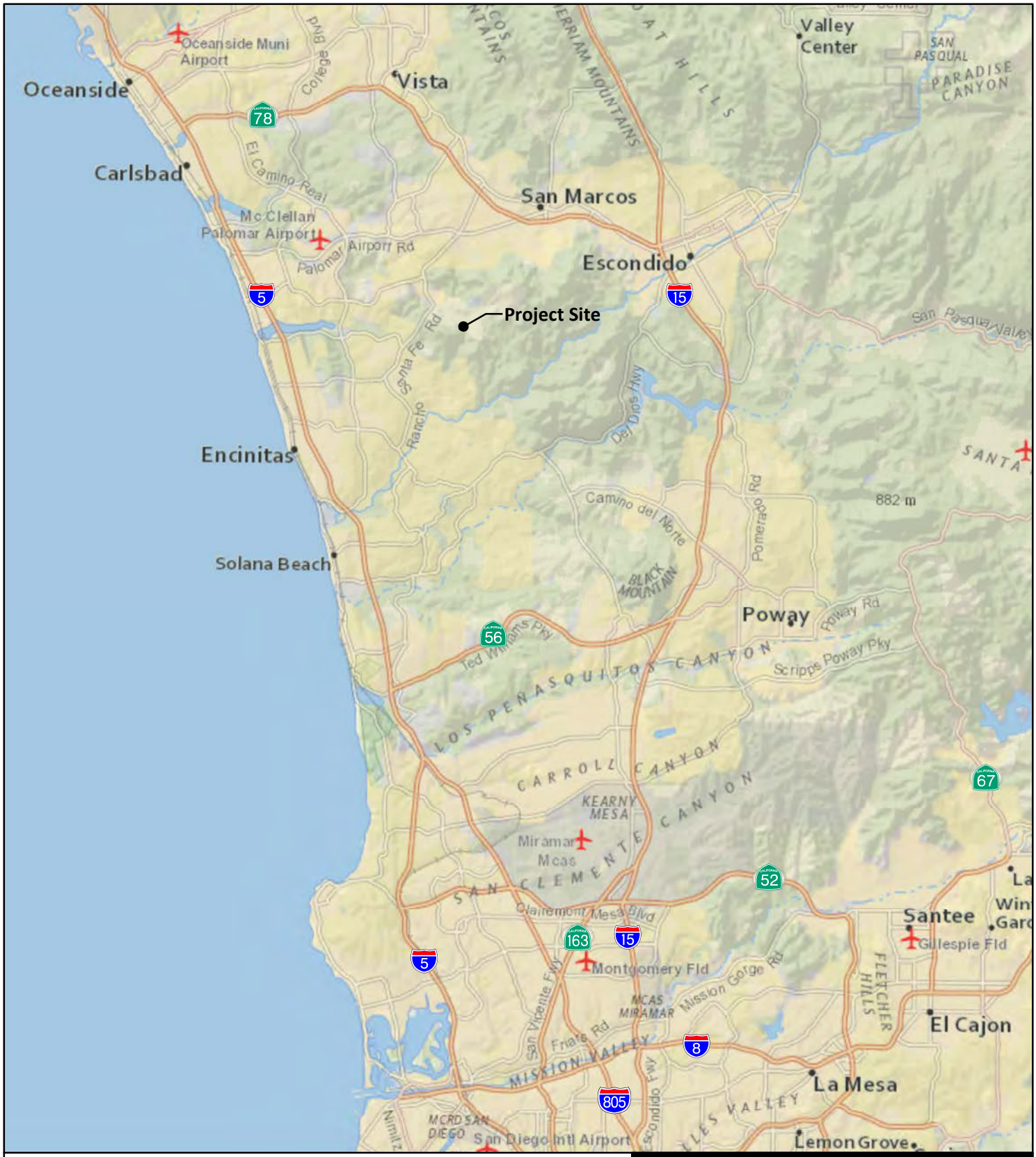

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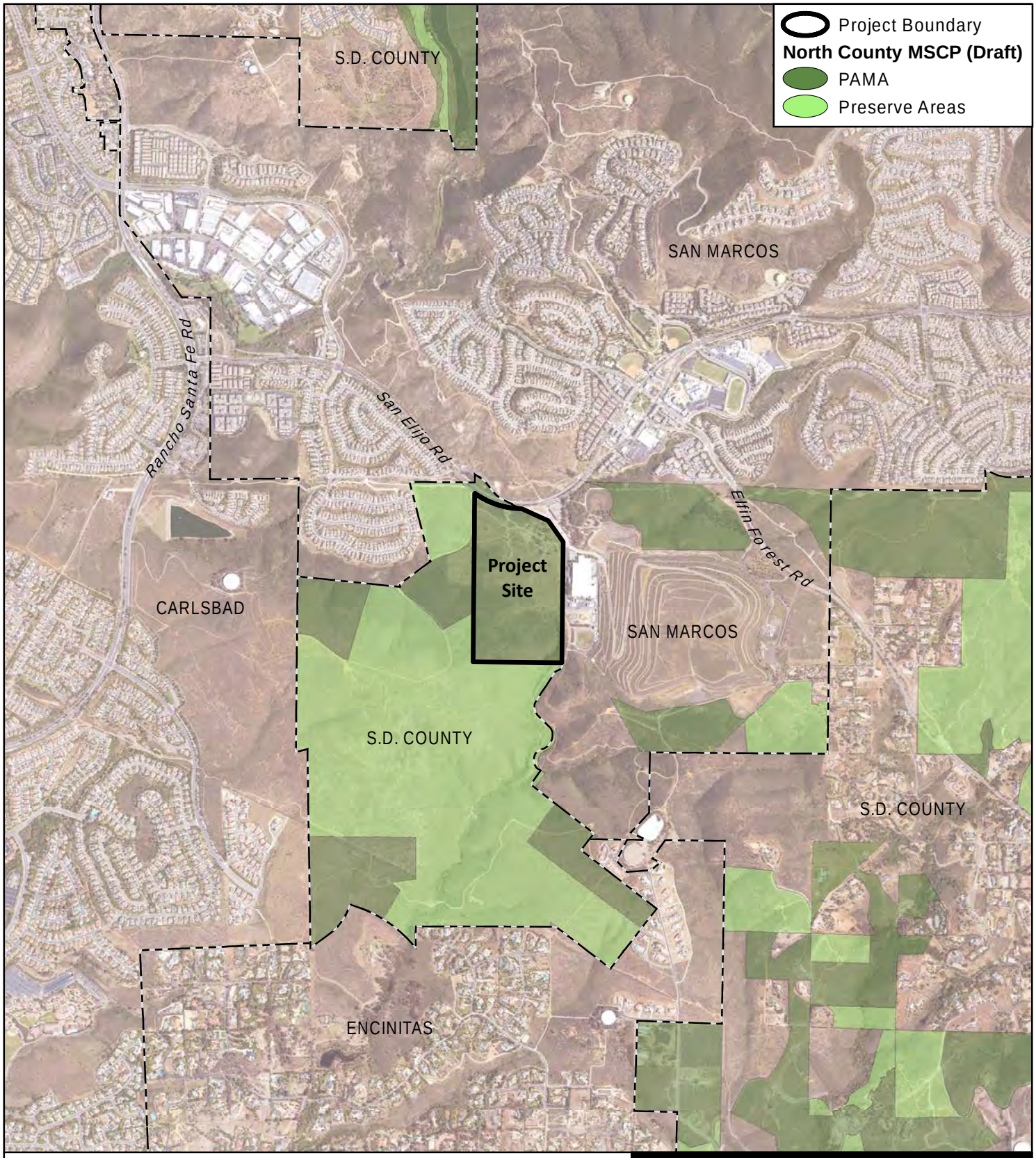
Figure 1

Regional Location

QUESTHAVEN



Source: SanGIS

Figure 2

Project Location

QUESTHAVEN

N
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0 1,000 2,000 Feet

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Table 1 BIOLOGICAL SURVEY INFORMATION			
DATE/TIME	**PERSONNEL**	**SURVEY CONDITIONS (START/STOP)**	**SURVEY TYPE**
July 31, 2014/ NA	Greg Mason	NA	General biological survey
February 19, 2020/ 0600-0815	Erik LaCoste	100% cloud cover, 52° F, wind 0-1 mph/100% cloud cover, 62° F, wind 0-1 mph	BUOW 1 of 4
March 17, 2020	Erik LaCoste	NA	Hermes copper butterfly assessment
April 9, 2020/ 0700-1100	Erik LaCoste[1]	80% cloud cover, 58° Fahrenheit (F), wind 2-4 miles per hour (mph)/ 100% cloud cover (sprinkles from 1000-1100), 59° F, wind 2-4 mph	CAGN 1 of 3
April 23, 2020/ 0600-0800	Erik LaCoste	0% cloud cover, 60° F, wind 0 mph/0% cloud cover, 68° F, wind 1-2 mph	BUOW 2 of 4
April 23, 2020/ 0800-1200	Erik LaCoste[1]	0% cloud cover, 68° F, wind 1-2 mph/0% cloud cover, 78° F, wind 2-4 mph	CAGN 2 of 3
May 1, 2020/ 0615-1015	Erik LaCoste[1]	100% cloud cover, 63° F, wind 0 mph/100% cloud cover, 66° F, wind 1-2 mph	CAGN 3 of 3
June 2, 2020	Erik LaCoste	50% cloud cover, 58° F, wind 0-1 mph/ 30% cloud cover, 73° F, wind 1-2 mph	BUOW 3 of 4
June 3, 2020	Erik LaCoste	NA	Special status plant species (specifically Orcutt's brodiaea)
June 10-11, 2020	Greg Mason Jasmine Watts	NA	Vegetation mapping/update; rare plant species (Orcutt's brodiaea), and map potential jurisdictional features
June 16, 2020	Erik LaCoste	100% cloud cover, 59° F, wind 0-1 mph/50% cloud cover, 66° F, wind 1-3 mph	BUOW 4 of 4
March 13, 2021	Greg Mason	NA	Map water holding basins following rainfall, survey for western spadefoot toads, and confirm vegetation mapping
March 20, 2021	Greg Mason	NA	Map water holding basins, survey for western spadefoot toads, and map areas in which to create new water holding basins.
February 24, 2023	Brian Parker, Darin Busby	90% cloud cover, 62°F, wind 0-2 mph/ 100% cloud cover, 58°F, wind 3-5 mph	Confirm and update vegetation mapping.
May 13, 2023	Greg Mason	Clear, 70°F, wind 0-2 mph/ Clear, 66°F, wind 0-2 mph	Brodiaea survey update and general sensitive plants
May 23, 2023	Korey Klutz	Cloudy, 60°F, wind 0 mph/ Cloudy, 64°F, wind 2 mph	CBB Survey 1, Area 1
May 24, 2023	Brian Lohstroh	100% cover, 70°F, wind 2-6 mph/ 100%, 69°F, wind 3-5 mph	CBB Survey 1, Area 2

Table 1 (cont.) **BIOLOGICAL SURVEY INFORMATION**			
DATE/TIME	**PERSONNEL**	**SURVEY CONDITIONS (START/STOP)**	**SURVEY TYPE**
May 25, 2023	Aldo Mason	Partly cloudy, 64°F, wind 0-2 mph/ Partly cloudy, 66°F, wind 0-1 mph	GPS Brodiaea locations
May 30, 2023	Darin Busby	100% cover, 69°F, wind 4-7 mph/ 90%, 70°F, wind 3-5 mph	CBB Survey 1, Area 3
May 30, 2023	Melissa Busby	100% cover, 69°F, wind 4-7 mph/ 90%, 70°F, wind 3-5 mph	CBB Survey 1, Area 3
June 7, 2023	Korey Klutz	Cloudy, 63°F, wind 0 mph/ Cloudy, 67°F, wind 4 mph	CBB Survey 2, Area 1
June 8, 2023	Brian Lohstroh	100% cover, 73°F, wind 3-6 mph/ 10%, 76°F, wind 2-7 mph	CBB Survey 2, Area 2
June 17, 2023	Darin Busby	0% cover, 73°F, wind 1-5 mph/ 0%, 78°F, wind 3-6 mph	CBB Survey 2, Area 3
June 20, 2023	Aldo Mason	Cloudy, 62°F, wind 0-1 mph/ Cloudy, 64°F, wind 0-1 mph	GPS Brodiaea locations
June 22, 2023	Korey Klutz	Partly cloudy, 64°F, wind 0 mph/ Partly cloudy, 70°F, wind 8 mph	CBB Survey 3, Area 1
June 22, 2023	Brian Lohstroh	20% cover, 74°F, wind 2-5 mph/ 0%, 76°F, wind 4-7 mph	CBB Survey 3, Area 2
June 30, 2023	Darin Busby	0% cover, 70°F, wind 0-3 mph/ 0%, 79°F, wind 2-5 mph	CBB Survey 3, Area 3
July 9, 2023	Korey Klutz	Partly cloudy, 65°F, wind 0 mph/ Clear, 71°F, wind 6 mph	CBB Survey 4, Area 1
July 7, 2023	Brian Lohstroh	0% cover, 70°F, wind 0-4 mph/ 0%, 71°F, wind 2-9 mph	CBB Survey 4, Area 2
July 13, 2023	Darin Busby	0% cover, 78°F, wind 1-3 mph/ 0%, 85°F, wind 1-5 mph	CBB Survey 4, Area 3
July 23, 2023	Korey Klutz	Clear, 65°F, wind 0 mph/ Clear, 73°F, wind 10 mph	CBB Survey 5, Area 1
July 21, 2023	Brian Lohstroh	100% cover, 68°F, wind 2-4 mph/ 0%, 79°F, wind 0-7 mph	CBB Survey 5, Area 2
July 27, 2023	Darin Busby	0% cover, 77°F, wind 2-3 mph/ 0%, 85°F, wind 3-5 mph	CBB Survey 5, Area 3

[1]USFWS Threatened/Endangered Species Permit TE-027736-6

1.3.3 Focused Species Surveys/Assessment

Special Status Plant Species Survey

Alden conducted a special status plant species survey of the site on June 3, 2020 with a focus on Orcutt's brodiaea (*Brodiaea orcuttii*; Table 1). Another special status plant species survey of the site was conducted on June 11, 2020. Follow up site visits for sensitive plants and mapping of *Brodiaea* were conducted on May 13, 25, and June 20, 2023. Special status species also were searched for during the vegetation mapping, burrowing owl, CAGN, and CBB (2023) surveys conducted throughout the site. The entire site was traversed by foot and was inspected for the presence of special status plant species. The species were mapped and counted when found (with the exception of Nuttall's scrub oak [*Quercus dumosa*], which is the dominant species in scrub oak chaparral on site). The staminodia of *Brodiaea* found on site was closely inspected to determine which species is present. All *Brodiaea* found were mapped using global positioning system (GPS) technology with sub-meter accuracy (no *Brodiaea* species other than *orcuttii* was found). Special status plant species searched for include those that are listed as threatened or endangered by the USFWS and/or the California Department of Fish and Wildlife (CDFW), those afforded Rare Plant Rank 1-4 designation by the California Native Plant Society (CNPS), and/or those that are on the County Sensitive Plant List.

Western Spadefoot Toad

Alden made site visits on March 13 and 20, 2021 following rain events to search the site for water holding basins potentially suitable for western spadefoot toad (*Spea hammondii*) breeding. Alden identified and mapped, via GPS technology, 35 potential water holding basins consisting of trenches, tire ruts, BMX tracks, holes, and depressions in previously disturbed/cleared portions of the site and those areas of the site once used for stockpiling. After further inspection and consideration of the 35 basins, eight were determined to be suitable for western spadefoot breeding as they are expected to hold water for at least 30 days, which is a requirement for successful spadefoot breeding. Therefore, very shallow ruts and basins that would not hold water long enough were excluded from the final mapping of suitable breeding habitat.

Coastal California Gnatcatcher Survey

A USFWS protocol survey for the CAGN (*Polioptila californica californica*) was conducted by USFWS-permitted biologist Erik LaCoste (TE-027736-6). Three site visits were made per USFWS (1997) protocol from April 9 through May 1, 2020 (Table 1). The survey was conducted by walking through, and adjacent to, suitable CAGN habitat on site. Birds were viewed with the aid of binoculars, where necessary. Recorded CAGN vocalizations ("mew calls") were broadcast for approximate five-second durations at approximately 50-yard increments along the survey route, or as needed to adequately cover each potentially suitable habitat patch. Recorded vocalizations were only broadcast to initially detect the possible presence of CAGNs. The CAGN survey report is included as Appendix C to this report.

Burrowing Owl Survey

The survey consisted of four site visits made by Erik LaCoste according to the survey methods in the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game [CDFG] 2012), which supersedes the survey, avoidance, minimization and mitigation recommendations in the 1995 Staff Report (CDFG 1995), and takes into account the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993).

Suitable habitat (non-native grassland and disturbed) was surveyed for BUOWs and potential burrows or perches that could be used by the owl. BUOWs are known to occupy California ground squirrel (*Otospermophilus beecheyi*) burrows; therefore, particular attention was paid to areas along fence lines, or other locations where squirrel activity was observed in the past, was observed presently, or is likely to occur. Dirt piles, drainages, and culverts are also carefully examined as these sites can often provide cavities that can support the species. The determination of BUOW presence is made by direct BUOW observation or by owl signs such as, but not necessarily limited to, excavated soil, whitewash (excrement), castings (pellets), and/or feathers. The BUOW survey report is included as Appendix D to this report.

Crotch's Bumble Bee

A focused foraging survey for the CBB was conducted during the during the period May 23 through July 27, 2023 (Table 1). The first part of the survey followed the CDFW-issued Unofficial Crotch's Bumble Bee Survey Methods, which was available when the survey began. The latter portion of the survey followed the Survey Considerations for CESA Candidate Bumble Bee Species issued by the CDFW on June 6, 2023 (CDFW 2023). Prior to beginning the survey, a habitat assessment was conducted that included reviewing the California Natural Diversity Database and available bee data (iNaturalist) to identify any reported CBB observations in the project site vicinity and to help determine areas on site with suitable foraging resources (flowering plants) for the CBB. The CBB report is included as Appendix E to this report.

Hermes Copper Butterfly Assessment

Alden conducted an assessment of the site for its potential to support the Hermes copper butterfly based on the butterfly's life history, range and habitat information, as well as the County's Guidelines for Hermes Copper (Attachment B [County of San Diego Guidelines for Hermes Copper] in County 2010a). The assessment was conducted on March 17, 2020 (Table 1), and typically involves mapping spiny redberry (*Rhamnus crocea*), the species larval host plant, and noting where California buckwheat (*Eriogonum fasciculatum*), the adult butterfly's preferred nectar resource, is present within 15 to 20 feet of spiny redberry plants (a species requirement). On the Questhaven site, spiny redberry is such a common species that mapping all the plants was done at the beginning of the assessment but was later limited to focus just on those spiny redberry plants in proximity to California buckwheat (of which there were none).

Mapping of Potential Jurisdictional Features

An initial inspection of the project site for potential jurisdictional features was made by Alden on July 31, 2014. A follow-up inspection and mapping of jurisdictional features on the project site was performed by Alden on June 10 and 11, 2020. Subsequent to the Sackett Supreme Court decision, the Environmental Protection Agency (EPA) issued a new definition for what is to be considered a Waters of the U.S. In conjunction with Corps staff in the Los Angeles District, the previously prepared Jurisdictional Delineation Report was revised to reflect the new Waters definition for the project (Alden, 2023).

A review of relevant literature and materials aided in preliminary identification of areas that may be jurisdictional including aerial photographs, USGS topographic maps, National Wetland Inventory data, and Natural Resource Conservation Service soil survey maps.

During the field visits, the site was inspected for potential wetland resources potentially subject to U.S. Army Corps of Engineers (Corps) jurisdiction pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), streambed habitats potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of California Fish and Game Code, and surface waters potentially subject to permitting from the Regional Water Quality Control Board (RWQCB). The effort also included determining the presence or absence of potential County Resource Protection Ordinance (RPO) wetlands.

Waters of the U.S.

Potential Corps-jurisdictional Waters of the U.S. (WUS) are determined in accordance with the *Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Supplement* (Corps 2008a). The potential Ordinary High Water Mark (OHWM) also is determined in accordance with *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (Corps 2008b). Areas are determined to be non-wetland WUS if there is evidence of intermittent or perennial surface flow (e.g., bed and bank) but the vegetation and/or soils criterion are not met. Per the current Corps CWA Rule, unvegetated ephemeral drainages/streambeds are not considered to be jurisdictional WUS.

Waters of the State

Potential CDFW-jurisdictional Waters of the State (WS) are determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction are determined based on the definition of streambed as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation” (Title 14, Section 1.72). Potential CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream. The RWQCB reviews issues related to WS pursuant to the Federal CWA as well as the Porter-Cologne Act.

County Resource Protection Ordinance Wetlands

Areas are considered County wetlands if they meet 1 of the 3 following attributes pursuant to the County RPO (County 2011): (1) at least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) the substratum is predominantly undrained hydric soil; or (3) an ephemeral or perennial stream is present, whose substratum is predominately non-soil and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

1.3.4 Survey Limitations

Noted animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs. However, the lists of species identified are not necessarily comprehensive accounts of all those that utilize the site as species that are nocturnal, secretive, or seasonally restricted may not have been observed or detected.

1.3.5 Nomenclature

Nomenclature used in this report comes from Holland (1986); Oberbauer et al. (2008); Hickman, ed. (1993); CNPS (2021); Crother (2008); American Ornithological Society (2020); Jones, et al. (1992); and CDFW (2021).

1.4 ENVIRONMENTAL SETTING

The project site is undeveloped and includes several unimproved dirt roads and trails. Historically, the northern portion of the site has been subject to disturbance and was used as a laydown yard for construction equipment associated with the adjacent former recycling facilities. Additionally, a portion of the western area of the site was used for agricultural uses. The southern portion of the project site contains a large area of steep hills that transition into a relatively flat area in the northern and central portion of the site. Elevations range between approximately 830 feet above mean sea level (amsl) in the southwest corner to 500 feet amsl along the eastern boundary.

To the west of the project site is open space associated with the Rancho La Costa Habitat Conservation Area, beyond which is existing residential development. North of the project site is land designated for open space, beyond which are existing residential uses. East of the project site is a former recycling facility that is currently used as an indoor sports complex known as “Edenpark” and that is proposed for additional sports complex and commercial uses. To the south of the project site is open space associated with the Rancho La Costa Habitat Conservation Area. The project site is adjacent to the San Elijo Hills development in the City of San Marcos and is within their Sphere of Influence.

Given that the project site is adjacent open space preserves to the west and south, the project proposes a design to cluster in the north in order to preserve a viable wildlife corridor in the more constrained land on the southern edge of the project site and establish a level of compatibility with these adjacent preserves.

1.4.1 Regional Context

The site is within the boundaries of the draft North County Multiple Species Conservation Program (NCMSCP) area and is completely within the PAMA (Pre-approved Mitigation Area; Figure 2); however, the NCMSCP Plan has not yet been approved or adopted. As such, the proposed NCMSCP requirements do not apply and are not addressed in this report. NCMSCP information is referenced as supporting background and biological database information.

1.4.2 General Land Uses

The project site is undeveloped and includes several unimproved dirt roads and trails that have been observed to be used by the public for recreational purposes including hiking, dog walking, bicycling (BMX tracks), and remote control car operation. There also are a total of 9 separate easements for powerlines, roadway, utilities, and site access purposes. Specific information for each easement is provided in Appendix F.

1.4.3 Disturbance

The site has a long history of historical disturbance with clearing and construction related activities visible in historic aerial imagery as far back as 1947 and continuing into the early 2000s. Appendix G includes historic aerial photographs of that shows the disturbance on the site over the years. Much of the northern portion of the site has been cleared, graded, used as a laydown area, and covered with stockpile soil materials. The southern portion of the project site contains a large area of relatively undisturbed steep hills.

1.4.4 Topography and Soils

The project site encompasses a large area of steep hills that transition into a relatively flat area in the northern and central portion of the site. Elevations range between approximately 830 feet amsl in the southwest corner to 500 feet amsl along the eastern boundary. Soil on site is mapped as Cieneba very rocky coarse sandy loam (30 – 75 percent slopes), San Miguel rocky silt loam (9 – 30 percent slopes), Huerhuero loam (2 – 9 percent slopes), San Miguel-Exchequer rocky silt loams (9 – 70 percent slopes), and Exchequer rocky silt loam (30 – 70 percent slopes; Figure 3).

1.4.5 Vegetation Communities/Habitat Types

Nine vegetation communities/habitat types occur on site and are described below (Table 2; Figure 4). The numbers in parentheses are the Holland Codes (Oberbauer et al. 2008).

Table 2
EXISTING VEGETATION COMMUNITIES/HABITAT TYPES

VEGETATION COMMUNITY/HABITAT[1]	ON SITE	OFF SITE[2]
Diegan coastal sage scrub (32500)	9.8	0.2
Diegan coastal sage scrub-disturbed (32500)	2.1	-
Scrub oak chaparral (37900)	0.6	-
Mafic chamise chaparral (37220)	2.4	-
Mafic southern mixed chaparral (37122)	25.7	-
Non-native grassland (42200)	20.9	-
Eucalyptus woodland (79100)	2.9	-
Disturbed habitat (11300)	3.7	0.2
Developed and ornamental (12000)	1.0	0.9
TOTAL	**69.1**	**1.3**

[1]Categories and numeric codes are from Oberbauer et al. 2008.
[2]Off-site numbers reflect off-site impacts

Diegan Coastal Sage Scrub (including -disturbed; 32500)

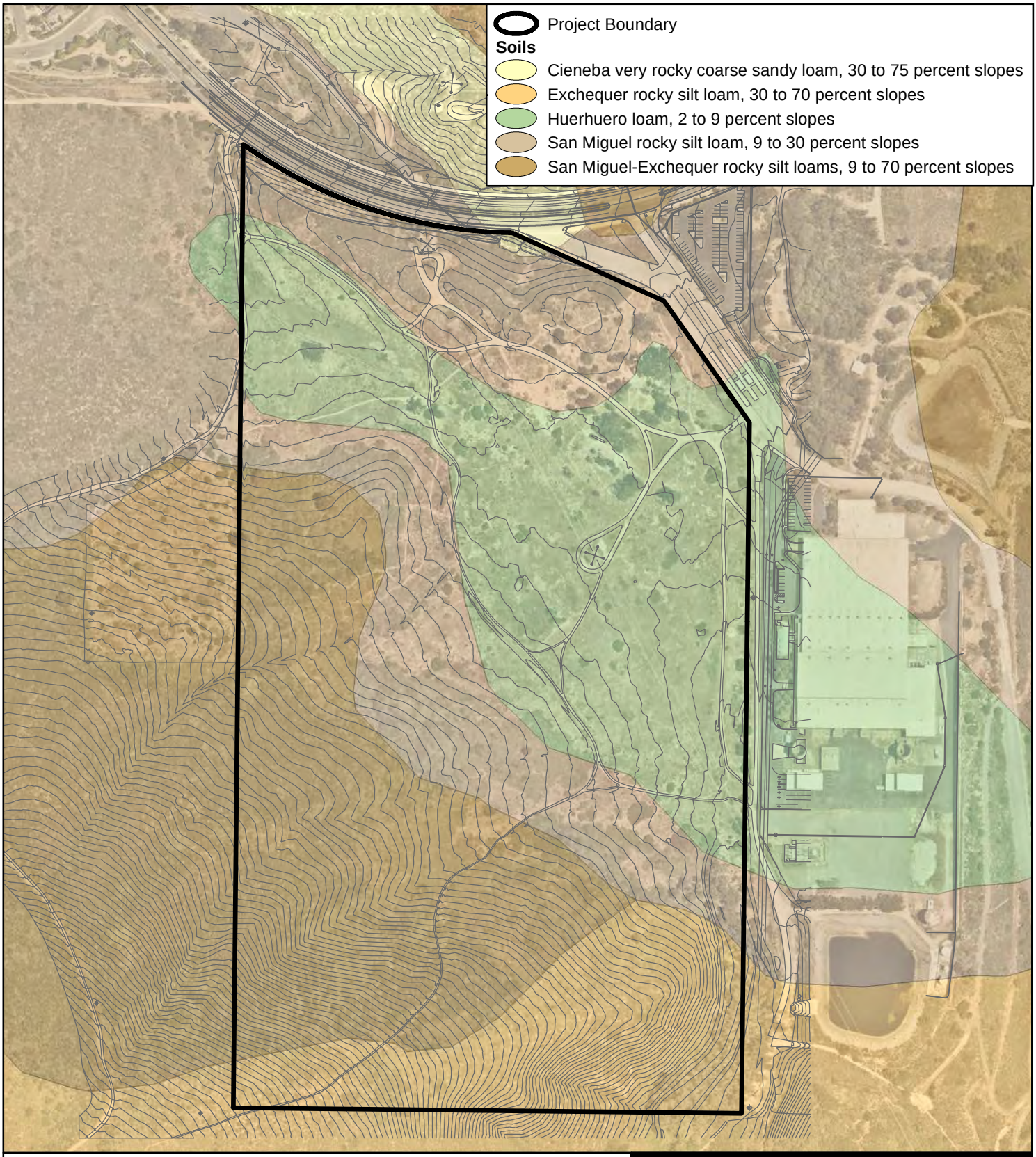
Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Typical species found within Diegan coastal sage scrub, including on the project site, are California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina)*, and black sage (*Salvia mellifera*). Where Diegan coastal sage scrub on site is mapped as disturbed, it is characterized by less native shrub cover and more non-native, herbaceous plant species cover (e.g., non-native grasses.

Scrub Oak Chaparral (37900)

Scrub oak chaparral is a dense, evergreen community that may reach heights of 20 feet that is typically dominated by Nuttall's scrub oak with considerable mountain mahogany (*Cercocarpus betuloides*). On site, scrub oak chaparral is dominated by Nuttall's scrub oak.

Mafic Chamise Chaparral (37220)

Mafic chamise chaparral on site occurs on San Miguel series soils (Figure 3) that are formed from metavolcanic rock that overlays metavolcanic bedrock. This chaparral on site is dominated by chamise (*Adenostoma fasciculatum*). Associated species contribute little to the vegetative cover.



Source: USDA NRCS

N
W E
S

0 175 350

Feet

ALDEN ENVIRONMENTAL, INC

Figure 3

Topography/Soils

QUESTHAVEN

Project Boundary
Project Impacts
Fuel Modification Zone/Limited Building Zone
Road and Utility Easements
Preserve
Photo Locations
Non-wetland Waters of the U.S./Streambed

Vegetation
Riparian Forest
Freshwater Marsh
Diegan Coastal Sage Scrub
Diegan Coastal Sage Scrub - Disturbed
Scrub Oak Chaparral
Mafic Southern Mixed Chaparral
Mafic Chamise Chaparral
Non-native Grassland
Eucalyptus Woodland
Disturbed Habitat
Ornamental
Developed

Special Status Species
Coastal California Gnatcatcher (*Polioptila californica californica*)
Least Bell's Vireo (*Vireo bellii pusillus*)
Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
Western Spadefoot Toad (*Spea hammondii*)
Ashy Spikemoss (*Selaginella cinerascens*)
Nuttall's Scrub Oak (*Quercus dumosa*)
Spiny Rush (*Juncus acutus*)
Orcutt's Brodiaea (*Brodiaea orcuttii*)
Orcutt's Brodiaea Habitat Area
Suitable Water Holding Basins for Western Spadefoot Toad

San Elijo Rd

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1' 20' 10' 20' 10' 30' 10' 50'

Aerial Photo: Nearmap 2020

N W E S
0 105 210 Feet

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Figure 4

Vegetation and Sensitive Resources/Impacts

QUESTHAVEN

Mafic Southern Mixed Chaparral (37122)

Mafic southern mixed chaparral on site occurs on San Miguel series soils (Figure 3) that are formed from metavolcanic rock that overlays metavolcanic bedrock. This chaparral on site is composed of broad-leaved sclerophyllous shrubs that can reach six to 10 feet in height and form dense often nearly impenetrable stands with poorly developed understories. Characteristic plants in this community include black sage, fuschia-flowered gooseberry (*Ribes speciosum*), spiny redberry (*Rhamnus ilicifolia*), holly-leaf redberry (*Rhamnus ilicifolia*), chamise, toyon (*Heteromeles arbutifolia*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*).

Non-native Grassland (42200)

Non-native grassland is a dense to sparse cover of annual grasses, often associated with native, annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the introduced annual species that comprise non-native grassland originated from the Mediterranean region of Europe, an area with a climate similar to that in California and a long history of agriculture. These two factors have contributed to the successful invasion and establishment of these species and the replacement of native grasslands by annual-dominated non-native grasslands (Jackson 1985). Non-native grassland on site is comprised of the following characteristic non-native species including oats (*Avena barbata* and *A. fatua*), species of bromes (*Bromus diandrus, B. madritensis,* and *B. hordeaceus*), Italian ryegrass (*Festuca perennis*), and annual beardgrass (*Polypogon monspeliensis*), along with some native and non-native and forbs.

Eucalyptus Woodland (79100)

Eucalyptus woodland is a non-native vegetation community type dominated by gum tree (*Eucalyptus* spp.). Eucalyptus produces a large amount of leaf and bark litter, the chemical and physical characteristics of which limit the ability of other species to grow in the understory, decreasing floristic diversity. Eucalyptus woodland occurs on site as scattered individual trees, and larger groupings of trees in the northern central portion of the site as well as along a drainage in the site's southeastern corner.

Disturbed Habitat (11300)

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), land containing a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or land showing signs of past or present animal usage that removes any capability of providing viable habitat. Disturbed habitat on site is comprised of dirt roads and pads for transmission line towers.

Developed and Ornamental (12000)

Developed land exists where permanent structures and/or pavement has been placed (preventing the growth of vegetation) or where landscaping is clearly tended and maintained. Developed land on site is comprised of the two transmission line towers and concrete brow ditches. It also includes ornamental plantings along San Elijo Road.

1.4.6 Flora

Alden identified 121 species of plants on site, of which 43 (36 percent) are non-native species (Appendix H) and primarily found in non-native grassland, eucalyptus woodland, and disturbed habitat.

1.4.7 Fauna

A total of 89 animal species were observed or detected on site including 26 invertebrates, two amphibians, two reptiles, 56 birds, and three mammals (Appendix I).

1.4.8 Sensitive Vegetation Communities/Habitat Types

Sensitive habitat is defined as land that supports unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the CEQA Guidelines. The County maintains a list of sensitive vegetation communities that require compensatory mitigation for unavoidable impacts (Table 5, Habitat Mitigation Ratios, for lands outside of approved MSCP subarea plans; County 2010a).

Sensitive vegetation communities/habitat types on site include Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, scrub oak chaparral, mafic chamise chaparral, mafic southern mixed chaparral, and non-native grassland.

1.4.9 Special Status Plant Species

Special Status Plant Species Observed

Four special status plant species were found on site (Figure 4) and are addressed below.

Orcutt's brodiaea (*Brodiaea orcuttii*)
Status: CNPS Rare Plant Rank 1B.1; County List A
Distribution: Riverside and San Bernardino counties south to Baja California, Mexico.
Habitat(s): Mesic closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools—often associated with clay soil.
Presence on site: Orcutt's brodiaea was found on site in two locations. The larger population occurs in non-native grassland in the northwestern portion of the site; another small population occurs in non-native grassland in the central portion of the site. A total of 1,740 individual plants were counted in 2023.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)
Status: CNPS Rare Plant Rank 4.2; County List D
Distribution: Los Angeles, San Bernardino, San Luis Obispo, Ventura, and San Diego counties; Baja California, Mexico.
Habitat(s): Mesic coastal dunes; alkaline meadows and seeps; coastal salt marshes and swamps.
Presence on site: One southwestern spiny rush plant was found in the southeastern corner of the site, within the proposed preserve area.

Nuttall's scrub oak (*Quercus dumosa*)
Status: CNPS Rare Plant Rank 1B.1; County List A
Distribution: Los Angeles, Orange, Santa Barbara, San Diego, and Ventura counties; Baja California, Mexico.
Habitat(s): Sandy and clay loam soils in closed-cone coniferous forest, chaparral, and coastal scrub.
Presence on site: Nuttall's scrub oak is the dominant species in scrub oak chaparral on site.

Ashy spike-moss (*Selaginella cinerascens*)
Status: CNPS Rare Plant Rank 4.1; County List D
Distribution: Orange and San Diego counties; Baja California, Mexico.
Habitat(s): Chaparral and coastal scrub.
Presence on site: Two patches of ashy spike-moss were observed on site in mafic southern mixed chaparral, within the proposed preserve area.

Special Status Plant Species with Potential to Occur

Forty-one special status plant species were evaluated for their potential to occur based on reports of the species to the SanBios, USFWS, and/or the CNDDB within five miles of the site, the habitat types/vegetation communities present on site, the site's elevation and soils, and the site's geographic location. Appendix J provides a list of these special status species and their potential to occur (or status as present if found on site). Four species were found to be present on site, the remaining species were determined to have low potential to occur or are not expected to occur.

1.4.10 Special Status Animal Species

Special Status Animal Species Observed or Otherwise Detected

Five special status animal species were found (Figure 4) and are addressed below.

Western spadefoot toad (*Spea hammondii*)
Status: State Species of Special Concern; County Group 2
Distribution: Throughout the Central Valley and San Francisco Bay area south along the coast to northwestern Baja California, Mexico.
Habitat(s): Open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas. Breeding sites include vernal pools and other temporary rain pools, cattle tanks, and occasionally in pools of intermittent streams with little or no cover. To be suitable for the successful transformation of larvae, temporary breeding pools must hold water for at least 30 days. Requires friable soils for burrowing. Generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).
Presence on site: Observed opportunistically during 2020 gnatcatcher survey. Heard by project biologist on March 13, 2021, but no eggs, tadpoles, or adults were directly observed. Project biologist observed eggs and tadpoles in two water holding basins on March 20, 2021. Two basins on site were observed holding water during the March 2021 site visits; however, a total of eight basins (with a total area of 0.14 acre) were determined to be suitable for toad breeding because they are all deep enough, and evidence of current and/or previous ponding was observed.

Cooper's hawk (*Accipiter cooperii*)
Status: State Watch List; County Group 1
Distribution: Occurs year-round throughout San Diego County's coastal slope where stands of trees are present.
Habitat(s): In San Diego County, tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrubland or fields.
Presence on site: A Cooper's hawk was seen flying overhead potentially foraging on site and has potential to nest in the trees on site (Figure 4).

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
Status: State Watch List; County Group 1
Distribution: Observed throughout coastal lowlands and foothills of San Diego County.
Habitat(s): Coastal sage scrub and open chaparral as well as shrubby grasslands.
Presence on site: This species was observed in the central portion of the site (Figure 4).

Coastal California gnatcatcher (*Polioptila californica californica*)
Status: Federal Threatened; State Species of Special Concern; County Group 1
Distribution: In San Diego County, occurs throughout coastal lowlands.
Habitat(s): Coastal sage scrub
Presence on site: One pair of CAGN was observed on site during all three site visits of the USFWS protocol survey conducted in April/May 2020. The pair's nest was incidentally noted with the female sitting on it on May 1, 2020 in the north-central portion of the site. All Diegan coastal sage scrub and Diegan coastal sage scrub on site is considered occupied by the CAGN (Figure 4).

Least Bell's vireo (*Vireo bellii pusillus*)
Status: Federal Endangered; State Endangered; County Group 1
Distribution: Observed throughout coastal southern California in the breeding season, south of Santa Barbara, but in smaller numbers in foothills and mountains.
Habitat(s): Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub.
Presence on site: One least Bell's vireo was observed (heard occasionally calling) in mafic southern mixed chaparral in the project's mitigation preserve during the Crotch's bumble bee survey on July 21, 2023. Since there is no breeding habitat for the species on site, it is thought that this bird was a post-breeding, migratory individual (some post-breeding migration may begin as early as late July per the USFWS [2023]).

Special Status Animal Species with Potential to Occur

Sixty-one special status animal species were evaluated for their potential to occur based on reports of the species to the SanBios and/or USFWS databases and/or the CNDDB within five miles of the site, the habitat types/vegetation communities present on site, the site's elevation and soils, and the site's geographic location. Appendix J provides a list of these special status species and their potential to occur (or status as present if found on site). The BUOW and CBB were not found during the focused surveys.

Seventeen special status animal species have moderate potential to occur because potential habitat occurs on site. Twenty-four have low potential to occur because they are uncommon, their potential habitat on site is limited, or focused species surveys were negative. And, 16 special status animal species are not expected to occur because their habitat is not present on site.

Large Mammals

The coyote was detected on site and other large mammals (mule deer and mountain lion) may also occur on the site but are less likely to use site as they are expected to more frequently use lands farther to the east through the Elfin Forest and Harmony Grove that are core areas identified in the draft Biological Mitigation Ordinance (BMO) for the NCMSCP.

Avian Foraging and Nesting

Migratory Birds

Fifty-six species of birds were observed or detected on site, and the site supports a variety of shrubland, grassland, and eucalyptus woodland habitats that are expected to support year-round foraging and breeding season nesting of migratory birds, particularly passerine species (raptors are addressed separately below).

Raptors

The County (2010b) defines raptor foraging habitat as, "Land that is a minimum of 5 acres (not limited to project boundaries) of fallow or open areas with any evidence of foraging potential (i.e., burrows, raptor nests, etc.)." The more level portions of the site that support vegetation communities/habitat types such as non-native grassland, Diegan coastal sage scrub-disturbed, and disturbed habitat on site could be considered raptor foraging habitat based on this definition since it occupies greater than 5 acres, is open in nature, and it supports burrows of common small mammals, namely California ground squirrel, which was observed.

The Cooper's hawk was observed flyover over the site potentially foraging. The red-tailed hawk (*Buteo jamaicensis*), which was also observed during site surveys and utilizes open areas for foraging, has high potential to use this habitat on site for foraging. The trees on site may also have potential to support raptor nesting.

1.4.11 Wetlands/Jurisdictional Waters

Waters of the U.S.

A single unvegetated streambed occurs in the southern portion of the site (Figure 4). This streambed is ephemeral in nature; therefore, is not a Corps jurisdictional WUS.

Waters of the State

The ephemeral unvegetated streambed in the southern portion of the site is a potential WS (Figure 4) and potentially subject to regulation by both the CDFW and RWQCB.

RPO Wetlands

There are no RPO wetlands on site. There is an unvegetated, ephemeral streambed located in the southern portion of the site that traverses through upland habitats and under the canopy of eucalyptus woodland. The streambed within the project footprint (impact area) does not meet the County criteria for wetlands (Section 1.5.3) as it lacks wetland vegetation, does not support hydric soils, and does not have a predominately non-soil a substratum.

1.4.12 Habitat Connectivity, Wildlife Corridors, and Nursery Sites

A corridor is a specific route that is used for the movement of species. Local corridors allow wildlife access to resources such as food, water, and shelter within the framework of its daily routines. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A linkage is an area of land that supports or contributes to the long-term movement of wildlife and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stones that are comprised of a fragmented archipelago arrangement of habitat over a linear distance.

Important corridors and linkages have been identified on a local and regional scale throughout the Multiple Habitat Conservation Program (MHCP) and MSCP planning areas in the County. The planning objectives of most corridors and linkages in coastal San Diego County include establishing a connection between the northern and southern regional populations of the CAGN in addition to facilitating movement and connectivity of habitat for large mammals and riparian bird species. The proposed North County preserve system incorporates existing preserves and ensures connections between these preserves through soft-line conservation areas. Soft-line areas are referred to as the PAMA. It is not expected that all land within these soft-line areas (PAMA) will be incorporated into the preserve system. The project site is inside the PAMA (Figure 2).

The PAMA for the draft NCMSCP is based on the core and linkage concept of landscape-level conservation planning. While the project site is within the PAMA and would be subject to criteria to avoid/minimize impacts to habitat lands and plant and animal populations, Appendix C of the draft BMO for the draft NCMSCP shows that the project site is not within a core or linkage.

Large mammals such as coyote detected on site may use the project site and the local area, which includes the adjacent Rancho La Costa Reserve and additional PAMA to the south and west, but movement in this local area is likely limited to the immediate north and east by existing development. San Elijo Road is a significant barrier to non-avian wildlife movement north of the site. Rather, regional movement of large mammals (e.g., coyote, mule deer, and mountain lion) likely occurs farther to the east through the Elfin Forest and Harmony Grove core areas identified in the draft BMO for the NCMSCP. Therefore, the project site likely does not contribute substantially to regional wildlife movement and habitat connectivity. Given that the project site is adjacent to open space preserves to the south and west, the project proposes a design to cluster in the north in order to preserve a corridor for local wildlife movement in the more constrained land on the southern edge of the project site and establish a level of compatibility with these adjacent preserves.

Specific sites for reproduction (i.e., nursery sites) are potentially present on site and include, for example, active bird nests and bat nursery colonies. It is certain that avian nesting occurs on site during the avian nesting season. There are two bat species that have moderate potential to occur on site (Appendix J), and they are Mexican long-tongued bat (*Choeronycteris mexicana*) and western mastiff bat (*Eumops perotis californicus*). However, there is no record of the Mexican long-tongued bat breeding in San Diego County (Tremor et al. 2017), so there are no potential nursery sites for this species on site. And, according to Tremor et al. (2017), western mastiff bat roosts include vertical cliffs, rock quarries, outcrops of fractured boulders, and sometimes tall buildings; none of which is present on site. Therefore, there are no potential nursery sites for either species on site.

1.5 APPLICABLE REGULATIONS

Biological resources on the project site are subject to regulatory review by federal, State, and local agencies. Under CEQA, impacts associated with a proposed project or program are assessed with regard to significance criteria determined by the CEQA Lead Agency (in this case, the County) pursuant to CEQA Guidelines.

1.5.1 Federal Government

Federal Endangered Species Act

Administered by the USFWS, the federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) that are identified as being endangered or threatened with extinction. Actions that jeopardize endangered or threatened species and the habitats upon which they rely are considered a 'take' under the ESA. Section 9(a) of the ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." 'Harm' and 'harass' are further defined in federal regulations and case law to include actions that adversely impair or disrupt a listed species' behavioral patterns.

The USFWS identifies critical habitat for endangered and threatened species. Critical habitat is defined as areas of land that are considered necessary for endangered or threatened species to recover. The ultimate goal is to restore healthy populations of listed species within their native habitat so they can be removed from the list of threatened or endangered species. Once an area is designated as critical habitat pursuant to the federal ESA, all federal agencies must consult with the USFWS to ensure that any action they authorize, fund, or carry out is not likely to result in destruction or adverse modification of the critical habitat. There is no critical habitat designated on site.

Sections 7 and 10(a) of the federal ESA regulate actions that could jeopardize endangered or threatened species. Section 7 describes a process of federal interagency consultation for use when federal actions may adversely affect listed species. A biological assessment is required for any major construction activity if it may affect listed species. In this case, take can be authorized via a letter of biological opinion issued by the USFWS for non-marine related listed species issues. A Section 7 consultation (formal or informal) is required when there is a nexus between endangered species' use of the site and impacts to Corps jurisdictional areas. Section 10(a) allows issuance of permits for incidental take of endangered or threatened species with preparation of a Habitat Conservation Plan (HCP). The term "incidental" applies if the taking of a listed species is incidental to, and not the purpose of, an otherwise lawful activity. An HCP demonstrating how the taking would be minimized and how steps taken would ensure the species' survival must be submitted for issuance of Section 10(a) permits.

Migratory Bird Treaty Act

All migratory bird species that are native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA), as amended under the Migratory Bird Treaty Reform Act of 2004 (FR Doc. 05-5127). The MBTA is generally protective of migratory birds but does not actually stipulate the type of protection required. In common practice, the MBTA is now used to place restrictions on disturbance of active bird nests during the nesting season (generally February 1 to September 1). In addition, the USFWS commonly places restrictions on disturbances allowed near active raptor nests. As a standard condition, the project must comply with the MBTA.

Rivers and Harbors Act and Clean Water Act

Federal wetland regulation (non-marine issues) is guided by the Rivers and Harbors Act of 1899 and the Clean Water Act (CWA). The Rivers and Harbors Act deals primarily with discharges into navigable waters, while the purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. Permitting for projects filling WUS (including wetlands) is overseen by the Corps under Section 404 of the CWA. Projects could be permitted on an individual basis or be covered under one of several approved Nationwide Permits. Individual Permits are assessed individually based on the type of action, amount of fill, etc. and typically require substantial time (often longer than 6 months) to review and approve, while Nationwide Permits are pre-approved if a project meets appropriate conditions.

1.5.2 State of California

California Environmental Quality Act

Primary environmental legislation in California is found in CEQA and its implementing guidelines (State CEQA Guidelines), which require that projects with potential adverse effects (or impacts) on the environment undergo environmental review. Adverse environmental impacts are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

California Endangered Species Act

The California ESA is similar to the federal ESA in that it contains a process for listing of species and regulating potential impacts to listed species. California ESA Section 2081 authorizes the CDFW to enter into a memorandum of agreement for the take of listed species for scientific, educational, or management purposes.

Native Plant Protection Act

The Native Plant Protection Act (NPPA) enacted a process by which plants are listed as rare or endangered. The NPPA regulates collection, transport, and commerce in listed plants. The California ESA follows the NPPA and covers both plants and animals designated as endangered or threatened with extinction. Plants listed as rare under NPPA were also designated rare under the California ESA.

California Fish and Game Code

California Fish and Game Code (Sections 1600 through 1603) requires a CDFW agreement for projects affecting riparian and wetland habitats through issuance of a Streambed Alteration Agreement (SAA).

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1970 grants the State Water Resource Control Board (SWRCB) and its regional offices (RWQCBs) power to protect water quality and is the primary vehicle for implementation of the State's responsibilities under Section 401 of the CWA. The Porter-Cologne Act grants the SWRCB authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. Typically, the SWRCB and RWQCB act in concert with the Corps under Section 401 of the Federal CWA in relation to permitting fill of federal jurisdictional waters.

California Natural Communities Conservation Planning Act

The California Natural Communities Conservation Planning (NCCP) Act of 1991 (Section 2835) allows the CDFW to authorize interim take of species covered by plans in agreement with NCCP guidelines. A Natural Communities Conservation Program initiated by the State of California focuses on conserving coastal sage scrub, and in concert with the USFWS and the federal ESA, is intended to avoid the need for future federal and state listing of coastal sage scrub-dependent species. The County of San Diego became a participant in the NCCP in 1993 for projects located within the planning area for the Coastal Sage Scrub NCCP with the intent to "…provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth." The NCCP process guidelines were established as interim guidelines until formal subregional plans were approved. The draft NCMSCP will be the subregional plan for this portion of the County when adopted. Until then, an NCCP 4(d) take permit (Habitat Loss Permit; HLP) is required for the project to demonstrate compliance with the NCCP Act.

1.5.3 County of San Diego

Habitat Loss Permit Ordinance

The HLP Ordinance was adopted in March of 1994 in response to both the listing of the CAGN as a federal threatened species and the adoption of the NCCP Act by the State. Pursuant to the Special 4(d) Rule under the federal ESA, the County is authorized to issue "take permits" for the CAGN (in the form of HLPs) in lieu of Section 7 or 10(a) permits typically required from the USFWS. Although issued by the County, the USFWS and CDFW must concur with the issuance of an HLP for it to become valid as take authorization under the federal ESA. The HLP Ordinance states that projects must obtain an HLP prior to the issuance of a grading permit, clearing permit, or improvement plan if the project would directly or indirectly impact any of several coastal sage scrub habitat types. The HLP Ordinance requires an HLP if coastal sage scrub or related habitat will be impacted, regardless of whether it is currently occupied by the CAGN. An HLP is not required for projects within the boundaries of the MSCP that have an adopted subarea plan; this project lies within the boundaries of the draft NCMSCP, which is still

in draft form. HLPs are also not required for projects that have separately obtained Section 7 or 10(a) permits for take of the CAGN; this project has not.

Approval of an HLP is based on findings made pursuant to the HLP Ordinance. Findings need to demonstrate that a project's loss of coastal sage scrub would not exceed the County's 5 percent interim allowable loss limit. It would also have to demonstrate that the habitat loss would not preclude connectivity between areas of high habitat values or preclude or prevent the preparation of a subregional NCCP plan. Additionally, the findings must show that the habitat loss has been minimized and mitigated to the maximum extent practicable in accordance with Section 4.3 of the Southern California Coastal Sage Scrub NCCP Process Guidelines, and that the habitat loss would not appreciably reduce the likelihood of survival and recovery of listed species in the wild. Finally, the habitat loss must be incidental to otherwise lawful activities. An HLP application must be filed with the County if the draft NCMSCP has not been adopted at the time of its environmental review because impacts to coastal sage scrub occupied by the CAGN would occur.

Resource Protection Ordinance

The County regulates natural resources (among other resources) as sensitive biological resources via the RPO (County 2011), the regulations of which cover wetlands, wetland buffers, sensitive plant and animal species, sensitive vegetation communities/habitat types, and habitats containing sensitive animals or plants.

RPO wetlands are defined as lands having one or more of the following attributes:

- At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);
- The substratum is predominantly undrained, hydric soil; or
- An ephemeral or perennial stream is present, whose substratum is predominately non-soil, and such lands contribute substantially to the biological functions or values of wetlands in the drainage system.

According to the RPO, the following are not considered RPO wetlands:

- Lands which have attribute(s) specified above, solely due to man-made structures (e.g., culverts, ditches, road crossings, or agricultural ponds), provided that the Director of Planning and Land Use determines that they:
    - Have negligible biological function or value as wetlands;
    - Are small and geographically isolated from other wetland systems;
    - Are not vernal pools; and
    - Do not have substantial or locally important populations of wetland dependent sensitive species.

- Lands that have been degraded by past legal land disturbance activities to the point that they meet the following criteria as determined by the Director of Planning and Land Use:
    - Have negligible biological function or value as wetlands even if restored to the extent feasible; and,
    - Do not have substantial or locally important populations of wetland dependent sensitive species.

As noted above in Section 1.4.11, the project would not affect County RPO wetlands.

Sensitive Habitat Lands are defined by the RPO as:

- Land which supports unique vegetation communities, or the habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the State CEQA Guidelines (14 Cal. Admin. Code Section 15000 *et seq*.), including the area which is necessary to support a viable population of any of the above species in perpetuity, or which is critical to the proper functioning of a balanced natural ecosystem or which serves as a functioning wildlife corridor.
    - "Unique vegetation community" refers to associations of plant species which are rare or substantially depleted. These may contain rare or endangered species, but other species may be included because they are unusual or limited due to a number of factors, for example: (a) they are only found in the San Diego region; (b) they are a local representative of a species or association of species not generally found in San Diego County; or (c) they are outstanding examples of the community type as identified by the CDFW listing of community associations.

There are no unique vegetation communities on site; however, Sensitive Habitat Lands on site include: 1) Diegan coastal sage scrub, 2) scrub oak chaparral, mafic chamise chaparral, mafic southern mixed chaparral, and 3) non-native grassland because it supports Orcutt's brodiaea a County List A species.

The remaining portions of the project site are not Sensitive Habitat Lands as they do not meet the Sensitive Habitat Lands definition. The remaining portions do not represent areas which are necessary to support a viable population of rare and endangered species in perpetuity, or which are critical to the proper functioning of a balanced natural ecosystem or which serve as a functioning wildlife corridor.

2.0 PROJECT EFFECTS

Direct impacts are immediate impacts resulting from permanent removal of biological resources. Direct impacts were quantified by overlaying the limits of project-related impacts on the biological resources map of the site. A total of 32.9 acres would be directly affected by grading and fire fuel modification on site. This includes 31.6 acres of impact on site and 1.3 acre of impact off site (fuel modification). Indirect impacts are all actions that are not direct removal of biological resources but affect the surrounding biological resources either as a secondary effect of the direct impacts or as the cause of degradation of a biological resource over time.

2.1 SPECIAL STATUS SPECIES

2.1.1 Special Status Plant Species

Project construction would result in direct and permanent impacts to an estimated 1,710 individual Orcutt's brodiaea plants (County List A) out of an estimated population of 1,740 individuals on site. The suitable habitat area mapped for the species on site is 3.8 acres (Figure 4), of which 3.4 acres would be impacted and 0.4 acre would be preserved.

Project construction would result in direct and permanent impacts to 12 individual Nuttall's scrub oaks (County List A), which is the dominant species in scrub oak chaparral on site.

Project construction would preserve ashy spike-moss (County List D) and would avoid southwestern spiny rush (County List D) as both occur within the preserve area.

2.1.2 Special Status Animal Species

The western spadefoot toad (County Group 2) was observed opportunistically during a gnatcatcher survey visit in 2020. The species also was heard calling by a project biologist on March 13, 2021, but no eggs, tadpoles, or adults were directly observed. The project biologist did observe eggs and tadpoles in two water holding basins on March 20, 2021; however, a total of eight basins (with a total area of 0.14 acre) were determined to be suitable for toad breeding because they are all deep enough, and evidence of current and/or previous ponding was observed (Figure 4). The spadefoot likely uses the surrounding coastal sage scrub, chaparral, and grassland on site for non-breeding purposes.

The CAGN (federal threatened; County Group 1) was found on the site using it for breeding, and based on the species' behavior patterns and habitat needs, it would also use the site for non-breeding purposes (e.g., feeding and sheltering). Based on the habitat needs and behavioral patterns of the southern California rufous-crowned sparrow (County Group 1), it likely breeds, feeds, and shelters on site, as well. The Cooper's hawk (County Group 1) was observed flying overhead and potentially foraging on site; it was not observed breeding on site (no raptor nests were observed). However, the eucalyptus trees on site have potential to be used as nesting sites for the species.

For the western spadefoot toad, project construction would result in the direct and permanent removal of three locations where toads were observed and eight water holding basins (totaling 0.14 acre in area) suitable for toad breeding (Figure 4). It would also result in the direct and permanent removal of 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed habitat on and off site, 4.6 acres of chaparral on site, and 15.4 acres of non-native grassland on site that could be used for non-breeding purposes. Construction could also cause direct injury/mortality to individual toads.

Project construction would result in the direct and permanent removal of 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed habitat on and off site occupied by the CAGN. Project construction could also have temporary noise impacts on CAGN nesting as addressed below in Section 2.5 of this report.

Project construction would result in the direct and permanent removal of 27.2 acres of the scrub, chaparral, and grassland habitats on and off site used, or potentially used, by the southern California rufous-crowned sparrow. Project construction could also have temporary noise impacts on this species' nesting as addressed below in Section 2.5 of this report.

Project construction would result in the removal of potential foraging habitat for the Cooper's hawk, and eucalyptus woodland that has potential to support Cooper's hawk breeding, feeding, and sheltering. Project construction could also have temporary noise impacts on Cooper's hawk nesting as addressed below in Section 2.5 of this report.

2.2 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITY

Impacts on and off site from the project to sensitive upland habitats that would require compensatory mitigation include 7.2 acres of Diegan coastal sage scrub (including -disturbed), 0.2 acre of scrub oak chaparral, 1.6 acres of mafic chamise chaparral, 2.8 acres of mafic southern mixed chaparral, and 15.4 acres of non-native grassland. Table 3 provides a summary of project impacts to vegetation communities.

Table 3
IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES[1]

VEGETATION COMMUNITY/ HABITAT	ON SITE	OFF SITE	TOTAL
Diegan coastal sage scrub (32500)	5.1	0.2	5.3
Diegan coastal sage scrub-disturbed (32500)	1.9	0.0	1.9
Scrub oak chaparral (37900)	0.2	0.0	0.2
Mafic chamise chaparral (37220)	1.6	0.0	1.6
Mafic southern mixed chaparral (37122)	2.8	0.0	2.8
Non-native grassland (42200)	15.4	0.0	15.4
Eucalyptus woodland (79100)	1.4	0.0	1.4
Disturbed habitat (11300)	2.4	0.2	2.6
Developed and ornamental (12000)	0.8	0.9	1.7
TOTAL	**31.6**	**1.3**	**32.9**

[1]In acres

2.3 JURISDICTIONAL WETLANDS AND WATERWAYS

2.3.1 Waters of the U.S.

The unvegetated streambed is ephemeral and not subject to Corps jurisdiction; therefore, there would be no impacts to WUS.

2.3.2 Waters of the State

Potential non-wetland WS on site include the single unvegetated ephemeral streambed in the southern portion of the site. Impacts to potential non-wetland WS from the project total 0.01 acre (546 linear feet). This impact may require permits from the CDFW and RWQCB, should one or both elect to take jurisdiction over the feature.

2.3.3 County RPO Wetland

The unvegetated ephemeral streambed does not meet the criteria for County RPO wetlands. As such, here are no affected County RPO wetlands.

2.4 WILDLIFE MOVEMENT AND NURSERY SITES

As mentioned previously, the project site is not within a core or linkage and does not serve as a nursery site. Large mammals may, however, use the project site and the local area, but movement is likely limited to the immediate north and east by existing development. Rather, local movement of large mammals probably occurs farther to the east through the Elfin Forest and Harmony Grove core areas identified in the draft BMO for the NCMSCP. Therefore, the project site likely does not contribute substantially to wildlife movement and habitat connectivity and, therefore, would not affect those features substantially. As a benefit, however, the project proposes a design to cluster in the north in order to preserve a corridor for local wildlife movement in the more constrained land in the southern portion of the project site and establish a level of compatibility with the adjacent preserves to the west and south.

2.5 INDIRECT IMPACTS

Potential indirect impacts may occur to sensitive biological as a result of project construction (fugitive dust and noise). Other potential indirect impacts may occur to sensitive biological resources from night lighting; invasive, non-native plant species; and public access due to occupation of the built project. These potential impacts are addressed where applicable in the following sections of this report.

Fugitive Dust

Fugitive dust produced by construction could disperse onto native vegetation beyond the project impact footprint. A continual cover of dust can reduce the overall vigor of individual plants by reducing their photosynthetic capabilities and increasing their susceptibility to pests or disease. This, in turn, can affect animals dependent on these plants. Fugitive dust also may make plants unsuitable as structural habitat for insects and birds. Fugitive dust would be a short-term, temporary impact of project construction.

Noise

Excessing noise could impact the nesting success of the CAGN, southern California rufous-crowned sparrow, and/or Cooper's hawk through grading, clearing, fire fuel modification, and/or other noise-generating activities such as construction. This potential impact could occur during the general avian breeding season of January 15 through August 15 and affect each of these three species (the specific CAGN breeding season is February 15 to August 15, the specific breeding season for the southern California rufous-crowned sparrow is mid-March to mid-June [San Diego Management and Monitoring Program 2010], and the Cooper's hawk specific breeding season is January 15 to July 15).

Night Lighting

Night lighting that shines on or spills into native habitats adjacent to the project impact footprint can prevent nocturnal wildlife from using the habitat. It can also cause loss of native wildlife by providing nocturnal predators with an unnatural advantage over their prey. Night lighting could cause these impacts over the short term during construction and over the long term during operation of the project.

Invasive, Non-native Plant Species

Invasive, non-native plant species are threats to native biological resources in that they can, for example, displace native plants, increase the threat of wildfire by increasing fuel load, and supplant plants used as forage by herbivorous species. Vehicles are the primary conduits for the spread of many invasive species, and activities and soil disturbance associated with construction of the project could spread invasive, non-native plant species to adjacent areas supporting native vegetation. However, the adjacent undeveloped areas are like the project site in plant species composition, so project construction would not result in the spread of invasive, non-native plant species to those adjacent areas because they are already present. New invasive, non-native plant species could be introduced to the project site, however, in erosion control materials.

Landscaping associated with the project could include species that are not native to the project area. Therefore, project landscaping could result in the introduction of invasive, non-native plant species to the project footprint and their spread outside the project footprint.

Public Access

Increases in human activity in the area could result in degradation of preserved habitat and associated indirect impacts on special status species through the removal of vegetation and creation of unauthorized trails. In addition, illegal dumping of lawn and garden clippings, trash, and other refuse could occur.

Domestic Animals

The project is residential in nature, so domestic predators (e.g., dogs and cats) may be introduced to the proposed preserve adjacent to the project footprint. Such introductions have potential to harm native wildlife species through behavioral pattern disturbance and predation.

3.0 SPECIAL STATUS SPECIES

3.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the USFWS or CDFW?

Any of the following conditions would be considered significant if:

A. The project would impact one or more individuals of a species listed as federal or State endangered or threatened.

B. The project would impact an on-site population of a County List A or B plant species, or a County Group 1 animal species, or a species listed as a State Species of Special Concern.

C. The project would impact the local long-term survival of a County List C or D plant species or a County Group 2 animal species.

D. The project may impact arroyo toad aestivation, foraging or breeding habitat.

E. The project would impact golden eagle habitat.

F. The project would result in a significant loss of functional foraging habitat for raptors.

G. The project would impact the viability of a core wildlife area, defined as a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species.

H. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term.

I. The project would impact occupied burrowing owl habitat.

J. The project would impact occupied cactus wren habitat, or formerly occupied coastal cactus wren habitat that has been burned by wildfire.

K. The project would impact occupied Hermes copper butterfly habitat.

L. The project would impact nesting success of the following sensitive bird species through grading, clearing, fire fuel modification, and/or other noise generating activities such as construction:

- Coastal cactus wren
- Coastal California gnatcatcher
- Least Bell's vireo
- Southwestern willow flycatcher
- Tree-nesting raptors
- Ground-nesting raptors
- Golden eagle
- Light-footed clapper rail

3.2 ANALYSIS OF PROJECT EFFECTS

The proposed project would result in significant impacts under the above guidelines for the following reasons:

3.1.A The project would impact 1 pair of CAGN through the removal of Diegan coastal sage scrub (including -disturbed) during construction. These impacts would be considered significant under County Guideline 3.1.A. Potential noise impacts to the CAGN are addressed under 3.1.L.

3.1.B The project would impact 1,710 individual Orcutt's brodiaea (List A) plants and 12 individual Nuttall's scrub oak (List A) plants. The project would remove 3.4 acres of land supporting Orcutt's brodiaea and 0.2 acre of scrub oak chaparral dominated by Nuttall's scrub oak. The project would impact the western spadefoot toad (SSC) through loss of breeding habitat (eight suitable water holding basins totaling 0.14 acre in area), non-breeding habitat (Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, chaparral, and non-native grassland) and through potential direct injury/mortality to individuals during construction.

The project would impact Cooper's hawk (Group 1) through loss of potential foraging and nesting habitat. The project would impact southern California rufous-crowned sparrow (Group 1) through habitat loss and potential direct impacts to those when nesting. Impacts to these SSC or County Group 1 species would be significant under County Guideline 3.1.B. Potential noise impacts to the Cooper's hawk and southern California rufous-crowned sparrow are addressed under County Guideline 3.1.L.

The project also has potential to impact SSC or County Group 1 species with moderate potential to occur on site (Appendix J). These species include:

Reptiles

- Coast horned lizard (SSC)
- Coast patch-nosed snake (SSC)
- Coastal whiptail (SSC)
- Two-striped garter snake (SSC, Group 1)

Birds

- Bell's sage sparrow (Group 1)
- California horned lark (Group 1)
- Red-shouldered hawk (Group 1)
- Turkey vulture (Group 1)

Mammals

- Dulzura pocket mouse (SSC)
- Mexican long-tongued bat (SSC)
- San Diego black-tailed jackrabbit (SSC)
- San Diego desert woodrat (SSC)
- Western mastiff bat (SSC)

Potential impacts to the reptiles and small mammals could include habitat loss and/or direct injury/mortality to individuals during construction. Potential impacts to the birds could include habitat loss and direct impacts to those that are nesting. Impacts to these County Group 1/SSC species, should they occur, would be significant under County Guideline 3.1.B.

3.1.F The project site supports raptors such as the Cooper's hawk and red-tailed hawk. The project would impact open habitats including, for example, non-native grassland and Diegan coastal sage scrub-disturbed that occur in the more level portion of the site and contain rodent burrows. The impacts would be significant under County Guideline 3.1.F.

3.1.H The project could cause indirect impacts to the Rancho La Costa Preserve or proposed project preserve to levels that would likely harm sensitive species over the long term as follows.

Potentially significant indirect impacts to special status species resulting from human activity; domestic animals (e.g., cats); and invasive, non-native plant species could occur. These impacts would be significant under County Guideline 3.1.H. See 3.1.H, below, for a discussion of potential indirect impacts to Orcutt's brodiaea. Potential indirect impacts from construction noise are discussed under County Guideline 3.1.L.

3.1.L Noise from such sources as clearing and grading could result in an impact to wildlife. Noise-related impacts would be considered significant if special status species like the CAGN were displaced from their nests and failed to breed. The CAGN and other special status bird species nesting within any area impacted by noise exceeding 60 decibels (dB) or ambient could be significantly impacted. If tree-nesting raptors (e.g., Cooper's hawk) are nesting within 500 feet of the impact area, or special status passerines such as the CAGN and southern California rufous-crowned sparrow are nesting within 300 feet of the impact area, effects resulting from construction noise would be significant according to County Guideline 3.1.L.

The project would not result in significant impacts under the above guidelines for the following reasons:

3.1.C The project would not impact the local long-term survival of List C plant species because none was observed on site, and none has potential to occur. The project would not impact the local long-term survival of the List D plant species present on site (southwestern spiny rush and ashy spike-moss) because these species would be preserved or avoided. Other List D plant species have low potential to occur and are, therefore, not likely to be present or impacted. The project is not expected to impact the local long-term survival of any County Group 2 animal species (that are not SSC; those are addressed under County Guidelines 3.1.B) because none has moderate or high potential to occur on site.

List D plant species evaluated for their potential to occur on site have low potential to occur (Appendix J) and, therefore, are not expected to have their long-term survival affected by the project. Therefore, impacts to List C and D plant species and Group 2 animal species are considered less than significant.

3.1.D The project would not impact arroyo toad aestivation, foraging, or breeding habitat because the site contains no habitat suitable for the arroyo toad, and the arroyo toad has not been reported to the CNDDB or SanBios and USFWS databases within five miles of the site.

3.1.E The project would not impact golden eagle habitat because the site is not currently an area of solitude at a distance to human habitation that the golden eagle requires. Rather, the site is adjacent to existing development. While a record in the SanBios database exists for an eight-kilometer (approximately five-mile) area that overlaps somewhere with the five-mile radius of the site, the record is from 1998. There are no historic or current records of the golden eagle in the CNDDB or USFWS database within five miles of the site.

3.1.G Appendix C of the draft BMO (Appendix A of County 2009) for the 2009 draft NCMSCP (County 2009) shows that the project site is not within a core despite being adjacent to the 1,400-acre Rancho La Costa Preserve established in 2002. A core is a large block of habitat (typically 500 acres or more not limited to project boundaries, though smaller areas with particularly valuable resources may also be considered a core wildlife area) that supports a viable population of a sensitive wildlife species or supports multiple wildlife species. While the project site is adjacent to the Preserve and supports a viable population of County List A Orcutt's brodiaea and multiple wildlife species (including the County Group 1 CAGN), the project would not impact the viability of a core.

3.1.H. Potential indirect impacts to Orcutt's brodiaea preserved on site would be less than significant because the preserved suitable habitat area would be surrounded by a 100-foot buffer from development. Likewise, potential indirect impacts to Nuttall's scrub oak preserved on site would be less than significant because the preserved individuals would be surrounded by a greater than 100-foot buffer from development. Night lighting would not result in significant impacts because the project would be required to adhere to Division 9 of the San Diego County Light Pollution Code. Lighting within the project footprint adjacent to the proposed open space would be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from the open space.

3.1.I The project would not impact occupied BUOW habitat because the BUOW was determined to be absent from the site during the focused survey for the species conducted in 2020.

3.1.J The cactus wren was not observed or detected on site, and the cactus thickets that the species require are not present. The species has not been reported to the CNDDB or SanBios database within five miles of the project site.

3.1.K The project would not impact occupied Hermes copper butterfly habitat because the Hermes copper habitat assessment of the site concluded that the potential for the species to occur is low. There was no spiny redberry was found in proximity to California buckwheat, which is a general habitat requirement for the species (Attachment B [County of San Diego Guidelines for Hermes Copper] in County 2010a).

3.1.L The project would not impact nesting success of the coastal cactus wren because the cactus wren was not observed or detected, and the cactus thickets that the species require are not present. The species has not been reported to the CNDDB or SanBios database within five miles of the project site. The project would not impact the nesting success of the least Bell's vireo or southwestern willow flycatcher because their native riparian forest, woodland, and scrub habitats are not present on site or adjacent to the site. The project would not affect the Ridgway's rail because its marsh habitats are not present on site or adjacent to the site. Lastly, the project would not impact the nesting success of the golden eagle because no golden eagle nesting habitat (generally remote cliffs) occurs on site, and no nests are known within 4,000 feet of the site. There are no historic or current records of the golden eagle in the CNDDB or USFWS and database within five miles of the site.

3.3 CUMULATIVE IMPACT ANALYSIS

The area of consideration for cumulative impacts on biological resources (i.e., the cumulative study area) includes an area of unincorporated County including and surrounding the project site and bordered by the cities of Carlsbad to the west, San Marcos to the north and west, Escondido to the east, and Encinitas to the southwest. The cumulative study area encompasses part of the Escondido Creek watershed and numerous preserves and reserves (Figure 5).

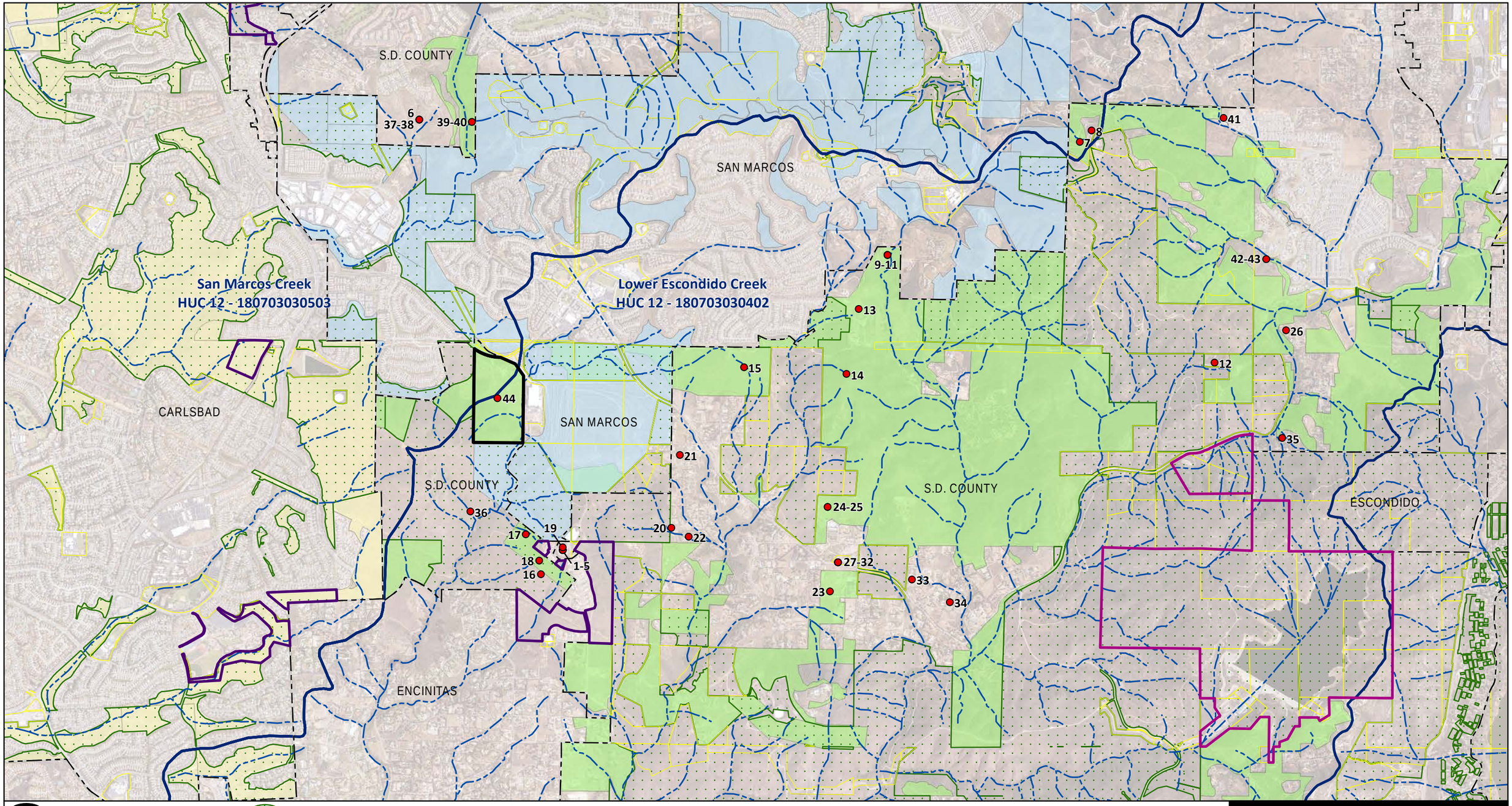


Figure 5

Cumulative Study Area

QUESTHAVEN

The cumulative study area was chosen because it includes areas with similar biological resources to the project site. This area includes lands within a reasonable distance from the project site that may have a biologically based connection to the site in terms of habitat connectivity and development in the region. The cumulative study area includes surrounding proposed PAMA and open space preserve connections to the project site as well as Elfin Forest, which is a biological core area identified in the draft BMO for the NCMSCP.

A total of 44 projects (including the proposed project) were reviewed for this cumulative analysis (Table 4; Figure 5). Of these 44 cumulative projects, four would result in significant or potentially significant cumulative impacts to sensitive biological resources. The remaining 40 projects either would not result in impacts to sensitive biological resources, or information on impacts is not available. The project has the potential to contribute to the cumulative impact on the CAGN, raptors (i.e., loss of foraging habitat), southern California rufous-crowned sparrow, and SSC or County Group 1 species with moderate potential to occur on site, as discussed below.

The cumulative projects (i.e., projects 1 through 43) with available data would impact 42.18 acres of coastal sage scrub, 9.7 acres of southern mixed chaparral (not all impacts required mitigation) and 43.7 acres of non-native grassland. The project would contribute additional impacts to 7.2 acres of coastal sage scrub, 0.2 acre of scrub oak chaparral, 1.6 acres of mafic chamise chaparral, 2.8 acres of mafic southern mixed chaparral, and 15.4 acres of non-native grassland. Therefore, the total cumulative impacts for which mitigation is required/was provided is:

- 49.38 acres of coastal sage scrub,
- 0.20 acre of scrub oak chaparral,
- 1.60 acres of mafic chamise chaparral,
- 12.50 acres of southern mixed chaparral, and
- 59.10 acres of non-native grassland.

The loss of coastal sage scrub habitat would represent a potential cumulative impact on the western spadefoot toad, CAGN, southern California rufous-crowned sparrow, and other special status species with moderate potential to occur in this habitat. The project would result in impacts to 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed and 1 pair of CAGN through the removal of this habitat during construction. Therefore, the proposed project would contribute to the significant cumulative impact on the CAGN and other special status species.

Projects are required to implement avoidance measures so that direct, inadvertent take of CAGN individuals is prevented. In addition, projects are typically required to compensate impacts on coastal sage scrub at a minimum 1:1 ratio to ensure that the loss of occupied and suitable habitat for the CAGN is fully compensated. The project would implement required CAGN avoidance measures and compensate for the loss of 7.2 acres of coastal sage scrub habitat through the mitigation program explained in Mitigation Measure 4.1.A. Therefore, the project's contribution to the cumulative impact on the CAGN and other special status species would be less than considerable and reduced to a less-than-significant level.

Table 4
CUMULATIVE IMPACTS ON BIOLOGICAL RESOURCES[1]

# on Figure 5	Project Number	Project Name	Resource[2]									
			CSS		SOC		MCC		MSMC		NNG	
			Impacts (I)	Mitigation (M)	I	M	I	M	I	M	I	M
1	PDS2020-ZAP-98-015W1M6	Cell site modification	0	0	0	0	0	0	0	0	0	0
2	PDS2016-ZAP-98-015W2M2	T-Mobile West wireless facility modification	0	0	0	0	0	0	0	0	0	0
3	PDS2017-MUP-95-012W1M2	Verizon Wireless equipment replacement/installation	0	0	0	0	0	0	0	0	0	0
4	PDS2012-3910-1208006	No information available	--	--	--	--	--	--	--	--	--	--
5	PDS2012-3401-98-015-03	T-Mobile wireless facility modification	0	0	0	0	0	0	0	0	0	0
6	PDS2003-3950-03-005	Lake San Marcos Greens	0	0	0	0	0	0	0	0	0	0
7	PDS2014-AD-14-022	Agricultural clearing	0	0	0	0	0	0	0	0	0	0
8	PDS2014-MUP-82-050W3M1	Mount Whitney cell equipment relocation	0	0	0	0	0	0	0	0	0	0
9	PDS2019-MUP-06-008M1	Sprint telecom facility modification	0	0	0	0	0	0	0	0	0	0
10	PDS2006-3300-06-008	Construct/operate telecom facility	0	0	0	0	0	0	0	0	0	0
11	PDS2006-3910-0608005 9	No information available	--	--	--	--	--	--	--	--	--	--
12	PDS2003-3000-03-083	Felker ag clearing	0	0	0	0	0	0	4.5[3]	0	0	0
13	PDS2010-3710-10-0013	Questhaven boundary adjustment	0	0	0	0	0	0	0	0	0	0
14	PDS2005-3710-05-0027	Altmann boundary adjustment	0	0	0	0	0	0	0	0	0	0
15	PDS2018-IC-18-035	Application to subdivide	0	0	0	0	0	0	0	0	0	0
16	PDS2006-3710-06-0047	Perkins boundary adjustment	0	0	0	0	0	0	0	0	0	0
17	PDS2016-LDGRMJ-30097	No information available	--	--	--	--	--	--	--	--	--	--
18	PDS2018-LDGRMJ-30192	No information available	--	--	--	--	--	--	--	--	--	--
19	PDS2012-3300-12-018	Sprint Gaty Reservoir wireless telecom facility	0	0	0	0	0	0	0	0	0	0

Table 4 (cont.)
CUMULATIVE IMPACTS ON BIOLOGICAL RESOURCES[1]

# on Figure 5	Project Number	Project Name	Resource[2]									
			CSS		SOC		MCC		MSMC		NNG	
			Impacts (I)	Mitigation (M)	I	M	I	M	I	M	I	M
20	PDS2004-3000-04-036	Sinatra and Bordagaray agricultural brushing and clearing	0	0	0	0	0	0	1.5[3]	0	0	0
21	PDS2014-AD-14-014	Barking Elf Ranch Stables zoning verification	--	--	--	--	--	--	--	--	--	--
22	PDS2018-VAC-18-003	Vacate open space easement	0	0	0	0	0	0	0	0	0	0
23	PDS2004-3200-20764	Baumgartner parcel map	0	0	0	0	0	0	0	0	6.0	3.0
24	PDS2004-3100-5278	Anderson major subdivision	0.48	0.48	0	0	0	0	0	0	0	0
25	PDS2017-LDMJIP-50031	No information available	--	--	--	--	--	--	--	--	--	--
26	PDS2017-MUP-70-135M2	Minor deviation—fire rebuild	0	0	0	0	0	0	0	0	0	0
27	PDS2018-MUP-05-008M5	AT&T Mobility plot plan deviation	0	0	0	0	0	0	0	0	0	0
28	PDS2017-MUP-05-008M4	AT&T Mobility plot plan deviation	0	0	0	0	0	0	0	0	0	0
29	PDS2012-3301-05-008-02	AT&T plot plan deviation	0	0	0	0	0	0	0	0	0	0
30	PDS2015-MUP-05-008M3	Sprint plot plan deviation	0	0	0	0	0	0	0	0	0	0
31	PDS2005-3300-05-008	Sprint Nextel telecom facility	0	0	0	0	0	0	0	0	0	0
32	PDS2011-3301-05-008-01	AT&T plot plan deviation	0	0	0	0	0	0	0	0	0	0
33	PDS2011-3710-11-0025	Holland boundary adjustment	0	0	0	0	0	0	0	0	0	0
34	PDS2018-BC-18-0112	Ertorth residence lot line adjustment	0	0	0	0	0	0	0	0	0	0
35	PDS2019-BC-19-0036	Dietel boundary adjustment	0	0	0	0	0	0	0	0	0	0
36	PDS2006-3710-06-0047	Perkins boundary adjustment	0	0	0	0	0	0	0	0	0	0
37	PDS2004-3000-04-067	Agricultural open space easement encroachment	0	0	0	0	0	0	0	0	0	0
38	PDS2004-3500-04-028	Varadero Model Homes	0	0	0	0	0	0	0	0	0	0

Table 4 (cont.)
CUMULATIVE IMPACTS ON BIOLOGICAL RESOURCES[1]

# on Figure 5	Project Number	Project Name	Resource[2]									
			CSS		SOC		MCC		MSMC		NNG	
			Impacts (I)	Mitigation (M)	I	M	I	M	I	M	I	M
39	PDS2007-3710-07-0082	Citizen Development Corp. boundary adjustment	0	0	0	0	0	0	0	0	0	0
40	PDS2006-3710-06-0167	McMorris/CDC boundary adjustment	0	0	0	0	0	0	0	0	0	0
41	PDS2019-MUP-04-012M9	Winchester plot plan deviation	0	0	0	0	0	0	0	0	0	0
42	PDS2002-3500-02-055	Walz "B" site plan	0	0	0	0	0	0	0	0	0	0
43	PDS2004-3100-5365	Harmony Grove Village	41.7	76.5	0	0	0	0	3.7[3,4]	1.9[4]	37.7	18.9
Subtotal			**42.18**	**76.98**	**0.00**	**0.00**	**0.00**	**0.00**	**9.70[3,4]**	**1.90[4]**	**43.70**	**21.90**
44	PDS2020-TM-5643	Questhaven Tentative Map	7.20	50.6[2]	0.20	50.6[2]	1.60	50.6[2]	2.80	50.6[2]	15.40	50.3[2]
TOTAL			**49.38**	**127.58**	**0.20**	**50.60**	**1.60**	**50.60**	**12.50[4]**	**52.50**	**59.10**	**72.20**

[1]Impacts and mitigation are listed in acres.
[2]CSS = Diegan coastal sage scrub and variations/ecotones (e.g., coastal sage-chaparral scrub, etc.); SOC = scrub oak chaparral; MCC = mafic chamise chaparral; MSMC = mafic southern mixed chaparral; NNG = non-native grassland. The mitigation shown in Table 4 for Questhaven is not based on impacts to mitigation ratios. Rather, the mitigation is an overall program of preservation and/or habitat restoration/preservation of a total of 50.3 acres on and off site (adjacent). Refer to Section 4.4 and Table 7 of this report.
[3]Impacts were to southern mixed chaparral, not mafic southern mixed chaparral
[4]Six acres of the impact is to southern mixed chaparral for which no mitigation was required. Mitigation was required for impacts to 3.7 acres of southern mixed chaparral from Harmony Grove Village.

The cumulative projects would impact 0.2 acre of scrub oak chaparral, 1.6 acres of mafic chamise chaparral, and 12.5 acres of southern mixed chaparral, which have the potential to support the western spadefoot toad, southern California rufous-crowned sparrow and other special status species with moderate potential to occur on site. Projects are typically required to compensate for scrub oak chaparral at a minimum 1:1 ratio; impacts to non-mafic chamise chaparral and southern mixed chaparral are typically not required; however, mitigation was required/provided for Harmony Grove Village (project number 43). Impacts to mafic chamise chaparral and mafic southern mixed chaparral are typically required to be mitigated at a minimum 3:1 ratio. The project would mitigate impacts to scrub oak chaparral, mafic chamise chaparral, and mafic southern mixed chaparral through the mitigation program explained in Mitigation Measure 4.1.A. Therefore, the project's contribution to the cumulative impacts would be less than considerable and reduced to a less-than-significant level.

The cumulative projects would impact 59.1 acres of non-native grassland that potentially serve to provide raptor foraging habitat. Cumulative impacts to raptors would be significant since the cumulative projects would further reduce the amount of foraging habitat available for these species. The project's contribution to this habitat loss would be 15.4 acres. Therefore, the project would contribute to significant cumulative impacts to raptors. The project proposes to mitigate for impacts to non-native grassland through the mitigation program explained in Mitigation Measure 4.1.A. With the implementation of this measure, the project's contribution on the cumulative impact to raptor foraging habitat would be less than considerable and reduced to a less-than-significant level.

3.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Impact 3.1.A The project would directly impact one pair of the CAGN through habitat removal (see *Impact 3.1.L* for indirect noise impacts to these species).

Mitigation Measure 3.1.A

No grading or clearing of occupied Diegan coastal sage scrub or Diegan coastal sage scrub-disturbed shall occur during the breeding season of the CAGN (February 15 – August 31). All grading permits, improvement plans, and the final map shall state the same. If clearing or grading is scheduled to occur during the breeding season, a pre-construction survey shall be conducted to determine whether CAGN occur within the impact area. If there is no CAGN nesting (includes nest building or other breeding/nesting behavior) within the impact area, clearing and grading shall be allowed to proceed. If, however, CAGN are observed nesting or displaying breeding/nesting behavior in the impact area, construction shall be postponed until all nesting (or breeding/nesting behavior) has ceased or until after August 31.

The loss of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed shall be mitigated through the overall mitigation program explained in Mitigation Measure 4.1.A.

Impact 3.1.B The project impact Orcutt's brodiaea, Nuttall's scrub oak, western spadefoot toad, Cooper's hawk, and southern California rufous-crowned sparrow through loss of habitat and/or potential direct injury/mortality. Furthermore, the project could impact SSC or County Group 1 species with moderate potential to occur on site.

Mitigation Measure 3.1.B

Mitigation for Orcutt's brodiaea shall occur through the translocation of Orcutt's brodiaea corms from within the project impact footprint to suitable habitat within the preserve on site in accordance with a County-, CDFW-, and USFWS-approved translocation plan (Alden 2022; Appendix L).

Nuttall's scrub oak, western spadefoot toad, Cooper's hawk and southern California rufous-crowned sparrow shall be mitigated through implementation of Mitigation Measure 4.1.A

Impacts to Nuttall's scrub oak would also be mitigated through preservation of 0.4 acre of scrub oak chaparral on site. In addition, this species is included in the container stock list for the southern mafic chaparral/coastal sage scrub ecotonal habitat restoration area. The goal would be for a 3:1 replacement (36 total) of impacted individual oaks through planting of container stock in the preserve.

Additionally, 21 new water holding basins suitable for western spadefoot toad breeding shall be created with a combined area of 0.2 acre (Figures 6 and 7a-7c). The basins are only to create western spadefoot toad breeding opportunities and are not intended to be vernal pools or wetland habitat. The basins shall be created in flatter areas on site and off site (i.e., in the adjacent off-site mitigation area; see Mitigation Measure 4.1.A) where surface runoff from rainfall on hillsides to the west and south is expected to collect. The basins shall be created in a variety of sizes for a diversity of breeding conditions, with smaller basins potentially holding water in drier years when there is insufficient rainfall to fill larger basins. The basins shall be created at depths of approximately one foot, maximum, with gradual slopes to facilitate toad access. For created basins within the fuel modification zone, mowing shall be restricted to the dry season and shall be prohibited in the basin areas whenever there is ponded water. Otherwise, periodic mowing shall be considered compatible with western spadefoot toad reproduction. The created basins shall be monitored for ponding and toad activity in conjunction with the five-year maintenance and monitoring period of the on- and off-site restoration plan prescribed in Mitigation Measure 4.1.A (Appendix K). The only basin maintenance that shall occur during that five-year period would be to repair damage to the basins and/or remove weeds if they appear to be hindering the ponding of water.

The potential loss of injury/mortality to individuals of Cooper's hawk and southern California rufous-crowned sparrow shall also be mitigated through complying with the MBTA to avoid impacts to nesting birds.

Potential impacts to SSC or County Group 1 species with moderate potential to occur on site shall be mitigated through implementation of Mitigation Measure 4.1.A.

Impact 3.1.F The project would impact raptor foraging habitat (non-native grassland, Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, and disturbed habitat).

Mitigation Measure 3.1.F

The project shall mitigate the loss of raptor foraging habitat through implementation of Mitigation Measure 4.1.A.

Project Boundary
Fuel Modification Zone/Limited Building Zone
Road and Utility Easements
Onsite Upland Habitat Preserve Area
Offsite Upland Habitat Preserve Area
Onsite CSS Restoration Area
Offsite SMC/CSS Ecotonal Restoration Area
Constructed Spadefoot Toad Basin
Preserve Area Fencing [1]
Preserve Area Signs [1]

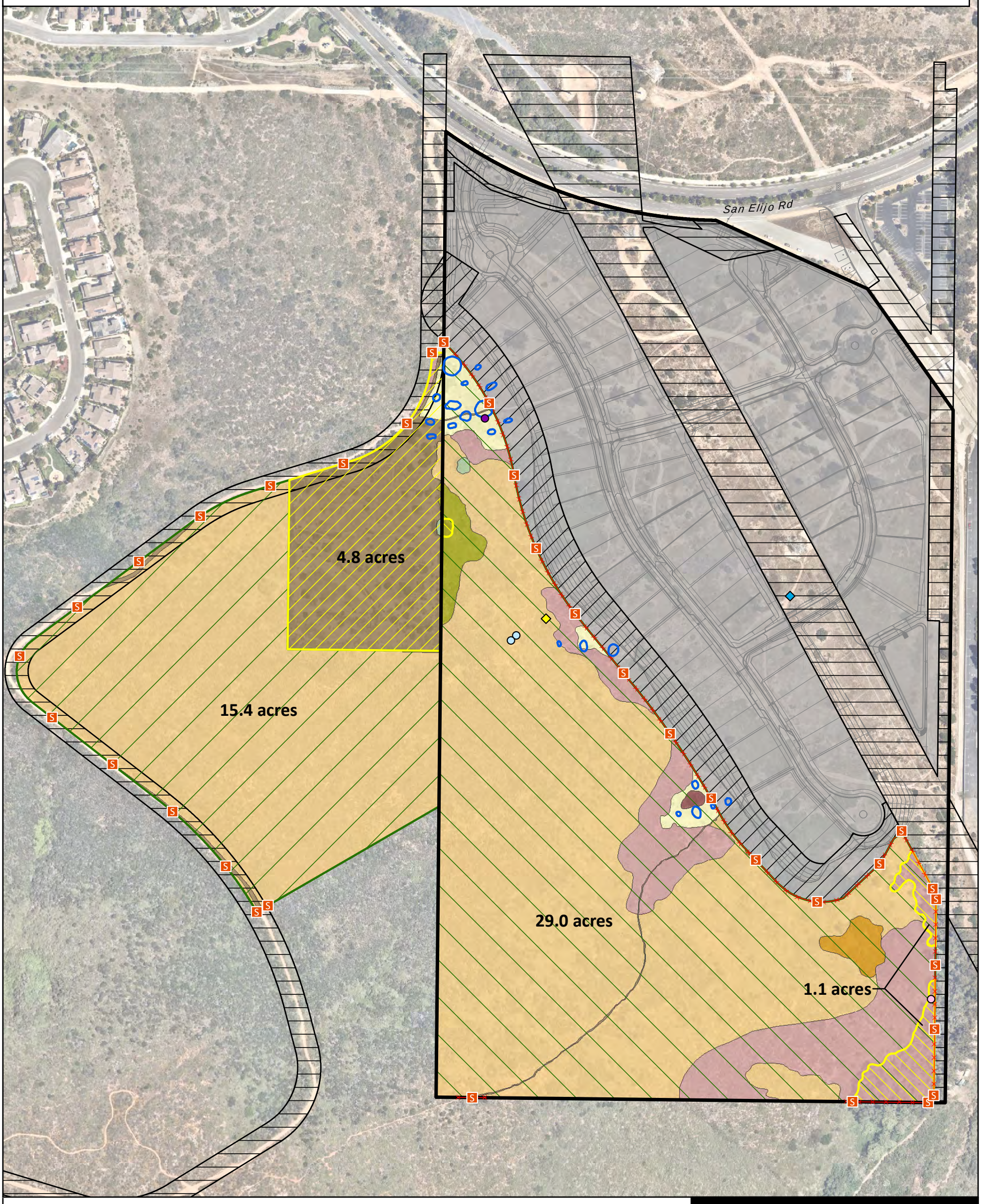
[1] Fencing and signs not included along southern boundary due to very steep slopes and impenetrable vegetation

Vegetation

Diegan Coastal Sage Scrub
Diegan Coastal Sage Scrub - Disturbed
Scrub Oak Chaparral
Mafic Southern Mixed Chaparral
Mafic Chamise Chaparral
Non-native Grassland
Eucalyptus Woodland
Disturbed Habitat
Developed

Special Status Species

Coastal California Gnatcatcher (*Polioptila californica californica*)
Western Spadefoot Toad (*Spea hammondii*)
Ashy Spikemoss (*Selaginella cinerascens*)
Spiny Rush (*Juncus acutus*)
Orcutt's Brodiaea (*Brodiaea orcuttii*)



Aerial Photo: Nearmap 2020

N
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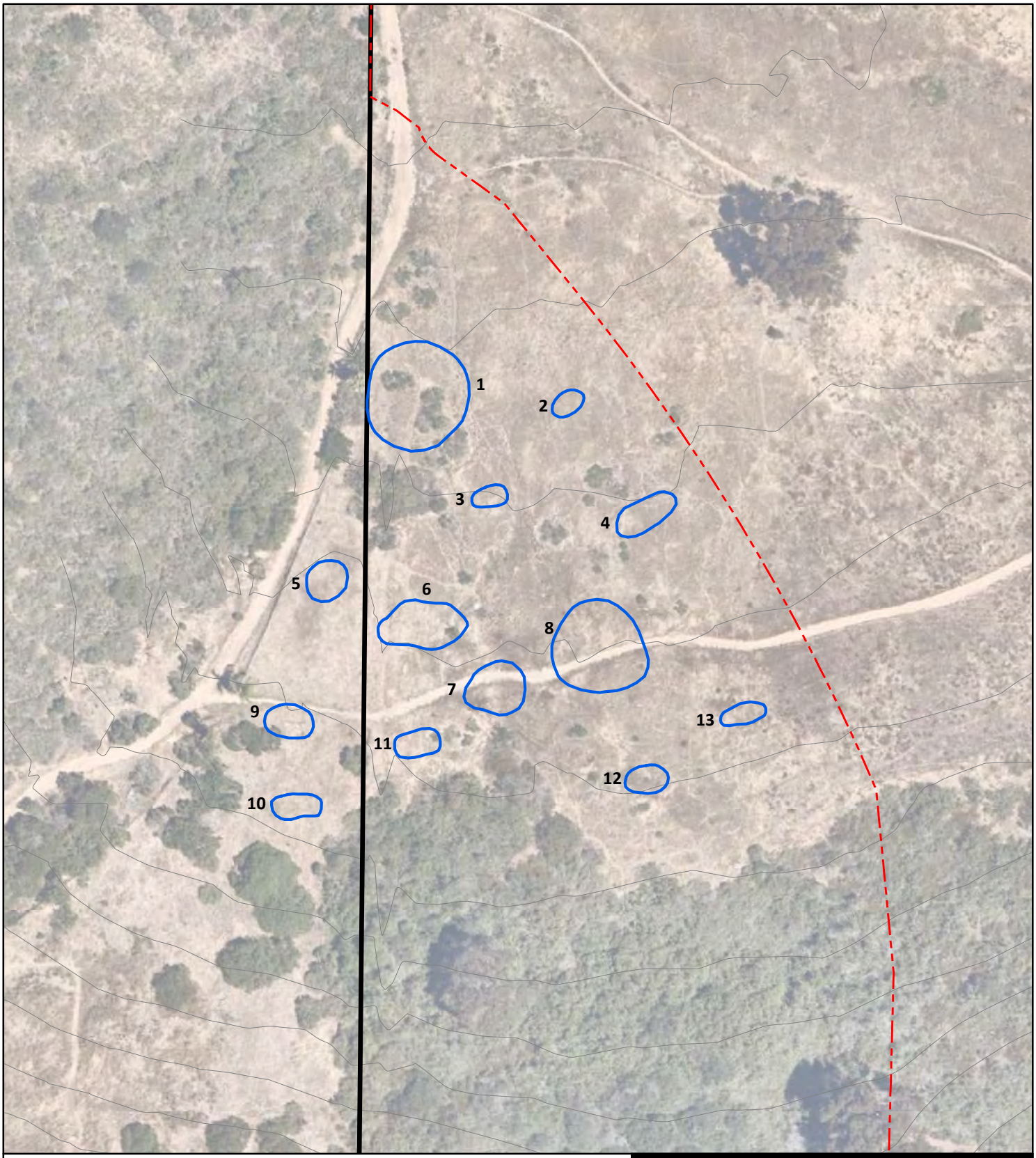
0 125 250
Feet

ALDEN ENVIRONMENTAL, INC

Figure 6

Biological Mitigation Areas

QUESTHAVEN



Project Boundary
Grading Limits
Constructed Spadefoot Toad Basin

Aerial Photo: Nearmap 2020

N
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0 30 60
Feet

ALDEN ENVIRONMENTAL, INC

Figure 7a

Spadefoot Toad Basins

QUESTHAVEN

Project Boundary
Grading Limits
Constructed Spadefoot Toad Basin

Aerial Photo: Nearmap 2020

N
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0 30 60
Feet

ALDEN
ENVIRONMENTAL, INC

Figure 7b

Spadefoot Toad Basins

QUESTHAVEN

Project Boundary
Grading Limits
Constructed Spadefoot Toad Basin

Aerial Photo: Nearmap 2020

N
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0 30 60 Feet

ALDEN ENVIRONMENTAL, INC

Figure 7c

Spadefoot Toad Basins

QUESTHAVEN

Impact 3.1.H The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive species over the long term.

Mitigation Measure 3.1.H
To mitigate from potential impacts from increased human activity, open space fencing and signage shall be installed: 1) at the interface of the project and the preserve; 2) at the southeast corner of the site where is abuts non-preserve area; and 3) at the trailhead entering the preserve from the southwest (Figure 6). At the request of the County, signage, alone, shall be installed around the off-site preserve area adjacent to the existing easement (Figure 6) to provide for ingress and egress for road and utility purposes (Appendix F). The remaining preserve area boundaries shall not be fenced as they are adjacent to Preserve Areas in the Draft NCMSCP (Figure 2) and also have extremely steep slopes with impenetrable vegetation, making fence installation infeasible.

Only non-invasive plant species shall be included in the landscape plan for the site (i.e., species not listed on the California Invasive Plant Council Inventory rated as Moderate or High).

The project proponent shall notify all residents that their domestic cats will be required to remain indoors and will be responsible for dissemination of additional information to residents to protect the preserve if the need arises.

Impact 3.1.L Noise from such sources as clearing and grading could result in impacts to nesting CAGN, Cooper's hawk, and southern California rufous-crowned sparrow.

Mitigation Measure 3.1.L
No clearing or grading shall occur of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed during the breeding season of the CAGN (February 15 – August 31) as described in *Mitigation Measure 3.1.A.*

If construction is to occur during the breeding season for the CAGN (February 15 to August 31) or nesting raptors such as the Cooper's hawk (January 15 to July 15), pre-construction survey(s) shall be conducted by a qualified biologist to determine whether these species occur within the areas potentially impacted by noise (i.e., 60 dB(A) hourly average or ambient, if greater). If it is determined at the completion of pre-construction surveys that active nests belonging to these sensitive species are absent from the potential noise-impacted area, construction shall be allowed to proceed. If pre-construction surveys determine the presence of active nests belonging to these sensitive species occur within the noise-impacted area, then construction shall not occur and shall: (1) be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or (2) shall not occur until a temporary noise barrier or berm is constructed at the edge of the development footprint to ensure that noise levels in the occupied habitat are reduced to below 60 dB(A) hourly average or ambient, if greater. Decibel output will be confirmed by a County-approved noise specialist and intermittent monitoring by a qualified biologist to ensure that the reduced noise levels are being maintained. Implementation of this measure shall also mitigate for potential noise impacts to nesting southern California rufous-crowned sparrows.

3.5 CONCLUSION

Project implementation could result in significant impacts to Orcutt's brodiaea, Nuttall's scrub oak, western spadefoot toad, CAGN, Cooper's hawk, southern California rufous-crowned sparrow, and special status species with moderate potential to occur on site. Implementation of Mitigation Measures 3.1.A, 3.1.B, 3.1.F, 3.1.H, and 3.1.L would reduce the impacts to less-than-significant levels.

4.0 RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITY

4.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the USFWS or CDFW?

Any of the following conditions would be considered significant if:

A. Project-related grading, clearing, construction or other activities would temporarily or permanently remove sensitive native or naturalized habitat (as listed in Table 5 in the County Guidelines for Determining Significance [County 2010a], excluding those without a mitigation ratio) on or off the project site.

B. Any of the following will occur to or within jurisdictional wetlands and/or riparian habitats as defined by the Corps, CDFW, and County: vegetation removal; grading; obstruction or diversion of water flow; adverse change in velocity, siltation, volume of flow, or runoff rate; placement of fill; placement of structures; road crossing construction; placement of culverts or other underground piping; any disturbance of the substratum; and/or any activity that may cause an adverse change in native species composition, diversity, and abundance.

C. The project would draw down the groundwater table to the detriment of groundwater-dependent habitat, typically a drop of 3 feet or more from historical low groundwater levels.

D. The project would cause indirect impacts, particularly at the edge of proposed development adjacent to proposed or existing open space or other natural habitat areas, to levels that would likely harm sensitive habitats over the long term.

E. The project does not include a wetland buffer adequate to protect the functions and values of existing wetlands.

4.2 ANALYSIS OF PROJECT EFFECTS

The project would result in significant impacts under the above guideline for the following reasons:

4.1.A Project-related grading, clearing, construction or other activities would permanently remove sensitive native or naturalized habitat as listed in Table 5 in the County Guidelines for Determining Significance [County 2010a]. As noted in Table 3, the project would result in permanent impacts to 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed, 0.2 acre of scrub oak chaparral, 1.6 acres of mafic chamise chaparral, 2.8 acres of mafic southern mixed chaparral, and 15.4 acres of non-native grassland that would require mitigation. The impacts would be significant under County Guideline 4.1.A.

4.1.D Increases in human activity on site could result in significant indirect impacts to adjacent preserved habitat through unauthorized access and disturbance. Landscaping associated with the project also could result in the introduction of invasive, non-native plant species to the project footprint and their spread outside the project footprint into the proposed open space. This impact would be significant under County Guideline 4.1.D.

The project would not result in significant impacts under the above guidelines for the following reasons:

4.1.B The identified ephemeral streambed is unvegetated and does not meet County or agency criteria for wetland/riparian habitat (wetland WUS, WS, and County RPO Wetlands). As such, the project would not result in significant impacts to Corps, CDFW, RWQCB, or County RPO wetlands or riparian habitats per County significance guidelines.

4.1.C No groundwater withdrawal or other activities that could lower the groundwater table are proposed.

4.1.E The project would not impact County RPO wetlands.

4.3 CUMULATIVE IMPACT ANALYSIS

The project would contribute to the cumulative impact on sensitive natural communities; however, it would not contribute to cumulative impacts on riparian habitats. Tables 5 and 6 show the sensitive natural community acreages within the draft NCMSCP Plan area (Table 5) and how the project's communities compare with the much larger cumulative area of the draft NCMSCP Plan (Table 6).

Table 5 NATURAL HABITAT REPORTED WITHIN THE DRAFT NCMSCP							
Vegetation Community On Site	**Vegetation Community in the Plan Area as Listed in the Plan**	**Total Acres in Plan Area**	**Total Acres in PAMA**	**Total Percentage in PAMA**	**Total Expected Conservation Percentage in Plan Area**	**Expected Conservation Acreage in PAMA**	**Expected Conservation Percentage in PAMA**
Diegan coastal sage scrub[1] (32500)	Coastal sage scrub	29,888	23,463	79	62	18,439	79
Scrub oak chaparral (37900)	Chaparral	75,865	66,931	88	68	51,898	78
Mafic chamise chaparral (37220)							
Mafic southern mixed chaparral (37122)							
Non-native grassland (42200)	Grassland	22,355	14,841	66	48	10,817	73

[1]Includes Diegan coastal sage scrub-disturbed

Table 6 PROJECT NATURAL HABITAT COMPARISON TO DRAFT NCMSCP								
Vegetation Community[1]	**Existing Project Acres**	**Existing as Percentage of Total Acres in Plan Area**	**Existing as Percentage of Total Acres in PAMA**	**Existing as Percentage of Expected Conservation Acres in Plan Area**	**Project Impact Acres**	**Impacts as Percentage of Total Acres in Plan Area**	**Impacts as Percentage of Total Acres in PAMA**	**Impacts as Percentage of Expected Conservation in Plan Area**
Coastal sage scrub[2]	11.9	0.04	0.05	0.06	7.2[3]	0.02	0.03	0.04
Chaparral	28.7	0.04	0.04	0.06	4.6	0.01	0.01	0.01
Grassland	20.9	0.09	0.14	0.19	15.4	0.07	0.10	0.14

[1]See Table 5 for specific vegetation community types
[2]Includes coastal sage scrub-disturbed
[3]Includes off-site impacts

The project's impacts to sensitive communities are considered significant but mitigable at the project and cumulative level because the project would provide mitigation consistent with County and regulatory agency guidelines. Mitigation for habitat loss is required to compensate for direct impacts on a project site, but it also compensates for cumulative loss of habitat. Cumulatively significant impacts to the sensitive communities would be fully mitigated through on- and off-site habitat preservation and restoration. Therefore, long-term conservation value is provided. As the project's mitigation would be per agreement with the County and regulatory agencies, the project's contribution to cumulative impacts to sensitive communities is not considerable and would be less than significant.

4.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Impact 4.1.A The project would result in permanent impacts to 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed, 0.2 acre of scrub oak chaparral, 1.6 acres of mafic chamise chaparral, 2.8 acres of mafic southern mixed chaparral, and 15.4 acres of non-native grassland.

Mitigation Measure 4.1.A

Mitigation for the project's significant impacts to sensitive natural communities shall include on- and off-site preservation of 44.4 acres, on- and off-site restoration of 5.9 acres as shown in Table 7 and on Figure 6. On- and off-site restoration shall be implemented in accordance with a County-, CDFW-, and USFWS-approved restoration plan with five years of maintenance and monitoring (Appendix K).

This measure was developed in coordination with the County, USFWS, and CDFW, and focuses on a functioning preserve mitigation strategy rather than relying on prescribed mitigation ratios, as presented in Table 5 of the County's Guidelines for Determining Significance and Report Format and Content Requirements, Biological Resources (County 2010a). The project's proposed mitigation, therefore, includes on- and off-site (adjacent) habitat preservation and on- and off-site (adjacent) habitat restoration/preservation. Mitigation would be provided for significant impacts to a total of 27.2 acres of sensitive natural communities in a 50.3 acre biological preserve area (Figure 6) including 44.4 acres of preserved habitat and 5.9 acres of restored habitat. The project's mitigation preserve area would connect to other identified preserve areas to create a larger, overall habitat preserve (Figure 5) that would not only compensate for the project's impacts but would be a beneficial biological resource in the western portion of unincorporated San Diego County.

A mitigation comparison table (Table 8) has been prepared to determine if the proposed mitigation is equivalent to that which would have been required through use of the County's standard ratio approach. As shown in Table 8, the actual acreage in the proposed mitigation is 50.1 acres, as opposed to the 28.3 acres that would have been provided through the ratio approach (an additional 0.2 acre of disturbed habitat [an existing dirt road] would be preserved off site that is not included in Table 8 but is shown in Table 7). This is an excess of 21.8 acres. The proposed mitigation for coastal sage scrub and non-native grassland is lower than the ratios would have provided, but the amount of mafic chaparral far exceeds all requirements. In addition, the existing mafic chaparral is relatively undisturbed, of high quality, and provides similar functions as those of the impacted habitats (wildlife movement, foraging habitat, etc.). The habitat restoration efforts also incorporate coastal sage scrub

species in their seed mixes and container stock lists. The proposed mitigation approach also allowed for a consolidated development footprint with a lesser interface area between the development and the adjacent preserve. In this way potential impacts from fragmentation and human intrusion are reduced while also providing for a more contiguous and defensible preserve area.

Impact 4.1.D Increases in human activity on site could result in significant indirect impacts to adjacent preserved habitat through unauthorized access and disturbance. Landscaping associated with the project also could result in the introduction of invasive, non-native plant species. Domestic predators (e.g., dogs and cats) may be introduced and harm native wildlife species through disturbance and predation.

Mitigation Measure 4.1.D

Implement Mitigation Measure 3.1.H, which includes installing open space fencing and signage shall mitigate for increases in human activity.

Implement Mitigation Measure 3.1.H, which states that only non-invasive plant species shall be included in the landscape plan for the site (i.e., species not listed on the California Invasive Plant Council Inventory rated as Moderate or High).

Table 7 SENSITIVE COMMUNITY MITIGATION PROGRAM										
Vegetation Community	**Existing[1]**	**Avoided Impact Neutral[2]**	**Impacts[3]**			**Mitigation**				
			On Site	**Off Site**	**Total**	**On-site Preserved**	**Off-site Preserved**	**On-site Restored[4]**	**Off-site Restored[5]**	**Total**
Diegan coastal sage scrub	9.8	0.2	5.1	0.2	**5.3**	4.5	-	-	-	**4.5**
Diegan coastal sage scrub-disturbed	2.1	0.1	1.9	-	**1.9**	-	-	-	-	**-**
Scrub oak chaparral	0.6	-	0.2	-	**0.2**	0.4	-	-	-	**0.4**
Mafic chamise chaparral	2.4	0.3	1.6	-	**1.6**	0.4	-	-	-	**0.4**
Mafic southern mixed chaparral	25.7	0.1	2.8	-	**2.8**	22.8	15.1	-	-	**37.9**
Non-native grassland	20.9	4.6	15.4	-	**15.4**	0.9	0.1	-	-	**1.0**
Subtotal Sensitive Communities	**61.5**	**5.5**	**27.0**	**0.2**	**27.2**	**29.0**	**15.2**	**-**	**-**	**44.2**
Eucalyptus woodland	2.9	0.5	1.4	-	**1.4**	-	-	1.0	-	**1.0**
Disturbed habitat	3.7	1.2	2.4	0.2	**2.6**	-	0.2[6]	0.1	4.8	**5.1**
Developed/Ornamental	1.0	0.2	0.8	0.9	**1.7**	-	-	-	-	-
Subtotal Non-sensitive Communities	**7.6**	**1.9**	**4.6**	**1.1**	**5.7**	**-**	**0.2**	**1.1**	**4.8**	**6.1**
TOTAL	**69.1**	**7.4**	**31.6**	**1.3**	**32.9**	**29.0**	**15.4**	**1.1**	**4.8**	**50.3**

[1]Existing acreage on site includes road and utility easements.
[2]Avoided "Impact Neutral" area within the existing easements on site, does not count toward impacts or mitigation. Provided for informational purposes.
[3]On-site impacts are from grading and fire fuel modification. Off-site impacts are only from fire fuel modification.
[4]Restored to Diegan coastal sage scrub and added to Diegan coastal sage scrub mitigation total.
[5]Restored to southern mafic chaparral/coastal sage scrub ecotone and added to mafic southern mixed chaparral mitigation total.
[6]An existing dirt road.

Table 8 SENSITIVE COMMUNITY MITIGATION COMPARISON					
Vegetation Community	**Impact**	**County Standard**		**Actual**	**Difference**
		Ratio[1]	**Result**		
Diegan coastal sage scrub (including disturbed)	7.2	1:1	7.2	5.6	-1.6
Scrub oak chaparral	0.2	1:1	0.2	0.4	+0.2
Mafic chamise chaparral	1.6	3:1	4.8	0.4	-4.4
Mafic southern mixed chaparral	2.8	3:1	8.4	42.7	+34.3
Non-native grassland	15.4	0.5:1	7.7	1.0	-6.7
TOTAL	**27.2**	**-**	**28.3**	**50.1[2]**	**+21.8**

[1]Ratios from Table 5, for lands outside of approved MSCP subarea plans (County 2010a).
[2]Does not include the off-site preservation of 0.2 acre of disturbed habitat that is an existing dirt road (Table 7).

4.5 CONCLUSION

Project implementation would result in direct and indirect impacts to sensitive natural communities. Implementation of Mitigation Measures 4.1.A and 4.1.D would reduce the impacts to less-than-significant levels.

5.0 JURISDICTIONAL WETLANDS AND WATERWAYS

5.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption or other means?

5.2 ANALYSIS OF PROJECT EFFECTS

The unvegetated ephemeral streambed on site is not a federally protected wetland and is not a Corps jurisdictional WUS. However, the unvegetated streambed could be a jurisdictional non-wetland WS, subject to the jurisdiction of the CDFW and the RWQCB.

5.3 CUMULATIVE IMPACT ANALYSIS

No federal wetlands as defined by Section 404 of the CWA would be impacted; therefore, under County Guideline 5.1.A the project would not contribute to cumulative wetland impacts.

5.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Impact 5.3 There are no federal, state, or County protected wetlands on site, so none would be impacted. The unvegetated ephemeral streambed may be considered a non-wetland WS by the CDFW and the RWQCB. The project will be submitting permit applications to the CDFW and RWQCB for impacts to the streambed.

Mitigation Measure 5.3

The CDFW and RWQCB may require mitigation for impacts to the unvegetated ephemeral streambed, if it is considered jurisdictional non-wetland WUS and permitting is required. This will be determined through consultation with the CDFW and RWQCB. Given that the streambed is not a County RPO, no specific County mitigation is required.

5.5 CONCLUSION

The project would result in impacts (0.01 acre) to non-wetland WS (unvegetated streambed) that may be considered jurisdictional by the CDFW and RWQCB.

6.0 WILDLIFE MOVEMENT AND NURSERY SITES

6.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Any of the following conditions would be considered significant if:

A. The project would impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction.

B. The project would substantially interfere with connectivity between blocks of habitat, or would potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

C. The project would create artificial wildlife corridors that do not follow natural movement patterns.

D. The project would increase noise and/or nighttime lighting in a wildlife corridor or linkage to levels proven to affect the behavior of the animals identified in a site-specific analysis of wildlife movement.

E. The project does not maintain an adequate width for an existing wildlife corridor or linkage and/or would further constrain an already narrow corridor through activities such as (but not limited to) reduction of corridor width, removal of available vegetative cover, placement of incompatible uses adjacent to it, and placement of barriers in the movement path.

F. The project does not maintain adequate visual continuity (i.e., long lines-of-site) within wildlife corridors or linkage.

6.2 ANALYSIS OF PROJECT EFFECTS

The project would not result in significant impacts under the above guideline for the following reasons:

6.1.A The project would not impede wildlife access to foraging habitat, breeding habitat, water sources, or other areas necessary for their reproduction because it proposes open space that provides habitat for these purposes and provides for improved local wildlife.

6.1.B The project would not substantially interfere with connectivity between blocks of habitat, nor would it potentially block or substantially interfere with a local or regional wildlife corridor or linkage.

6.1.C The project would not create artificial wildlife corridors that do not follow natural movement patterns; rather, it preserves existing habitat connections.

6.1.D The project would not increase noise or nighttime lighting in a wildlife corridor or linkage. Project operation noise is not anticipated to adversely impact wildlife as project development would be set back and buffered from the proposed on-site biological open space. All project-related lighting would be required to adhere to Division 9 of the San Diego County Light Pollution Code. Project lighting adjacent to habitat would be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from habitat.

6.1.E The project does maintain an adequate width for an existing local wildlife corridor. The width of the proposed preserve on site (from north to south) ranges from zero feet to approximately 1,300 feet, which spans the entire southern border of the site. This on-site preserve connects to off-site preserve to the south and west (Figures 2 and 5). Furthermore, the project's proposed addition of off-site preserve, also to the west, would widen the project's portion of the corridor to a maximum of 1,560 feet (Figure 6). Therefore, existing local movement across the site from the south to the west and west to the south is maintained.

6.1.F The project does maintain adequate visual continuity (i.e., long lines-of-site) within wildlife corridors or linkage. The developed portion of the project would be clustered to the north of the proposed preserve that maintains an existing local movement corridor. That is, no portion of the project would physically or visually block the corridor.

6.3 CUMULATIVE IMPACT ANALYSIS

The cumulative projects are in a semi-rural area characterized by low-density residential development, agricultural uses, and preserved lands. The majority of the projects involved no impacts to sensitive biological resources (Table 4). While the project would develop a residential use in this semi-rural environment, the residential use would occur along an existing roadway (San Elijo Road) and be adjacent to an existing sports complex to the east that is proposed for additional sports and commercial uses. These existing facilities are potential barriers to wildlife movement to the north and east. The project would preserve biological open space on the southwestern portion of the site as well as off site to the west that connect to preserved (Figures 2, 5, and 6). This would preserve on-site connections between the eastern, western, and southern conserved lands. As explained in Section 1.4.12 of this report, there are no potential nursery sites on site, so the project would not contribute to cumulative impacts to nursery sites.

With the project's proposed biological open space and implementation of mitigation, the contribution of the project to the cumulative impact on wildlife movement would not be considerable and would be less than significant.

6.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

None required.

6.5 CONCLUSION

The project would not result in significant impacts under County Guideline 6.1, and no mitigation is required.

7.0 LOCAL POLICIES, ORDINANCES, AND ADOPTED PLANS

7.1 GUIDELINES FOR DETERMINING SIGNIFICANCE

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? Would the project conflict with the provisions of an adopted HCP, NCCP plan, or other approved local, regional or state HCP?

Any of the following conditions would be considered significant if:

A. For lands outside of the MSCP, the project would impact Diegan coastal sage scrub vegetation in excess of the County's 5 percent habitat loss threshold, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines.

B. The project would preclude or prevent the preparation of the subregional NCCP. For example, the project proposes development within areas that have been identified by the County or resource agencies as critical to future habitat preserves.

C. The project will impact any amount of wetlands or sensitive habitat lands as outlined in the RPO.

D. The project would not minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Community Conservation Planning Guidelines.

E. The project does not conform to goals and requirements outlined in any applicable HCP, Resource Management Plan (RMP), Special Area Management Plan, Watershed Plan, or similar regional planning effort.

F. For lands within the MSCP, the project would not minimize impacts to Biological Resource Core Area, as defined in the Biological Mitigation Ordinance (County 2010b).

G. The project would preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines.

H. The project does not maintain existing movement corridors and/or habitat linkages, as defined by the BMO.

I. The project does not avoid impacts to MSCP narrow endemic species and would impact core populations of narrow endemics.

J. The project would reduce the likelihood of survival and recovery of listed species in the wild.

K. The project would result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (MBTA).

L. The project would result in the take of eagles, eagle eggs, or any part of an eagle (Bald and Golden Eagle Protection Act; BGEPA).

7.2 ANALYSIS OF PROJECT EFFECTS

The project would result in significant impacts under the above guidelines for the following reasons:

7.1.C The project will impact sensitive habitat lands as follows.

Impacted sensitive habitat lands include:

- Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed;
- Scrub oak chaparral;
- Mafic chamise chaparral;
- Mafic southern mixed chaparral; and
- Non-native grassland

These impacts would be significant under County Guideline 7.1.C.

7.1.K The project could result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (MBTA).

The project would not result in significant impacts under the above guidelines for the following reasons:

7.1.A The project would not impact Diegan coastal sage scrub vegetation in excess of the County's five-percent habitat loss threshold, as defined by the Southern California Coastal Sage Scrub NCCP Guideline. The project would impact 7.2 acres of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed that would require mitigation.

7.1.B The entire site is located within the PAMA (soft-line preserve), and according to the draft NCMSCP, it is not expected that all land within the PAMA will be incorporated into the preserve system. Therefore, development of the project, which includes preservation of biological open space on the site (and off site) would be consistent with the draft NCMSCP.

7.1.C The unvegetated, ephemeral streambed on site does not meet the criteria for wetland habitat, therefore, the project would not impact federal, state, or County (RPO) regulated wetlands.

7.1.D The project would minimize and/or mitigate coastal sage scrub habitat loss in accordance with Section 4.3 of the Natural Community Conservation Planning Guidelines. The habitat on site was evaluated for its conservation potential, and the mitigation listed in Mitigation Measure 4.1.A has been developed in coordination with the County and resource agencies.

7.1.E The project does conform to goals and requirements outlined in any applicable HCP, Resource Management Plan (RMP), Special Area Management Plan, Watershed Plan, or similar regional planning effort. The draft NCMSCP, while not yet final, was followed by the project, and the project and its mitigation has been coordinated with the County and resource agencies.

7.1.F For lands within the MSCP, the project would not minimize impacts to Biological Resource Core Area, as defined in the Biological Mitigation Ordinance (County 2010b). The project site is not located in an area covered by an approved MSCP Subarea Plan. The draft NCMSCP (County 2009) shows the project site as not within a core.

7.1.G The project would not preclude connectivity between areas of high habitat values, as defined by the Southern California Coastal Sage Scrub NCCP Guidelines. While the value of the habitat south and west of the site is not known, the project would preserve biological open space on site (and adjacent off site) that would maintain an existing connection to the habitat off site to the south and west. Therefore, connectivity between these lands would not be precluded by the project.

7.1.H The project does maintain existing movement corridors and/or habitat linkages. The project would preserve biological open space on site (and adjacent off site) that would maintain an existing local movement corridor between the habitat off site to the south and west.

7.1.I The project site is not located in an area covered by an approved MSCP Subarea Plan; therefore, no impacts to MSCP narrow endemic species would occur.

7.1.J The project would not reduce the likelihood of survival and recovery of listed species in the wild. The project was planned to be consistent with the draft NCMSCP for listed species, which is designed to protect listed species while still allowing for development.

7.1.L The project would not result in the take of eagles, eagle eggs, or any part of an eagle because there is no suitable nesting habitat on site for the golden eagle, and the site and its environs are likely too close to human habitation for the golden eagle to use the site for foraging. The bald eagle is not expected to occur on site because it typically nests in forested areas adjacent to large bodies of water, staying away from heavily developed areas, and in winter it still needs access to open water for foraging.

7.3 CUMULATIVE IMPACT ANALYSIS

The cumulative projects would be required to conform to County Guidelines 7.1.A through 7.1.L and provide mitigation as appropriate. Mitigation is proposed to reduce the project-level impacts on sensitive habitat lands. Conformance or mitigation, as appropriate, would be required for the project and for the other cumulative projects in order to obtain a recommendation for approval; therefore, no significant cumulative impacts would occur. Additional discussion regarding the project's contribution to the cumulative impacts on PAMA and the viability of the draft NCMSCP is provided below. The project would contribute to the cumulative impacts to lands designated as future PAMA under the draft NCMSCP as impacts would occur to 32.9 acres of PAMA (Table 9).

Table 9 PAMA IMPACTS SUMMARY			
Category of Impacts	**Acreage**		**Percent PAMA Impacted**
	Existing in PAMA	**Proposed Impacts in PAMA**	
Sensitive vegetation community[1]	61.5	27.2	44
Non-sensitive vegetation community/land use type[2]	7.6	5.7	75
TOTAL	69.1	32.9	48

[1]Diegan coastal sage scrub, Diegan coastal sage scrub-disturbed, scrub oak chaparral, mafic chamise chaparral, mafic southern mixed chaparral, non-native grassland
[2]Eucalyptus woodland, disturbed habitat, developed and ornamental

Project impacts to sensitive vegetation communities in PAMA total 27.2 acres representing 44 percent of the PAMA impacts. As shown in Table 9, 44 percent of the total sensitive vegetation communities contained within PAMA would be impacted compared to 75 percent of the non-sensitive vegetation communities within PAMA.

Impacts to sensitive vegetation communities have been minimized to the extent practicable, and the on-site preserve has been designed to maximize connectivity (Figures 2 and 6). Furthermore, project mitigation includes preserving and restoring 20.2 acres of land off site to the west (Figure 6). Therefore, land in the preserve on site is connected to preserved land off-site to the west and to other off-site preserve lands farther to the south and west (Figure 2). Although the NCMSCP Plan is still in draft form, the project and its mitigation has been designed to assist in implementing the proposed PAMA and to contribute to long-term habitat value for plants and wildlife in the region.

With the project's proposed preserve size and configuration and implementation of mitigation, the contribution of the project to the cumulative impact on PAMA would not be considerable and would be less than significant.

7.4 MITIGATION MEASURES AND DESIGN CONSIDERATIONS

Impact 7.1.C The project would impact sensitive habitat lands: Diegan coastal sage scrub (including-disturbed) with CAGN, mafic chamise chaparral, mafic southern mixed chaparral, and non-native grassland. The project would not impact County RPO wetlands.

Mitigation Measure 7.1.C
Implement Mitigation Measure 4.1.A.

Impact 7.1.K The project could result in the killing of migratory birds or destruction of active migratory bird nests and/or eggs (MBTA).

Mitigation Measure 7.1.K
Implement Mitigation Measure 3.1.L.

7.5 CONCLUSION

The project would have significant impacts on sensitive habitat lands and migratory birds. Implementation of Mitigation Measures 4.1.A and 3.1.L would reduce the impacts to less-than-significant levels.

8.0 SUMMARY OF PROJECT IMPACTS AND MITIGATION

Implementation of the project would result in significant impacts to special status species, sensitive natural communities, and local policies. Table 10 provides a summary of the proposed mitigation measures.

Table 10 SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES		
PROPOSED MITIGATION MEASURE (MM)	**SIGNIFICANCE AFTER MITIGATION**	**GUIDELINE NUMBER**
MM 3.1.A No grading or clearing of occupied Diegan coastal sage scrub or Diegan coastal sage scrub-disturbed shall occur during the breeding season of the CAGN (February 15 – August 31). All grading permits, improvement plans, and the final map shall state the same. If clearing or grading is scheduled to occur during the breeding season, a pre-construction survey shall be conducted to determine whether CAGN occur within the impact area. If there is no CAGN nesting (includes nest building or other breeding/nesting behavior) within the impact area, clearing and grading shall be allowed to proceed. If, however, CAGN are observed nesting or displaying breeding/nesting behavior in the impact area, construction shall be postponed until all nesting (or breeding/nesting behavior) has ceased or until after August 31. The loss of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed shall be mitigated through the overall mitigation program listed in Mitigation Measure 4.1.A.	Less than Significant	3.1.A, 3.1.L

Table 10 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

PROPOSED MITIGATION MEASURE (MM)	SIGNIFICANCE AFTER MITIGATION	GUIDELINE NUMBER
M 3.1.B Mitigation for Orcutt's brodiaea shall occur through the translocation of Orcutt's brodiaea corms from within the project impact footprint to suitable habitat within the preserve on site in accordance with a County-, CDFW-, and USFWS-approved translocation plan (Alden 2022; Appendix L). Nuttall's scrub oak, western spadefoot toad, Cooper's hawk and southern California rufous-crowned sparrow shall be mitigated through implementation of the Mitigation Measure 4.1.A. Impacts to Nuttall's scrub oak would also be mitigated through preservation of 0.4 acre of scrub oak chaparral on site. In addition, this species is included in the container stock list for the southern mafic chaparral/coastal sage scrub ecotonal habitat restoration area. The goal would be for a 3:1 replacement (36 total) of impacted individual oaks through planting of container stock in the preserve. Additionally, 21 new water holding basins suitable for western spadefoot toad breeding shall be created with a combined area of 0.2 acre (Figures 6 and 7a-7c). The basins are only to create western spadefoot toad breeding opportunities and are not intended to be vernal pools or wetland habitat. The basins shall be created in flatter areas on site and off site (i.e., in the adjacent off-site mitigation area; see Mitigation Measure 4.1.A) where surface runoff from rainfall on hillsides to the west and south is expected to collect. The basins shall be created in a variety of sizes for a diversity of breeding conditions, with smaller basins potentially holding water in drier years when there is insufficient rainfall to fill larger basins. The basins shall be created at depths of approximately one foot, maximum, with gradual slopes to facilitate toad access. For created basins within the fuel modification zone, mowing shall be restricted to the dry season and shall be prohibited in the basin areas whenever there is ponded water. Otherwise, periodic mowing shall be considered compatible with western spadefoot toad reproduction. The created basins shall be monitored for ponding and toad activity in conjunction with the five-year maintenance and monitoring period of the on- and off-site restoration plan prescribed in Mitigation Measure 4.1.A. The only basin maintenance that shall occur during that five-year period would be to repair damage to the basins and/or remove weeds if they appear to be hindering the ponding of water. The potential loss of injury/mortality to individuals of Cooper's hawk and southern California rufous-crowned sparrow shall also be mitigated through complying with the MBTA to avoid impacts to nesting birds. Potential impacts to SSC or County Group 1 species with moderate potential to occur on site shall be mitigated through implementation of Mitigation Measure 4.1.A.	Less than Significant	3.1.B
MM 3.1.F The project shall mitigate the loss of raptor foraging habitat through implementation of Mitigation Measure 4.1.A.	Less than Significant	3.1.F

Table 10 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

PROPOSED MITIGATION MEASURE (MM)	SIGNIFICANCE AFTER MITIGATION	GUIDELINE NUMBER
MM 3.1.H To mitigate from potential impacts from increased human activity, open space fencing and signage shall be installed: 1) at the interface of the project and the preserve; 2) at the southeast corner of the site where is abuts non-preserve area; and 3) at the trailhead entering the preserve from the southwest (Figure 6). At the request of the County, signage, alone, shall be installed around the off-site preserve area adjacent to the existing easement (Figure 6) to provide for ingress and egress for road and utility purposes (Appendix F). The remaining preserve area boundaries shall not be fenced as they are adjacent to Preserve Areas in the Draft NCMSCP (Figure 2) and also have extremely steep slopes with impenetrable vegetation, making fence installation infeasible. Only non-invasive plant species shall be included in the landscape plan for the site (i.e., species not listed on the California Invasive Plant Council Inventory rated as Moderate or High). The project proponent shall notify all residents that their domestic cats will be required to remain indoors and will be responsible for dissemination of additional information to residents to protect the preserve if the need arises.	Less than Significant	3.1.H, 4.1.D
MM 3.1.L No clearing or grading shall occur of Diegan coastal sage scrub and Diegan coastal sage scrub-disturbed during the breeding season of the CAGN (February 15 – August 31) as described under Mitigation Measure 3.1.A. If construction is to occur during the breeding season for the CAGN (February 15 to August 31) or nesting raptors such as the Cooper's hawk (January 15 to July 15), pre-construction survey(s) shall be conducted by a qualified biologist to determine whether these species occur within the areas potentially impacted by noise (i.e., 60 dB(A) hourly average or ambient, if greater). If it is determined at the completion of pre-construction surveys that active nests belonging to these sensitive species are absent from the potential noise-impacted area, construction shall be allowed to proceed. If pre-construction surveys determine the presence of active nests belonging to these sensitive species occur within the noise-impacted area, then construction shall not occur and shall: (1) be postponed until a qualified biologist determines the nest(s) is no longer active or until after the respective breeding season; or (2) shall not occur until a temporary noise barrier or berm is constructed at the edge of the development footprint to ensure that noise levels in the occupied habitat are reduced to below 60 dB(A) hourly average or ambient, if greater. Decibel output will be confirmed by a County-approved noise specialist and intermittent monitoring by a qualified biologist to ensure that the reduced noise levels are being maintained. Implementation of this measure shall also mitigate for potential noise impacts to nesting southern California rufous-crowned sparrows.	Less than Significant	3.1.L

Table 10 (cont.)
SUMMARY OF BIOLOGICAL RESOURCES MITIGATION MEASURES

PROPOSED MITIGATION MEASURE (MM)	SIGNIFICANCE AFTER MITIGATION	GUIDELINE NUMBER
MM 4.1.A Mitigation for the project's significant impacts to sensitive natural communities shall include on- and off-site preservation of 44.4 acres, on- and off-site restoration of 5.9 acres as shown in Table 7 and on Figure 6.	Less than Significant	4.1.A, 3.1.F, 7.1.C
MM 4.1.D Implement Mitigation Measure 3.1.H above.	Less than Significant	4.1.D, 3.1.H
MM 5.3 The Corps (CDFW and RWQCB) may require mitigation for impacts to the unvegetated ephemeral streambed if it is considered jurisdictional non-wetland WUS and permitting is required. This will be determined through consultation with CDFW and RWQCB).	Less than Significant	5.1
MM 7.1.C Implement Mitigation Measure 4.1.A above.	Less than Significant	7.1.C, 4.1.A
MM 7.1.K Implement Mitigation Measure 3.1 L	Less than Significant	7.1.K, 3.1.L

9.0 LIST OF PREPARERS AND PERSONS/ ORGANIZATIONS CONTACTED

The following individuals contributed to the fieldwork and/or preparation of this report.

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[1]Primary report author
[2]County-approved Biological Consultant
[3]Field Personnel

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Appendix A

Representative Photographs

Representative Photographs

Photo Point 1. 07/11/20

Photo Point 2. 07/11/20

Photo Point 3. 07/11/20

Photo Point 4. 07/11/20

Photo Point 5. 07/11/20

Photo Point 6. 07/11/20

Photo Point 7. 07/11/20

Photo Point 8. 07/11/20

Photo Point 9. 07/11/20

Photo Point 10. 07/11/20

Photo Point 11. 07/11/20

Photo Point 12. 07/11/20

Photo Point 13. 07/11/20

Photo Point 14. 07/11/20

Photo Point 15. 07/11/20

Photo Point 16. 07/11/20

Appendix B

CNDDB Field Forms

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 04/09/2020

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Polioptila californicacalifornica*

Common Name: Coastal CAlifornia gnatcatcher

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 2 Subsequent Visit? (●) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ No ☒ Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Erik LaCoste
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

2 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☒ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ lek ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Questhaven project site off of San Elijo road, approximately .25 mile east of Fallsview Road

County: San Diego Landowner / Mgr: Colrich

Quad Name: Rancho Santa Fe Elevation: 510

T 12s R 3w Sec 33 , nw 1/4 of nw 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE

T ____ R ____ Sec ____ , ____ 1/4 of ____ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: 1m meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 33° 5'33.11"N, 117°12'23.65"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Loated within coastal sage scrub habitat

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: _____

Visible disturbances: Roadway and SDG&E powerlines

Threats: Proposed for development

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☒ By another person (name): Erik LaCoste
☒ Other: Visual and song identification

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ( ) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 04/09/2020

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Spea hammondii*

Common Name: Western spadefoot

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 2 Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ No ☒ Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Erik LaCoste
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

2 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☐ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ lek ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Questhaven project site off of San Elijo Road approximately 0.25 mile east of Fallsview Road.

County: San Diego Landowner / Mgr: Colrich

Quad Name: Rancho Santa Fe Elevation: 520

T 12S R 3W Sec 33 , ____ 1/4 of ____ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE

T ____ R ____ Sec ____ , ____ 1/4 of ____ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 33°05'28.74"N, 117°12'18.50"W 33°05'28.02"N, 117°12'20.71"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Non-native grassland

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: _____

Visible disturbances: Roadway and SDG&E powerlines

Threats: Proposed for development

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☒ Other: Vocalizations heard

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ( ) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

Date of Field Work (mm/dd/yyyy): 04/09/2020

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Aimophila ruficeps canescens*

Common Name: Southern California rufous-crowned sparrow

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 1 Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # [ ] No [X] Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Erik LaCoste
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

1 # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

[ ] wintering [ ] breeding [ ] nesting [ ] rookery [ ] burrow site [ ] lek [ ] other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Questhaven project site off of San Elijo Road approximately 0.25 mile east of Fallsview Road.

County: San Diego Landowner / Mgr: Colrich

Quad Name: Rancho Santa Fe Elevation: 524

T 12S R 3W Sec 33 , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE

T ___ R ___ Sec ___ , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 33°05'30.8"N, 117°12'23.04"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Diegan coastal sage scrub

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: _____

Visible disturbances: Roadway and SDG&E powerlines

Threats: Proposed for development

Comments:

Determination: *(check one or more, and fill in blanks)*

[ ] Keyed (cite reference): _____
[ ] Compared with specimen housed at: _____
[ ] Compared with photo / drawing in: _____
[ ] By another person (name): _____
[X] Other: Visual and vocals

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	[ ]	[ ]	[ ]
Habitat	[ ]	[ ]	[ ]
Diagnostic feature	[ ]	[ ]	[ ]

May we obtain duplicates at our expense? ( ) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 06/03/2020

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Selaginella cinerascens*

Common Name: Ashy spike-moss

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: _____ Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # [ ] No [X] Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Erik LaCoste
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

[ ] wintering [ ] breeding [ ] nesting [ ] rookery [ ] burrow site [ ] lek [ ] other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Questhaven project site off of San Elijo Road approximately 0.25 mile east of Fallsview Road.

County: San Diego Landowner / Mgr: Colrich

Quad Name: Rancho Santa Fe Elevation: 574

T 12S R 3W Sec 33 , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE

T ___ R ___ Sec ___ , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 33°05'27.45"N, 117°12'26.94"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Two patches of ashy spike-moss found in southern mixed chaparral

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: _____

Visible disturbances: Roadway and SDG&E powerlines

Threats: Proposed for development

Comments:

Determination: *(check one or more, and fill in blanks)*

- [ ] Keyed (cite reference): _____
- [ ] Compared with specimen housed at: _____
- [ ] Compared with photo / drawing in: _____
- [ ] By another person (name): _____
- [ ] Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	[ ]	[ ]	[ ]
Habitat	[ ]	[ ]	[ ]
Diagnostic feature	[ ]	[ ]	[ ]

May we obtain duplicates at our expense? ( ) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 06/03/2020

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Quercus dumosa*

Common Name: Nuttall's scrub oak

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 1 Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ No ☒ Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Erik LaCoste
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☐ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ lek ☐ other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***
Questhaven project site off of San Elijo Road approximately 0.25 mile east of Fallsview Road.

County: San Diego Landowner / Mgr: Colrich
Quad Name: Rancho Santa Fe Elevation: 524
T 12S R 3W Sec 33 , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE
T ___ R ___ Sec ___ , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____
DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: _____ meters/feet
Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)
Coordinates:

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Is the dominant species in scrub oak chaparral on site. Also found in chamise chaparral, southern mixed chaparral, and Diegan coastal sage scrub-disturbed on site.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor
Immediate AND surrounding land use: _____
Visible disturbances: Roadway and SDG&E powerlines
Threats: Proposed for development
Comments:

Determination: *(check one or more, and fill in blanks)*
☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ( ) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 06/20/2020

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Brodiaea orcuttii*

Common Name: Orcutt's brodiaea

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: 326 Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # ☐ No ☒ Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Greg Mason, Erik LaCoste, Jasmine Watts
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

☐ wintering ☐ breeding ☐ nesting ☐ rookery ☐ burrow site ☐ lek ☐ other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)

Questhaven project site off of San Elijo Road approximately 0.25 mile east of Fallsview Road.

County: San Diego Landowner / Mgr: Colrich

Quad Name: Rancho Santa Fe Elevation: 526

T 12S R 3W Sec 33 , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE

T ___ R ___ Sec ___ , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____

DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: _____ meters/feet

Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)

Coordinates: 33°05'35.58"N, 117°12'26.99"W 33°05'24.44"N, 117°12'21.57"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Orcutt's brodiaea was found on site in two locations. The larger population occurs in non-native grassland in the northwestern portion of the site; another small population occurs in non-native grassland in the central portion of the site.

Please fill out separate form for other rare taxa seen at this site.

Site Information

Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor

Immediate AND surrounding land use: _____

Visible disturbances: Roadway and SDG&E powerlines

Threats: Proposed for development

Comments:

Determination: *(check one or more, and fill in blanks)*

☐ Keyed (cite reference): _____
☐ Compared with specimen housed at: _____
☐ Compared with photo / drawing in: _____
☐ By another person (name): _____
☐ Other: _____

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	☐	☐	☐
Habitat	☐	☐	☐
Diagnostic feature	☐	☐	☐

May we obtain duplicates at our expense? ( ) yes ( ) no

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
P.O. Box 944209
Sacramento, CA 94244-2090
CNDDB@wildlife.ca.gov

For Office Use Only
Source Code: _____ Quad Code: _____
Elm Code: _____ Occ No.: _____
EO Index: _____ Map Index: _____

Date of Field Work (mm/dd/yyyy): 03/20/2021

Clear Form

California Native Species Field Survey Form

Print Form

Scientific Name: *Spea hammondii*

Common Name: Western spadefoot

Species Found? (●) Yes ( ) No _____ If not found, why?

Total No. Individuals: _____ Subsequent Visit? ( ) Yes ( ) No

Is this an existing NDDB occurrence? _____ Yes, Occ. # [ ] No [X] Unk.

Collection? If yes: _____ Number _____ Museum / Herbarium

Reporter: Greg Mason
Address: Alden Environmental, Inc.
3245 University Ave #1188, San Diego, CA 92104
E-mail Address: gmason@aldenenv.com
Phone: 619-284-3815

Plant Information

Phenology:

_____ % vegetative _____ % flowering _____ % fruiting

Animal Information

_____ # adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown

[ ] wintering [ ] breeding [ ] nesting [ ] rookery [ ] burrow site [ ] lek [ ] other

Location Description ***(please attach map AND/OR fill out your choice of coordinates, below)***
Questhaven project site off of San Elijo Road approximately 0.25 mile east of Fallsview Road.

County: San Diego Landowner / Mgr: Colrich
Quad Name: Rancho Santa Fe Elevation: 510
T 12S R 3W Sec 33 , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) Source of Coordinates (GPS, topo. map & type): GE
T ___ R ___ Sec ___ , ___ 1/4 of ___ 1/4, Meridian: H ( ) M ( ) S ( ) GPS Make & Model: _____
DATUM: **NAD27** ( ) **NAD83** (●) **WGS84** ( ) Horizontal Accuracy: _____ meters/feet
Coordinate System: UTM Zone 10 ( ) UTM Zone 11 ( ) ***OR*** Geographic (Latitude & Longitude) (●)
Coordinates: 33°05'30.4"N, 117°12'17.81"W 33°05'29.74"N, 117°12'16.61"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Eggs and tadpoles observed in two water-holding basins--one in disturbed habitat near the base of an SDG&E tower; the other slightly southwest in non-native grassland.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): ( ) Excellent (●) Good ( ) Fair ( ) Poor
Immediate AND surrounding land use: _____
Visible disturbances: Roadway and SDG&E powerlines
Threats: Proposed for development
Comments:

Determination: *(check one or more, and fill in blanks)*
[ ] Keyed (cite reference): _____
[ ] Compared with specimen housed at: _____
[ ] Compared with photo / drawing in: _____
[ ] By another person (name): _____
[X] Other: Directly observed

Photographs: *(check one or more)*

	Slide	Print	Digital
Plant / animal	[ ]	[ ]	[ ]
Habitat	[ ]	[ ]	[ ]
Diagnostic feature	[ ]	[ ]	[ ]

May we obtain duplicates at our expense? ( ) yes ( ) no

Appendix C

Coastal California Gnatcatcher

Survey Report

Questhaven Project
U.S. Fish and Wildlife Service Protocol Level Presence/Absence Surveys for the Coastal California Gnatcatcher (*Polioptila californica californica*)

Prepared for:

ColRich Communities
444 West Beech Street, Suite 300
San Diego, CA 92101

Prepared by:

Alden Environmental, Inc.
3245 University Ave., #1188
San Diego, CA 92104

May 19, 2020

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

Erik LaCoste (TE- 027736-6)

ALDEN ENVIRONMENTAL, INC

TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

INTRODUCTION

This report documents the results of a survey conducted for the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) on the Questhaven project site. The approximately 70 acre site is located in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. (Figures 1 and 2).

METHODS

The surveys were performed in accordance with the Year 1997 Survey Protocol Information (USFWS 1997) by US Fish & Wildlife Service (USFWS) permitted biologist Erik LaCoste (TE-027736-6). The survey visits were conducted between April 9 and May 1, 2020. CAGN were mapped when encountered.

Dates, times, and weather conditions at the start and end of each survey are presented in Appendix A. The survey was conducted by walking through, and adjacent to, suitable CAGN habitat on site. Birds were viewed with the aid of binoculars, where necessary. Recorded CAGN vocalizations ("mew calls") were broadcast for approximate 5-second durations at approximately 50-yard increments along the survey route, or as needed to adequately cover each suitable habitat patch. Recorded vocalizations were only broadcast to initially detect the possible presence of CAGNs. Copies of field notes from each survey are presented in Appendix B.

VEGETATION COMMUNITIES

The site supports approximately 11 acres of suitable coastal sage scrub habitat for the CAGN (Figure 3). Dominant species in this area include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina)*, and black sage (*Salvia mellifera*). The coastal sage scrub habitat occurs along the northern site boundary and along edge of the mafic southern mixed chaparral habitat to the south. Other habitats mapped on site that were not considered suitable for the species are eucalyptus woodland, non-native grassland, mafic southern mixed chaparral, mafic chamise chaparral, and developed/disturbed area.

SURVEY RESULTS

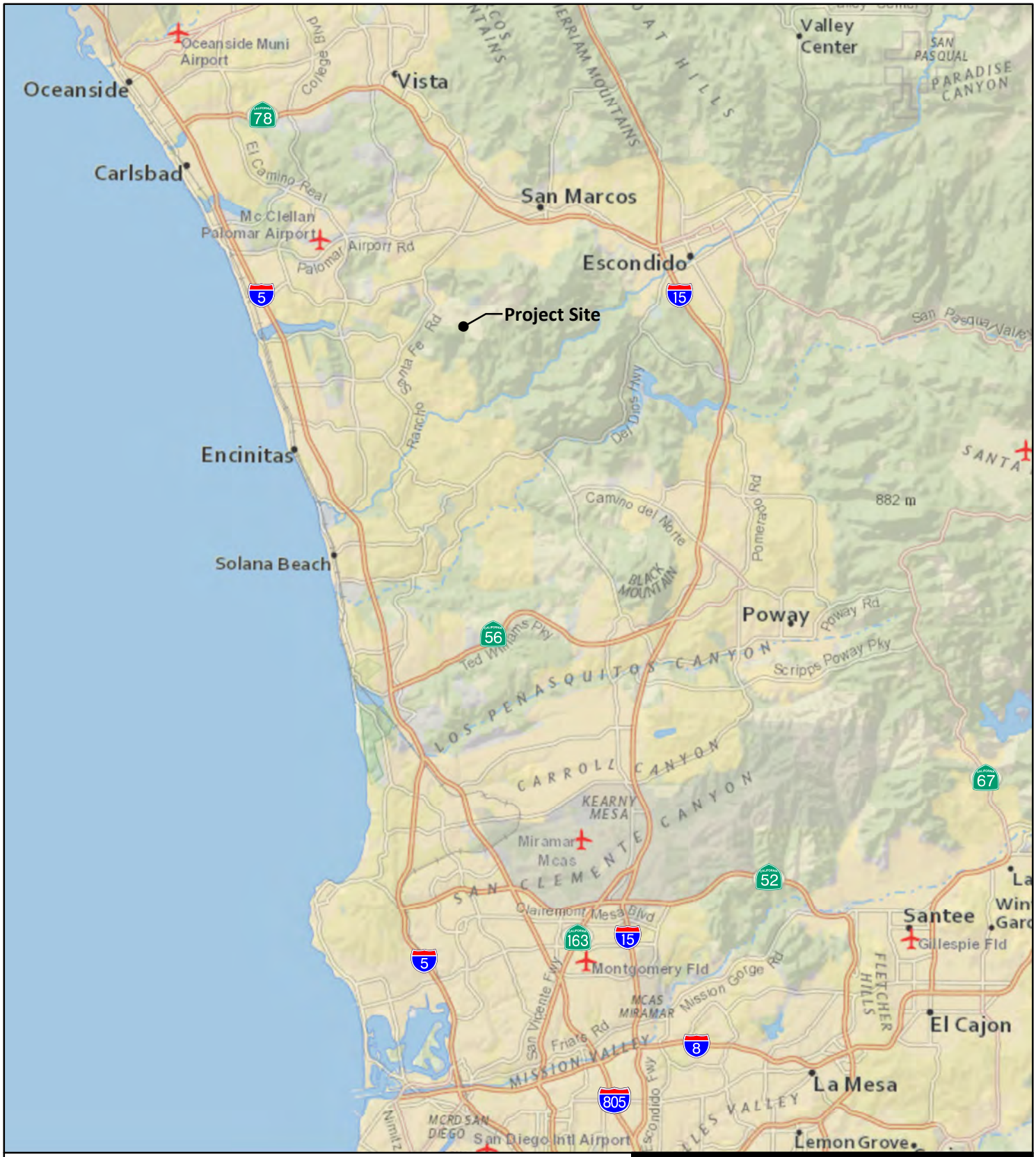
A pair of CAGN were observed on site during all three site visits. Specific observations are provided in Table 1 and are shown on Figure 3. Additional information is included in the attached field notes (Appendix B).

Table 1
CAGN Observations

Number Observed	Date	NOTES
2	4/9/2020	Pair observed foraging on site
2	4/23/2020	Same pair observed, no evidence of active nest but pair is sticking close together
2	5/1/2020	Nest found by accident, female incubating, male nearby

REFERENCES

USFWS. 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Guidelines. February 28.

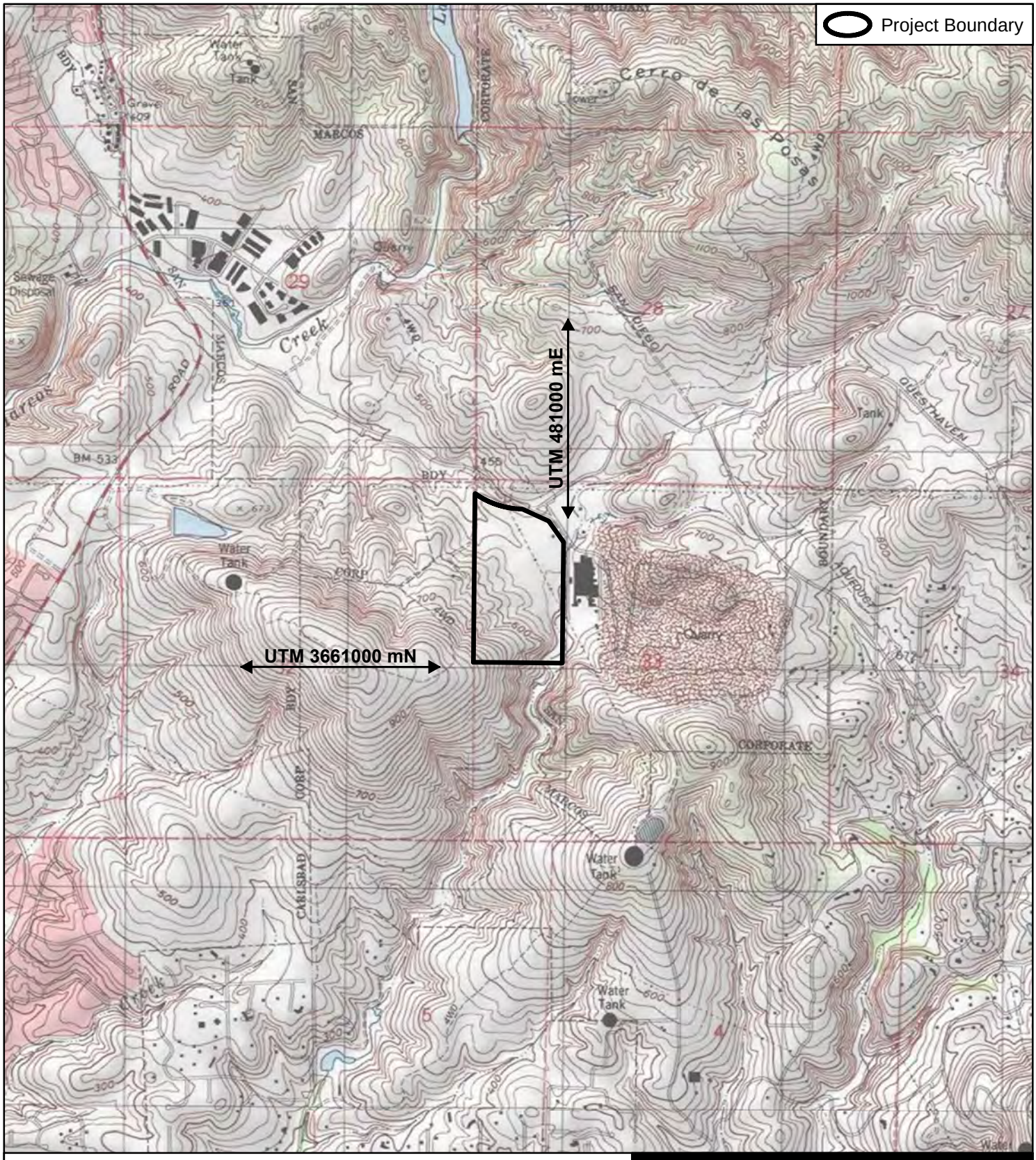


ALDEN ENVIRONMENTAL, INC

Figure 1

Regional Location

QUESTHAVEN PROJECT
COASTAL CALIFORNIA GNATCATCHER
SURVEY REPORT



Source: USGS Quads (Rancho Santa Fe) Copyright:© 2013 National Geographic Society, i-cubed

N
W E
S

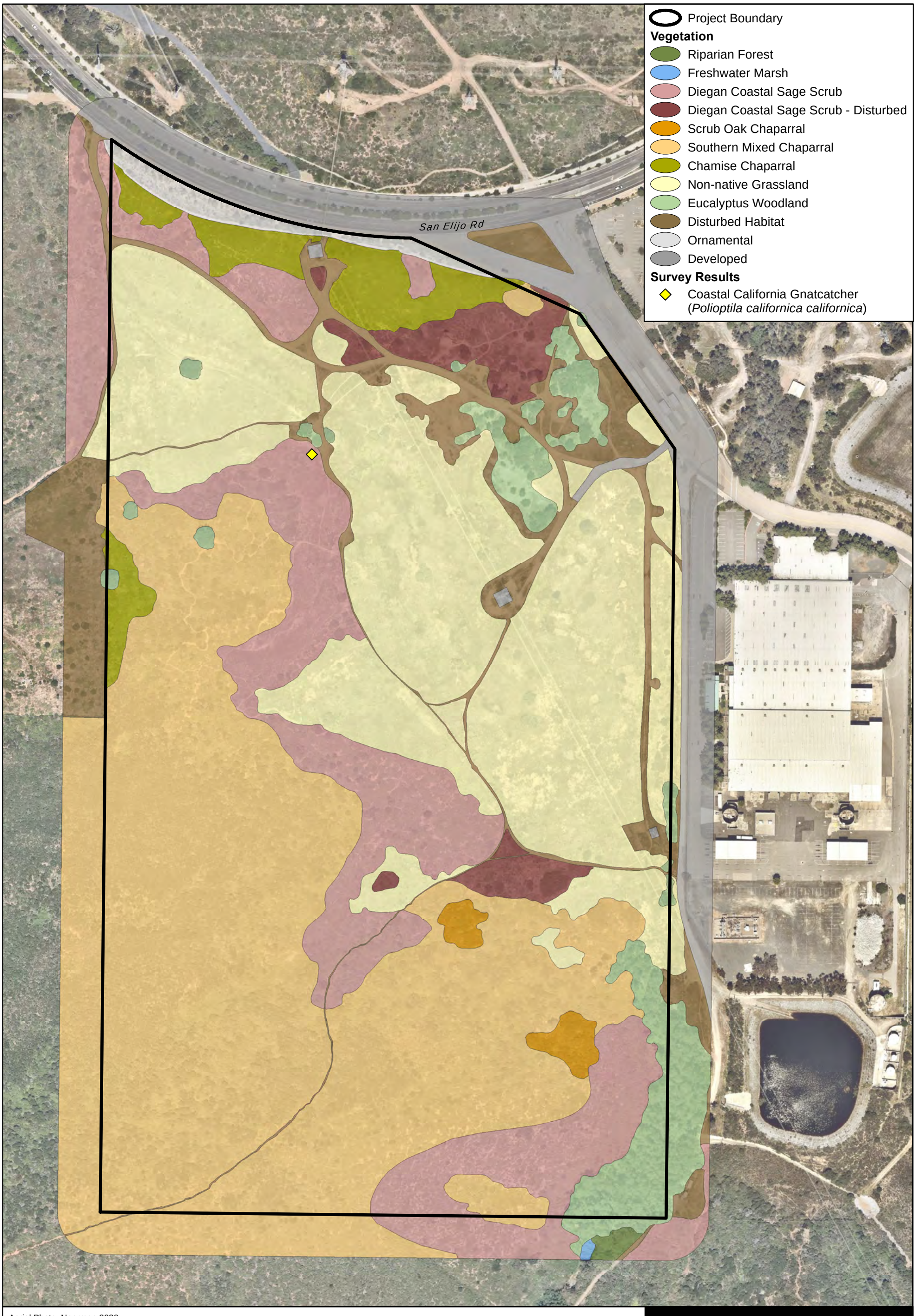
0 1,000 2,000 Feet

ALDEN ENVIRONMENTAL, INC

Figure 2

Project Location

QUESTHAVEN PROJECT
COASTAL CALIFORNIA GNATCATCHER
SURVEY REPORT



Aerial Photo: Nearmap 2020

ALDEN ENVIRONMENTAL, INC

Figure 3

Survey Results

QUESTHAVEN PROJECT
COASTAL CALIFORNIA GNATCATCHER
SURVEY REPORT

Appendix A
SUMMARY OF FIELD SURVEY CONDITIONS

Survey	Date	Biologist	Survey Times (start/stop)	Weather Conditions (start/stop)
1	4/9/2020	Erik LaCoste	0700-1100	80% cover, 58°F, wind 2-4 mph/ 100% cover (sprinkles from 1000-1100), 59°F, wind 2-4 mph
2	4/23/2020	Erik LaCoste	0800-1200	0% cover, 68°F, wind 1-2 mph/ 0% cover, 78°F, wind 2-4 mph
3	5/1/2020	Erik LaCoste	0615-1015	100% cover, 63°F, wind 0 mph/ 100% cover, 66°F, wind 1-2 mph

Appendix B
COPIES OF FIELD NOTES

4/9/20 QUAIL HAVEN CAGN #1

TIME			
0700	58	2-4	20% OC.
1100	59	2-4	100% sprinkles 10-11

SPECIES		other
CAFI	BEWR	CA GR GO
BHGR	OCWA	
HOFI	COYO	
WCSP	VASW	
MODO	CAGN - PAIR -	
ANHU	33.03995, -117.20544	
EUST	Foraging -	
BUSH		
YRWA		
SAPH		
CATO (CALT)		
WREN		
CATH		
RTHA		
CAGN(P)		
BGGN		
SOSP		
SPTO		

♂ 0935 + ♀

~1000 - Some sprinkles - not hard - not affecting Bird Activity -
1020 - Stopped - still 100% OC.
- LIGHT RAIN/Sprinkles - 10-11 Am -

4/23/20 QuestHaven BUOW 2

BUOW Survey 2

TIME	Temp.	Wind	Sky
0600	60	0	0
0800	68	0-2	0

SPECIES (For Both Surveys)

CATH	CAKI	BLGR	DOWO
SPTO	WTSW	ATFL	CLSW
CALT	HOFI	CORA	CAEN
ANHU	SAPH	MODO	COHA
BEWR	LEGO	NUWO	RTHA
WREN	SOSP	WIWA	NOMO
BEWR	RUHU	BLPH	BUOR
WAVI	WCASS	PSPL	RCSP
BUSH	CADU	HUVI	GRRO
COYE	NRWS	BHCO	EUST

4/23/20 Questhaven CAGN 2

CAGN Survey 2

Time	Temp	Wind	Sky
0800	68	1-2	0
1200	78	2-4	0

0845 - ♂ + ♀ - Pair CAGN - DETect.

Quiet -

33.09108, -117.20703

No Evidence of Active nest - though Pair is Sticking close together.

Others

Cottontail

CALK SQ

S.P. Rattlesnake

QUESTHANCH CAGN #3

5/1/20

TIME	TEMP	WIND	SKY
0615	63	0	100% 0.6
1015	66	+2	100% OC

SPECIES

MODO	WREN
BHCO	CAQU
BUSH	BGGN.
CAKI	RUHU
HOFI	CORA
LEGO	WIWA
BEWR	COYE
EVST	WCSP.
BHGR	GRRO
NUWO	BCHU
CATH	PSFL
SOSP	BLPH
BLGR	ATFL
SPTO	CAGN (Pair + Nest)
CALT	COHA
MALL	
CASJ	
HOWR	
ANHU	

NOTES

SPADEFOOT Toad located -
33.09132, -117.20510

SPADEFOOT - 33.09102, -117.20565

♂ 857 - Nest Found BY ACCIDENT - 33.09160, -117.20688
♀ incubating, ♂ Nearby

Appendix D

Burrowing Owl Survey Report

ALDEN ENVIRONMENTAL, INC
3245 University Ave, #1188 | San Diego, CA 92104 | **Phone/Fax:** 619.284.3815

June 18, 2020

Ms. Rita Mahoney
Colrich
444 West Beech Street, Suite 300
San Diego, CA 92101

Subject: Burrowing Owl Survey Report for the Questhaven Project

Dear Ms. Mahoney:

This letter presents the results of the 2020 nesting season survey for the burrowing owl (*Athene cunicularia*) conducted on the approximately 69.1-acre Questhaven Property (APNs 223-080-46-00, 223-070-07-00, and 223-070-08-00).

LOCATION AND SITE DESCRIPTION

The approximately 69.1-acre project site is located in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. The project site is located immediately south and west of the City of San Marcos and east of the City of Carlsbad. Interstate 5 is located approximately 5.3 miles west of the project site. Specifically, the project site is located south of San Elijo Road and east of Denning Drive (Figures 1 and 2). The project site encompasses Assessor's Parcel Number 223-080-46-00 and is located in the west half of the northwest quarter of Section 33, Township 12 South, Range 3 West, San Bernardino Meridian on the U.S. Geological Survey (USGS) 7.5-minute Rancho Santa Fe quadrangle map (Figure 2).

The project site encompasses a large area of steep hills that transition into a relatively flat area in the northern and central portion of the site. Elevations range between approximately 830 feet amsl in the southwest corner to 500 feet amsl along the eastern boundary. Soil on site is mapped as Cieneba very rocky coarse sandy loam (30 – 75 percent slopes), San Miguel rocky silt loam (9 – 30 percent slopes), Huerhuero loam (2 – 9 percent slopes), San Miguel-Exchequer rocky silt loams (9 – 70 percent slopes), and Exchequer rocky silt loam (30 – 70 percent slopes; Figure 3).

METHODS

The 2020 survey consisted of 4 site visits conducted by biologist Erik LaCoste on separate days (Table 1, Attachment A) according to the survey methods in the Staff Report on Burrowing Owl Mitigation (CDFG 2012), which supersedes the survey, avoidance, minimization and mitigation recommendations in the 1995 Staff Report (CDFG 1995), and takes into account the Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993). Representative photographs were taken and are enclosed as Appendix B.

Surveys were limited to an approximately 30-acre flatter area in the central and northeastern portion of the site. This area supports non-native grassland, sparse eucalyptus woodland, and disturbed/developed areas. The remainder of the site with steep slopes and supporting dense chaparral and eucalyptus woodland communities was excluded from the survey area.

The entire survey area was searched for burrowing owls and potential burrows or perches that could be used by the owl. Burrowing owls are known to occupy California ground squirrel (*Spermophilus beecheyi*) burrows; therefore, particular attention was paid to any areas along fence lines, or other locations where squirrel activity has been observed in the past, was observed presently, or was likely to occur. Dirt piles, drainages, and culverts were also carefully examined as these sites can often provide cavities that can support the species. The determination of owl presence was made by direct owl observation or by owl signs such as, but not necessarily limited to, excavated soil, whitewash (excrement), castings (pellets), and/or feathers.

Table 1
Burrowing Owl Survey Information

Survey Number	Date	Biologist	Time	Weather Conditions (start/stop)
1	2/19/20	Erik LaCoste	0600-0815	Overcast (high fog/low clouds), 52°F, wind 0-1 mph/ 100%, 62°F, wind 0-1 mph
2	4/23/20	Erik LaCoste	0600-0800	0%, 60°F, wind 0 mph/ 0%, 68°F, wind 1-2 mph
3	6/2/20	Erik LaCoste	0600-0845	50%, 58°F, wind 0-1 mph/ 30%, 73°F, wind 1-2 mph
4	6/16/20	Erik LaCoste	0600-0915	100%, 59°F, wind 0-1 mph/ 50%, 66°F, wind 1-3 mph

SURVEY RESULTS

On the first survey, a single an old corrugated drainage pipe was investigated for the potential to support the BUOW, but there was no sign of presence/occupation. No BUOW or potential BUOW sign/evidence was observed on the site during any of the visits. Based on the negative results of the 2020 field surveys, the site is not anticipated to be occupied by the BUOW.

Please contact me if you have any questions.

Sincerely,

Greg Mason
Senior Biologist

Enclosures:

Figure 1	Regional Location Map
Figure 2	Project Location Map
Figure 3	BUOW Survey Map
Attachment A	Field Notes

References:

Bowman, R. 1973. Soil Survey of the San Diego Area. USDA in cooperation with USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

California Department of Fish and Game (CDFG). 2012. Staff Report on Burrowing Owl Mitigation. March 17.

1995. Environmental Services Division. Staff Report on Burrowing Owl Mitigation. October 17. 8pp. plus attachments.

California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. April.

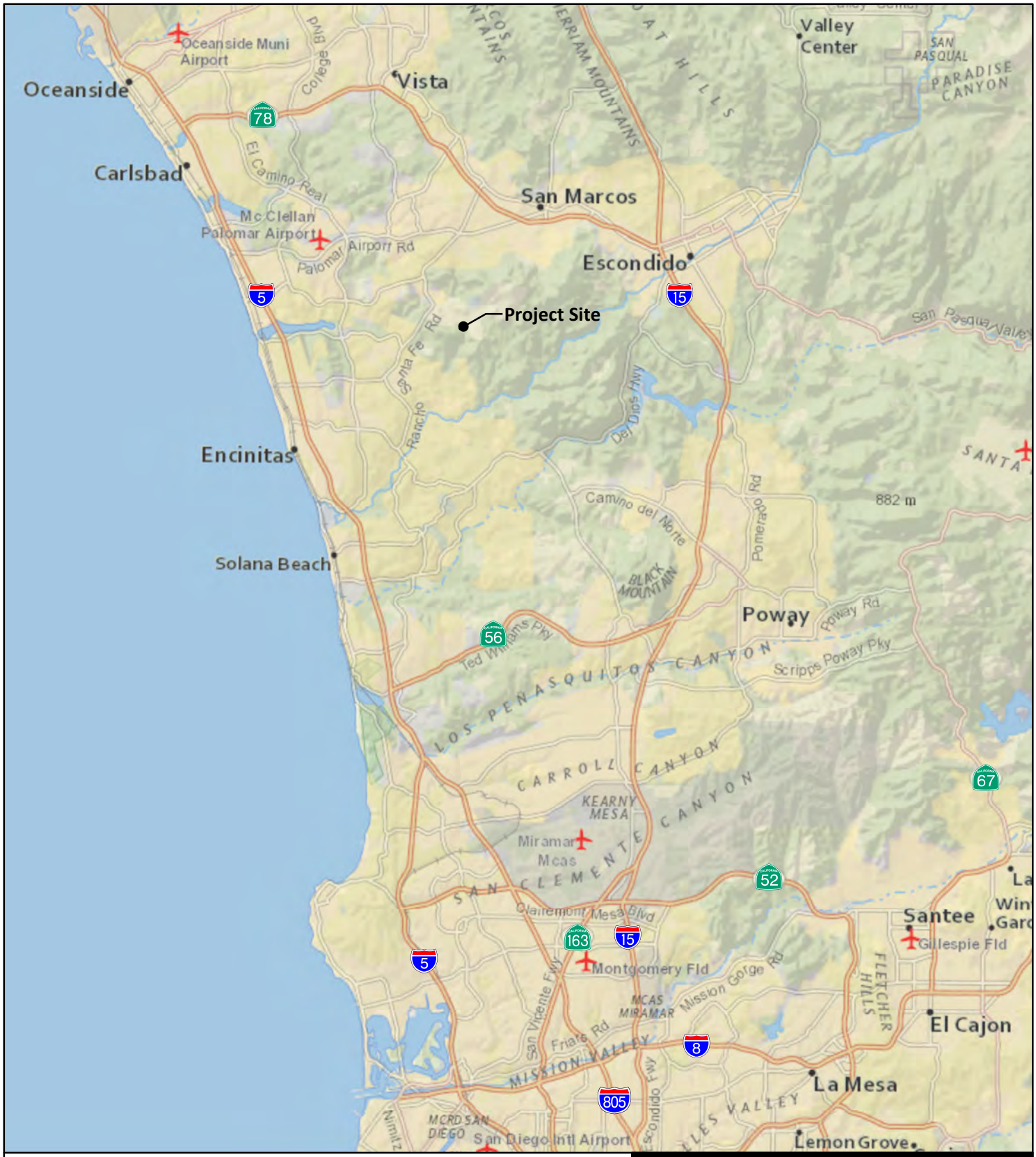


Figure 1

Regional Location

N
W E
S
0 2 4
Miles

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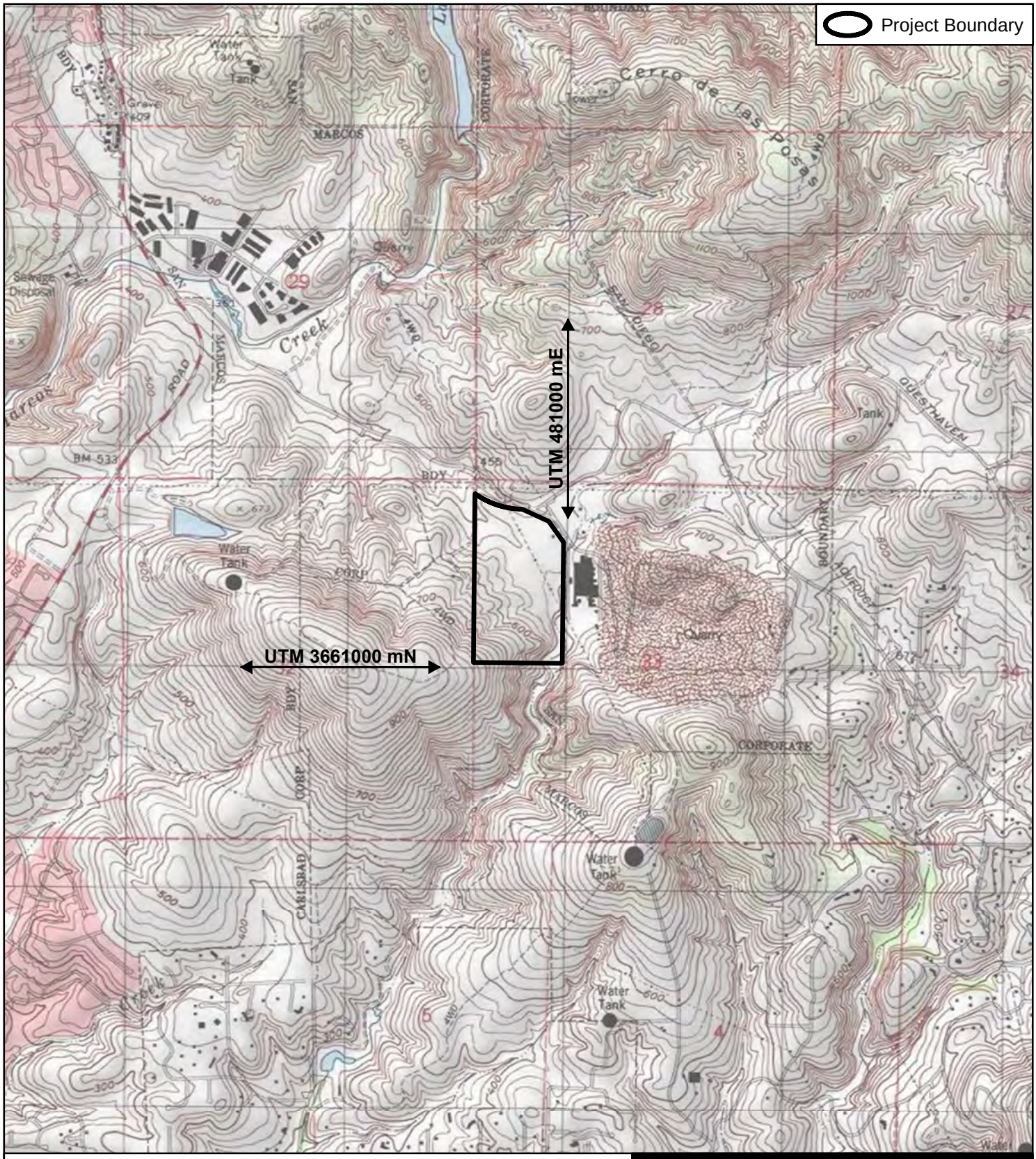
QUESTHAVEN PROJECT
BURROWING OWL SURVEY REPORT



Source: USGS Quads (Rancho Santa Fe) Copyright:© 2013 National Geographic Society, i-cubed

Figure 2

Project Location

QUESTHAVEN PROJECT
BURROWING OWL SURVEY REPORT

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Aerial Photo: Nearmap 2020

N
W E
S
0 90 180
Feet

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Figure 3

Burrowing Owl Survey Area

QUESTHAVEN PROJECT
BURROWING OWL SURVEY REPORT

Attachment A

Field Notes

2.19.20 BUOW 1

Erik LaCoste. Arrive 0600, overcast (high fog/low clouds), 52F, 0-1, 100% OC.

Walking transects roughly 10-15 meters apart. Area is relatively flat and open given good observation potential. Periodic scanning with binoculars.

A single burrow with the potential to provide BUOW with a burrow was located. The burrow is an old corrugated drainage pipe. Location is at 33.09022 , -117.20380.

No fossorial mammals were detected the entire survey. No ground squirrels or burrow were detected anywhere in the survey area. Property was 100% covered on foot achieving 100% visual coverage. No BUOW was detected.

End of survey 0815, 62F, 0-1 mph, 100% OC.

4/23/20 QuestHaven BUOW 2

BUOW Survey 2

TIME	Temp.	Wind	Sky
0600	60	0	0
0800	68	0-2	0

SPECIES (For Both Surveys)

CATH	CAKI	BLGR	DOWO
SPTO	WTSW	ATFL	CLSW
CALT	HOFI	CORA	CAEN
ANHU	SAPH	MODO	COHA
BEWR	LEGO	NUWO	RTHA
WREN	SOSP	WIWA	NOMO
BEWR	RUHU	BLPH	BUOR
WAVI	WCASS	PSPL	RCSP
BUSH	CADU	HUVI	GRRO
COYE	NRWS	BHCO	EUST

4/23/20 Questhaven CAGN 2

CAGN Survey 2

Time	Temp	Wind	Sky
0800	68	1-2	0
1200	78	2-4	0

0845 - ♂ + ♀ - Pair CAGN - DETect.

Quiet -

33.09108, -117.20703

No Evidence of Active nest - though Pair is Sticking close together.

Others

Cottontail

CALK SQ

S.P. Rattlesnake

BUOW - #3 QUEST Haven

6/2/20

START	Temp	Wind	Sky
0600	58	0-1	50%
845	73	1-2	30%

SPECIES		others
BUSH	CAWR.	cottontail.
BUOR		CA GR SQ
WEKI		
NOMO		
LEGO		
EUST.		
MODO		
CALT.		
CAQU		
SBMU		
&SPTO		
HOWR		
RCSP.		
BEWR		
HOFI		
CASJ		
HOOR		

6/16/20

Quisthaven Buoy #4

Time	Temp	Wind	Sky
0600	59	0-1	100% 0.C
0915	66	1-3	50% 0.C

SPECIES

SAPH
LASP
BGGN
SBMU
WEKI
SPTO
EUST
SOSP
MODO
LEGO
BLPH
CAQU
ATFL
NOMO
CALN
NUWO
HOOR
BHGR

HOFI
BLGR
CALT
RCSP
COYE
BEWR
WREN
ACWO
PSFL
CORA
CAST
ALHU
ANHU
NOFL
BHCO - 1 ♂

NO BUOY

Appendix E

Crotch's Bumble Bee Survey Report

2023 Survey Report
for
Foraging Crotch's Bumble Bee
(*Bombus crotchii*)
on the
Questhaven Project Site

Prepared for:

Colrich Communities
444 West Beech Street, Suite 300
San Diego, CA 92101

Prepared by:

Alden Environmental, Inc.
3245 University Ave., #1188
San Diego, CA 92104

August 21, 2023

ALDEN
ENVIRONMENTAL, INC

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INTRODUCTION

This report documents the methods and results of a survey conducted on the Questhaven Project (project) site for foraging Crotch's bumble bee (CBB; *Bombus crotchii*), a candidate for listing as endangered under the California Endangered Species Act (CESA). The approximately 70-acre site is in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. It is within the boundaries of the Draft North County Multiple Species Conservation Program in Pre-approved Mitigation Area (Figures 1 and 2).

METHODS

A foraging bumble bee survey for the CBB was conducted during the period May 23 through July 27, 2023 (Table 1). The first part of the survey followed the California Department of Fish and Wildlife (CDFW)-issued Unofficial Crotch's Bumble Bee Survey Methods, which was available when the survey began. The latter portion of the survey followed the Survey Considerations for CESA Candidate Bumble Bee Species issued by the CDFW on June 6, 2023 (CDFW 2023). Prior to beginning the survey, a habitat assessment was conducted that included reviewing the California Natural Diversity Database and available bee data (iNaturalist) to identify any reported CBB observations in the project site vicinity and to help determine areas on site with suitable foraging resources (flowering plants) for the CBB.

Table 1 Crotch's Bumble Bee Survey Information					
Site Visit	**Area**	**Date**	**Biologist**	**Survey Times (start-stop)**	**Weather Conditions (start/stop)**
1	1	5/23	Korey Klutz	0930-1630	Cloudy, 60°F, wind 0 mph/ Cloudy, 64°F, wind 2 mph
1	2	5/24	Brian Lohstroh	1200-1600	100% cover, 70°F, wind 2-6 mph/ 100%, 69°F, wind 3-5 mph
1	3	5/30	Darin Busby	1230-1530	100% cover, 69°F, wind 4-7 mph/ 90%, 70°F, wind 3-5 mph
1	3	5/30	Melissa Busby	1330-1530	100% cover, 69°F, wind 4-7 mph/ 90%, 70°F, wind 3-5 mph
2	1	6/7	Korey Klutz	0900-1430	Cloudy, 63°F, wind 0 mph/ Cloudy, 67°F, wind 4 mph
2	2	6/8	Brian Lohstroh	1100-1530	100% cover, 73°F, wind 3-6 mph/ 10%, 76°F, wind 2-7 mph
2	3	6/17	Darin Busby	1040-1500	0% cover, 73°F, wind 1-5 mph/ 0%, 78°F, wind 3-6 mph
3	1	6/22	Korey Klutz	0900-1430	Partly cloudy, 64°F, wind 0 mph/ Partly cloudy, 70°F, wind 8 mph
3	2	6/22	Brian Lohstroh	1015-1430	20% cover, 74°F, wind 2-5 mph/ 0%, 76°F, wind 4-7 mph
3	3	6/30	Darin Busby	1000-1330	0% cover, 70°F, wind 0-3 mph/ 0%, 79°F, wind 2-5 mph
4	1	7/9	Korey Klutz	1000-1500	Partly cloudy, 65°F, wind 0 mph/ Clear, 71°F, wind 6 mph
4	2	7/7	Brian Lohstroh	1015-1425	0% cover, 70°F, wind 0-4 mph/ 0%, 71°F, wind 2-9 mph
4	3	7/13	Darin Busby	0930-1300	0% cover, 78°F, wind 1-3 mph/ 0%, 85°F, wind 1-5 mph
5	1	7/23	Korey Klutz	0800-1300	Clear, 65°F, wind 0 mph/ Clear, 73°F, wind 10 mph
5	2	7/21	Brian Lohstroh	0815-1215	100% cover, 68°F, wind 2-4 mph/ 0%, 79°F, wind 0-7 mph
5	3	7/27	Darin Busby	1030-1400	0% cover, 77°F, wind 2-3 mph/ 0%, 85°F, wind 3-5 mph

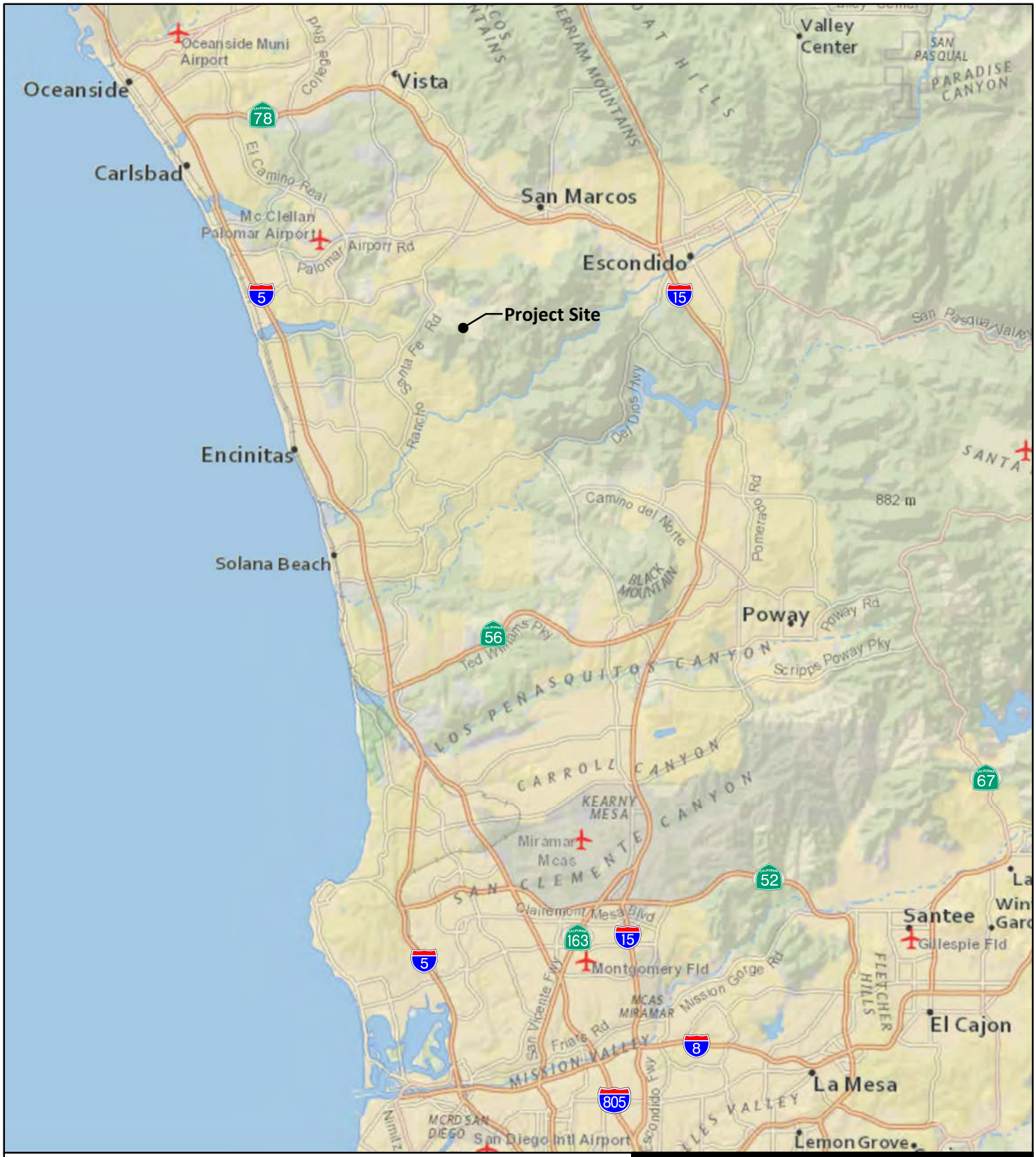

Figure 1

Regional Location

QUESTHAVEN PROJECT
2023 CROTCH'S BUMBLE BEE SURVEY

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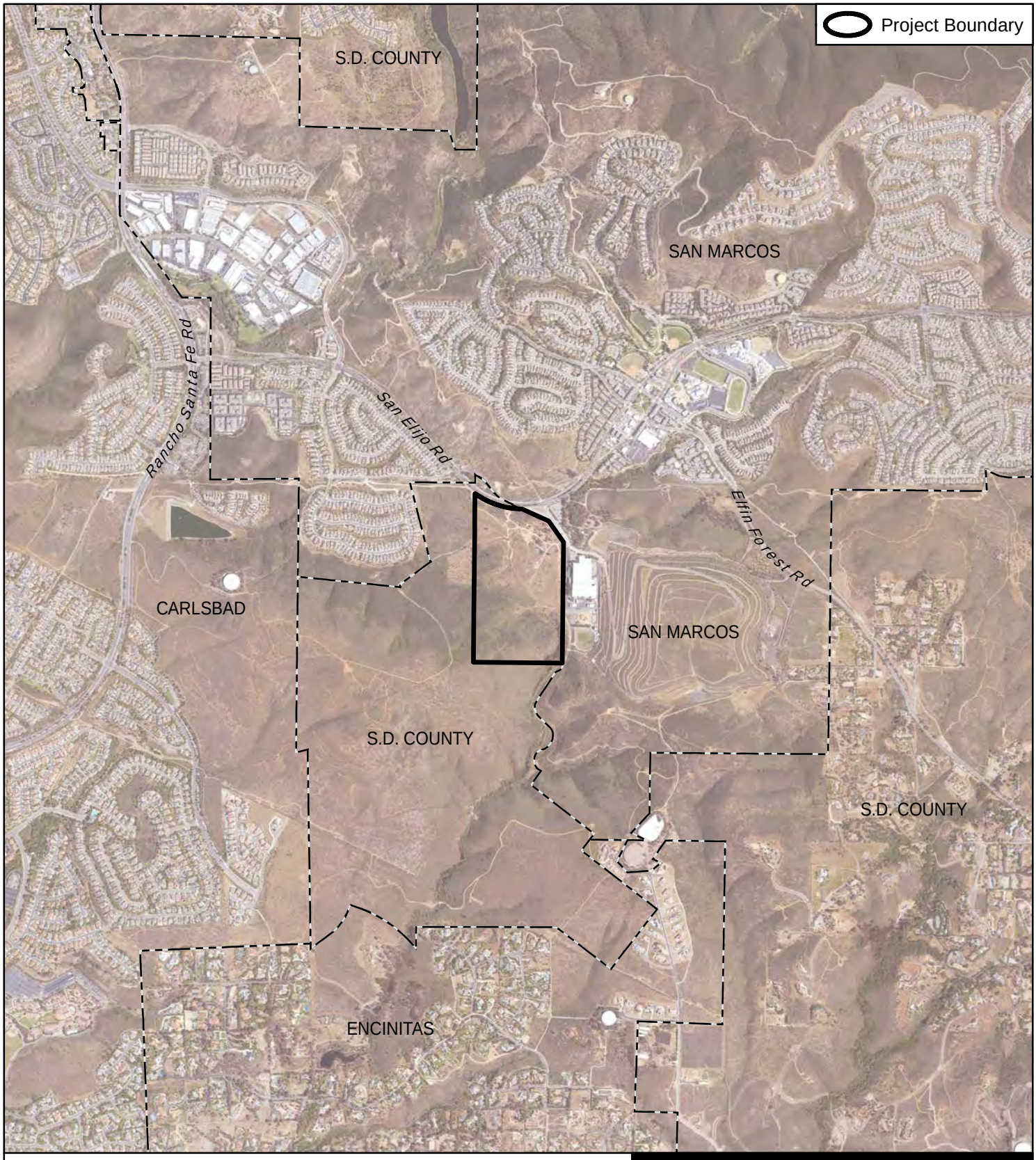

Aerial Photo: USDA NAIP 2022

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0 1,000 2,000 Feet

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Figure 2

Project Location

QUESTHAVEN PROJECT
2023 CROTCH'S BUMBLE BEE SURVEY

Aerial Photo: Nearmap 2023

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W E
S
0 90 180
Feet

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Figure 3

Crotch's Bumble Bee Survey Area

QUESTHAVEN PROJECT
2023 CROTCH'S BUMBLE BEE SURVEY

The survey area was divided into 3 sections: Area 1 is comprised of 9.67 acres; Area 2 is comprised of 9.95 acres; and Area 3 is comprised of 9.69 acres (Figure 3). The survey areas were determined based on the presence of flowering plants that could serve as nectar and pollen resources for foraging bumble bees. Dense non-native grassland, eucalyptus woodland, and developed/disturbed areas were excluded as they did not support flowering species. More open and less dense non-native grassland areas with numerous flowering species (Orcutt's brodiaea, deer weed, blue dicks, etc.) were included in the survey areas. Less dense coastal sage scrub habitat areas within and adjacent to the project footprint also were surveyed where possible. Areas outside of the project footprint to the south and west also were excluded as they are not proposed for impacts (within the preservation areas) and support primarily dense, impenetrable chaparral habitat on steep slopes.

According to the Survey Considerations (CDFW 2023), it is recommended that at least 3 site visits take place spaced 2 to 4 weeks apart during the period of highest detection probability for foraging Crotch's bumble bees (i.e., the April – August Colony Active Period for the species) and when floral resources are present. As shown in Table 1, 5 site visits were made to each of the 3 survey areas approximately 2 weeks apart during the Colony Active Period when floral resources were present.

The Survey Considerations (CDFW 2023) also state that site visits should be made at least 1 hour after sunrise and at least 2 hours before sunset, although ideally between 9 am and 1 pm on warm, but not hot, sunny days (65-90 degrees Fahrenheit) with low wind (less than 8 miles per hour). The recommended rate of survey is 1 person-hour per 3 acres of suitable habitat. The survey was generally conducted under these conditions (Table 1).

The survey included walking slow, meandering transects through the survey areas and looking for foraging *Bombus* species. Flowering plants in bloom, as well as bumble bees and other bee/wasp species observed, were recorded in field notes (Appendix A). No netting or handling of any insects was conducted.

RESULTS

While there were numerous plant species in flower during the survey, only one genus that is favored by the CBB, which is *Salvia*, was present on site (Appendix A). Three bumble bee species were identified, but none was the CBB. The 3 bumble bee species included black tail bumble bee (*Bombus melanopygus*; observed only in May); yellow bumble bee (*B. californicus*; observed May through July); and most abundantly, the yellow-faced bumble bee (*B. vosnesenskii*; observed May through July).

REFERENCE

California Department of Fish and Wildlife. 2023. Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species. June 6. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=213150&inlin

APPENDIX A

Copies of Field Notes

Biologist: Korey Klutz

Questhaven Survey Dates and Weather Conditions					
	Survey 1	Survey 2	Survey 3	Survey 4	Survey 5
	23-May	7-Jun	22-Jun	9-Jul	23-Jul
Survey Hours	0930-1630	0900-1430	0900-1430	1000-1500	0800-1300
Temps	60-64	63-67	64-70	65-71	65-73
Wind	0-2	0-4	0-8	0-6	0-10
Conditions	Cloudy	Cloudy	Partly Cloudy	Partly Cloudy to Clear	Clear

Biologist:
Brian Lohstroh

Questhaven San Marcos Site (Area 2)					
Date	**Time on site**	**Temp (°F)**	**Sky Cover (%)**	**Wind Speed (MPH)**	**Personnel**
5/24/23	1200-1600	70-69	100-100%	2-6; 3-5	B. Lohstroh
6/8/23	1100-1530	73-76	100-10%	3-6; 2-7	B. Lohstroh
6/22/23	1015-1430	74-76	20-0%	2-5; 4-7	B. Lohstroh
7/7/23	1015-1425	70-71	0-0%	0-4; 2-9	B. Lohstroh
7/21/23	0815-1215	68-79	100-0%	2-4; 0-7	B. Lohstroh

Biologist:
Brian Lohstroh

Common Name	*Scientific Name*	Questhaven Area 2				
		5/24/23	6/8/23	6/22/23	7/7/23	7/21/23
Honey bee	*Apis mellifera*	x	x	x	x	x
Unknown black bee	bee *sp. (TBD)*				x	
Bee fly	*Bombilius sp.*	x				
California bumblebee	***Bombus californicus***	**1***		**2**	**6**	**3**
Black-tailed bumblebee	***Bombus melanopygus***			**1**	**1**	
Vonsnesenski's bumblebee	***Bombus vosnesenskii***	**7***	**7***	**13***	**10**	**35+male**
Common blue mud dauber	*Chalybion californicum*		x			
Mexican Cactus Fly	*Copestylum mexicanum*		x			x
Digger/sunflower bee species	*Diadasia sp.*		x	x		x
Scoliid wasp	*Scoliidae* (Family)	x	x	x	x	x
Syrphid fly	*Syrphidae* (Family)	x	x			
bumblebee robberfly	*Laphria flava*			x		
Common cicada	*Okanagana* sp.			x		x
Tarantula hawk	*Pepsis chrysothemis*				x	x
Calyptrate (house) fly	Subsection *Calyptratae*	x				
Western Yellowjacket	*Vespula pensylvanica*	x				x
		*One queen observed				
Other species of interest:						
Tarantula	Genus *Aphonopelma*					
California toad (dead)	*Anaxyrus boreas halophilus*					
green lynx spider	*Peucetia viridans*					
California Gnatcatcher	*Polioptila californica*					
Least Bell's Vireo	*Vireo bellii pusillus*					x
So. California rufous-crowned Sparrow	*Aimophila ruficeps canescens*					

Crotch's Bumble Bee Survey Form

Surveyor: Darin Busby **Date:** 5/30/2023

Site Name: Questhaven – Area 3 **Site Visit No:** 1

Acres Surveyed: 5.81 **Survey Time:** 3.0 hours **Acres per Hour:** 1.9

Other Surveyors Present: N/A **Project No.:**

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover**
Start	1230	69	4-7	100%
End	1530	70	3-5	90%
Start	--	--	--	--
End	--	--	--	--

Vegetation Communities Surveyed (inc. dominant spp.):
Diegan coastal sage scrub (*Eriogonum fasciculatum*)
Non-native grassland (*Avena* spp.)

Bumble Bee Species	**No.**	**Other Hymenoptera (Bee/Wasp) Species**	**Obs.**
yellow bumble bee (*Bombus californicus*)		western honey bee (*Apis mellifera*)	x
Crotch's bumble bee (*B. crotchii*)		Ichnemonid wasp (Family: Ichneumonidae)	
Fernald cuckoo bumble bee (*B. flavidus*)		cuckoo bee (*Nomada*)	
black tail bumble bee (*B. melanopygus*)	2	tarantula hawk (*Pepsis thisbe*)	
Sonoran (American) bumble bee (*B. sonorous*)		sawfly (Family: Tenthredinidae)	
Vancouver bumble bee (*B. vancouverensis nearcticus*)		yellowjacket (*Vespula / Dilichovespula*)	
Van Dyke bumble bee (*B. vandykei*)		carpenter bee (Subfamily: Xylocopinae)	
Vosnesensky bumble bee (*B. vosnesenskii*)	14		
Column Total	16	**See field notes for other flying insects observed*	

Nectar/Pollen Sources (*CBB favorites)			
deerweed (*Acmispon glaber*)	x	phacelia / scorpionweed (*Phacelia*)*	
onion (*Allium* spp.)		popcorn flower (*Cryptantha/Plagiobothrys*)	
fiddleneck (*Amsinckia* spp.)		sage (*Salvia*)*	x
snapdragon (*Antirrhinum*)*		ragwort (*Senecio*)	
manzanita (*Arctostaphylos*)		clover (*Trifolium*)	
milkweed (*Asclepias*)*		vetch (*Vicia*)*	
milk-vetch (*Astragalus*)		**Other:**	
goldenstar (*Bloomeria* spp.)		canchalagua (*Zeltnera venusta*)	x
lilac\buckthorn (*Ceanothus*)		fiesta flower (*Pholistoma auritum*)	x
pincushion (*Chaenactis*)*		Italian thistle (*Carduus pycnocephalus*)	x
thistle (*Cirsium*)*		bristly ox-tongue (*Helminthotheca echioides*)	x
clarkia (*Clarkia*)		morning-glory (*Calystegia macrostegia*)	x
bird's beak (*Cordylanthus*)		orange-bush monkeyflower (*Diplacus aurantiacus*)	x
fascicled tarweed (*Deinandra fasciculata*)		golden yarrow (*Eriophyllum confertiflorum*)	x
larkspur (*Delphinium*)*		scarlet pimpernel (*Lysimachia arvensis*)	x
buckwheat (*Eriogonum fasciculatum*)	x	black elderberry (*Sambucus nigra*)	x
sunflower (*Helianthus*)		blue-eyed grass (*Sisyrinchium bellum*)	x
telegraph weed (*Heterotheca*)		California rose (*Rosa californica*)	x
goldfields (*Lasthenia* spp.)		Parish's nightshade (*Solanum parishii*)	x
honeysuckle (*Lonicera*)		wild radish (*Raphanus sativus*)	x
lupine (*Lupinus*)*		redstem filaree (*Erodium cicutarium*)	x
bur-clover (*Medicago*)*		Crete hedypnois (*Hedypnois cretica*)	x
penstemon (*Penstemon*)			

Crotch's Bumble Bee Observation(s) Log			
Time	**Photo(s)**	**No.**	**Notes (Habitat, Nectar/Pollen Source, Behavior)**

Crotch's Bumble Bee Survey Form

Surveyor: Melissa Busby **Date:** 5/30/2023

Site Name: Questhaven – Area 3 **Site Visit No:** 1

Acres Surveyed: 3.88 **Survey Time:** 2.0 hours **Acres per Hour:** 1.9

Other Surveyors Present: N/A **Project No.:**

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover**
Start	1330	69	4-7	100%
End	1530	70	3-5	90%
Start	--	--	--	--
End	--	--	--	--

Vegetation Communities Surveyed (inc. dominant spp.):
Diegan coastal sage scrub (*Eriogonum fasciculatum*)
Non-native grassland (*Avena* spp.)

Bumble Bee Species	**No.**	**Other Hymenoptera (Bee/Wasp) Species**	**Obs.**
yellow bumble bee (*Bombus californicus*)		western honey bee (*Apis mellifera*)	x
Crotch's bumble bee (*B. crotchii*)		Ichnemonid wasp (Family: Ichneumonidae)	
Fernald cuckoo bumble bee (*B. flavidus*)		cuckoo bee (*Nomada*)	
black tail bumble bee (*B. melanopygus*)		tarantula hawk (*Pepsis thisbe*)	
Sonoran (American) bumble bee (*B. sonorous*)		sawfly (Family: Tenthredinidae)	
Vancouver bumble bee (*B. vancouverensis nearcticus*)		yellowjacket (*Vespula / Dilichovespula*)	
Van Dyke bumble bee (*B. vandykei*)		carpenter bee (Subfamily: Xylocopinae)	
Vosnesensky bumble bee (*B. vosnesenskii*)	13		
Column Total	13	**See field notes for other flying insects observed*	

Nectar/Pollen Sources (*CBB favorites)			
deerweed (*Acmispon glaber*)	x	phacelia / scorpionweed (*Phacelia*)*	
onion (*Allium* spp.)		popcorn flower (*Cryptantha/Plagiobothrys*)	
fiddleneck (*Amsinckia* spp.)		sage (*Salvia*)*	x
snapdragon (*Antirrhinum*)*		ragwort (*Senecio*)	
manzanita (*Arctostaphylos*)		clover (*Trifolium*)	
milkweed (*Asclepias*)*		vetch (*Vicia*)*	
milk-vetch (*Astragalus*)		**Other:**	
goldenstar (*Bloomeria* spp.)		canchalagua (*Zeltnera venusta*)	x
lilac\buckthorn (*Ceanothus*)		grass poly (*Lythrum hyssopifolia*)	x
pincushion (*Chaenactis*)*		Italian thistle (*Carduus pycnocephalus*)	x
thistle (*Cirsium*)*		bristly ox-tongue (*Helminthotheca echioides*)	x
clarkia (*Clarkia*)		morning-glory (*Calystegia macrostegia*)	x
bird's beak (*Cordylanthus*)		orange-bush monkeyflower (*Diplacus aurantiacus*)	x
fascicled tarweed (*Deinandra fasciculata*)		golden yarrow (*Eriophyllum confertiflorum*)	x
larkspur (*Delphinium*)*		scarlet pimpernel (*Lysimachia arvensis*)	x
buckwheat (*Eriogonum fasciculatum*)	x	black elderberry (*Sambucus nigra*)	x
sunflower (*Helianthus*)		blue-eyed grass (*Sisyrinchium bellum*)	x
telegraph weed (*Heterotheca*)		California goldenrod (*Solidago velutina* ssp. *californica*)	x
goldfields (*Lasthenia* spp.)		Orcutt's brodiaea (*Brodiaea orcuttii*)	x
honeysuckle (*Lonicera*)		rattlesnake weed (*Daucus pusillus*)	x
lupine (*Lupinus*)*		fiesta flower (*Pholistoma auritum*)	x
bur-clover (*Medicago*)*		everlasting (*Pseudognaphalium* spp.)	x
penstemon (*Penstemon*)		wild radish (*Raphanus sativus*)	x

Crotch's Bumble Bee Observation(s) Log			
Time	**Photo(s)**	**No.**	**Notes (Habitat, Nectar/Pollen Source, Behavior)**

Crotch's Bumble Bee Survey Form

Surveyor: Darin Busby **Date:** 6/17/2023

Site Name: Questhaven – Area 3 **Site Visit No:** 2

Acres Surveyed: 9.69 **Survey Time:** 4.3 hours **Acres per Hour:** 2.3

Other Surveyors Present: N/A **Project No.:**

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover**
Start	1040	73	1-5	0%
End	1500	78	3-6	0%
Start	--	--	--	--
End	--	--	--	--

Vegetation Communities Surveyed (inc. dominant spp.):
flowers 5-40%, 10% average

Bumble Bee Species	**No.**	**Other Hymenoptera (Bee/Wasp) Species**	**Obs.**
yellow bumble bee (*Bombus californicus*)	4	western honey bee (*Apis mellifera*)	x
Crotch's bumble bee (*B. crotchii*)		Ichnemonid wasp (Family: Ichneumonidae)	
Fernald cuckoo bumble bee (*B. flavidus*)		cuckoo bee (*Nomada*)	
black tail bumble bee (*B. melanopygus*)		tarantula hawk (*Pepsis thisbe*)	
Sonoran (American) bumble bee (*B. sonorous*)		sawfly (Family: Tenthredinidae)	
Vancouver bumble bee (*B. vancouverensis nearcticus*)		yellowjacket (*Vespula / Dilichovespula*)	
Van Dyke bumble bee (*B. vandykei*)		carpenter bee (Subfamily: Xylocopinae)	
Vosnesensky bumble bee (*B. vosnesenskii*)	15		
Column Total	19	**See field notes for other flying insects observed*	

Nectar/Pollen Sources (*CBB favorites)			
deerweed (*Acmispon glaber*)	x	popcorn flower (*Cryptantha/Plagiobothrys*)	
onion (*Allium* spp.)		sage (*Salvia*)*	x
fiddleneck (*Amsinckia* spp.)		ragwort (*Senecio*)	
snapdragon (*Antirrhinum*)*		clover (*Trifolium*)	
manzanita (*Arctostaphylos*)		vetch (*Vicia*)*	
milkweed (*Asclepias*)*		**Other:**	
milk-vetch (*Astragalus*)		canchalagua (*Zeltnera venusta*)	x
goldenstar (*Bloomeria* spp.)		Italian thistle (*Carduus pycnocephalus*)	x
lilac\buckthorn (*Ceanothus*)		orange-bush monkeyflower (*Diplacus aurantiacus*)	x
pincushion (*Chaenactis*)*		golden yarrow (*Eriophyllum confertiflorum*)	x
thistle (*Cirsium*)*		scarlet pimpernel (*Lysimachia arvensis*)	x
clarkia (*Clarkia*)		black elderberry (*Sambucus nigra*)	x
bird's beak (*Cordylanthus*)		blue-eyed grass (*Sisyrinchium bellum*)	x
fascicled tarweed (*Deinandra fasciculata*)	x	fennel (*Foeniculum vulgare*)	x
larkspur (*Delphinium*)*		wild radish (*Raphanus sativus*)	x
buckwheat (*Eriogonum fasciculatum*)	x	California rose (*Rosa californica*)	x
sunflower (*Helianthus*)		wild cucumber (*Marah macrocarpa*)	x
telegraph weed (*Heterotheca*)		short-pod mustard (*Hirschfeldia incana*)	x
goldfields (*Lasthenia* spp.)		garland daisy (*Glebionis coronaria*)	x
honeysuckle (*Lonicera*)		redstem filaree (*Erodium cicutarium*)	x
lupine (*Lupinus*)*		chaparral mallow (*Malacothamnus fasciculatus*)	x
bur-clover (*Medicago*)*		California everlasting (*Pseudognaphalium californicum*)	x
penstemon (*Penstemon*)		Parish's nightshade (*Solanum parishii*)	x
phacelia / scorpionweed (*Phacelia*)*			

Crotch's Bumble Bee Observation(s) Log			
Time	**Photo(s)**	**No.**	**Notes (Habitat, Nectar/Pollen Source, Behavior)**

Crotch's Bumble Bee Survey Form

Surveyor: Darin Busby **Date:** 6/30/2023

Site Name: Questhaven – Area 3 **Site Visit No:** 3

Acres Surveyed: 9.69 **Survey Time:** 3.5 hours **Acres per Hour:** 2.8

Other Surveyors Present: N/A **Project No.:**

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover**
Start	1000	70	0-3	0%
End	1330	79	2-5	0%
Start	--	--	--	--
End	--	--	--	--

Vegetation Communities Surveyed (inc. dominant spp.):
Diegan coastal sage scrub (*Eriogonum fasciculatum*); flowers 5-30%, 10% average

Bumble Bee Species	**No.**	**Other Hymenoptera (Bee/Wasp) Species**	**Obs.**
yellow bumble bee (*Bombus californicus*)	6	western honey bee (*Apis mellifera*)	x
Crotch's bumble bee (*B. crotchii*)		Ichnemonid wasp (Family: Ichneumonidae)	
Fernald cuckoo bumble bee (*B. flavidus*)		cuckoo bee (*Nomada*)	
black tail bumble bee (*B. melanopygus*)		tarantula hawk (*Pepsis thisbe*)	x
Sonoran (American) bumble bee (*B. sonorous*)		sawfly (Family: Tenthredinidae)	
Vancouver bumble bee (*B. vancouverensis nearcticus*)		yellowjacket (*Vespula / Dilichovespula*)	
Van Dyke bumble bee (*B. vandykei*)		carpenter bee (Subfamily: Xylocopinae)	
Vosnesensky bumble bee (*B. vosnesenskii*)	15		
Column Total	21	**See field notes for other flying insects observed*	

Nectar/Pollen Sources (*CBB favorites)			
deerweed (*Acmispon glaber*)	x	popcorn flower (*Cryptantha/Plagiobothrys*)	
onion (*Allium* spp.)		sage (*Salvia*)*	x
fiddleneck (*Amsinckia* spp.)		ragwort (*Senecio*)	
snapdragon (*Antirrhinum*)*		clover (*Trifolium*)	
manzanita (*Arctostaphylos*)		vetch (*Vicia*)*	
milkweed (*Asclepias*)*		**Other:**	
milk-vetch (*Astragalus*)		canchalagua (*Zeltnera venusta*)	x
goldenstar (*Bloomeria* spp.)		orange-bush monkeyflower (*Diplacus aurantiacus*)	x
lilac\buckthorn (*Ceanothus*)		scarlet pimpernel (*Lysimachia arvensis*)	x
pincushion (*Chaenactis*)*		black elderberry (*Sambucus nigra*)	x
thistle (*Cirsium*)*		blue-eyed grass (*Sisyrinchium bellum*)	x
clarkia (*Clarkia*)		fennel (*Foeniculum vulgare*)	x
bird's beak (*Cordylanthus*)		wild radish (*Raphanus sativus*)	x
fascicled tarweed (*Deinandra fasciculata*)	x	morning-glory (*Calystegia macrostegia*)	x
larkspur (*Delphinium*)*		short-pod mustard (*Hirschfeldia incana*)	x
buckwheat (*Eriogonum fasciculatum*)	x	laurel sumac (*Malosma laurina*)	x
sunflower (*Helianthus*)		golden yarrow (*Eriophyllum confertiflorum*)	x
telegraph weed (*Heterotheca*)		chaparral mallow (*Malacothamnus fasciculatus*)	x
goldfields (*Lasthenia* spp.)		California everlasting (*Pseudognaphalium californicum*)	x
honeysuckle (*Lonicera*)		Parish's nightshade (*Solanum parishii*)	x
lupine (*Lupinus*)*		grass poly (*Lythrum hyssopifolia*)	x
bur-clover (*Medicago*)*			
penstemon (*Penstemon*)			
phacelia / scorpionweed (*Phacelia*)*			

Crotch's Bumble Bee Observation(s) Log			
Time	**Photo(s)**	**No.**	**Notes (Habitat, Nectar/Pollen Source, Behavior)**

Crotch's Bumble Bee Survey Form

Surveyor: Darin Busby **Date:** 7/13/2023

Site Name: Questhaven – Area 3 **Site Visit No:** 4

Acres Surveyed: 9.69 **Survey Time:** 3.5 hours **Acres per Hour:** 2.8

Other Surveyors Present: N/A **Project No.:**

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover**
Start	0930	78	1-3	0%
End	1300	85	1-5	0%
Start	--	--	--	--
End	--	--	--	--

Vegetation Communities Surveyed (inc. dominant spp.):
flowers 0-30%, 5% average

Bumble Bee Species	**No.**	**Other Hymenoptera (Bee/Wasp) Species**	**Obs.**
yellow bumble bee (*Bombus californicus*)	2	western honey bee (*Apis mellifera*)	x
Crotch's bumble bee (*B. crotchii*)		Ichnemonid wasp (Family: Ichneumonidae)	
Fernald cuckoo bumble bee (*B. flavidus*)		cuckoo bee (*Nomada*)	
black tail bumble bee (*B. melanopygus*)		tarantula hawk (*Pepsis thisbe*)	x
Sonoran (American) bumble bee (*B. sonorous*)		sawfly (Family: Tenthredinidae)	
Vancouver bumble bee (*B. vancouverensis nearcticus*)		yellowjacket (*Vespula / Dilichovespula*)	
Van Dyke bumble bee (*B. vandykei*)		carpenter bee (Subfamily: Xylocopinae)	
Vosnesensky bumble bee (*B. vosnesenskii*)	8		
Column Total	10	**See field notes for other flying insects observed*	

Nectar/Pollen Sources (*CBB favorites)			
deerweed (*Acmispon glaber*)		popcorn flower (*Cryptantha/Plagiobothrys*)	
onion (*Allium* spp.)		sage (*Salvia*)*	x
fiddleneck (*Amsinckia* spp.)		ragwort (*Senecio*)	
snapdragon (*Antirrhinum*)*		clover (*Trifolium*)	
manzanita (*Arctostaphylos*)		vetch (*Vicia*)*	
milkweed (*Asclepias*)*		**Other:**	
milk-vetch (*Astragalus*)		canchalagua (*Zeltnera venusta*)	x
goldenstar (*Bloomeria* spp.)		orange-bush monkeyflower (*Diplacus aurantiacus*)	x
lilac\buckthorn (*Ceanothus*)		Ramona ceanothus (*Ceanothus tomentosus*)	x
pincushion (*Chaenactis*)*		scarlet pimpernel (*Lysimachia arvensis*)	x
thistle (*Cirsium*)*		black elderberry (*Sambucus nigra*)	x
clarkia (*Clarkia*)		blue-eyed grass (*Sisyrinchium bellum*)	x
bird's beak (*Cordylanthus*)		fennel (*Foeniculum vulgare*)	x
fascicled tarweed (*Deinandra fasciculata*)	x	wild cucumber (*Marah macrocarpa*)	x
larkspur (*Delphinium*)*		California rose (*Rosa californica*)	x
buckwheat (*Eriogonum fasciculatum*)	x	chaparral mallow (*Malacothamnus fasciculatus*)	x
sunflower (*Helianthus*)		short-pod mustard (*Hirschfeldia incana*)	x
telegraph weed (*Heterotheca*)		golden yarrow (*Eriophyllum confertiflorum*)	x
goldfields (*Lasthenia* spp.)		laurel sumac (*Malosma laurina*)	x
honeysuckle (*Lonicera*)		tree tobacco (*Nicotiana glauca*)	x
lupine (*Lupinus*)*		common sow thisle (*Sonchus oleraceus*)	x
bur-clover (*Medicago*)*		Parish's nightshade (*Solanum parishii*)	x
penstemon (*Penstemon*)		wild radish (*Raphanus sativus*)	x
phacelia / scorpionweed (*Phacelia*)*			

Crotch's Bumble Bee Observation(s) Log			
Time	**Photo(s)**	**No.**	**Notes (Habitat, Nectar/Pollen Source, Behavior)**

Crotch's Bumble Bee Survey Form

Surveyor: Darin Busby **Date:** 7/27/2023

Site Name: Questhaven – Area 3 **Site Visit No:** 5

Acres Surveyed: 9.69 **Survey Time:** 3.5 hours **Acres per Hour:** 2.8

Other Surveyors Present: N/A **Project No.:**

Field Conditions				
	Time (24 hr)	**Temperature (˚F)**	**Wind Speed (mph)**	**Cloud Cover**
Start	1030	77	2-3	0%
End	1400	85	3-5	0%
Start	--	--	--	--
End	--	--	--	--

Vegetation Communities Surveyed (inc. dominant spp.):
Non-native grassland (*Avena fatua*, *Bromus* spp.); flowers 0-10%, 2% average
Coastal sage scrub (*Salvia mellifera*, *Malosma Laurina*)

Bumble Bee Species	**No.**	**Other Hymenoptera (Bee/Wasp) Species**	**Obs.**
yellow bumble bee (*Bombus californicus*)	3	western honey bee (*Apis mellifera*)	x
Crotch's bumble bee (*B. crotchii*)		Ichnemonid wasp (Family: Ichneumonidae)	
Fernald cuckoo bumble bee (*B. flavidus*)		cuckoo bee (*Nomada*)	
black tail bumble bee (*B. melanopygus*)		tarantula hawk (*Pepsis thisbe*)	x
Sonoran (American) bumble bee (*B. sonorous*)		sawfly (Family: Tenthredinidae)	
Vancouver bumble bee (*B. vancouverensis nearcticus*)		yellowjacket (*Vespula / Dilichovespula*)	
Van Dyke bumble bee (*B. vandykei*)		carpenter bee (Subfamily: Xylocopinae)	
Vosnesensky bumble bee (*B. vosnesenskii*)	7		
Column Total	10	**See field notes for other flying insects observed*	

Nectar/Pollen Sources (*CBB favorites)			
deerweed (*Acmispon glaber*)		popcorn flower (*Cryptantha/Plagiobothrys*)	
onion (*Allium* spp.)		sage (*Salvia*)*	x
fiddleneck (*Amsinckia* spp.)		ragwort (*Senecio*)	
snapdragon (*Antirrhinum*)*		clover (*Trifolium*)	
manzanita (*Arctostaphylos*)		vetch (*Vicia*)*	
milkweed (*Asclepias*)*		**Other:**	
milk-vetch (*Astragalus*)		canchalagua (*Zeltnera venusta*)	x
goldenstar (*Bloomeria* spp.)		orange-bush monkeyflower (*Diplacus aurantiacus*)	x
lilac\buckthorn (*Ceanothus*)		Ramona ceanothus (*Ceanothus tomentosus*)	
pincushion (*Chaenactis*)*		scarlet pimpernel (*Lysimachia arvensis*)	x
thistle (*Cirsium*)*		black elderberry (*Sambucus nigra*)	
clarkia (*Clarkia*)		blue-eyed grass (*Sisyrinchium bellum*)	x
bird's beak (*Cordylanthus*)		fennel (*Foeniculum vulgare*)	x
fascicled tarweed (*Deinandra fasciculata*)	x	wild cucumber (*Marah macrocarpa*)	x
larkspur (*Delphinium*)*		California rose (*Rosa californica*)	x
buckwheat (*Eriogonum fasciculatum*)		chaparral mallow (*Malacothamnus fasciculatus*)	x
sunflower (*Helianthus*)		short-pod mustard (*Hirschfeldia incana*)	x
telegraph weed (*Heterotheca*)		golden yarrow (*Eriophyllum confertiflorum*)	x
goldfields (*Lasthenia* spp.)		laurel sumac (*Malosma laurina*)	x
honeysuckle (*Lonicera*)		tree tobacco (*Nicotiana glauca*)	x
lupine (*Lupinus*)*		common sow thisle (*Sonchus oleraceus*)	x
bur-clover (*Medicago*)*		Parish's nightshade (*Solanum parishii*)	
penstemon (*Penstemon*)		wild radish (*Raphanus sativus*)	x
phacelia / scorpionweed (*Phacelia*)*			

Crotch's Bumble Bee Observation(s) Log			
Time	**Photo(s)**	**No.**	**Notes (Habitat, Nectar/Pollen Source, Behavior)**

Appendix F

Existing Easement Information

1. An existing 100' wide easement for public utilities and incidental purposes, granted to San Diego Gas and Electric company per document recorded October 11, 1940 in book 1082, page 293 of official records.
2. An existing 50' wide easement for public utilities and incidental purposes, granted to San Diego Gas and Electric per document recorded November 3, 1965 as instrument No. 199601 of official records.
3. An easement for road and utility and incidental purposes in favor of John A. Thomas, Jr and Avis C. Thomas, recorded February 28, 1964 as instrument No. 37644 of official records.
4. The right to extend and maintain drainage structures and excavation and embankment slopes beyond the limits of the right of way granted therein where required for construction and maintenance granted to county of San Diego, recorded July 14, 1978 as instrument No. 78-294151 of official records.
5. An easement for ingress and egress and incidental purposes in favor of Norad Development company, recorded march 5, 1971 as instrument No. 41512 of official records.
6. A 60 foot wide easement and right-of-way for ingress and egress for road and utility purposes, recorded March 15, 1972 in grant deed file No. 61527 of official records.
7. An easement for public utilities and incidental purposes in favor of San Diego Gas and Electric, recorded November 30, 1992 as instrument No. 92-0764106 of official records.
8. An easement for drainage and incidental purposes in favor of the city of San Marcos, recorded June 6, 2003 as instrument No. 03-0670400 of official records.
9. An easement for temporary slope and construction and incidental purposes in favor of the city of San Marcos, recorded June 6, 2003 as instrument No. 03-0670401 of official records.

Project Parcel Boundary
Project Limits
Existing Easement

N
W E
S

0 160 320
Feet

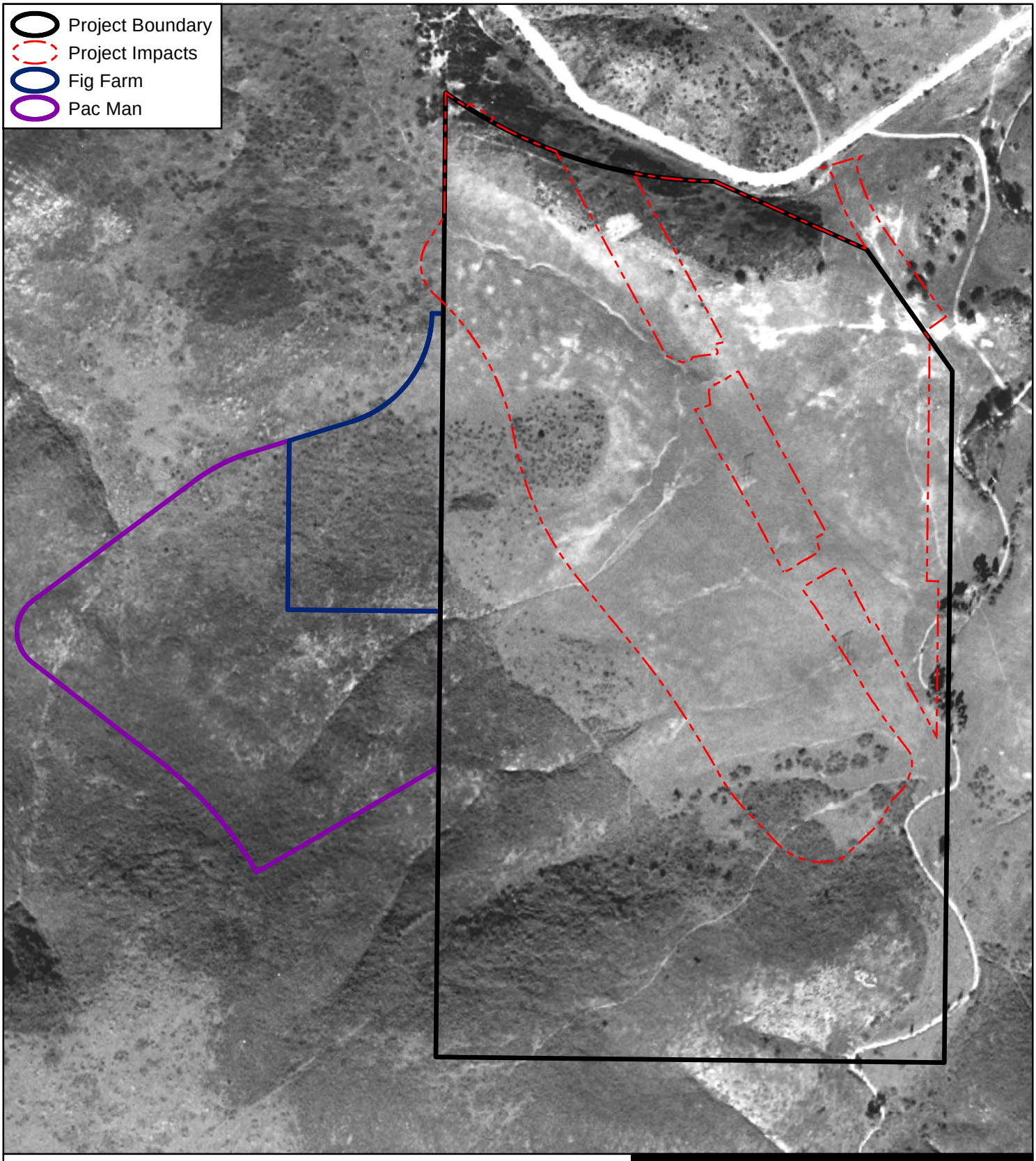
ALDEN ENVIRONMENTAL, INC

Existing Easement Information

QUESTHAVEN

Appendix G

Historic Aerial Images



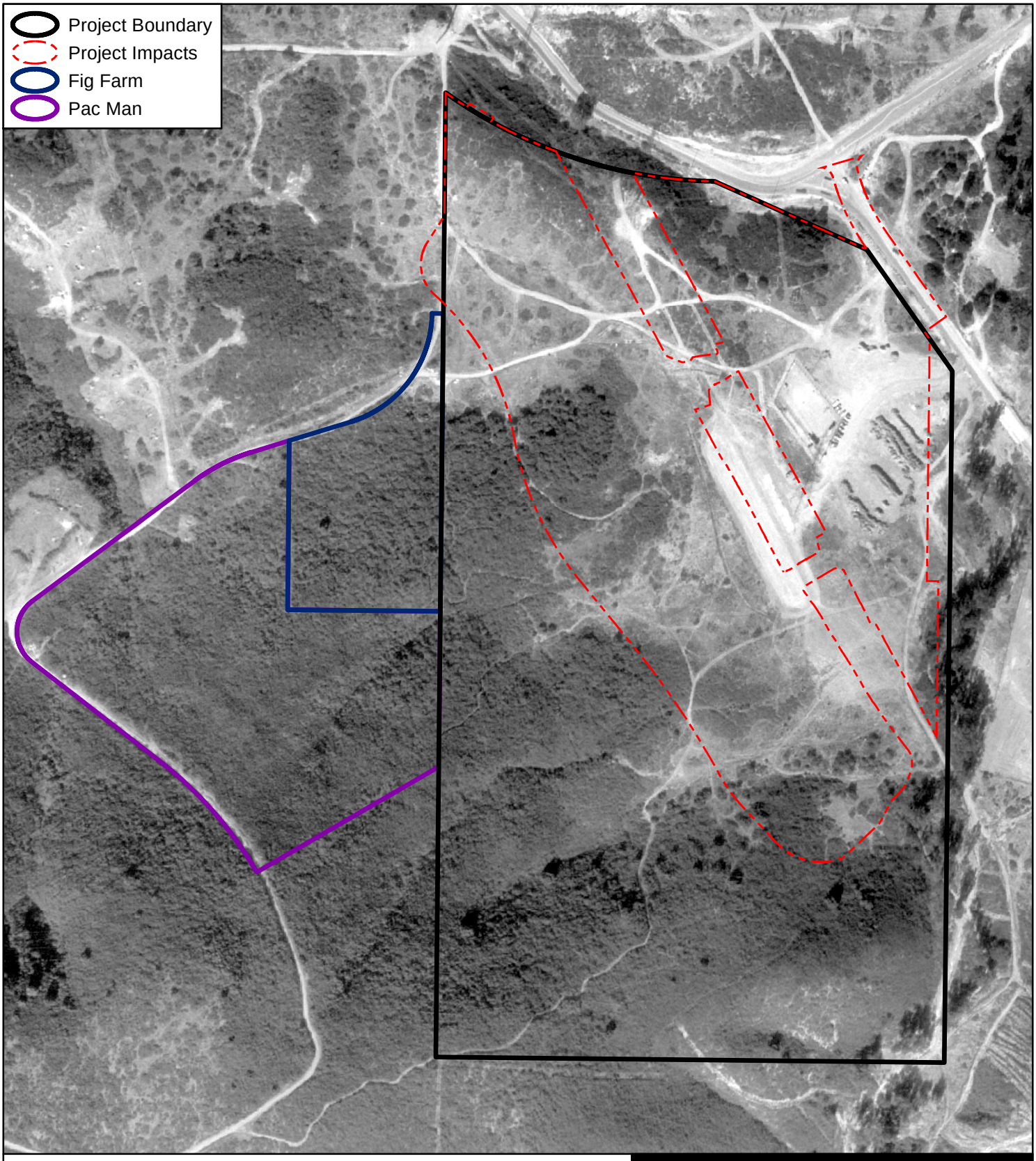
N
W E
S

0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

1947 Aerial Photo

QUESTHAVEN



N
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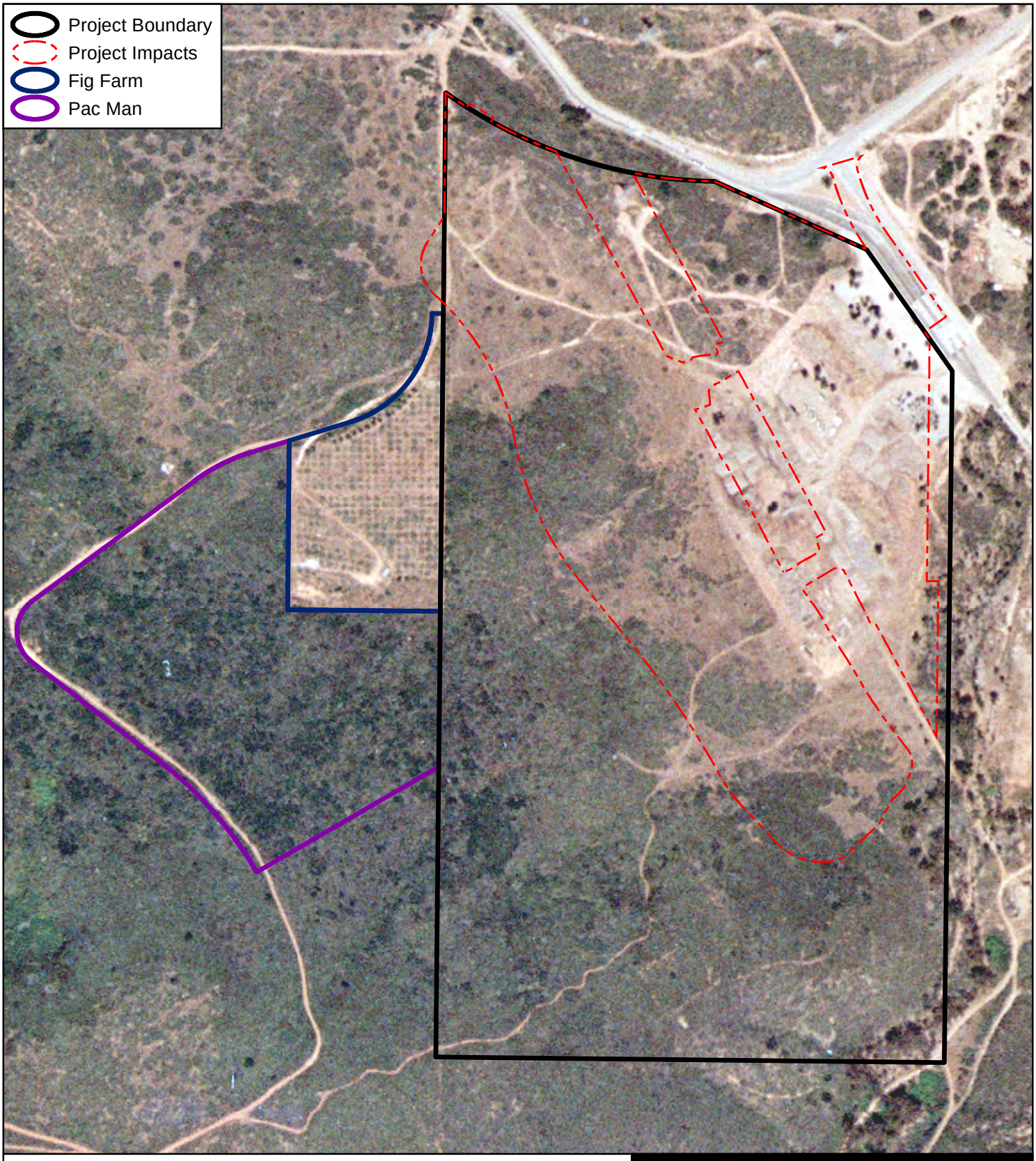
0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

1980 Aerial Photo

QUESTHAVEN



N
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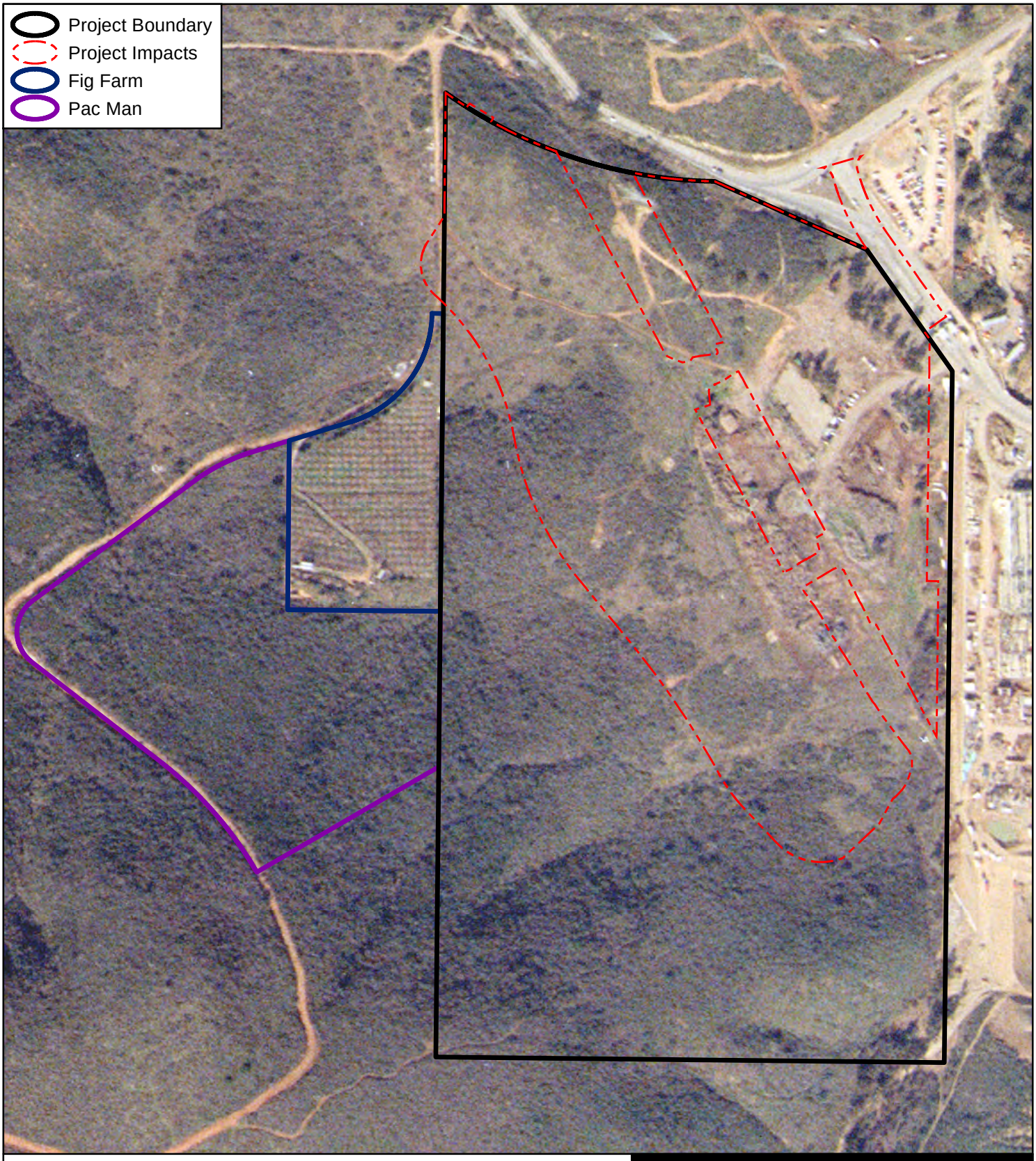
S

0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

1990 Aerial Photo

QUESTHAVEN



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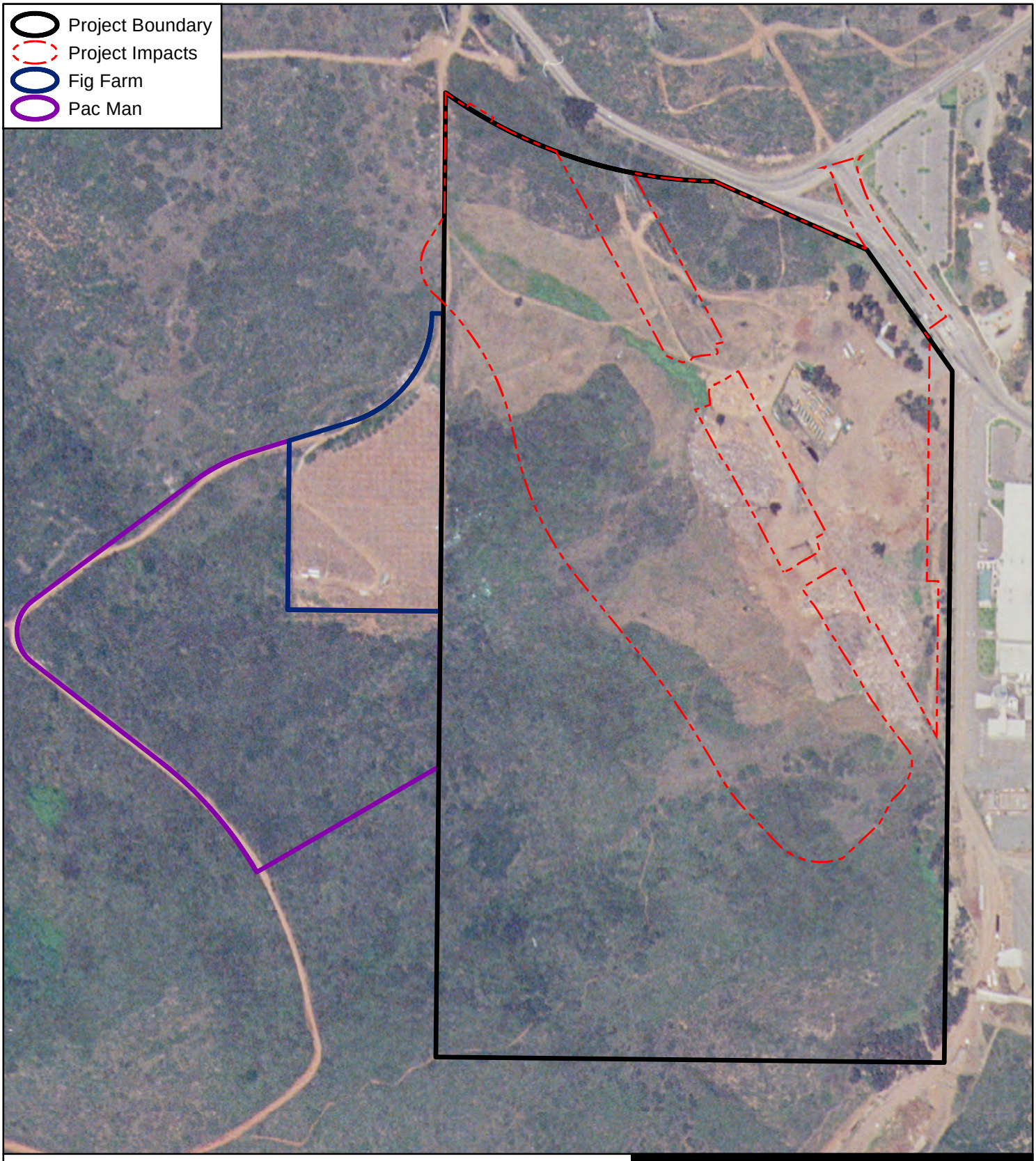
0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

1993 Aerial Photo

QUESTHAVEN



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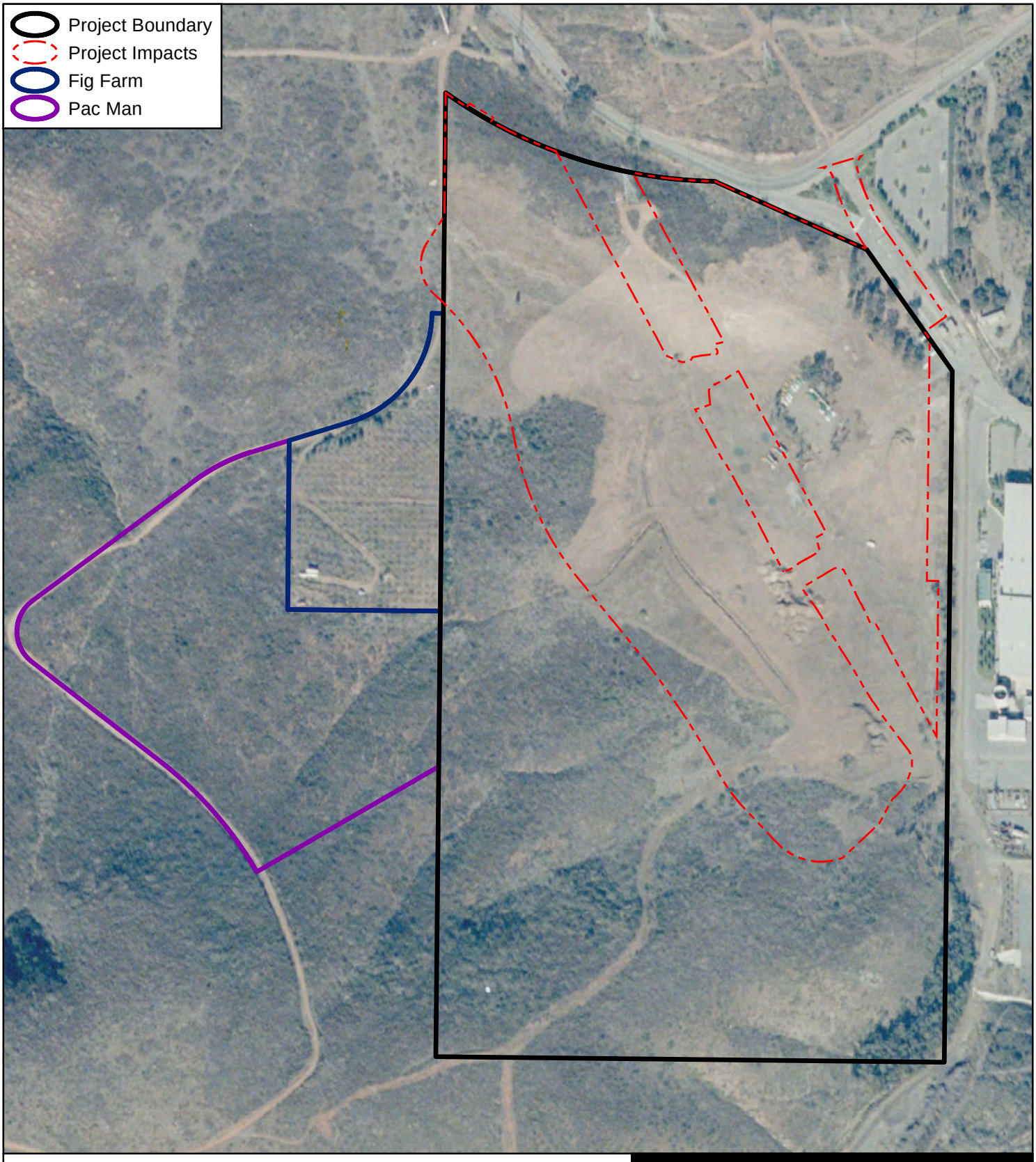
0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

1996 Aerial Photo

QUESTHAVEN



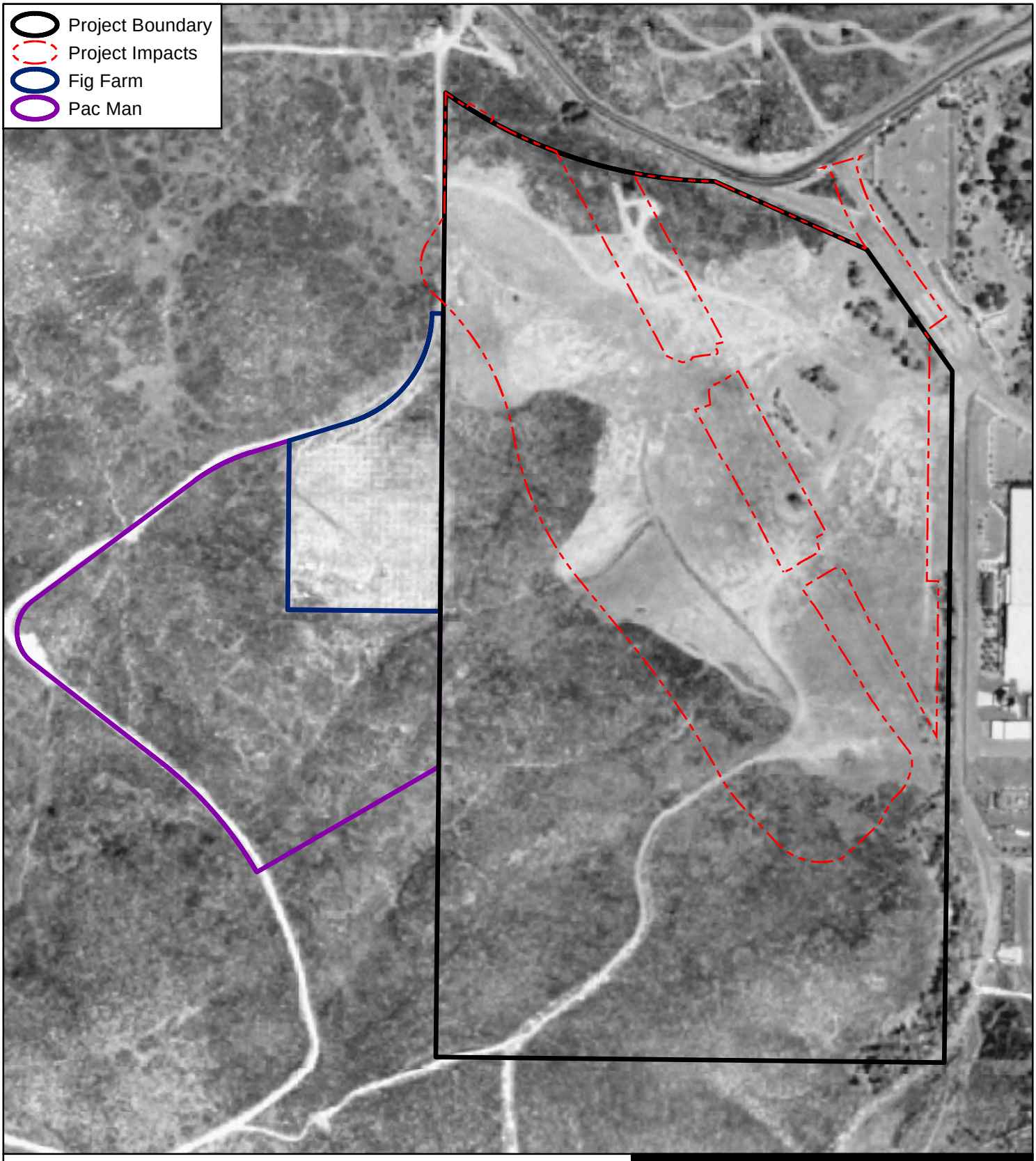
N
W E
S

0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

2000 Aerial Photo

QUESTHAVEN



N
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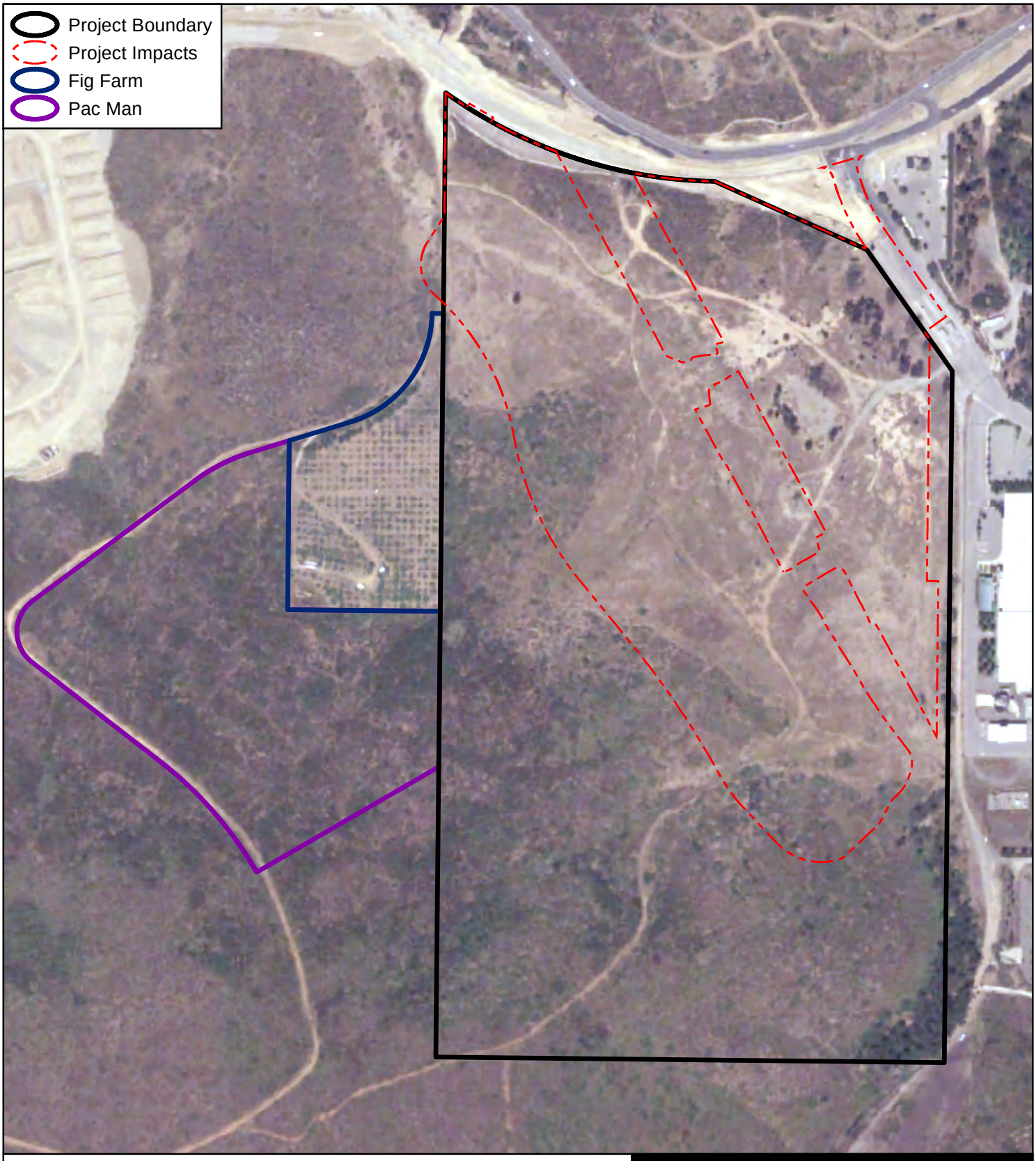
S

0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

2002 Aerial Photo

QUESTHAVEN



N
W E
S

0 175 350
Feet

ALDEN
ENVIRONMENTAL, INC

2005 Aerial Photo

QUESTHAVEN

Appendix H

Plant Species Observed

Appendix H
PLANT SPECIES OBSERVED - QUESTHAVEN

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
ANGIOSPERMS – MONOCOTS			
Cyperaceae	*Carex spissa*	San Diego sedge	EW
	Cyperus involucratus[2]	umbrella plant	EW
Juncaceae	*Juncus acutus* ssp. *leopoldii*[3]	southwestern spiny rush	EW
	Juncus xiphioides	iris-leaved rush	DCSS, NNG
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	NNG
Liliaceae	*Calochortus splendens*	Mariposa lily	SMC
Poaceae	*Avena barbata*[2]	slender oat	NNG
	Avena fatua[2]	wild oat	DCSS, DH, NNG
	Brachypodium distachyon[2]	purple false brome	DH, NNG, SMC
	Bromus diandrus[2]	common ripgut grass	DCSS, EW, NNG
	Bromus hordeaceus[2]	soft brome	NNG
	Bromus madritensis[2]	foxtail chess	DCSS, NNG, SMC
	Cynodon dactylon[2]	Bermuda grass	NNG
	Distichlis spicata	saltgrass	NNG
	Ehrharta erecta[2]	panic veldtgrass	EW
	Festuca perennis[2]	Italian ryegrass	NNG
	Gastridium phleoides[2]	nit grass	NNG
	Lamarckia aurea[2]	goldentop	DH, NNG
	Polypogon monspeliensis[2]	annual beardgrass	NNG
	Stipa lepida	foothill needlegrass	NNG
	Stipa miliacea[2]	smilo grass	DCSS, EW, NNG
Themidaceae	*Brodiaea orcuttii*[3]	Orcutt's brodiaea	NNG
	Dichelostemma capitatum	blue-dicks	NNG
ANGIOSPERMS – DICOTS			
Adoxaceae	*Sambucus nigra*	black elderberry	DCSS, SMC
Agavaceae	*Chlorogalum pomeridianum*	soap plant	SMC
Aizoaceae	*Carpobrotus edulis*[2]	hottentot-fig	DH, NNG

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
Anacardiaceae	*Malosma laurina*	laurel sumac	DCSS, SMC, NNG
	Rhus integrifolia	lemonadeberry	DCSS
	Schinus molle[2]	Peruvian pepper tree	NNG
	Toxicodendron diversilobum	poison oak	EW
Apiaceae	*Daucus pusillus*	rattlesnake weed	SMC
	Foeniculum vulgare[2]	fennel	EW, NNG
Asteraceae	*Artemisia californica*	California sagebrush	DCSS
	Artemisia dracunculus	tarragon	EW
	Baccharis pilularis	coyote brush	DCSS, NNG
	Baccharis salicifolia	mule fat	EW
	Carduus pycnocephalus[2]	Italian thistle	EW, NNG, SMC
	Centaurea melitensis[2]	tocalote	DCSS, NNG
	Corethrogyne filaginifolia	sand aster	DCSS, DH, NNG
	Cynara cardunculus[2]	Artichoke thistle	NNG
	Deinandra fasciculata	fascicled tarplant	DCSS, DH, NNG, SMC
	Encelia californica	San Diego Sunflower	EW
	Erigeron foliosus	fleabane	DCSS
	Eriophyllum confertiflorum	golden-yarrow	DCSS, NNG
	Glebionis coronaria[2]	garland daisy	DH, NNG
	Grindelia camporum	gum plant	NNG
	Hazardia squarrosa	saw-toothed goldenbush	SMC
	Hedypnois cretica[2]	Crete weed	NNG
	Helminthotheca echioides[2]	bristly ox-tongue	NNG
	Isocoma menziesii	goldenbush	DCSS, NNG
	Lactuca serriola[2]	wild lettuce	DCSS, EW, NNG, SMC
	Logfia gallica[2]	narrow-leaf filago	DCSS, DH
	Osmadenia tenela	osmadenia	DCSS
	Pseudognaphalium californicum	California everlasting	DCSS, NNG
	Pseudognaphalium luteoalbum[2]	everlasting cudweed	NNG
	Pseudognaphalium sp.	everlasting	DCSS, NNG
	Solidago velutina ssp. *californica*	California goldenrod	NNG
	Sonchus asper[2]	prickly sow thistle	NNG
	Sonchus oleraceus[2]	common sow thistle	DH, NNG, EW
	Stephanomeria virgata	virgate wreath-plant	DCSS, NNG
Boraginaceae	*Cryptantha intermedia*	popcorn flower	DCSS, NNG
	Pholistoma auritum	fiesta flower	DCSS, NNG

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
Brassicaceae	*Brassica nigra*[2]	black mustard	DCSS, NNG, DH
	Hirschfeldia incana[2]	shortpod mustard	NNG, DH
	Raphanus sativus[2]	wild radish	NNG, DH
Cactaceae	*Opuntia* sp.	prickly pear	DCSS, NNG
Caprifoliaceae	*Lonicera subspicata*	honeysuckle	DCSS, SMC
Chenopodiaceae	*Atriplex semibaccata*[2]	Australian saltbush	DH, NNG
	Salsola tragus[2]	Russian-thistle, tumbleweed	NNG
Cistaceae	*Cistus* sp.	rock rose	NNG
	Helianthemum scoparium	peak rush-rose	DCSS, SMC
Convolvulaceae	*Calystegia macrostegia*	morning-glory	DCSS, NNG
	Convolvulus arvensis[2]	bindweed	DCSS, NNG
Cucurbitaceae	*Marah macrocarpa*	wild cucumber	SMC
Euphorbiaceae	*Chamaesyce* sp.[2]	spurge	NNG
	Croton setigerus	dove weed	DCSS, DH, NNG
	Ricinus communis[2]	castor bean	EW
Fabaceae	*Acacia* sp.[2]	acacia	EW, NNG
	Acmispon americanus	Spanish-clover	NNG
	Acmispon glaber	deerweed	DCSS, DH, NNG, SMC
	Lathyrus vestitus	sweet pea	SMC
Fagaceae	*Quercus dumosa*[3]	Nuttall's scrub oak	SMC, SOC
Gentianaceae	*Zeltnera venusta*	canchalagua	DCSS, NNG, SMC
Geraniaceae	*Erodium botrys*[2]	long-beak filaree	DH, NNG
	Erodium cicutarium[2]	red-stem filaree	DH, NNG
Grossulariaceae	*Ribes indecorum*	white flowering currant	EW
	Ribes speciosum	fuschia-flowered gooseberry	SMC
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	DCSS, NNG
Lamiaceae	*Salvia mellifera*	black sage	DCSS, SMC
	Stachys sp.	hedge-nettle	EW
Lythraceae	*Lythrum hyssopifolia*	grass poly	NNG

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow	DCSS
	Malvella leprosa	alkali-mallow	EW
Myrsinaceae	*Anagallis arvensis*[2]	scarlet pimpernel	DH, NNG
Myrtaceae	*Eucalyptus* spp.[2]	eucalyptus	EW
Oleaceae	*Fraxinus uhdei*[2]	shamel ash	EW
Onagraceae	*Clarkia purpurea*	wine-cups	DCSS, NNG
	Clarkia purpurea ssp. *quadrivulnera*	four-spot clarkia	NNG
Orobanchaceae	*Castilleja affinis* ssp. *affinis*	coast paint-brush	SMC
	Castilleja exserta	purple paint brush	DCSS, SMC, NNG
Phrymaceae	*Diplacus aurantiacus*	orange-bush monkeyflower	
	Mimulus guttatus	monkey-flower	CC, DCSS, SMC
Polemoniaceae	*Navarretia hamata*	skunkweed	DCSS, SMC
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat	DCSS, EW
	Rumex conglomeratus[2]	dock	EW
	Rumex crispus[2]	curly dock	EW, NNG
Primulaceae	*Samolus parviflorus*	water pimpernel	EW
Ranunculaceae	*Thalictrum fendleri*	meadow rue	EW, SMC
Rhamnaceae	*Rhamnus crocea*	spiny redberry	SMC
	Rhamnus ilicifolia	holly-leaf redberry	SMC
	Ceanothus tomentosus	Ramona ceanothus	SMC
Rosaceae	*Adenostoma fasciculatum*	chamise	CC, SMC
	Heteromeles arbutifolia	toyon	SMC
	Rosa californica	California rose	DCSS, SMC
Rubiaceae	*Galium porrigens* var. *porrigens*	San Diego bedstraw	SMC
Salicaceae	*Salix lasiolepis*	arroyo willow	EW

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT[1]
Selaginellaceae	*Selaginella cinerascens*[3]	ashy spike-moss	SMC
Solanaceae	*Nicotiana glauca*[2]	tree tobacco	EW
	Solanum parishii	Parish's nightshade	DCSS, NNG, EW
	Solanum sp.	nightshade	DCSS, SMC
Verbenaceae	*Verbena lasiostachys*	verbena	NNG

[1]Habitat acronyms:
CC = chamise chaparral
DCSS= Diegan coastal sage scrub (including disturbed)
DH=disturbed habitat
EW = eucalyptus woodland
NNG = non-native grassland
SMC = southern mixed chaparral
SOC = scrub oak chaparral
[2]Non-native species
[3]Sensitive species

Appendix I

Animal Species Observed

or Detected

Appendix I
ANIMAL SPECIES OBSERVED – QUESTHAVEN

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
Apis mellifera	honey bee
Apodemia virgulti	Behr's metalmark
Bombilius sp.	bee fly
Bombus californicus	California bumble bee
Bombus melanopygus	black-tailed bumble bee
Bombus vosnesenskii	yellow-faced bumble bee
Chalybion californicum	common blue mud dauber
Copestylum mexicanum	Mexican cactus fly
Diadasia sp.	digger/sunflower bee species
Erynnis funeralis	funereal duskywing
Genus *Aphonopelma*	tarantula
Genus *Melissodes*	unidentified bee
Junonia coenia	common buckeye
Laphria flava	bumblebee robberfly
Leptotes marina	marine blue
Okanagana sp.	common cicada
Pepsis chrysothemis	tarantula hawk
Peucetia viridans	green lynx spider
Plebejus acmon	Acmon blue
Scoliidae	scoliid wasp
Strymon melinus	grey hairstreak
Syrphidae (family)	syrphid fly
Toxomerus marginatus	margined calligrapher
unidentified	sulphur butterfly
unidentified	white butterfly
Vespula pensylvanica	western yellowjacket
VERTEBRATES	
Amphibians	
Anaxyrus boreas halophilus	California toad (dead)
Spea hammondii[1]	western spadefoot toad
Reptiles	
Crotalus oreganus helleri	southern Pacific rattlesnake
Sceloporus sp.	lizard

Birds

Accipiter cooperii[1]	Cooper's hawk
Aeronautes saxatalis	white-throated swift
Aimophila ruficeps canescens[1]	southern California rufous-crowned sparrow
Anas platyrhynchos	mallard
Aphelocoma californica	California scrub jay
Archilochus alexandri	black-chinned hummingbird
Buteo jamaicensis	red-tailed hawk
Callipepla californica	California quail
Calypte anna	Anna's hummingbird
Cardellina pusilla	Wilson's warbler
Chaetura vauxi	Vaux's swift
Chamaea fasciata	wrentit
Chondestes grammacus	lark sparrow
Colaptes auratus	northern flicker
Corvus corax	common raven
Dryobates nuttallii	Nuttall's woodpecker
Empidonax difficilis	Pacific slope flycatcher
Geococcyx californianus	greater roadrunner
Geothlypis trichas	common yellowthroat
Haemorhous mexicanus	house finch
Icterus bullockii	Bullock's oriole
Icterus cucullatus	hooded oriole
Lonchura punctulata	scaly-breasted munia
Melanerpes formicivorus	acorn woodpecker
Melozone crissalis	California towhee
Melospiza melodia	song sparrow
Mimus polyglottos	northern mockingbird
Molothrus ater	brown-headed cowbird
Myiarchus cinerascens	ash-throated flycatcher
Passerina caerulea	blue grosbeak
Petrochelidon pyrrhonota	cliff swallow
Pheucticus melanocephalus	black-headed grosbeak
Picoides pubescens	downy woodpecker
Pipilo maculatus	spotted towhee
Polioptila caerulea	blue-gray gnatcatcher
Polioptila californica californica[1]	coastal California gnatcatcher
Psaltriparus minimus	bushtit
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Selasphorus rufus	rufous hummingbird
Selasphorus sasin	Allen's hummingbird
Setophaga coronata	yellow-rumped warbler
Spinus psaltria	lesser goldfinch
Stelgidopteryx serripennis	northern rough-winged swallow
Sturnus vulgaris	European starling

Birds (continued)

Thryomanes bewickii	Bewick's wren
Toxostoma redivivum	California thrasher
Troglodytes aedon	house wren
Tyrannus verticalis	western kingbird
Tyrannus vociferans	Cassin's kingbird
Vermivora celata	orange-crowned warbler
Vireo bellii pusillus[1]	least Bell's vireo
Vireo gilvus	warbling vireo
Vireo huttoni	Hutton's vireo
Zenaida macroura	mourning dove
Zonotrichia leucophrys	white-crowned sparrow

Mammals

Canis latrans	coyote
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	desert cottontail

[1]Special status species

Appendix J

Special Status Species Evaluated

for Potential to Occur on Site

Appendix J
SPECIAL STATUS SPECIES[1] EVALUATED FOR POTENTIAL TO OCCUR ON SITE

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Acanthomintha ilicifolia San Diego thornmint	FT SE Rare Plant Rank 1B.1 List A	Clay lenses in grassy openings in chaparral or sage scrub. Prefers friable or broken, clay soils.	April to June	Low. This annual herb was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Adolphia californica San Diego adolphia	-- -- Rare Plant Rank 2B.1 List B	Sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks. Usually associated with xeric locales where shrub canopy reaches 4 or 5 feet.	December to May	Low. A perennial shrub that was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Ambrosia pumila San Diego ambrosia	FE -- Rare Plant Rank 1B.1 List A	Grasslands, valley bottoms and dry drainages, also can occur on slopes, disturbed places, and in coastal sage scrub.	April to October	Low. This perennial, annual herb was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Arctostaphylos glandulosa ssp. *crassifolia* Del Mar manzanita	FE -- Rare Plant Rank 1B.1 List A	Maritime chaparral with sandy soil.	December to June	Not expected. Maritime chaparral is not present on site; the species was not found on site; and this perennial, evergreen shrub has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Artemisia palmeri San Diego sagewort	-- -- Rare Plant Rank 4.2 List D	Sandy soils in mesic chaparral; coastal scrub; and riparian forest, scrub, and woodland.	(February) May to September	Low. This perennial, deciduous shrub was not found on site, and it has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Atriplex pacifica South coast saltscale	-- -- Rare Plant Rank 1B.2 List A	Coastal bluff scrub, coastal dunes, coastal scrub, and playas.	March to October	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Baccharis vanessae Encinitas baccharis	FT SE Rare Plant Rank 1B.1 List A	Sandstone soils in chaparral. Known mainly from the Encinitas area from which it has been nearly extirpated.	August to November	Low. This perennial, deciduous shrub was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Bloomeria clevelandii San Diego goldenstar	-- -- Rare Plant Rank 1B.1 List A	Clay soils on dry mesas and hillsides in coastal sage scrub, chaparral, grassland, and around vernal pools.	April to May	Low. While this species has been reported to the SanBios database or the CNDDB within 1,000 feet of the site, this perennial, bulbiferous herb was not found on site.
Brodiaea filifolia Thread-leaved brodiaea	FT SE Rare Plant Rank 1B.1 List A	Clay soils in vernally moist grasslands and vernal pool periphery.	March to June	Low. This perennial, bulbiferous herb was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Brodiaea orcuttii Orcutt's brodiaea	-- -- Rare Plant Rank 1B.1 List A	Mesic closed-cone coniferous forest, chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland, and vernal pools—often associated with clay soil.	May to July	Present
Calandrinia breweri Brewer's calandrinia	-- -- Rare Plant Rank 4.2 List D	Chaparral and coastal scrub with sandy or loamy soils; on disturbed sites and burns.	(Jan) March to June	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Ceanothus verrucosus Wart-stemmed ceanothus	-- -- Rare Plant Rank 2B.2 List B	Chaparral	December to May	Low. While this species has been reported to the SanBios database and/or the CNDDB within 1,000 feet of the site, this perennial, evergreen shrub was not found on site.
Centromadia parryi ssp. *australis* Southern tarplant	-- -- Rare Plant Rank 1B.1 List A	Margins of marsh and swamps, vernally mesic grasslands, and vernal pools.	May to November	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Chorizanthe orcuttiana Orcutt's spineflower	FE SE Rare Plant Rank 1B.1 List A	Sandy openings in closed-cone coniferous forest, maritime chaparral, and coastal scrub.	March to May	Low. This annual herb was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Chorizanthe polygonoides var. *longispina* Long-spined spineflower	-- -- Rare Plant Rank 1B.2 List A	Chaparral, coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pools, often with clay soil.	April to July	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Comarostaphylis diversifolia ssp. *diversifolia* Summer holly	-- -- Rare Plant Rank 1B.2 List A --	Chaparral and cismontane woodland.	April to June	Low. While this species has been reported to the SanBios database and/or the CNDDB within 1,000 feet of the site, this perennial, evergreen shrub was not found on site.
Corethrogyne filaginifolia var. *linifolia* Del Mar Mesa sand aster	-- -- Rare Plant Rank 1B.1 List A	Sandy soils in maritime chaparral, coastal scrub, or coastal bluff scrub.	May, July to September	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Cryptantha wigginsii Wiggins' cryptantha	-- -- Rare Plant Rank 1B.2 --	Coastal scrub habitat, often with clay soil.	February to June	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Dudleya blochmaniae ssp. *blochmaniae* Blochman's dudleya	-- -- Rare Plant Rank 1B.1 List A	Coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland habitats with rocky, often clay or serpentinite soils.	April to June	Low. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Dudleya variegata Variegated dudleya	-- -- Rare Plant Rank 1B.2 List A	Clay soils near vernal pools, and on metavolcanic rocky soils in open coastal sage scrub, chaparral, and grasslands.	April to June	Not expected. Potential habitat not present. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Dudleya viscida Sticky dudleya	-- -- Rare Plant Rank 1B.2 List A	Grows predominantly on very steep, north-facing slopes in rocky areas of coastal bluff scrub, chaparral, cismontane woodland, and coastal scrub.	May to June	Not expected. Steep slopes not present. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Eryngium aristulatum parishii San Diego button-celery	FE SE Rare Plant Rank 1B.1 List A	Vernal pools or mima mound areas with vernally moist conditions.	April to June	Not expected. Potential habitat not present; the species was not found on site; and this annual/perennial herb has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Ferocactus viridescens San Diego barrel cactus	-- -- Rare Plant Rank 2B.1 List B	Coastal scrub hillsides, often at the crest of slopes and growing among cobbles.	May to June	Low. This perennial stem succulent was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Harpagonella palmeri Palmer's grapplinghook	-- -- Rare Plant Rank 4.2 List D	Open grassy areas with shrubland (chaparral, coastal scrub) and clay soil.	March to May	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Hazardia orcuttii Orcutt's hazardia	-- ST Rare Plant Rank 1B.1 List A	Maritime chaparral and coastal scrub, often with clay soil.	August to October	Not expected. This perennial, evergreen shrub was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Horkelia truncata Ramona horkelia	-- -- Rare Plant Rank 1B.3 List A	Clay or gabbroic soils in chaparral and cismontane woodland.	May to June	Low. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Iva hayesiana San Diego marsh-elder	-- -- Rare Plant Rank 2B.2 List B	Marshes, swamps, and playas.	April to October	Low. Potential habitat absent or very limited. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Juncus acutus ssp. *leopoldii* Southwestern spiny rush	-- -- Rare Plant Rank 4.2 List D	Mesic coastal dunes; alkaline meadows and seeps; coastal salt marshes and swamps.	(March) May to June	Present
Lasthenia glabrata ssp. *coulteri* Coulter's goldfields	-- -- Rare Plant Rank 1B.1 List A	Coastal salt marshes and swamps; playas; vernal pools.	February to June	Low. Potential habitat absent or very limited. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Lepidium virginicum var. *robinsonii* Robinson pepper grass	-- -- Rare Plant Rank 4.3 List A	Openings in chaparral and sage scrub.	January to July	Low. This annual herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Leptosyne maritima Sea dahlia	-- -- Rare Plant Rank 2B.2 List B	Coastal bluff scrub and coastal scrub.	March to May	Low. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Monardella hypoleuca ssp. *lanata* Felt-leaved monardella	-- -- Rare Plant Rank 1B.2 List A	Chaparral and cismontane woodland.	June to August	Low. This perennial, rhizomatous herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Navarretia fossalis Spreading navarretia	FT -- Rare Plant Rank 1B.1 List A	Chenopod scrub, marshes and swamps (assorted freshwater habitats), playas, and vernal pools.	April to June	Low. This annual herb was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Orobanche parishii ssp. *brachyloba* Short-lobed broomrape	-- -- Rare Plant Rank 4.2 List D	Sandy soils in coastal bluff scrub, coastal dunes, and coastal scrub.	April to October	Low. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Pogogyne abramsii San Diego mesa mint	FE SE Rare Plant Rank 1B.1 List A	Vernal pools	March to July	Not expected. No potential habitat on site. This annual herb was not found on site, and it has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Selaginella cinerascens Ashy spike-moss	-- -- Rare Plant Rank 4.1 List D	Chaparral and coastal scrub	--	Present
Stemodia durantifolia Purple stemodia	-- -- Rare Plant Rank 2B.1 List B	Sonoran desert scrub	(January) April, June, August to October, December	Not expected. Potential habitat not present. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

PLANTS				
SPECIES	**SENSITIVITY[2]** **Federal** **State** **CNPS** **County**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR ON SITE**
Suaeda esteroa Estuary seablite	-- -- Rare Plant Rank 1B.2 List A	Marshes and swamps	(May) July to October (January)	Not expected. Potential habitat not present. This perennial herb was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Tetracoccus dioicus Parry's tetraccoccus	-- -- Rare Plant Rank 1B.2 List A	Chaparral and coastal scrub	April to May	Low. This perennial, deciduous shrub was not found on site, and it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Viguiera laciniata San Diego County viguiera	-- -- Rare Plant Rank 4.3 List D	Chaparral and coastal scrub	February to June (Aug)	Low. This perennial shrub was not found on site, and it has not been reported to the database or the CNDDB within 1,000 feet of the site.

[1] List of species is from a search of the SanBios and USFWS databases and the CNDDB for the project site plus a 5-mile radius.
[2] Explanation of Sensitivity Codes

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Accipiter cooperii Cooper's hawk	-- WL Group 1	In San Diego County, tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as scrubland or fields.	Present. Seen flying overhead potentially foraging on site and has potential to nest in the trees on site.
Accipiter striatus Sharp-shinned hawk	-- WL Group 1	Usually observed in areas with tall trees or other vegetative cover but can be observed in a variety of habitats. In San Diego County occurs in small numbers and only in winter.	Low. It only occurs in small numbers and only in winter. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Agelaius tricolor Tricolored blackbird	BCC ST, SSC Group 1	Highly colonial species occurring mostly in coastal lowland grasslands near open water sources for foraging.	Low. Potentially suitable habitat is not present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Aimophila ruficeps canescens Southern California rufous-crowned sparrow	-- WL Group 1	Coastal sage scrub and open chaparral as well as shrubby grasslands.	Present
Ammodramus savannarum Grasshopper sparrow	-- SSC Group 1	Typical habitat is dense grasslands that have little or no shrub cover.	Low. This species was not observed/detected on site during the site surveys conducted over the period January through June 2020, including the BUOW survey, which occurred in the grasslands on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Anniella stebbinsi (*pulchra pulchra*) Southern California (silvery) legless lizard	-- SSC Group 2	Areas with loose soil, particularly in sand dunes and or otherwise sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	Low. The soils on site consist primarily of rocky silt loams. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Antrozous pallidus Pallid bat	-- SSC Group 2	Most commonly associated with arid open scrub or grassland and gentle terrain with scattered rocky outcrops.	Low, as rocky outcrops are not present. it has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Aquila chrysaetos Golden eagle	BCC, BGEPA WL, FP Group 1	Typical foraging habitat includes grassy and open, shrubby habitats. Generally nests on remote cliffs; requires areas of solitude at a distance from human habitation.	Low. Site and immediate environs are not at distance to human habitation. No reports to the CNDDB within 5 miles of the site. A record in the SanBios database is from 1998 for the San Diego Natural History Museum in an 8-kilometer area that overlaps with the 5-mile radius of the site.
Ardea herodius Great blue heron	-- -- Group 2	Wetland habitats, but can be observed foraging away from water.	Low. Commonly associated with marshes, mudflats, and agricultural areas not present on site. It has not been reported to the SanBios database within 1,000 feet of the site.
Arizona elegans occidentalis California glossy snake	-- SSC --	Arid scrub, rocky washes, grasslands, chaparral. Appears to prefer open areas and areas with soil loose enough for burrowing.	Low. Rocky habitat is not present, and soils may not be suitable for burrowing. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Artemisiospiza belli belli Bell's sage sparrow	BCC WL Group 1	Chaparral and sage scrub. The habitat must not be too dense or have too much leaf litter as this species spends most of its time running on the ground.	Moderate. Potential habitat is present on site and has been reported to the SanBios database within 1,000 feet of the site.
Asio otus Long-eared owl	-- SSC Group 1	Shady oak woodlands and broad riparian forests.	Not expected. No potential habitat is present on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Aspidoscelis hyperythra Orange-throated whiptail	-- WL Group 2	Coastal sage scrub, chaparral, edges of riparian woodlands and washes. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas; shaded areas; and abundant invertebrate prey base, particularly termites (*Reticulitermes* sp.).	Moderate. Potential habitat is present on site, although it has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Aspidoscelis tigris stejnegeri Coastal whiptail	-- SSC Group 2	Open coastal sage scrub, chaparral, and woodlands. Frequently found along the edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of insects, spiders, or scorpions.	Moderate. Potential habitat is present on site, although it has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Athene cunicularia hypugea Burrowing owl	BCC SSC Group 1	Open areas such as grasslands, pastures, coastal dunes, desert scrub, and edges of agriculture fields, with underground burrows often excavated by California ground squirrels (*Otospermophilus beecheyi*), for breeding and foraging.	Low. A focused survey for the BUOW was conducted on site in 2020, and no BUOW was observed nor was any sign of BUOW observed. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Bombus crotchii Crotch's bumble bee	-- SCE --	Found between San Diego and Redding, California in a variety of habitats including open grasslands, shrublands, chaparral, desert margins including Joshua tree and creosote scrub, and semi-urban settings (CDFW 2022). Food plants include *Asclepias, Chaenactis, Lupinus, Medicago*, *Phacelia*, and *Salvia* (Williams et al. 2014). The species is near endemic to California, with only a few records from Nevada and Mexico (CDFW 2022).	Low. Much of the project footprint is densely vegetated with non-native grasses. Portions of the site do support nectar and pollen resources. A focused survey for the species was conducted in spring 2023, and the species was not found (Appendix E).
Branchinecta sandiegonensis San Diego fairy shrimp	FE -- Group 1	Seasonally astatic pools which occur in tectonic swales or earth slump basins and other areas of shallow, standing water. Often in patches of grassland and agriculture interspersed in coastal sage scrub and chaparral.	Not expected to occur. There is no potential habitat on site. It has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Buteo lineatus Red-shouldered hawk	-- -- Group 1	Riparian woodland, oak woodland, orchards, eucalyptus groves, or other areas with tall trees.	Moderate, as potential habitat is present on site. It has not been reported to the SanBios database within 1,000 feet of the site.
Buteo regalis Ferruginous hawk	BCC WL Group 1	In San Diego County, occurs only in winter. Found in open country, primarily prairies, plains, and badlands.	Low, as the site is not in open country, and the species only occurs in winter. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Campylorhynchus brunneicapillus couesi (sandiegensis) San Diego cactus wren	BCC SSC Group 1	Habitat consists of cactus thickets in coastal lowlands of San Diego County.	Low, as cactus thickets are not present on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Cathartes aura Turkey vulture	-- -- Group 1	Foraging habitat includes most open habitats with breeding occurring in crevices among boulders.	Moderate potential to forage on site. No breeding habitat is present. It has not been reported to the SanBios database within 1,000 feet of the site.
Chaetodipus californicus femoralis Dulzura pocket mouse	-- SSC Group 2	Primarily associated with mature chaparral. It is known to occur in coastal sage scrub.	Moderate, as potential habitat is present on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Chaetodipus fallax fallax Northwestern San Diego pocket mouse	-- SSC Group 2	Occurs in open areas of coastal sage scrub and weedy growth, often on sandy substrates.	Low, as the site's substrates are primarily rocky silt loams. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Charadrius alexandrinus nivosus Western snowy plover	FT, BCC SSC Group 1	Beaches, dunes, and salt flats.	Not expected due to a lack of potential habitat on site. It has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Charina trivirgata roseofusca Rosy boa	-- -- Group 2	Occurs among rocky outcrops in coastal sage scrub, chaparral, and desert scrub.	Low, as rocky outcrops are not present. It has not been reported to the SanBios database within 1,000 feet of the site.
Choeronycteris mexicana Mexican long-tongued bat	-- SSC --	Arid habitats along the coast and in inland valleys in urban and suburban situations. Roosts in natural and man-made crevices and structures.	Moderate, as potential habitat is present on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Circus (*cyaneus*) *hudsonius* Northern harrier	-- SSC Group 1	Coastal, salt, and freshwater marshlands; grasslands; and prairies.	Low. Not observed during the site surveys conducted over the period January through June 2020. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Clemmys marmorata pallida Southwestern pond turtle *(Emys marmorata,* western pond turtle)	-- SSC Group 1	Almost entirely aquatic; occurs in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Requires basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Low. The drainage on site has an overstory of eucalyptus trees with no suitable basking sites. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Coleonyx variegatus abbottii San Diego banded gecko	-- SSC Group 1 --	Chaparral and coastal sage scrub in areas with rock outcrops.	Low. The site does not contain rock outcrops. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Corynorhinus townsendii Townsend's big-eared bat	-- SSC Group 2	Most abundant in mesic habitats. Considered uncommon in California (California Department of Fish and Game 1990). Drinks water and requires caves, mines, tunnels, buildings, or other man-made structures for roosting.	Low, due to its uncommon occurrence in California. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Crotalus ruber Red-diamond rattlesnake	-- SSC Group 2	Chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	Low, as rock outcrops and piles of debris are not present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Diadophis punctatus similis San Diego ringneck snake	-- -- Group 2	Generally occurs in moist habitats such as oak woodlands and canyon bottoms but is also sometimes encountered in grassland, chaparral, and coastal sage scrub; generally restricted to leaf litter and rarely crosses open areas.	Moderate due to the presence of potential habitat on site. It has not been reported to the SanBios database within 1,000 feet of the site.
Elanus leucurus White-tailed kite	-- FP Group 1	Riparian woodlands and oak or sycamore groves adjacent to grassland on coastal slopes in San Diego County. Nests in the crowns of trees, especially coast live oak (*Quercus agrifolia*).	Low, as potential habitat is not present. Not observed during the site surveys conducted over the period January through June 2020. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Eremophila alpestris actia California horned lark	-- WL Group 1	Sandy beaches and in agricultural fields, grassland, and open areas.	Moderate due to the presence of potential habitat on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Eumops perotis californicus Western mastiff bat	-- SSC Group 2	Suitable habitat consists of extensive open areas with abundant roost locations (crevices in cliff faces, high buildings, trees, tunnels).	Moderate due to the presence of potential habitat on site. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Euphydryas editha quino Quino checkerspot butterfly	FE -- Group 1	Potential habitat includes areas of low-growing and sparse vegetation with primary larval host plants, dwarf plantain (*Plantago erecta*) and owl's clover (*Castilleja exserta*).	Not expected. The project site is outside the USFWS' recommended Quino survey area (USFWS 2014). It has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Ictera virens Yellow-breasted chat	-- SSC Group 1	Dense riparian habitats.	Not expected. Potential habitat is not present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Ixobrychus exilis Least bittern	BCC SSC Group 2	Freshwater or brackish marshes with tall grasses, cattails, and reeds.	Not expected. Potential habitat is not present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Lasiurus blossevillii Western red bat	-- SSC Group 2	Riparian areas dominated by cottonwoods, oaks, sycamores, and walnuts.	Not expected. Potential habitat is not present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Lasiurus xanthinus Western yellow bat	-- SSC --	Primarily roosts in the skirts of dead palm tree fronds. Strongly associated with native palm groves with open water.	Not expected. Potential habitat is not present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Lepus californicus bennetii San Diego black-tailed jackrabbit	-- SSC Group 2	Primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	Moderate. Potential habitat is present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Lycaena hermes Hermes copper	FC -- Group 1	Southern mixed chaparral and coastal sage scrub with mature specimens of its larval host plant, spiny redberry (*Rhamnus crocea*) with California buckwheat (*Eriogonum fasciculatum*) generally within 10 feet of the spiny redberry (Attachment B [County of San Diego Guidelines for Hermes Copper] to County 2010).	Low. The entire site was assessed in the field for the species' potential to occur, and no spiny redberry was found in proximity to California buckwheat. It has not been reported to the SanBios or USFWS databases or CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Myotis ciliolabrum Small-footed myotis	-- -- Group 2	Occurs in arid, upland habitats. Prefers open stands in forests and woodlands as well as brushy habitats. Feeds over and drinks from streams, ponds, springs, and stock tanks.	Low. Potentially suitable habitat on site is limited or absent. It has not been reported to the SanBios database within 1,000 feet of the site.
Myotis yumanensis Yuma myotis	-- -- Group 2	Open forests and woodland are optimal habitat. Closely tied to bodies of water for foraging and drinking. Roosts in buildings, mines, crevices, caves, and under bridges.	Low. Potentially suitable habitat on site is limited or absent. It has not been reported to the SanBios database within 1,000 feet of the site.
Neotoma lepida intermedia San Diego desert woodrat	-- SSC Group 2	Occurs in open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	Moderate. Potential habitat is present. It has not been reported to the SanBios database or CNDDB within 1,000 feet of the site.
Nyctinomops femorosaccus Pocketed free-tailed bat	-- -- Group 2	Prefers desert habitats with high cliffs or rock outcrops.	Not expected. Potentially suitable habitat is not present. It has not been reported to the SanBios database within 1,000 feet of the site.
Odocoileus hemionus Mule deer	-- -- Group 2	Occurs within a wide range of open habitats associated with expansive open space.	Moderate. Potentially suitable habitat is present, and while not reported to the SanBios database within 1,000 feet of the site, this wide-ranging species has been reported to the SanBios database within 5 miles of the site.
Passerculus sandwichensis beldingi Belding's savannah sparrow	-- SE Group 1	Coastal marshes dominated by pickleweed (*Salicornia* spp.).	Not expected. Suitable habitat is not present. It has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Perognathus longimembris pacifica Pacific pocket mouse	FE SSC Group 1	Open coastal sage scrub; fine, alluvial sands near ocean.	Not expected. Currently known from Dana Point Headlands in Orange County, CA and three locations on Marine Corps Base Camp Pendleton in San Diego County (Spencer 2005). It has not been reported to the SanBios or USFWS databases or CNDDB within 1,000 feet of the site.
Phalacrocorax auratus Double-crested cormorant	-- WL Group 2	Fresh and salt water habitats.	Not expected. Suitable habitat is not present. It has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Phrynosoma blainvillii Coast horned lizard	-- SSC Group 2	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* sp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	Moderate. Potentially suitable habitat present, although it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Plestiodon skiltonianus interparietalis Coronado skink	-- WL Group 2	Grasslands, coastal sage scrub, and open chaparral where there is abundant leaf litter or low herbaceous growth.	Moderate. Potentially suitable habitat present, although it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Polioptila californica californica Coastal California gnatcatcher	FT SSC Group 1	Coastal sage scrub	Present
Pyrocephalus rubinus Vermilion flycatcher	-- SSC Group 1	Riparian habitat	Not expected to occur. There is no potential habitat on site. It has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Rallus obsoletus levipes Light-footed Ridgway's rail	FE SE, FP Group 1	Coastal salt marshes, especially those dominated by cordgrass (*Spartina* sp.), but has been known to use brackish and freshwater sites.	Not expected to occur. There is no potential habitat on site. It has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Salvadora hexalepis virgultea Coast patch-nosed snake	-- SSC Group 2	Semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	Moderate. Potentially suitable habitat present, although it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Spea hammondii Western spadefoot	-- SSC Group 2	Open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).	Not expected to occur. Although it has been reported to the CNDDB within 1,000 feet of the site, there is no potential habitat on site.
Sternula antillarum browni California least tern	FE SE, FP Group 1	Coastal areas adjacent to the ocean. Nests in colonies at sites typically located on barrier dunes at river mouths, at lagoon entrances, and along sandy strips of sparse coastal strand vegetation.	Not expected to occur. There is no potential habitat on site. It has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.
Taxidea taxus American badger	-- SSC Group 2	Grasslands, alluvial fans, meadows, and desert. In San Diego County, persists mainly in large blocks of undeveloped land and avoids urbanization.	Low. Potentially suitable habitat limited or absent. It has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.

ANIMALS			
SPECIES	**SENSITIVITY[2]** **Federal** **State** **County**	**HABITAT(S)**	**POTENTIAL TO OCCUR ON SITE**
Thamnophis hammondii Two-striped garter snake	-- SSC Group 1	Primarily along permanent creeks and streams but also around vernal pools and along intermittent streams. Occasionally found in chaparral or other habitats relatively far from permanent water.	Moderate. Potentially suitable habitat present, although it has not been reported to the SanBios database or the CNDDB within 1,000 feet of the site.
Vireo bellii pusillus Least Bell's vireo	FE SE Group 1	Riparian woodland and is most frequent in areas that combine an understory of dense, young willows or mule fat (*Baccharis salicifolia*) with a canopy of tall willows (*Salix* spp.).	Not expected to occur. There is no potential habitat on site. It has not been reported to the SanBios or USFWS databases or the CNDDB within 1,000 feet of the site.

[1] List of species is from a search of the SanBios and USFWS databases and the CNDDB for the project site plus a 5-mile radius.
[2] Explanation of Sensitivity Codes

Federal - U.S. Fish and Wildlife Service

FE	Federal listed endangered
FT	Federal listed threatened
FC	Candidate for federal listing
BCC	Non-listed subspecies or populations of federal threatened or endangered species
BGEPA	Prohibits the take, possession, sale, purchase, barter, or offer to sell, purchase, or barter, export or import of the bald (and golden) eagle "at any time or in any manner

State – California Department of Fish and Wildlife

SE	State listed endangered
ST	State listed threatened
FP	State fully protected (may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW)
SSC	State species of special concern (declining population levels, limited ranges, and/or continuing threats)
WL	Previously SSC but no longer merits SSC status, or which does not meet SSC criteria but for which there is concern and a need for additional information to clarify status.

County of San Diego

Plant Sensitivity

List A	Plants rare, threatened or endangered in California or elsewhere.
List B	Plants rare, threatened or endangered in California but more common elsewhere.
List C	Plants that may be quite rare, but more information is needed to determine rarity status.
List D	Plants of limited distribution and are uncommon, but not presently rare or endangered.

Animal Sensitivity

Group 1	Animals that have a very high level of sensitivity, either because they are listed as threatened or endangered or because they have very specific natural history requirements.
Group 2	Animal species that are becoming less common, but are not yet so rare that extirpation or extinction is imminent without immediate action. These species tend to be prolific within their suitable habitat types.

CNPS - California Native Plant Society

California Rare Plant Rank *Threat Rank*

1A = Presumed extirpated in California and either rare or extinct elsewhere.

1B = Rare, threatened, or endangered in California and elsewhere.

2A= Presumed extirpated in California but more common elsewhere.

2B= Rare, threatened, or endangered in California but more common elsewhere.

3 = More information is needed.

4 = A watch list for species of limited distribution.

.1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately endangered in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20 percent of occurrences threatened/ low degree and immediacy of threat or no current threats known)

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Appendix K

Habitat Restoration Plan

Questhaven Tentative Map Project
Habitat Restoration Plan
PDS2020-TM-5643

October 7, 2024

Prepared by:

Greg Mason
County Approved CEQA Consultant-Revegetation

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

Project Applicant:

ColRich Communities
444 West Beech Street, Suite 300
San Diego, CA 92101

Prepared for the County of San Diego

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1.0 INTRODUCTION

This plan addresses the habitat restoration to be conducted as required mitigation for the Questhaven Tentative Map Project. Project impacts and required mitigation are presented in the Biological Technical Report for the project (Alden 2024). Specifically, this plan includes restoration of southern mafic chaparral/coastal sage scrub ecotone and coastal sage scrub communities, as well as the creation of water holding basins for spadefoot toad breeding. This plan does not address any other project components.

2.0 DESCRIPTION OF THE DEVELOPMENT PROJECT/IMPACT SITE

2.1 RESPONSIBLE PARTIES

The project site is currently owned by Colrich Communities. Contact information is provided below.

Colrich Communities
c/o Ms. Rita Mahoney
444 West Beech Street, Suite 300
San Diego, CA 92101

2.2 LOCATION OF THE DEVELOPMENT PROJECT

The approximately 69.1-acre Questhaven development project site is located in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. The project site is located immediately south and west of the City of San Marcos and east of the City of Carlsbad. Interstate 5 is located approximately 5.3 miles west of the project site. Specifically, the project site is located south of San Elijo Road and east of Denning Drive (Figures 1 and 2). The project site encompasses Assessor's Parcel Number 223-080-46-00 and is located in the west half of the northwest quarter of Section 33, Township 12 South, Range 3 West, San Bernardino Meridian on the U.S. Geological Survey (USGS) 7.5-minute Rancho Santa Fe quadrangle map (Figure 2).

2.3 SUMMARY OF THE OVERALL DEVELOPMENT PROJECT WITH PROPOSED RESTORATION

2.3.1 Current Environmental Setting and Site Conditions

The development project site is undeveloped and includes several unimproved dirt roads and trails. Historically, the northern portion of the site has been subject to disturbance and was used as a laydown yard for construction equipment associated with the adjacent former recycling facilities. Additionally, a portion of the western area of the site was used for agricultural uses. The southern portion of the project site contains a large area of steep hills that transition into a relatively flat area in the northern and central portion of the site. Elevations range between approximately 830 feet above mean sea level (amsl) in the southwest corner to 500 feet amsl along the eastern boundary. Soil on the development site is mapped as Cieneba very rocky coarse sandy loam (30 – 75 percent slopes), San Miguel rocky silt loam (9 – 30 percent slopes),

Huerhuero loam (2 – 9 percent slopes), San Miguel-Exchequer rocky silt loams (9 – 70 percent slopes), and Exchequer rocky silt loam (30 – 70 percent slopes).

To the west of the development project site is open space associated with the Rancho La Costa Habitat Conservation Area, beyond which is existing residential development. North of the project site is land designated for open space, beyond which are existing residential uses. East of the project site is a former recycling facility that is currently used as an indoor sports complex known as "Edenpark" and that is proposed for additional sports complex and commercial uses. To the south of the project site is open space associated with the Rancho La Costa Habitat Conservation Area. The project site is adjacent to the San Elijo Hills development in the City of San Marcos and is within their Sphere of Influence.

Nine vegetation communities/habitat types occur on the development project site and are described below (Table 1). The numbers in parentheses are the Holland Codes (Oberbauer et al. 2008).

Table 1
Development Project Site
Vegetation Communities/Habitat Types

Vegetation Community/Habitat[1]	On Site
Diegan coastal sage scrub (32500)	9.8
Diegan coastal sage scrub-disturbed (32500)	2.1
Scrub oak chaparral (37900)	0.6
Mafic chamise chaparral (37220)	2.4
Mafic southern mixed chaparral (37122)	25.7
Non-native grassland (42200)	20.9
Eucalyptus woodland (79100)	2.9
Disturbed habitat (11300)	3.7
Developed and ornamental (12000)	1.0
TOTAL	**69.1**

[1]Categories and numeric codes are from Oberbauer et al. 2008.

A total of 121 species of plants (including 43 non-native species) and 89 animal species were observed during surveys for the development project.

Four sensitive animal species, spadefoot toad (*Spea hammondii*), Cooper's hawk (*Accipiter* cooperii), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), and Coastal California gnatcatcher (*Polioptila californica californica*) were observed on the development project site (Alden 2024). The least Bell's vireo (*Vireo bellii pusillus*) also was observed within the project mitigation area.

Four special status plant species Orcutt's brodiaea (*Brodiaea orcuttii*), Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), Nuttall's scrub oak (*Quercus dumosa*), and Ashy spike-moss (*Selaginella cinerascens*) were observed on the development project site (Alden 2024).

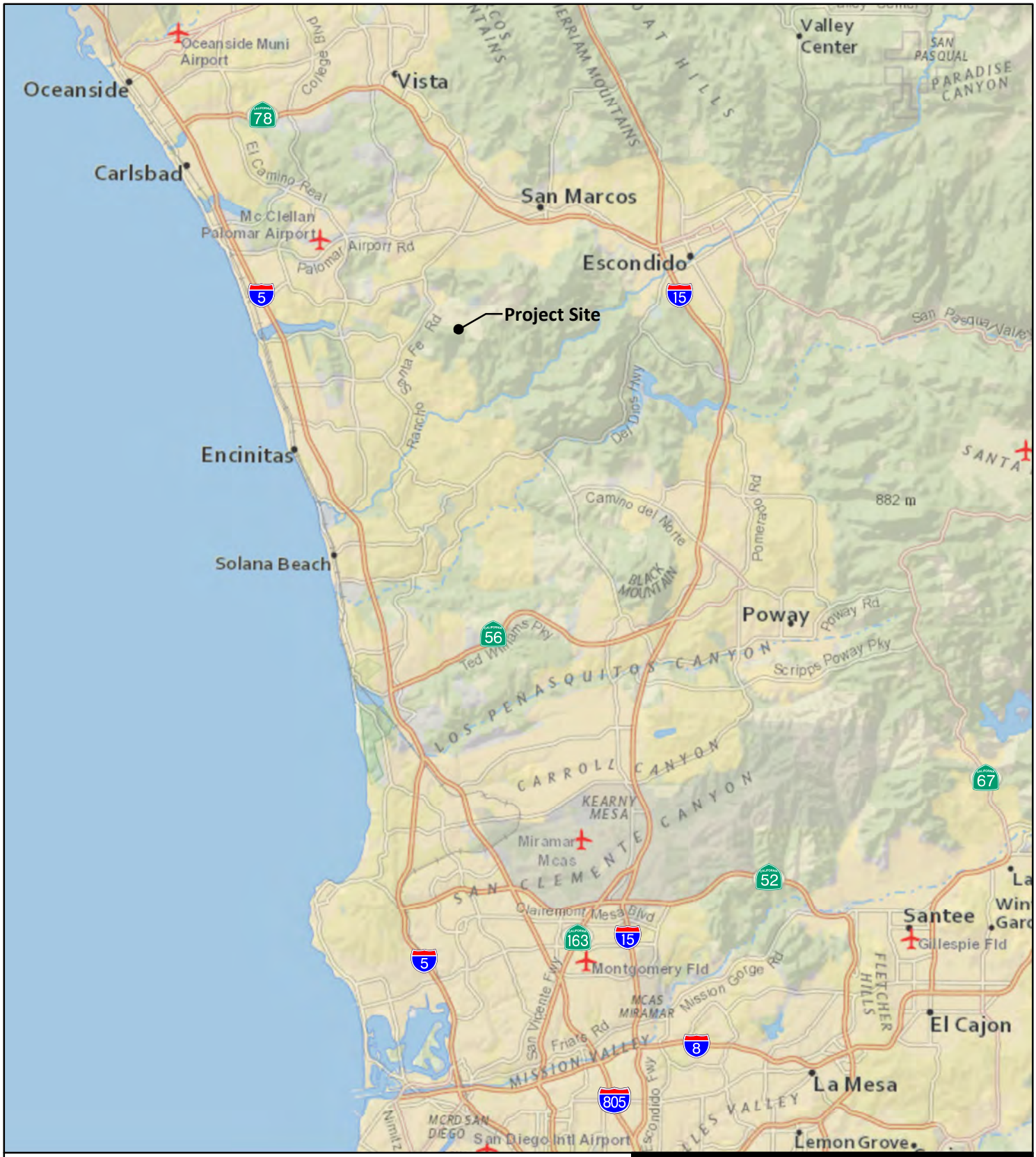

Figure 1

Regional Location

QUESTHAVEN
HABITAT RESTORATION PLAN

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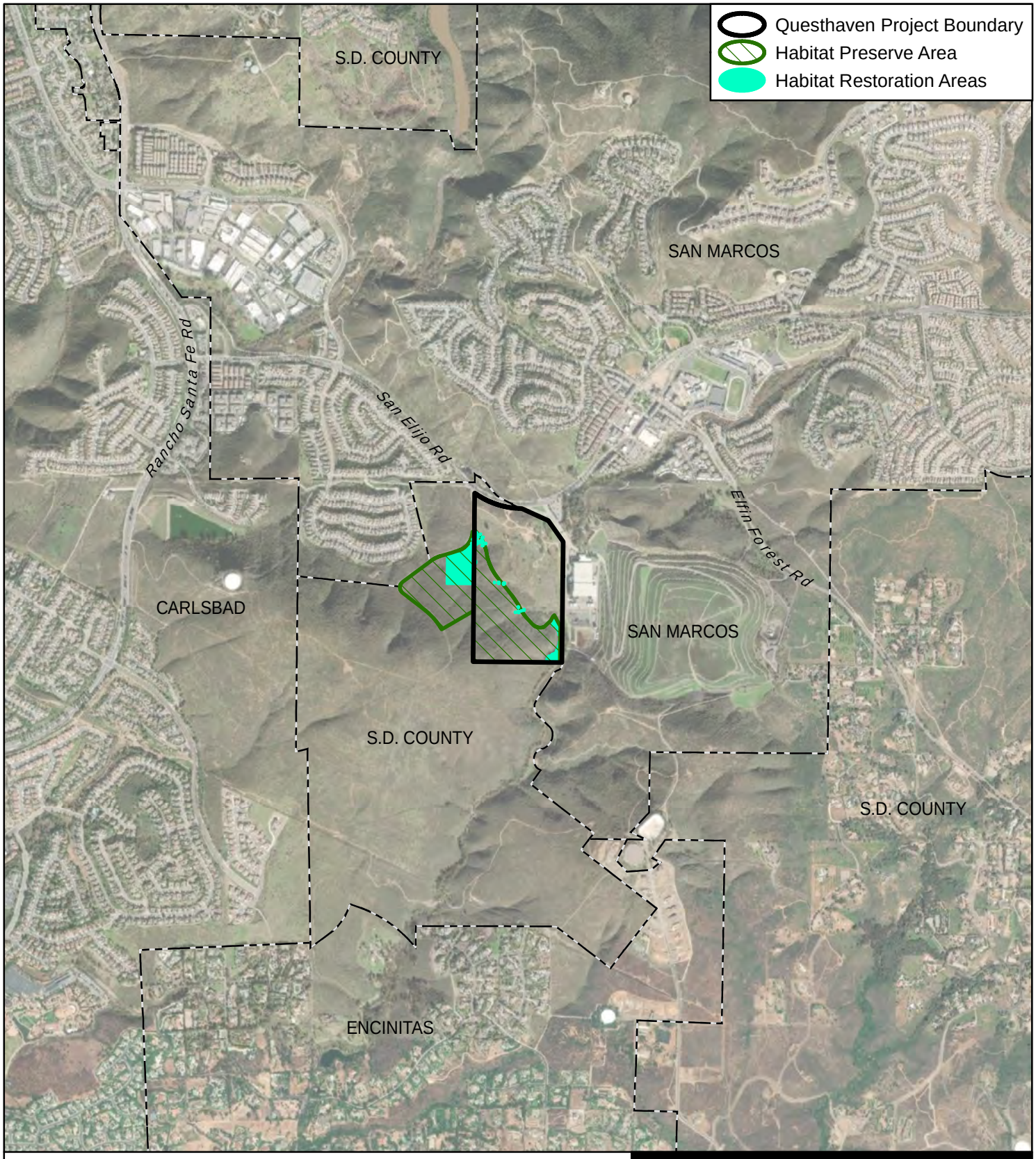

Source: SanGIS

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ALDEN ENVIRONMENTAL, INC

Figure 2

Project Location

QUESTHAVEN
HABITAT RESTORATION PLAN

2.3.2 Sensitive Resources Affected and Addressed in this Plan

The project would impact a total of 32.9 acres, including Diegan coastal sage scrub, scrub oak chaparral, mafic chamise chaparral, mafic southern mixed chaparral, and non-native grassland communities. The mitigation effort includes habitat preservation (44.4 acres) and habitat restoration (5.9 acres) within an adjacent 50.3 acre area (Figure 3). This document addresses the habitat restoration effort.

2.3.3 Type, Functions, and Value of the Habitat to be Restored

This plan includes restoration of mafic southern mixed/coastal sage scrub ecotone and coastal sage scrub communities. In addition, this plan incorporates creation of shallow ephemeral water holding basins (puddles) to be used by the spadefoot toad for breeding purposes.

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Typical species found within Diegan coastal sage scrub, including on the project site, are California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma laurina)*, and black sage (*Salvia mellifera*). The coastal sage scrub restoration in the southeastern area will replace the existing, non-native, eucalyptus woodlands with high quality native coastal sage scrub habitat.

Mafic southern mixed chaparral on site occurs on San Miguel series soils that are formed from metavolcanic rock that overlays metavolcanic bedrock. This chaparral on site is composed of broad-leaved sclerophyllous shrubs that can reach six to 10 feet in height and form dense often nearly impenetrable stands with poorly developed understories. Characteristic plants in this community include black sage, fuchsia-flowered gooseberry (*Ribes speciosum*), spiny redberry (*Rhamnus ilicifolia*), holly-leaf redberry (*Rhamnus ilicifolia*), chamise, toyon (*Heteromeles arbutifolia*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). The mafic southern mixed chaparral/coastal sage scrub ecotone restoration is intended to, over time, provide for a mature native community of shrub species. The coastal sage scrub component is included to help provide for interim native species cover and allow for the slower growing chaparral species to become established.

These communities are important components of the San Diego County ecosystem; they provide habitat for sensitive plant and animal species. Additionally, the constructed basins will specifically support extant populations of spadefoot toad, as well as other species that may utilize the basins when they are holding water.

3.0 GOALS OF THE RESTORATION

3.1 RESPONSIBILITIES

3.1.1 Project Proponent

Colrich Communities (or the owner at the time of implementation) will be responsible for financing the installation, maintenance, and monitoring of the restoration.

3.1.2 County of San Diego

As part of the monitoring program, annual reports prepared by the restoration specialist will be submitted to the Wildlife Agencies and County. The County will review these reports for completeness and will determine the success of the restoration effort together with the Wildlife Agencies.

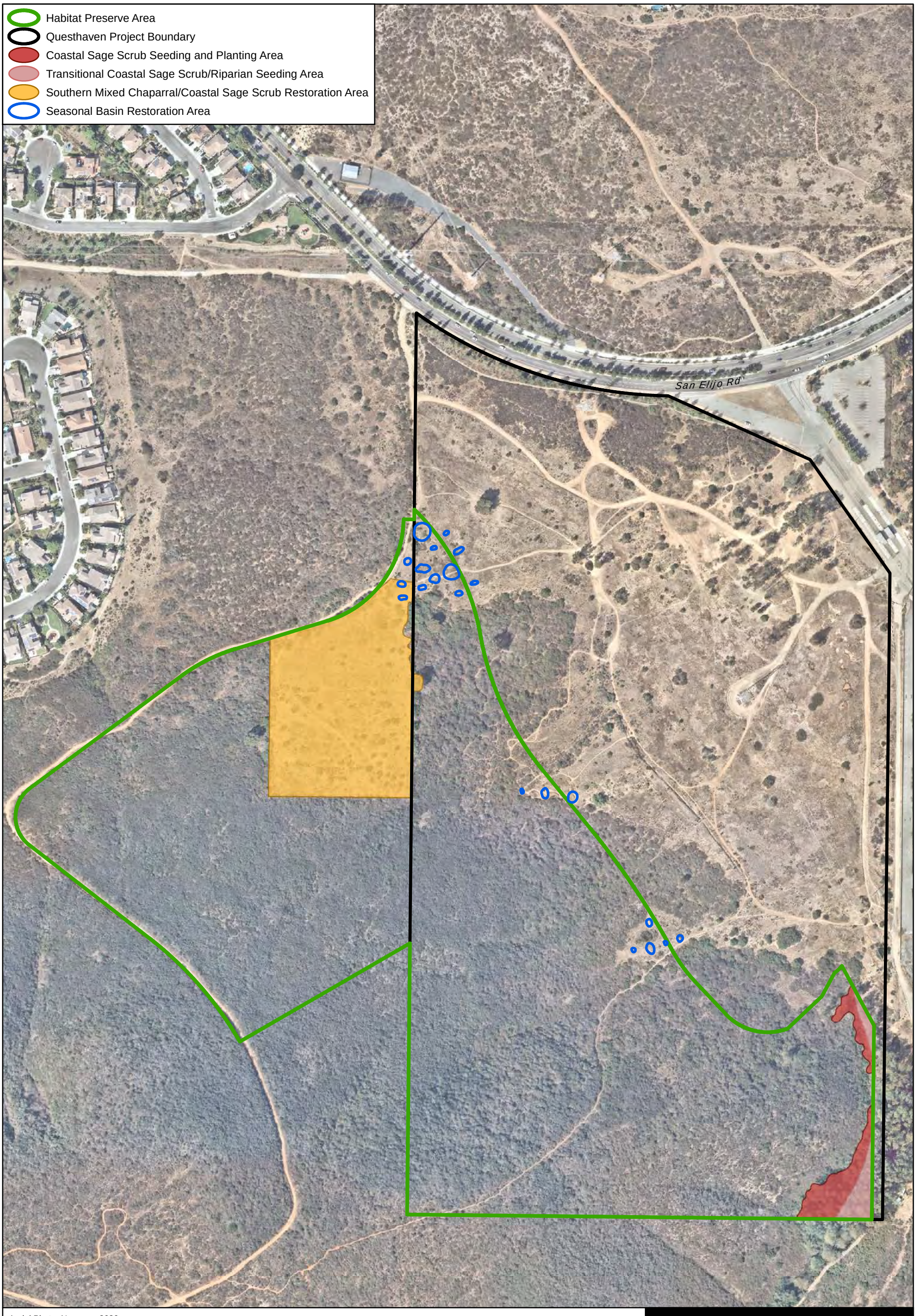
3.1.3 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this restoration program will be the responsibility of a restoration specialist with a minimum of 5 years of habitat restoration experience. The restoration specialist will educate all participants with regard to program goals and directly oversee all aspects of the restoration. In addition, the specialist will conduct all monitoring data collection, annual assessments, and prepare all required reports. If necessary, the restoration specialist will provide the project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The contractor will be responsible for carrying out all required measures in a timely manner. The restoration specialist will notify the contractor and responsible party if any requested remediation is not addressed. The restoration specialist will make all contractors, subcontractors, and supervisors aware of the agency permits and authorizations associated with the restoration. Copies of the permits will be kept on site at all times during periods of active work and must be presented to any agency personnel upon demand.

3.1.4 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have habitat restoration experience and will, under the direction of the restoration specialist, be responsible for tasks such as site preparation, planting, seeding, and maintenance. The restoration specialist will educate the contractor(s) on the installation and maintenance of native plant species.

After the installation is complete, maintenance personnel will initiate the 5-year maintenance program under the direction of the restoration specialist. Maintenance crews will service the entire restoration area regularly following installation. Service will include, but not be limited to, weed control, trash removal, watering, fence repair, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the restoration specialist. The maintenance crew will meet the restoration specialist at the site when requested and will perform all checklist items in a timely manner as directed by the restoration specialist. The restoration specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native species.



Aerial Photo: Nearmap 2020

ALDEN ENVIRONMENTAL, INC

Figure 3

Habitat Restoration Areas

QUESTHAVEN
HABITAT RESTORATION PLAN

Prior to the commencement of restoration activities, the contractor(s) will review all aspects of this plan including permit requirements, site protection, maintenance inspections, landscape procedures, and monitoring.

3.2 TYPE AND AREAS OF HABITAT TO BE RESTORED

As noted above, this plan includes restoration of mafic southern mixed chaparral/coastal sage scrub ecotone and coastal sage scrub habitats (Table 2, Figure 3), along with the creation of shallow, ephemeral water holding basins.

Table 2
Restored Habitat Areas

Type	Acreage
Mafic Southern Mixed Chaparral/ Coastal Sage Scrub Ecotone	4.8
Coastal Sage Scrub	1.1
Total	**5.9**

In addition to these restored habitats, the project includes creation of 21 shallow, ephemeral water holding basins with a combined area of 0.2 acre. The basin creation will occur within and adjacent to the habitat restoration and therefore is not included in the acreage totals above. These basins are intended to be a topographic feature in a larger habitat restoration/preserve area and not a standalone vegetation community/habitat type.

3.3 FUNCTIONS AND VALUES GOALS

The goals of this restoration effort are to restore native habitats that would, at a minimum, replace the functions and values lost through impacts from the development project. The restored areas will provide continuous habitat with the adjacent preserved native habitats, both on- and off-site. The restoration will help maintain a continuous wildlife movement corridor for the site and the larger vicinity.

3.4 TIME LAPSE

Implementation of the habitat restoration effort would commence prior to, or concurrent with the Questhaven project construction/grading.

3.5 COST

The project applicant shall be responsible for all costs associated with the project. The final restoration plan will provide a detailed cost estimate that includes site preparation, fencing, signage, container stock, hydroseeding, irrigation, report preparation, monitoring, maintenance, and weeding along with a 20% contingency factor and a 3% inflation factor.

4.0 DESCRIPTION OF THE PROPOSED RESTORATION SITE

4.1 LOCATION AND SIZE OF THE RESTORATION AREAS

The combined restoration areas are 5.9 acres in size (Table 2) and located in two distinct locations on site (Figure 3).

4.2 PRESENT AND PROPOSED USES

The mafic southern mixed chaparral/coastal sage scrub ecotone area (Figure 4) is located on the site of a former fig farm dating back to the 1980s. Agricultural activities have long since been discontinued on the site and it is now in a disturbed state, supporting primarily non-native weed species. There are some scattered remnant trees and debris on the site. The non-native vegetation, debris, and vestiges of the previously agricultural activity will be removed and the entire area restored to native habitat.

The coastal sage scrub area (Figure 5) currently supports a mature grove of eucalyptus trees. In addition, there is an existing drainage within this area that conveys water from stormwater outfalls located off site. The eucalyptus trees are a non-native, invasive species and will be removed from the entire area. Once the trees are removed the area will be restored to coastal sage scrub habitat. A portion of this area where the existing drainage occurs also will be restored, but may not fully become sage scrub as it is wetter than the surrounding area. A transitional coastal sage scrub/riparian area seed mix will be applied near the drainage so that native wetland/riparian species may become established where it is too wet for coastal sage scrub.

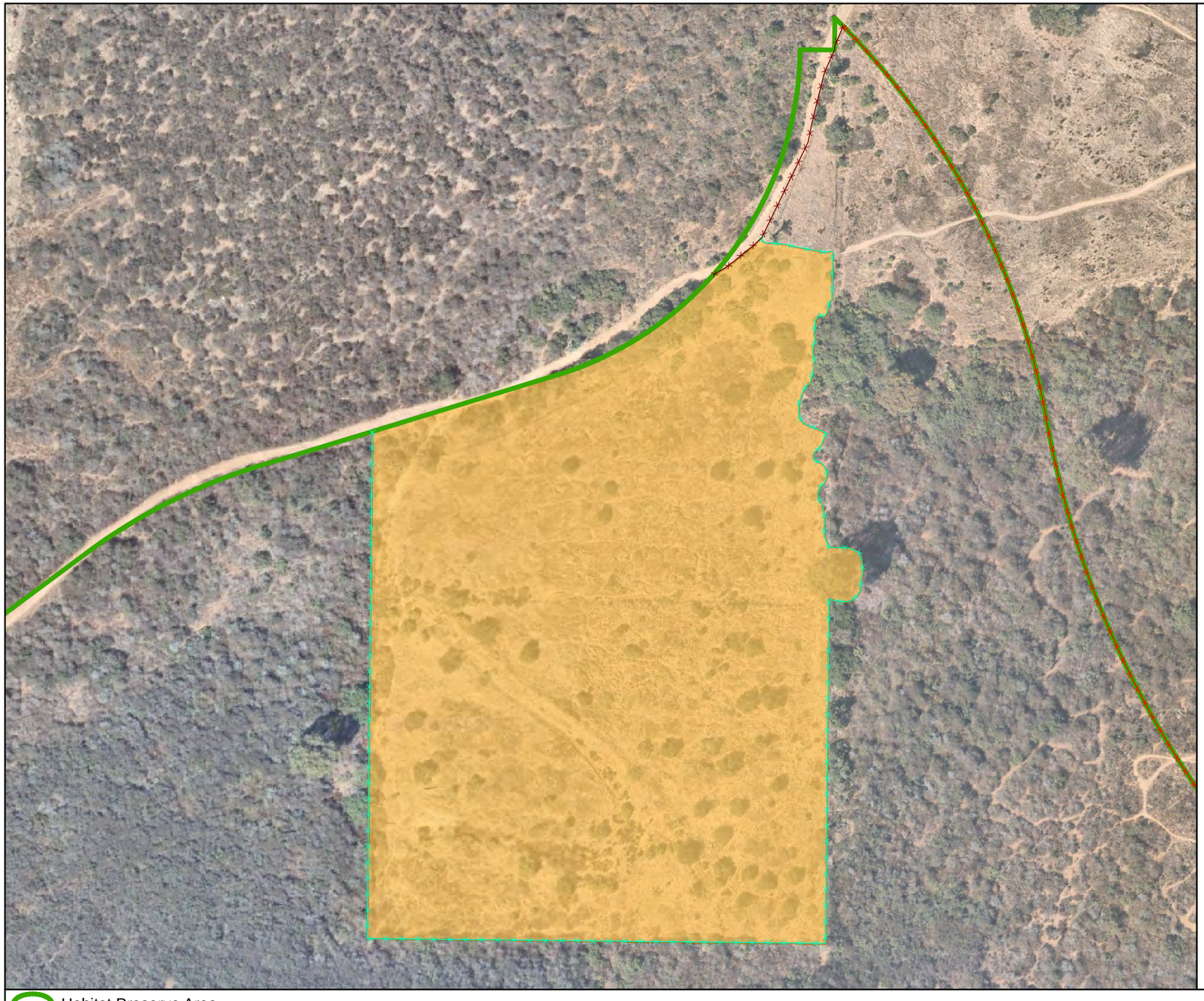
The proposed basin creation would occur in 3 distinct locations, within and adjacent to the onsite preserve/restoration areas (Figures 6a-6c). These basins are intended to be shallow features that will hold water during, and shortly after rainfall events. They are not intended to serve as vernal pool or wetland habitat; rather, their purpose is to provide breeding locations for extant spadefoot toads.

A draft easement for the combined preserve and restoration areas will be prepared and submitted to the County for approval. This easement will state that no other easements or activities that would result in soil disturbance and/or vegetation removal will be allowed within the easement area. Upon approval, the easement shall be executed and a final copy furnished to the County.

5.0 IMPLEMENTATION PLAN

5.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

The sites selected for the restoration currently support non-native and disturbed habitats (Figure 3) adjacent to native vegetation communities. These areas previously supported native habitat and the soils are appropriate for the proposed restoration. Implementation of this plan would result in restoration of habitats that are present and previously occurred on the site. Therefore, it is expected that the restoration will be successful.



SOUTHERN MIXED CHAPARRAL/COASTAL SAGE SCRUB SEED MIX	
Species	**Pounds Per Acre**
Black sage (*Salvia mellifera*)	3
Blue Dicks (*Dichelostemma capitatum*)	3
Blue-eyed grass (*Sisyrinchium bellum*)	3
California encelia (*Encelia californica*)	3
California everlasting (*Gnaphalium californicum*)	3
California melic (*Melica imperfecta*)	3
California sage brush (*Artemisia californica*)	3
Chamise (*Adenostoma fasciculatum*)	4
Chia (*Salvia columbariae*)	1
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Fascicled tarweed (*Deinandra fasciculata*)	3
Flat-top buckwheat (*Eriogonum fasciculatum*)	4
Golden yarrow (*Eriophyllum confertiflorum*)	3
Goldfields (*Lasthenia californica*)	2
Laurel sumac (*Malosma laurina*)	3
Lemonadeberry (*Rhus integrifolia*)	3
San Diego needlegrass (*Stipa lepida*)	5
TOTAL	54

SOUTHERN MIXED CHAPARRAL/COASTAL SAGE SCRUB CONTAINER STOCK SPECIES	
Species	**Number Per Acre**
Broom baccharis (*Baccharis sarothroides*)	15
California buckwheat (*Eriogonum fasciculatum*)	100
California sage brush (*Artemisia californica*)	100
Chamise (*Adenostoma fasciculatum*)	100
Coastal prickly pear (*Opuntia littoralis*)	10
Laurel sumac (*Malosma laurina*)	10
Lemonadeberry (*Rhus integrifolia*)	20
Nuttall's scrub oak (*Quercus dumosa*)	25
Toyon (*Heteromeles arbutifolia*)	30
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	30
TOTAL	**440**

Habitat Preserve Area
Southern Mixed Chaparral/Coastal Sage Scrub Restoration Area
Preserve Area Fencing
Permanent Fencing
Temporary Fencing

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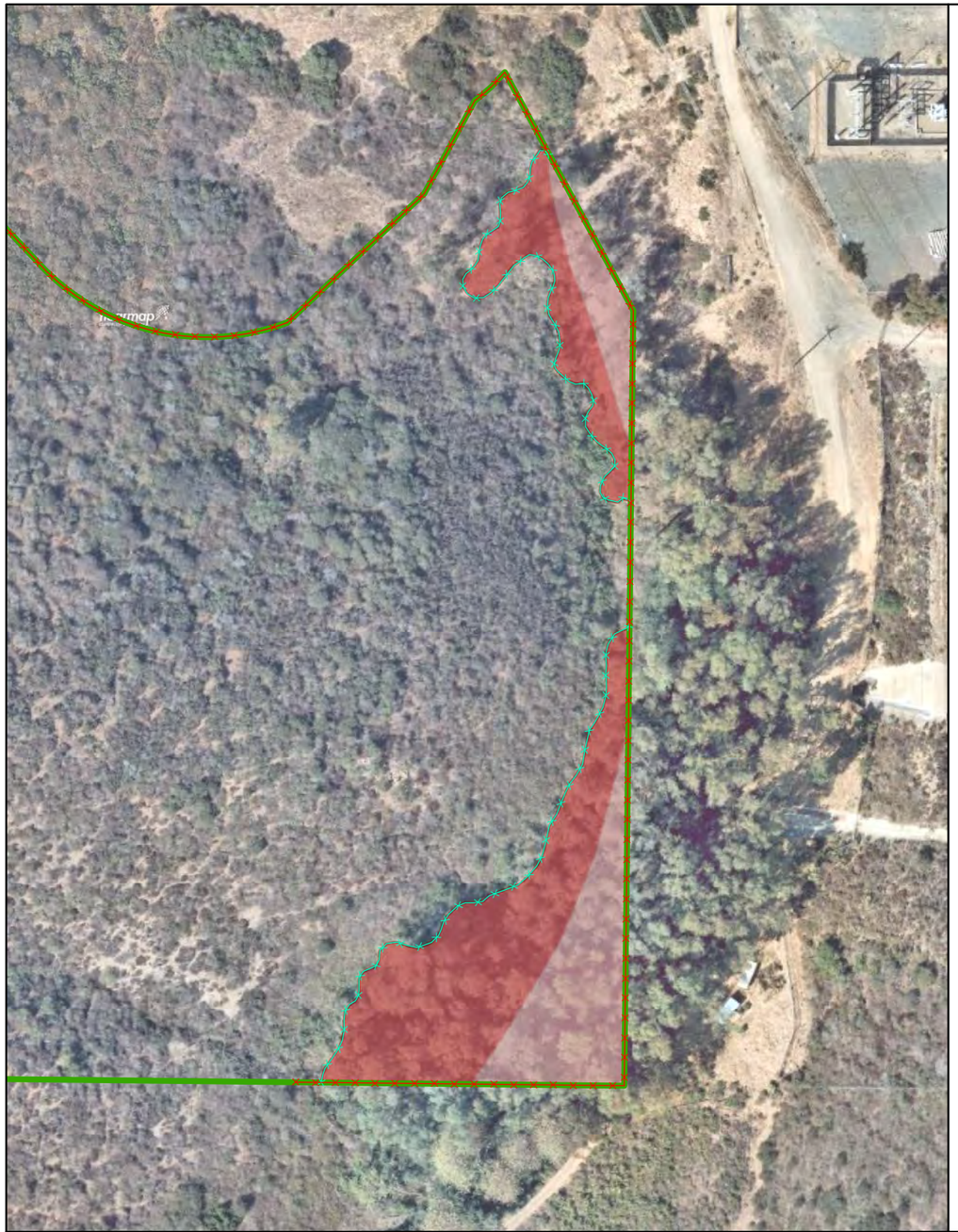
Figure 4

Southern Mixed Chaparral/ Coastal Sage Scrub Restoration

QUESTHAVEN
HABITAT RESTORATION PLAN



Habitat Preserve Area
Coastal Sage Scrub Seeding and Planting Area
Transitional Coastal Sage Scrub/Riparian Seeding Area
Preserve Area Fencing
Temporary Fencing

Coastal Sage Scrub Area

COASTAL SAGE SCRUB SEED MIX	
Species	**Pounds Per Acre**
Blue Dicks (*Dichelostemma capitatum*)	3
Blue-eyed grass (*Sisyrinchium bellum*)	3
California encelia (*Encelia californica*)	3
California everlasting (*Gnaphalium californicum*)	3
California melic (*Melica imperfecta*)	5
California sage brush (*Artemisia californica*)	3
Chia (*Salvia columbariae*)	1
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Fascicled tarweed (*Deinandra fasciculata*)	3
Flat-top buckwheat (*Eriogonum fasciculatum*)	6
Golden yarrow (*Eriophyllum confertiflorum*)	3
Goldfields (*Lasthenia californica*)	2
Lemonadeberry (*Rhus integrifolia*)	1
San Diego needlegrass (*Stipa lepida*)	10
TOTAL	**51**

COASTAL SAGE SCRUB CONTAINER STOCK SPECIES[1]	
Species	**Number Per Acre**
Laurel sumac (*Malosma laurina*)	10
Coastal prickly pear (*Opuntia littoralis*)	10
Broom baccharis (*Baccharis sarothroides*)	15
Lemonadeberry (*Rhus integrifolia*)	5
San Diego needlegrass (*Stipa lepida*)	300
California sage brush (*Artemisia californica*)	100
California buckwheat (*Eriogonum fasciculatum*)	100
TOTAL	**440**

[1]All container stock is 1 gallon except for *Stipa lepida* which are plugs

Transitional Coastal Sage Scrub/Riparian Area

COASTAL SAGE SCRUB/RIPARIAN SEED MIX	
Species	**Pounds Per Acre**
Arroyo willow (*Salix lasiolepis*)	3
Blue Dicks (*Dichelostemma capitatum*)	2
Blue-eyed grass (*Sisyrinchium bellum*)	2
California deergrass (*Muhlenbergia rigens*)	3
California encelia (*Encelia californica*)	3
California everlasting (*Gnaphalium californicum*)	2
California melic (*Melica imperfecta*)	3
California sage brush (*Artemisia californica*)	3
Creeping wild rye (*Leymus triticoides*)	2
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	2
Elderberry (*Sambucus nigra*)	3
Fascicled tarweed (*Deinandra fasciculata*)	2
Flat-top buckwheat (*Eriogonum fasciculatum*)	3
Goldfields (*Lasthenia californica*)	2
Mulefat (*Baccharis salicifolia*)	3
San Diego needlegrass (*Stipa lepida*)	3
San Diego sagewort (*Artemisia palmeri*)	3
Tarragon (*Artemisia dracunculus*)	3
Western ragweed (*Ambrosia psilostachya*)	3
Yerba mansa (*Anemopsis californica*)	3
TOTAL	**58**

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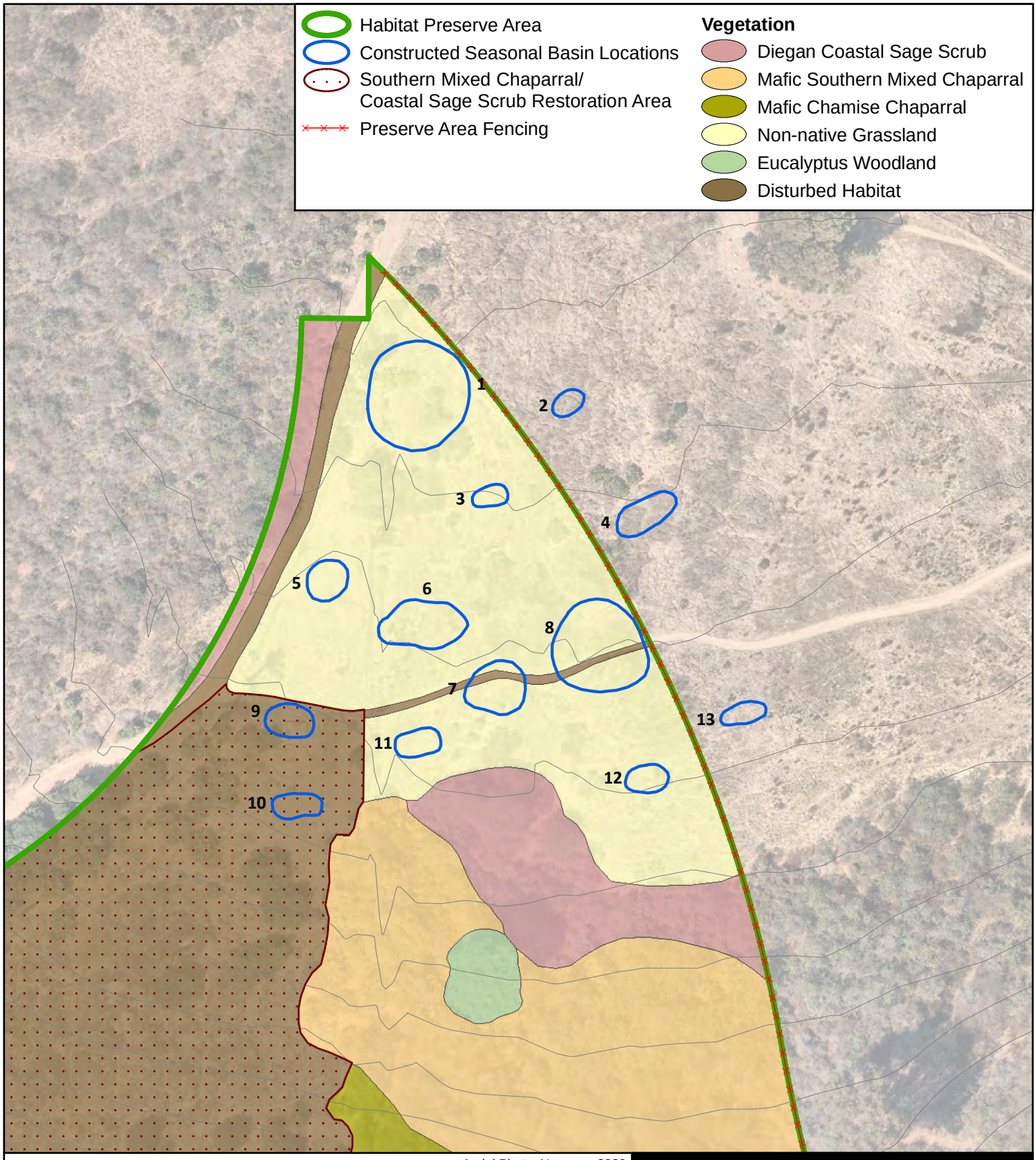
Figure 5

Diegan Coastal
Sage Scrub Restoration

QUESTHAVEN
HABITAT RESTORATION PLAN



Aerial Photo: Nearmap 2020

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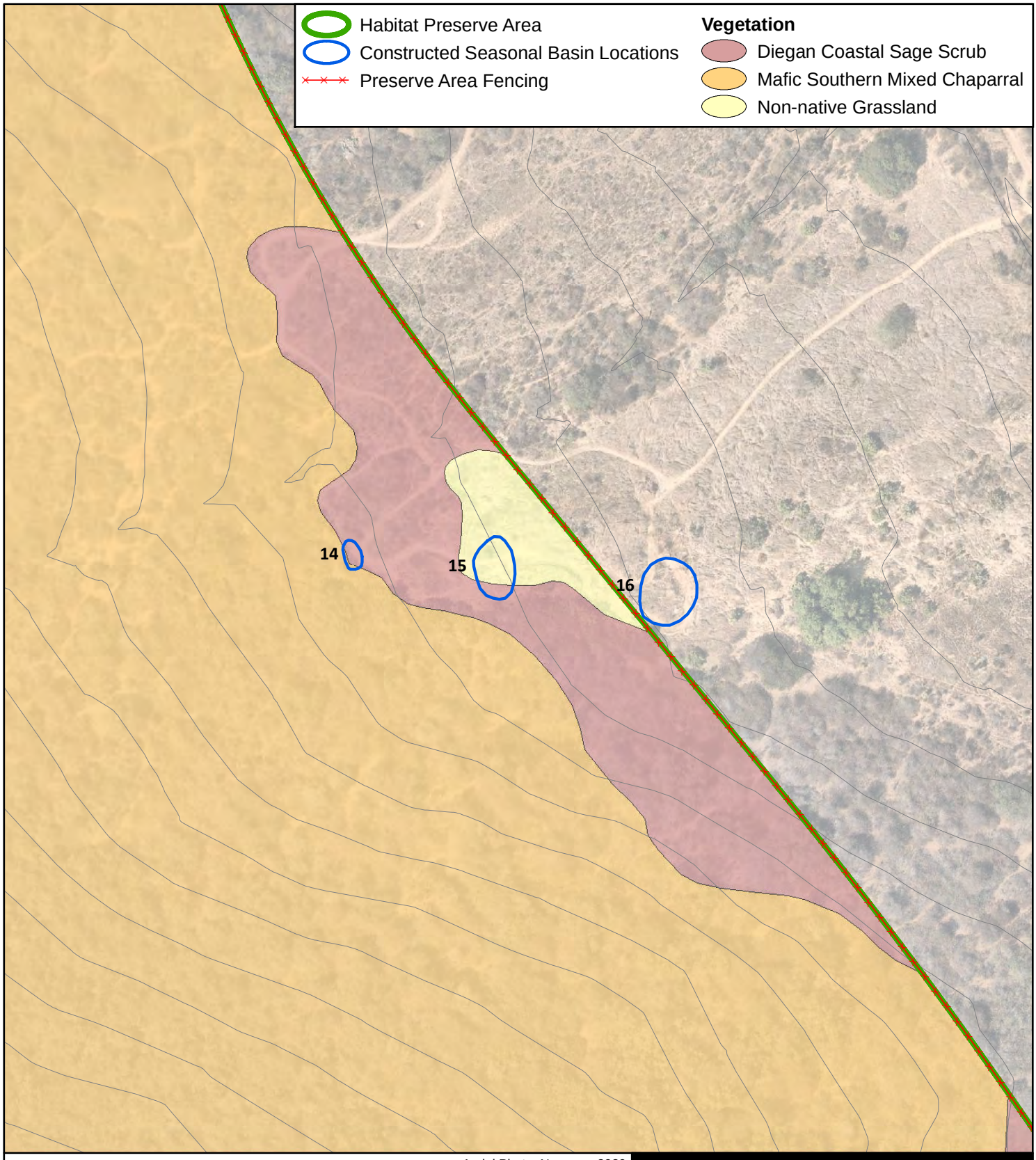
ALDEN ENVIRONMENTAL, INC

Figure 6a

Seasonal Basin Creation

QUESTHAVEN
HABITAT RESTORATION PLAN



Aerial Photo: Nearmap 2020

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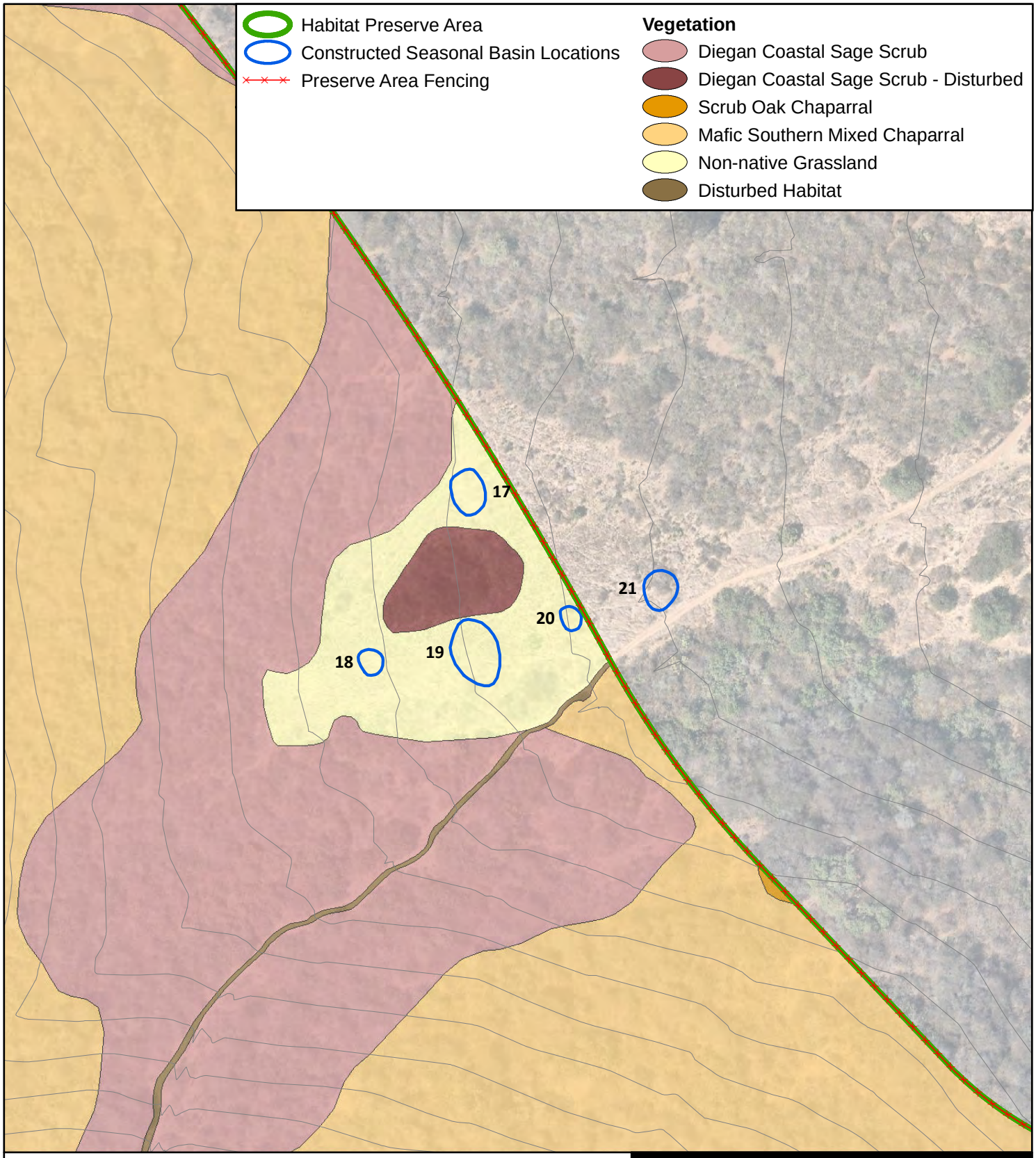
ALDEN ENVIRONMENTAL, INC

Figure 6b

Seasonal Basin Creation

QUESTHAVEN
HABITAT RESTORATION PLAN



Aerial Photo: Nearmap 2020

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ALDEN ENVIRONMENTAL, INC

Figure 6c

Seasonal Basin Creation

QUESTHAVEN
HABITAT RESTORATION PLAN

5.2 FINANCIAL ASSURANCES

Colrich Communities (or the owner at the time of implementation) will be responsible for financing the installation, maintenance, and monitoring of the restoration.

A restoration agreement shall be signed and notarized by the property owner following approval of this restoration plan and accompanied by the required security as agreed upon by the County of San Diego.

5.3 SCHEDULE

Implementation of the restoration program would commence prior to, or in conjunction with ground disturbance for the Questhaven development project. These activities are anticipated to take between 6 and 8 weeks to complete. A restoration plan checklist, by project phase, is provided as Table 3.

5.4 SITE PREPARATION

5.4.1 Pre-Construction Meeting

All activities will be carried out under the supervision of the restoration specialist. The restoration specialist will mark all work areas. Existing sensitive habitats and native plants to be avoided will be marked by the restoration specialist. Access routes also will be identified and marked. An on-site meeting will be held with the restoration specialist and all installation personnel to identify sensitive areas and devise a strategy for avoidance prior to initiation of restoration activities. Staging areas will be established and all vehicles and construction equipment will be restricted to the staging areas when not required for restoration activities.

5.4.2 Fencing

Prior to the restoration effort, temporary orange construction fences will be installed along the perimeter of all work areas to restrict access. The larger open space easement area (preserved and restored lands) will include permanent fencing following restoration activities except along the existing easement to the west to provide for ingress and egress for road and utility purposes. Steel signs will be attached to the fencing (or on posts along the easement) that will provide notice, in both English and Spanish, that the area is an ecological preserve and that trespassing is prohibited.

The final restoration plan will include construction details and locations of permanent fencing and signage on the landscape plans.

Table 3 Restoration Plan Checklist					
Construction Phase	**Task**	**Applicable Parties**			
		Project Proponent	**Installation Contractor**	**Maintenance Contractor**	**Restoration Specialist**
Pre-construction	Order seed and container stock		X		
	Attend pre-construction meeting	X	X		X
	Document pre-impact conditions,				X
	Identify site limits and staging area				X
Installation	Delineate mitigation boundaries		X		X
	Remove eucalyptus trees				X
	Debris removal		X		X
	Basin creation		X		X
	Pre-planting weed control		X		
	Install container stock and seed		X		X
	Install irrigation system		X		X
	Prepare/submit as-built report				X
Five-year Maintenance and Monitoring Period	Conduct maintenance monitoring and annual monitoring				X
	Prepare as needed maintenance monitoring memos				X
	Maintain and monitor site for 5 years - until signed off by County			X	X

5.4.3 Eucalyptus Removal

The initial site preparation will involve removal of the eucalyptus trees in the coastal sage scrub restoration area. All eucalyptus trees will be removed from the site and disposed of properly. Remaining stumps will be treated with herbicide (drill & inject method) to ensure that they do not resprout.

5.4.4 Site Cleanup/Dethatching

Refuse, debris, and deleterious soil that may be within the restoration areas will be removed and disposed of in a licensed landfill. Non-native habitat within the restoration areas will be mowed and dethatched prior to initiation of other activities. The dethatching will remove dead weed material that may have accumulated on the ground over time and that can inhibit the establishment and growth of native species. Dethatching consists of mowing or weed-whipping standing grass stalks, and raking, collecting, and removing the grass straw and other cut weeds from the site. All material will be removed from the site and be disposed of in a legal manner. Prior to dethatching, areas supporting native plants (if any) would be flagged for avoidance.

5.4.5 Basin Creation

The created basins are designed to have maximum depths of 8 to 10 inches, with the goal of having appropriate ponding for spadefoot toad breeding (i.e., retain water for approximately 30 days) and that the basins will have slopes of 12:1 to 15:1 to provide smooth, micro-topographic variance for spadefoot toad access. These basins would be unvegetated and intended to serve as vernal pool or wetland habitat. As such, there is no planting or introduction of inoculum.

5.5 PLANTING PLAN

5.5.1 Seed Mixes

Seeding will take place within the mafic southern mixed chaparral/coastal sage scrub ecotone area (Table 4; Figure 4) and the coastal sage scrub (including riparian transition) area (Tables 5 and 6; Figure 5). Seed will be sourced from as close to the site as possible. The source and proof (tags) for all seed will be provided.

Table 4 Mafic Southern Mixed Chaparral/Coastal Sage Scrub Seed Mix	
Species	**Pounds Per Acre**
Black sage (*Salvia mellifera*)	3
Blue Dicks (*Dichelostemma capitatum*)	3
Blue-eyed grass (*Sisyrinchium bellum*)	3
California encelia (*Encelia californica*)	3
California everlasting (*Gnaphalium californicum*)	3
California melic (*Melica imperfecta*)	3
California sage brush (*Artemisia californica*)	3
Chamise (*Adenostoma fasciculatum*)	4
Chia (*Salvia columbariae*)	1
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Fascicled tarweed (*Deinandra fasciculata*)	3
Flat-top buckwheat (*Eriogonum fasciculatum*)	4
Golden yarrow (*Eriophyllum confertiflorum*)	3
Goldfields (*Lasthenia californica*)	2
Laurel sumac (*Malosma laurina*)	3
Lemonadeberry (*Rhus integrifolia*)	3
San Diego needlegrass (*Stipa lepida*)	5
TOTAL	54

Table 5 Coastal Sage Scrub Seed Mix	
Species	**Pounds Per Acre**
Blue Dicks (*Dichelostemma capitatum*)	3
Blue-eyed grass (*Sisyrinchium bellum*)	3
California encelia (*Encelia californica*)	3
California everlasting (*Gnaphalium californicum*)	3
California melic (*Melica imperfecta*)	5
California sage brush (*Artemisia californica*)	3
Chia (*Salvia columbariae*)	1
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Fascicled tarweed (*Deinandra fasciculata*)	3
Flat-top buckwheat (*Eriogonum fasciculatum*)	6
Golden yarrow (*Eriophyllum confertiflorum*)	3
Goldfields (*Lasthenia californica*)	2
Lemonadeberry (*Rhus integrifolia*)	1
San Diego needlegrass (*Stipa lepida*)	10
TOTAL	**51**

Table 6 Coastal Sage Scrub/Riparian Seed Mix	
Species	**Pounds Per Acre**
Arroyo willow (*Salix lasiolepis*)	3
Blue Dicks (*Dichelostemma capitatum*)	2
Blue-eyed grass (*Sisyrinchium bellum*)	2
California deergrass (*Muhlenbergia rigens*)	3
California encelia (*Encelia californica*)	3
California everlasting (*Gnaphalium californicum*)	2
California melic (*Melica imperfecta*)	3
California sage brush (*Artemisia californica*)	3
Creeping wild rye (*Leymus triticoides*)	2
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	2
Elderberry (*Sambucus nigra*)	3
Fascicled tarweed (*Deinandra fasciculata*)	2
Flat-top buckwheat (*Eriogonum fasciculatum*)	3
Goldfields (*Lasthenia californica*)	2
Mulefat (*Baccharis salicifolia*)	3
San Diego needlegrass (*Stipa lepida*)	3
San Diego sagewort (*Artemisia palmeri*)	3
Tarragon (*Artemisia dracunculus*)	3
Western ragweed (*Ambrosia psilostachya*)	3
Yerba mansa (*Anemopsis californica*)	3
TOTAL	**55**

A hydroseed slurry will be evenly applied in two stages such that an even, homogeneous distribution is made. The first stage will include the seed, a small amount of fiber mulch, and dye. This application will help ensure that maximum seed/soil contact is made. A second layer will be applied immediately following the first. The second layer will include additional fiber mulch, dye, and a tackifier. The tackifier will serve to help bind seed and soil until germination. Hydroseed specifications are presented in Table 7.

Table 7 Hydroseed Application Specifications		
Material	**First Application**	**Second Application**
Seed	As called for per site	N/A
Long fiber wood mulch	500 lbs/acre	1,000 lbs/acre
Dye	As necessary	As necessary
Tackifier	N/A	90 lbs/acre
Water	Sufficient to maintain slurry	Sufficient to maintain slurry

Hand seeding may be conducted in focused areas to help ensure targeted application of seed. Areas not treated with the hydroseed slurry will be hand seeded following hydroseeding to make sure all areas are seeded. These areas will be determined at the time of seeding and will include areas where hydroseeding may not be possible, where existing native plants may be negatively affected by the hydroseed slurry, or where it is thought that certain species may be appropriate in small areas. Seed of different species will only be mixed when they are to be applied to the same location. Individual species may be seeded separately as directed by the restoration specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An inert carrier (sand, saw dust) may also be mixed with the seed to help maintain consistency. Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

5.5.2 Container Stock

In addition to seed, native container stock will be planted within the restoration areas (Tables 8 and 9). The container stock will be sourced from as close to the site as possible. If container stock is unavailable from the site vicinity, the restoration specialist may substitute species as necessary. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the restoration specialist prior to being installed. Specifically, the restoration specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for out-planting.

The restoration specialist will reject any plants not meeting these requirements.

Table 8
Mafic Southern Mixed Chaparral/Coastal Sage Scrub
Container Stock Species[1]

Species[2]	Number Per Acre
Broom baccharis (*Baccharis sarothroides*)	15
California buckwheat (*Eriogonum fasciculatum*)	100
California sage brush (*Artemisia californica*)	100
Chamise (*Adenostoma fasciculatum*)	100
Coastal prickly pear (*Opuntia littoralis*)	10
Laurel sumac (*Malosma laurina*)	10
Lemonadeberry (*Rhus integrifolia*)	20
Nuttall's scrub oak (*Quercus dumosa*)	25
Toyon (*Heteromeles arbutifolia*)	30
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	30
TOTAL	**440**

[1]All container stock is 1 gallon size
[2]If unavailable, restoration specialist shall substitute with other suitable species

Table 9 Coastal Sage Scrub Container Stock Species[1]	
Species[2]	**Number Per Acre**
Laurel sumac (*Malosma laurina*)	10
Coastal prickly pear (*Opuntia littoralis*)	10
Broom baccharis (*Baccharis sarothroides*)	15
Lemonadeberry (*Rhus integrifolia*)	5
San Diego needlegrass (*Stipa lepida*)	300
California sage brush (*Artemisia californica*)	100
California buckwheat (*Eriogonum fasciculatum*)	100
TOTAL	**540**

[1]All container stock is 1 gallon size
[2]If unavailable, restoration specialist shall substitute with other suitable species

5.6 IRRIGATION PLAN

A temporary, above ground irrigation systems will be installed in the restoration areas. The systems will provide head to head coverage to ensure adequate irrigation of the installed seed. The final restoration plan will include a detailed irrigation plan, compliant with the County's Water Conservation in Landscaping Ordinance.

5.7 AS-BUILT CONDITIONS

The restoration specialist shall prepare and submit a map showing the as-built conditions of the restoration area within 6 weeks of completion of site preparation, planting, and basin creation.

6.0 MAINTENANCE DURING MONITORING

6.1 MAINTENANCE ACTIVITIES

A 5-year maintenance program is proposed to help ensure the successful establishment and persistence of the preserved and revegetated habitat. The maintenance program will involve removal of trash, weed control, fence and signage repair/replacement, and any remedial measures deemed necessary for restoration success (e.g., re-seeding).

6.1.1 Trash Removal

The maintenance contractor will remove any trash encountered within the restoration area during every maintenance event and dispose of it in a legally acceptable fashion.

6.1.2 Weed Control

Particular maintenance emphasis will be placed on pro-active weed control within the restoration area. The project would revegetate non-native grassland habitat, which is dominated by grass species that would otherwise be considered to be weeds. For this project, non-native grasses are the target species, and they will not be controlled as weeds. Other, non-grass weed species observed will be considered invasive and targeted for removal. All workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid to special status plant species that may occur.

Weeds will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the restoration specialist. Herbicides will only be applied by workers licensed to use those chemicals. Additionally, herbicide will not be used during wet or windy conditions.

Weeds will be removed from the restoration areas and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before setting seed. Leaf and branch drop of native species will be left in place and not removed from the site.

6.2 SCHEDULE

Regular maintenance, trash removal, and weed control of the restoration area will be conducted during the first 5 years following implementation of the restoration program or until the restoration program is deemed successful. Maintenance personnel will visit the site at least bi-monthly for the 5-year maintenance and monitoring period. Additional visits will be conducted as directed by the restoration specialist during the rainy season (generally December through May) each year to keep weeds under control.

7.0 MONITORING PLAN FOR THE RESTORATION SITE

7.1 PERFORMANCE STANDARDS FOR TARGET DATES AND SUCCESS CRITERIA

The following sections provide performance standards to determine the successful completion of the 5-year restoration and monitoring program. Attainment of these standards indicates that restored habitat is progressing and performing the functions and services specified in this plan and by the end of the 5-year restoration and monitoring program. Methods used to measure these performance standards are described in the following text. If the restoration fails to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures will be developed and implemented, and the monitoring and maintenance period will be extended until all Year 5 standards are met, or as otherwise provided in this document. Only when the entire restoration site has attained the Year 5 standards will the entire restoration be signed off.

7.1.1 Container Stock

During each annual monitoring event, there will be no less than 80 percent survival of the container stock plants for all 5 years unless they have been replaced by natural recruitment.

7.1.2 Native Species Richness

Species richness criteria have been established to determine the success. Species richness will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific richness criteria are established for Years 1 or 2, but annual success criteria for species richness in Years 3, 4, and 5 are provided in Table 10. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 10
SPECIES RICHNESS SUCCESS CRITERIA[1]

Year 3	Year 4	Year 5
8	10	10

[1]Pre-determined, non-relative values

7.1.3 Native Species Cover

Native species cover success criteria have also been established to determine success of the restoration effort. Species cover will be measured by visual assessment in Years 1 and 2, and by quantitative transect data in Years 3, 4, and 5. No specific cover criteria are established for Years 1 or 2, but annual success criterion Years 3, 4, and 5 are provided in Table 11. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

Table 11
CSS Native Species Cover Success Criteria[1]

Year 3	Year 4	Year 5
40	60	70

[1]Pre-determined, non-relative values

7.1.4 Weed Cover

General and target weed cover success criteria have been established for the restoration effort. Given the size of the area and the extent of the weed seed bank, 100% weed eradication for all weed species is not a realistic goal (Some species are highly invasive and others are easier to eradicate). Therefore, species in Table 12 are zero tolerance species and will be controlled at 100% on a yearly basis. Other non-native species are more ubiquitous and can never be completely eliminated and will therefore be managed to a level of 10% or less. If the weed cover success criteria are not met in any given year, then remedial measures will be conducted.

Table 12
Zero Tolerance Weed Species

Latin name	Common name	Cal-IPC Rating[1]
Atriplex semibaccata	Australian saltbush	M
Carpobrotus spp.	Hottentot's fig	H/M
Cynara cardunculus	Artichoke thistle	M
Cynodon dactylon	Bermuda grass	M
Euphorbia lathyris	Gopher plant	N/A
Foeniculum vulgare	Fennel	H
Hordeum spp	barley	M
Nicotiana glauca	Tree tobacco	M
Ricinus communis	Castor bean	L
Salsola tragus	Russian thistle	L
Silybum marianum	Milk thistle	L
Sorghum halepense	Johnson grass	N/A
Xanthium strumarium	Cocklebur	N/A

[1]H= High invasiveness, M= Moderate invasiveness, L= Low invasiveness N/A= Not listed.

7.2 MONITORING METHODS AND SCHEDULES

7.2.1 Installation Monitoring

The restoration specialist will be on-site daily during the installation period to direct all restoration activities including site preparation, weed control, seeding, planting, and watering. Upon completion, the restoration specialist will prepare an as-built map and letter and confirm that the 5-year maintenance and monitoring period may begin.

7.2.2 Maintenance Monitoring

The restoration specialist will conduct regular maintenance monitoring visits during the 5-year maintenance period. Visits will be conducted monthly in Year 1, every other month in Years 2 through 3, and quarterly in Years 4 through 5. Additional visits may be required as conditions warrant. During each visit the restoration specialist will assess the condition of the restoration site and identify remedial measures as necessary. A brief monitoring memo will be prepared and submitted to the maintenance contractor following each maintenance monitoring visit.

7.2.3 Annual Monitoring

Annual monitoring visits will be conducted by the restoration specialist in the late spring each year during the 5-year maintenance period. During each annual monitoring the success of the restoration effort will be evaluated and species richness and cover data will be collected. In Years 1 and 2 species richness and cover will be determined by visual assessment. In Years 3-5 quantitative transect data will be collected.

Quantitative transect data will be collected using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). Four 50-m long sampling transects will be established in Year 3 within the CSS creation area. The ends of each transect will be marked with a re-bar stake and recorded with a Global Positioning System (GPS) unit.

Species cover will be determined by dividing each transect into 50 half meter intervals. A point will be projected into the vegetation each interval and any species intercepted by the point will be recorded. Species also will be divided into herb (0- 60 cm), shrub (60cm-3m), and tree (greater than 3 m) layers. Percent cover will be measured by dividing the number of hits by the number of possible hits. Total, native, and non-native cover values will be determined separately.

Native species richness (the number of species) will be calculated by counting all of the species encountered within a 5m wide belt transect along each transect (2.5m on each side). All plants observed will be categorized by origin (native/non-native) and height layer.

Photographs will be taken each year from the same photograph points used prior to initiation of site preparation. The photographs will help track project progress over time and will be included in the annual report each year.

7.3 MONITORING REPORTS

As part of the monitoring program, annual reports prepared by the restoration specialist will be prepared and submitted evaluating the success of the restoration effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the restoration, beginning with the second annual monitoring report, the reports will contain comparisons of the monitoring data for the current year with the previous years' data.

In accordance with the Report Format and Content Requirements for Restoration plans (County 2007): "Any significant issue or contingency that arises on the job site (e.g., plant survival issues, fire, or flooding) shall be reported in writing to the County of San Diego within two weeks from the date of the incident. Accompanying the report shall be a plan for remediation, with an implementation schedule and a monitoring schedule."

8.0 COMPLETION OF RESTORATION

8.1 NOTIFICATION OF COMPLETION

The permittee shall notify the County upon the restoration obtaining the Year-5 performance standards through the submittal of the final (Year 5) monitoring report.

8.2 CONFIRMATION

After receipt of the final monitoring report, the County may inspect the restoration site to determine if the effort has been conducted in accordance with this plan.

9.0 CONTINGENCY MEASURES

9.1 INITIATING CONTINGENCY PROCEDURES

An integral part of a successful program is the ability to detect problems with the restoration early in the process, determine the cause of the problem, and attempt to modify the program to accommodate emerging issues or situations. Minor problems, such as trash, vandalism, or small-scale weed or pest infestations will be rectified as they are discovered during routine site monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of the restoration site in any year, or if the final performance standards are not met, the restoration specialist will prepare an analysis of the cause(s) of failure, and if determined necessary by the County, propose remedial action for approval. These measures may include changes to the plant palette, adjustment of the management of the site, re-evaluation of species composition, or other design changes.

Should the restoration fail as a result of a natural disaster such as a flood, the permittee will still be held responsible for any additional measures that are required to re-establish the restoration site. The permittee is responsible to have the site meet performance standards in order to receive sign-off.

9.2 FUNDING

The Responsible Party shall be responsible for all costs associated with any contingency measures.

10.0 REFERENCES CITED

Alden Environmental, Inc. 2024. Biological Technical Report for the Questhaven Tentative Map Project. May 6.

County of San Diego. 2007. Report Format and Content Requirements-Restoration Plans. July 30. https://www.sandiegocounty.gov/content/dam/sdc/dplu/docs/Restoration_Report_Formats.pdf

Sawyer, J.O. and T. Keeler-Wolf. 1995. A Manual of California Vegetation. 472 pp.

Appendix L

Orcutt's Brodiaea Translocation Plan

Orcutt's Brodiaea Translocation Plan for the Questhaven Tentative Map Project

May 6, 2024

Prepared for:

Colrich Communities
444 West Beech Street, Suite 300
San Diego, CA 92101

Prepared by:

Alden Environmental, Inc.
3245 University Avenue, #1188
San Diego, CA 92104

ALDEN
ENVIRONMENTAL, INC

Orcutt's Brodiaea
Translocation Plan for the
Questhaven Tentative Map Project

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1.0 INTRODUCTION

This translocation plan provides the mitigation approach for direct impacts to the Orcutt's brodiaea (*Brodiaea orcuttii*), resulting from development of the Questhaven Tentative Map Project (Questhaven project). Orcutt's brodiaea has a California Native Plant Society (CNPS) Rare Plant Rank of 1B.1 and is a San Diego County List A sensitive plant species. It is a perennial herb with underground bulb-like storage stems, known as corms, in the Themidaceae family. Individual plants are up to 25 centimeters tall, which bears flowers on pedicels each a few centimeters long. The flower has six purple petals each between 1 and 2 centimeters long (CNPS 2022). The measures identified herein are based on those contained in the Questhaven project's Biological Technical Report (Alden Environmental, Inc. [Alden] 2024a).

2.0 PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The approximately 69.1-acre Questhaven project site is located in the western portion of unincorporated San Diego County within the San Dieguito Community Plan Area. The Questhaven project site is located immediately south and west of the City of San Marcos and east of the City of Carlsbad. Interstate 5 is located approximately 5.3 miles west of the Questhaven project site. Specifically, the Questhaven project site is located south of San Elijo Road and east of Denning Drive (Figures 1 and 2). The Questhaven project site encompasses Assessor's Parcel Number 223-080-46-00 and is located in the west half of the northwest quarter of Section 33, Township 12 South, Range 3 West, San Bernardino Meridian on the U.S. Geological Survey (USGS) 7.5-minute Rancho Santa Fe quadrangle map (Figure 2).

2.2 PROJECT IMPACTS

The project consists of a Tentative Map, Density Bonus Permit, Site Plan Review, and an Administrative Permit for the site. The total number of lots proposed is 93, with 76 residential and 17 non-residential. The project would provide for development of 69 market-rate units and 7 reserved units for affordable housing (18.27 acres), 4 water quality detention basins (2.40 acres), 1 private park parcel (0.31 acres), 4 private road lots (4.34 acres), and 7 open space HOA lots for fire buffer area (10.77 acres). The project also includes a biological open space lot (50.3 acres) that would connect to adjacent open space lands south and west of the project site. Alden prepared a Biological Technical Report that details all of the impacts and required mitigation for the Questhaven project (Alden 2024a). Specifically, this translocation plan addresses only the compensatory mitigation for impacts to Orcutt's brodiaea resulting from the proposed development.

Alden conducted surveyed for Orcutt's brodiaea on site on June 3 and 11, 2020 and again on May 13 and 25, 2023. The staminodia of *Brodiaea* found on site was closely inspected to determine which species is present. All brodiaea found were mapped using global positioning system (GPS) technology with sub-meter accuracy. No *Brodiaea* species other than *orcuttii* was found.

2.3 OWNERSHIP STATUS

The on-site biological open space where the Orcutt's brodiaea would be translocated is owned by Colrich Communities:

Colrich Communities
444 West Beech Street, Suite 300
San Diego, CA 92101

The brodiaea translocation areas are within on-site biological open space to be preserved that is adjacent to off-site Questhaven project mitigation land, all of which is connected to conserved lands to the east, farther west, and south (Figure 2).

3.0 TRANSLOCATION SUMMARY AND GOALS

This effort includes translocation of brodiaea corms from within the Questhaven project impact footprint (donor site) to receptor sites located within the on-site biological open space and associated planting of native grassland habitat.

3.1 DONOR SITE

The donor site (Figure 3) is comprised of non-native grassland totaling approximately 3.4 acres, out of 3.7 acres of suitable habitat for the species mapped there. The majority of the Orcutt's brodiaea plants on site were found in this area. This location is underlain with a majority of Huerhuero loam soil (2 to 9 percent slopes) and a minority of San Miguel rocky silt loam soil (9 to 30 percent slopes).

3.2 RECEPTOR SITE

The receptor site(s) includes 3 areas of non-native grassland on site (Figure 3). The first site is located immediately adjacent to the donor site within the mapped suitable habitat for the species (with the same Huerhuero loam and San Miguel rocky silt loam soils), and Orcutt's brodiaea was observed there, as well. This location also will support several ponds for the spadefoot toad (*Spea hammondii*). The corm translocation will avoid these ponds.

The other 2 areas of non-native grassland to be receptor sites are located to the southeast of the donor site by approximately 525 feet and 1,050 feet (Figure 3). The former is on a southwest-facing slope underlain with San Miguel rocky silt loam soil (9 to 30 percent slopes). The latter is on a southwest-facing slope underlain with San Miguel rocky silt loam soil (9 to 30 percent slopes) and San Miguel-Exchequer rocky silt loam (9 to 70 percent slopes). A small population of Orcutt's brodiaea was found immediately adjacent to this latter receptor site in the Questhaven project impact footprint.

Salvaged Orcutt's brodiaea corms from the donor site will be relocated to the receptor sites. These sites were selected because they have similar soils, slope steepness, slope aspect, and elevation to

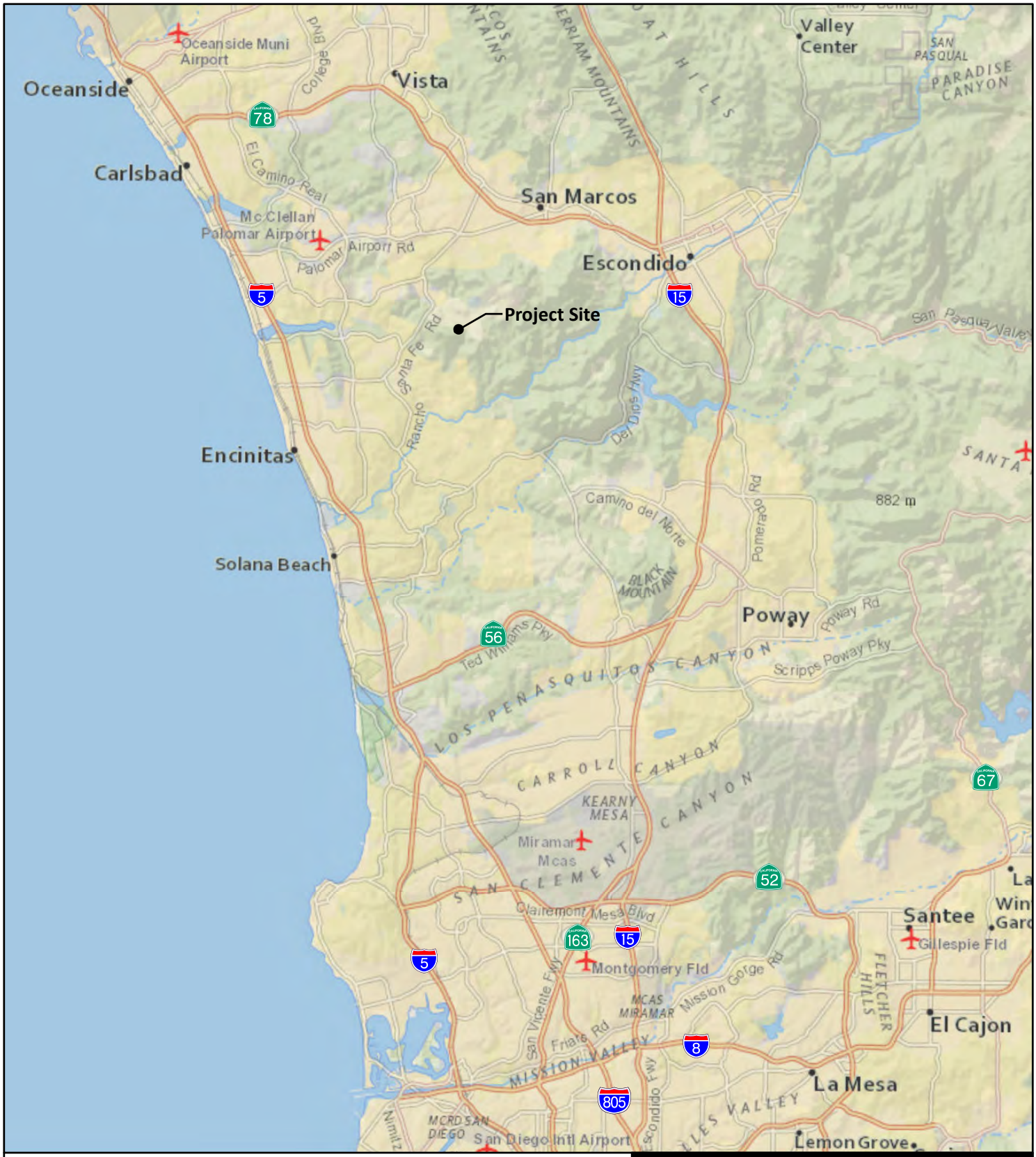


Figure 1

Regional Location

ORCUTT'S BRODIAEA
TRANSLOCATION PLAN FOR THE
QUESTHAVEN TENTATIVE MAP PROJECT

N
W E
S
0 2 4 Miles

ALDEN ENVIRONMENTAL, INC

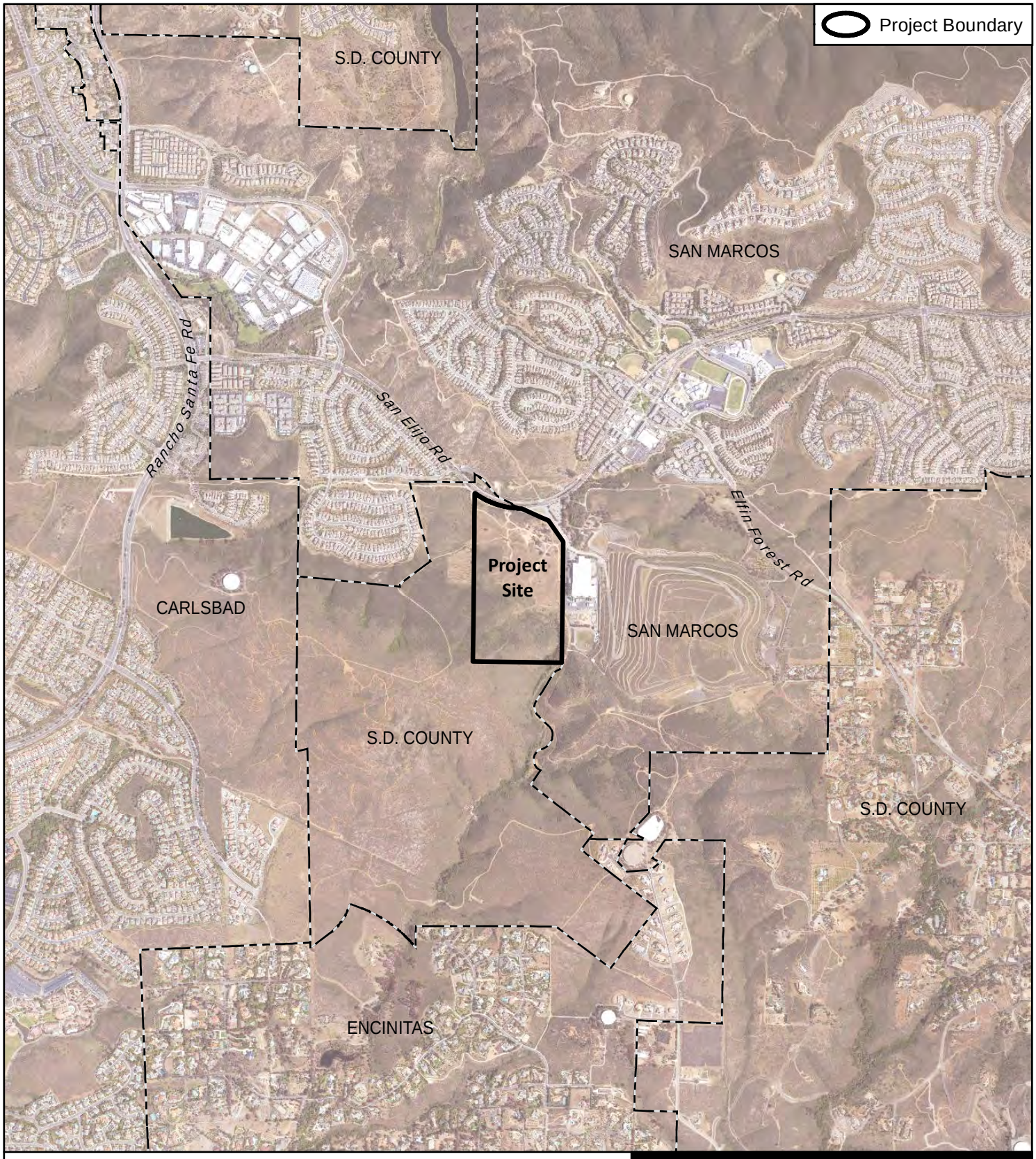


Figure 2

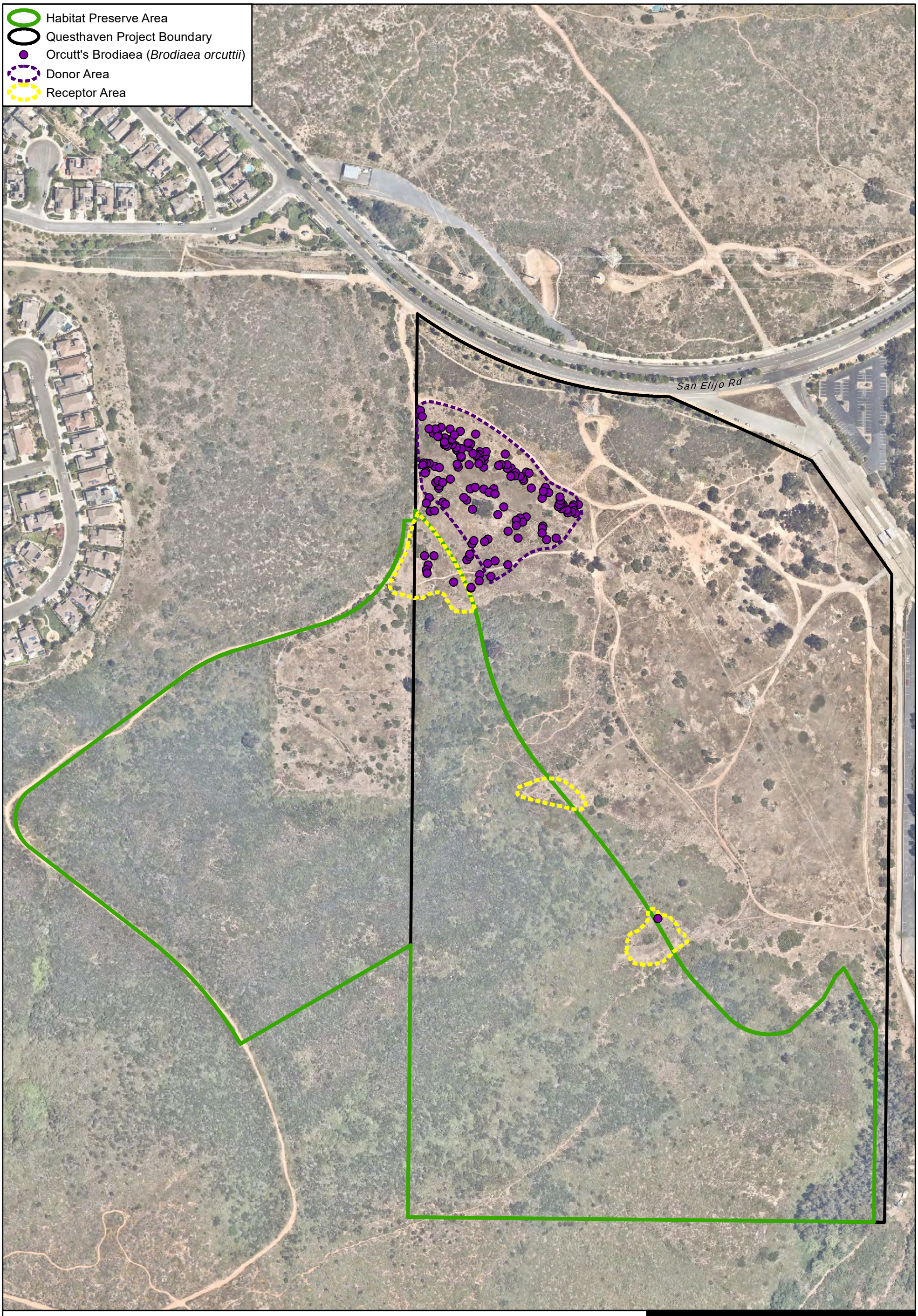
Project Location

ORCUTT'S BRODIAEA
TRANSLOCATION PLAN FOR THE
QUESTHAVEN TENTATIVE MAP PROJECT

N
W E
S

0 1,000 2,000 Feet

ALDEN ENVIRONMENTAL, INC



Aerial Photo: Nearmap 2023

ALDEN ENVIRONMENTAL, INC

Figure 3

Orcutt's Brodiaea Translocation Area

ORCUTT'S BRODIAEA TRANSLOCATION PLAN FOR THE QUESTHAVEN TENTATIVE MAP PROJECT

the donor site. The receptor sites are within the on-site biological open space to be managed in perpetuity, and there are no easements or other potential uses that would conflict with the translocation effort.

The Restoration Specialist will determine how the translocation from donor to receptor sites will occur based on the number of corms to be translocated and site-specific conditions within the receptor sites.

4.0 IMPLEMENTATION PLAN

The brodiaea translocation effort will consist of several components, including:

- Donor site corm salvage
- Receptor site preparation and fencing
- Corm translocation
- Native grassland seeding/planting
- Maintenance and monitoring for a 5-year period

4.1 RATIONALE FOR EXPECTING IMPLEMENTATION SUCCESS

As noted above, the receptor sites selected for the translocation effort currently supports suitable habitat characteristics to support the Orcutt's brodiaea. Additionally, the species occurs in the vicinity in areas exhibiting the same physical characteristics as the receptor sites.

4.2 RESPONSIBLE PARTIES

4.2.1 Project Proponent

Colrich Communities (or the owner at the time of implementation) will be responsible for financing the installation, maintenance, and monitoring of the restoration/enhancement measures of the translocation project.

4.2.2 Restoration Specialist

Overall supervision of the installation, maintenance, and monitoring of this translocation program will be the responsibility of a Restoration Specialist with a minimum of 5 years of habitat restoration experience. Additionally, the Restoration Specialist must have experience identifying, salvaging, and translocating brodiaea species as well as the ability to distinguish brodiaea corms from those of other geophytes. The Restoration Specialist will educate all participants with regard to program goals and directly oversee all aspects of the translocation project. In addition, the specialist will conduct all monitoring data collection, annual assessments, and prepare all required reports. If necessary, the Restoration Specialist will provide the translocation project proponent and contractor with a brief report, including a written list of items in need of attention following each monitoring visit. The contractor will be responsible for carrying out all required measures in a timely manner. The Restoration Specialist will notify the contractor and responsible party if any requested remediation is not addressed. A checklist with the main tasks and responsibilities is included in Table 1.

4.2.3 Installation/Maintenance Contractor

The installation and maintenance contractor(s) will have habitat restoration experience and will, under the direction of the Restoration Specialist, be responsible for pre-planting weed control, planting, seeding, and maintenance. The Restoration Specialist will educate the contractor(s) on the installation and maintenance of native plant species.

After the installation is complete, maintenance personnel will initiate the 5-year maintenance program under the direction of the Restoration Specialist. Maintenance crews will service the entire enhancement area regularly following installation. Service will include but not be limited to weed control, trash removal, watering, dead plant replacement, and re-seeding. All activities conducted will be seasonally appropriate and approved by the Restoration Specialist. The maintenance crew will meet the Restoration Specialist at the site when requested and will perform all checklist items in a timely manner as directed by the Restoration Specialist. The Restoration Specialist will ensure that maintenance personnel are capable of discerning between native plant species and non-native weed species.

4.3 IMPLEMENTATION SCHEDULE

Implementation of the mitigation program would commence prior to, or in conjunction with the grading of the Questhaven project. The brodiaea corm identification and salvage effort must occur prior to grading within the brodiaea donor site.

4.4 SITE PREPARATION

As described above, the initial site preparation of the receptor sites will involve removal of weeds, refuse, debris, and other deleterious material will be removed and disposed of in a licensed landfill. No grading is proposed as part of this translocation effort.

4.5 FENCING

Prior to and during implementation of the translocation effort, a temporary 3-strand barbless wire fence will restrict access to the receptor sites. As this effort is a part of a larger on-site preserve area for the Questhaven project, no permanent fencing or signs will be installed.

Table 1 MITIGATION PLAN CHECKLIST					
PHASE	**TASK**	**APPLICABLE PARTIES**			
		LAND OWNER	**INSTALLATION CONTRACTOR**	**MAINTENANCE CONTRACTOR**	**RESTORATION SPECIALIST**
Preparation	Order seed and container stock		X		
	Attend pre-construction meeting	X	X		X
	Document pre-start conditions				X
	Identify site limits and staging area				X
Corm Salvage	Flag limits of donor site				X
	Excavate soil to search for corms		X		X
	Identify and record corm results				X
	Prepare corms/soil blocks for translocation		X		X
Installation	Delineate boundary of receptor sites		X		X
	Dethatch and mow receptor sites		X		X
	Install temporary fence		X		X
	Install collected corms/soil blocks		X		X
	Install grassland seed mix		X		X
	Prepare/submit as-built report				X
Five-year Maintenance & Monitoring Period	Conduct maintenance monitoring and annual monitoring				X
	Maintenance for remainder of 5 years			X	X

4.6 CORM SALVAGE

The donor site within Questhaven project site must be thoroughly searched for brodiaea corms prior to initiation of grading activity. In order to find and salvage brodiaea corms, the Restoration Specialist will lead an exploratory effort within the donor site. Shovels, hand tools or other equipment will be used to locate corms within the area mapped that would be be impacted. The first step will be to lay a search grid pattern over the donor site. Next, a rubber-tired loader (or similar) will use a ripping tyne to turn the soil along a path (determined by the search grid). The Restoration Specialist will follow behind as the machine slowly transits the area. The machine will be halted when corms or corm-like structures are exposed so that they can be identified by the Restoration Specialist. If Orcutt's brodiaea corms are identified, the hand crew will be directed to dig exploratory holes in an effort to identify additional corms and determine if there is a patch or just scattered individuals. Scattered individual brodiaea corms will be collected by hand and placed in a cardboard box for temporary storage.

In the event that larger groupings of corms are encountered, the Restoration Specialist will direct a hand crew to remove soil blocks that contain the corms. The size and depth of the blocks to be removed will depend upon the number of corms present, the depth of the corms, and the condition of the soil (i.e. loose and fragile vs intact clay). It is anticipated that soil blocks will typically be have a depth of 8-12 inches and a surface area of approximately 2-4 square feet. The intent of the soil block method is to ensure that the corms remain undamaged and in their original orientation in the soil. To this end, the soil blocks will be carefully handled and placed in boxes with sufficient soil or other filler material to help maintain their integrity prior to being installed at the receptor sites. If necessary, machinery may be used to help remove the soil blocks from the ground to help keep them intact. Wood also may be used to create box frames for soil blocks that appear to be in danger of collapsing.

The Restoration Specialist will take pre- and post- salvage photographs of the donor site and record all activities undertaken. The numbers of individual corms and soil blocks collected will be recorded, along with specific information regarding the condition of the corms, where they were located within the donor site, and their relative spacing from each other in the soil.

4.7 CORM TRANSLOCATION

Depending on the number of brodiaea corms found and the time of year, individual corms and/or soil blocks containing the corms will be removed from the donor site and translocated immediately to the receptor sites. For individual corms, a pipe- or similar device will be used to create a hole just wide enough to plant a single corm 3-5 inches deep. If soil blocks are used, soil at the receptor site will be excavated to a depth slightly greater than the height of the soil blocks that contain the corms to be transplanted (i.e., 10-14 inches deep). The corms and soil blocks will be spaced in such a way as to mimic the relative spacing observed at the donor site. Displaced soil will be replaced in a manner that will maintain drainage and prevent ponding over the brodiaea. Gaps on the edges of soil blocks will be filled in with native soil and compacted maintain soil structure and stability as much as possible. The receptor sites also may be watered once the corms and soil blocks have been installed. This will help soil to settle in any cracks and fill in air pockets. The location

of each translocated corm and soil block will be recorded with a sub-meter GPS unit to help in relocation and success monitoring.

The Restoration Specialist will notify the County, California Department of Fish and Wildlife (CDFW), and U.S. Fish and Wildlife Service (USFWS) immediately if brodiaea corms are identified at a receptor site. Notification will include the date, time, locations of the corms, and information as to the extent of the occurrence within the receptor site(s). The Restoration Specialist will rebury and flag the previously unmapped corms within the receptor site and will move into areas of the receptor site(s) not occupied by the species to continue the translocation process.

4.8 NURSERY STOCK

Up to 50 percent of any corms found at the donor site will be transferred to a native plant nursery as approved by County, CDFW, and USFWS where they will be propagated. Nursery plants will initially be reserved for planting at the receptor sites if, at any point during the monitoring period, it is determined that the number of the brodiaea individuals originally translocated to the receptor site is not enough to meet the success criteria. The Restoration Specialist will confer with the County, CDFW, and USFWS prior to planting any nursery plants within the receptor sites to determine the reasons for the need for the plantings and to consider whether a receptor site(s) is not functioning adequately and a new receptor site(s) is needed to meet the project requirements. The nursery plants will be used only if their condition is considered satisfactory by the Restoration Specialist and the nursery staff. Any nursery corms or plants left at the end of the monitoring period will be planted at the receptor sites.

4.9 NATIVE GRASSLAND

4.9.1 Seed Mix

Seeding with a native grassland mix (Table 2) will take place within the receptor sites (Figure 3). The species included in the mix were selected because they are native and occur either on the project site or in the project vicinity. The seed will be sourced from as close to the site as possible. The source and proof (tags) for all seed will be provided.

Because of the small size of the receptor sites, the seed will be applied by hand. Seed of different species will only be mixed when they are to be applied to the same location. Individual species may be seeded separately as directed by the Restoration Specialist. Hand broadcasters will be used to help ensure a consistent application of seed. An inert carrier (sand, saw dust) may also be mixed with the seed to help maintain consistency. Seeding will not be conducted during windy conditions. Seed will be raked into soil after application to help increase seed/soil contact.

Table 2 NATIVE GRASSLAND SEED MIX	
SPECIES	**POUNDS/ ACRE**
Blue dicks (*Dichelostemma capitatum*)	3
Blue-eyed grass (*Sisyrinchium bellum*)	3
California everlasting (*Pseudognaphalium californicum*)	3
Deerweed (*Acmispon glaber*)	2
Dot-seed plantain (*Plantago erecta*)	3
Fascicled tarweed (*Deinandra fasciculata*)	2
Golden yarrow (*Eriophyllum confertiflorum*)	3
Goldfields (*Lasthenia californica*)	2
San Diego needlegrass (*Stipa lepida*)	8
TOTAL	**29**

4.9.2 Container Stock

In addition to seed, San Diego needle grass plugs will be planted in the receptor sites at a rate of 300 per acre. The grass plugs will be evenly spaced throughout the receptor sites, as well as in a 15-foot buffer area. No grass plugs will be planted within translocated soil blocks. The plant material will be sourced from as close to the site as possible. If container stock is unavailable from the project vicinity, the Restoration Specialist may substitute species as necessary. The source and proof for all plant material will be provided. All container stock will be inspected and approved by the Restoration Specialist prior to being installed.

Specifically, the Restoration Specialist will ensure that:

- The correct number, size, and species ordered are delivered;
- Plants are healthy and showing no sign of disease;
- Roots fill the containers, but are not root bound;
- There is no breakage of plants;
- Plants show no evidence of pests;
- Plants are in a state suitable for outplanting.

The Restoration Specialist will reject any plants not meeting these requirements.

The Installation Contractor will be responsible for planting all container stock within four days following delivery. Container stock will be planted in such a way as to mimic a natural species distribution within the receptor sites, while avoiding the installed soil blocks. The project Restoration Specialist will specify the locations for all planting.

4.9.3 Material Salvage

The seed and container stock identified above is intended to be implemented without using any native plant/soil material salvaged from adjacent development projects. If salvaged upland soil/plant material is made available to the translocation project during the installation phase, it will be incorporated into the receptor sites, to the extent practicable.

4.10 HERBIVORE EXCLUSION

Upon completion of the translocation and native grassland planting efforts, herbivore exclusion fencing will be installed around the limits of the translocated corms within the receptor sites. The exclusion fencing will be trenched at least 12 inches to discourage herbivory. The herbivore exclusion fencing will be removed 2 years after its installation.

4.11 IRRIGATION

The brodiaea translocation effort is designed to be a non-irrigated project. While there will be no irrigation system, maintenance crews may hand water the receptor sites during dry years, as directed by the Restoration Specialist.

4.12 AS-BUILT CONDITIONS

The Restoration Specialist shall prepare and submit a map using showing the as-built conditions of the receptor sites within 8 weeks of completion of site preparation and translocation. Areas of corm/soil block translocation and all seeding and planting shall be shown on the map. The map shall be submitted to the County, CDFW, and USFWS.

5.0 MAINTENANCE PLAN

5.1 HABITAT MAINTENANCE ACTIVITIES

A 5-year maintenance program is proposed to help ensure the successful establishment and persistence of the translocated brodiaea. The maintenance program will involve removal of trash, weed control, fence repair/replacement, and any remedial measures deemed necessary for translocation program success (e.g., re-seeding). Maintenance personnel will visit the site at least monthly as part of the 5-year maintenance program.

5.1.1 Trash Removal

The Maintenance Contractor will remove any trash encountered within the receptor sites during every maintenance event and dispose of it in a legally acceptable fashion.

5.1.2 Weed Control

Particular maintenance emphasis will be placed on pro-active weed control within the receptor sites. All weed species observed will be considered invasive and targeted for removal. All workers conducting weed removal activities will be educated to distinguish between native and non-native species, with special attention paid sensitive plant species.

Weeds will be removed by hand or with small machinery (e.g., line trimmers) whenever possible, but focused herbicide application may be used if needed and requested by the Restoration Specialist. Herbicides will only be applied by workers licensed to use those chemicals. Additionally, herbicide will not be used during wet or windy conditions. Weed control tasks that involve machinery or herbicide use will be timed to avoid the vegetative and flowering period for the brodiaea and would not occur between January through July.

Weeds will be removed from the receptor sites and disposed of in a legal manner. All weeds will be removed prior to reaching 12 inches in height or before reaching seed stage. Leaf and branch drop of native species should be left in place and not removed. Vegetation clearing would be limited to above-ground methods, with vegetation being cut to a height of no more than two inches from the soil surface, with roots left in place. There would be no soil disturbance (e.g., from disking, tilling, etc.).

5.2 HABITAT MAINTENANCE SCHEDULE

Regular maintenance, trash removal, and weed control of the receptor sites will be conducted during the first 5 years following implementation of the translocation program or until the program is deemed successful. Maintenance personnel will visit the site at least monthly for the 5-year maintenance and monitoring period.

6.0 PERFORMANCE STANDARDS

The following sections provide performance standards to determine the successful completion of the 5-year maintenance and monitoring program. Attainment of these standards indicates the brodiaea translocation effort is progressing toward the habitat functions and services specified for this plan. Methods used to measure these performance standards are described in the following text. If the receptor sites fail to meet the Year 5 standards after the full monitoring term, a specific set of remedial measures will be developed, implemented, and the monitoring and maintenance period would be extended until all Year 5 standards are met, or as otherwise provided in this document. If a site does not meet Year 5 standards, the monitoring and maintenance period would be extended at least a full year and until all are standards are met. Only when all receptor sites have attained the Year 5 standards for at least 2 years without irrigation will the entire translocation program be signed off.

6.1 ORCUTT'S BRODIAEA

The brodiaea translocation effort will be considered successful when the following success criteria are met during any 2 of the last 4 years of the monitoring period.

- At least 60% of the translocated corms produce vegetative growth
- 100% of the translocated corms produce flowers
- The receptor sites must be free of human intervention (i.e., supplemental watering and/or planting, excluding measures required by the plan) such that the translocated corms are determined to be self-sustaining.

6.2 CONTAINER STOCK

During each of the 5 annual monitoring events there will be no less than 80% of the initially planted container plants surviving (unless their function has been replaced by natural recruitment).

6.3 NATIVE SPECIES RICHNESS/COVER

At the end of the 5-year monitoring period, the native grassland planting (receptor sites plus a 15-foot buffer) will achieve 80% cover overall of native grassland species and support a minimum of 2 native perennial grassland species that are reproducing. Corrective measures will be implemented in areas not meeting the species richness goals in any given year.

6.4 WEED COVER

General and target weed cover success criteria have been established for the translocation effort. Given the small sizes of the receptor sites and the extent of the existing weed seed bank, 100% eradication for all weed species is not a realistic goal (some species are highly invasive and others are easier to eradicate). Therefore, species in Table 3 are zero tolerance species and will be controlled at 100% on a yearly basis. Other non-native species are more ubiquitous and can never be completely eliminated and will, therefore, be managed to a level of 25% cover or less. If the weed cover success criteria are not met in any given year, then remedial measures will be implemented.

Table 3 ZERO TOLERANCE WEED SPECIES		
Latin name	**Common name**	**Cal-IPC Rating[1]**
Acacia sp.	Acacia	L/M
Atriplex semibaccata	Australian saltbush	M
Carpobrotus spp.	Ice plant, Hottentot's fig	H/M
Cynara cardunculus	Artichoke thistle	M
Cynodon dactylon	Bermuda grass	M
Erodium botrys	Long-beak filaree	NR
Erodium cicutarium	Redstem filaree	L
Foeniculum vulgare	Fennel	H
Lythrum hyssopifolium	Grass poly	M
Nicotiana glauca	Tree tobacco	M
Ricinus communis	Castor bean	L
Rumex conglomeratus	dock	NR
Rumex crispus	Curly dock	L
Salsola tragus	Russian thistle	L
Carduus pycnocephalus	Italian thistle	L

[1]H= High invasiveness, M= Moderate invasiveness, L= Low invasiveness NR= Not rated

7.0 MONITORING PLAN

7.1 INSTALLATION MONITORING

The Restoration Specialist will be on site daily during the corm collection and translocation to direct all translocation activities including site preparation, weed control, seeding, planting, and watering. Upon completion, the Restoration Specialist will prepare an as-built map and letter and confirm that the 5-year maintenance and monitoring period may begin.

7.2 MAINTENANCE MONITORING

The Restoration Specialist will conduct regular monitoring of the maintenance conducted by the Installation and Maintenance Contractor(s) during the 5-year maintenance period. Maintenance monitoring visits will be conducted by the Restoration Specialist monthly in Years 1 and 2, and every other month in Years 3-5. Additional visits may be required as conditions warrant. During each visit the Restoration Specialist will assess the condition of the receptor sites and identify any necessary remedial measures. Fencing (including the herbivory exclusion fencing) will be inspected, and any trash, debris, or other disturbances will be recorded. The Restoration Specialist also will monitor soil moisture to determine whether seasonal rains are adequate to keep the soil moist throughout the first 3 growing seasons. Supplemental irrigation of the receptor sites may be needed depending on natural rainfall, temperatures, and day length. A brief monitoring memo will be prepared and submitted to the Maintenance Contractor following each maintenance monitoring visit.

7.3 ANNUAL MONITORING

Two quantitative monitoring visits will be conducted by the Restoration Specialist each year. The first will be conducted in January/February to search for and count the number of brodiaea corms that have produced vegetative growth. The second visit will be conducted in May/June/July to identify and record the extent of brodiaea that are flowering. During the annual monitoring events, the number, average size, and overall health of the transplanted corms will be recorded. A qualitative assessment of health and the number of Orcutt's brodiaea observed (vegetative and flowering) also will be conducted. Brodiaea plants also will be inspected to determine if they are producing viable seeds. If viable seeds are present, then up to 2% may be collected for conservation seed storage at the Rancho Santa Ana Botanic Garden. Photographs will be taken from established photo documentation locations. During each annual monitoring event, the success of the translocation effort will be evaluated, and species richness and cover data will be collected. In Years 1 and 2, species richness and cover will be determined by visual assessment. In Years 3-5, quantitative transect data will be collected.

Quantitative transect data will be collected using the point intercept line transect sampling methods described in the California Native Plant Society's Field Sampling Protocol (Sawyer and Keeler-Wolf 1995). A single sampling transect will be established in Year 3 within each receptor site. The ends of each transect will be marked with a re-bar stake and recorded with a GPS unit. The location and length of each transect will depend upon the number of transplanted corms and the size of each receptor site.

Species cover will be determined by dividing each transect into half-meter intervals. A point will be projected into the vegetation at each interval, and any species intercepted by the point will be recorded. Species also will be divided into herb (0-60 cm), shrub (60 cm-3 m), and tree (greater than 3 m) layers. Percent cover will be measured by dividing the number of hits by the number of possible hits. Total native and non-native cover values will be determined separately.

Native species richness (the number of species) will be calculated by counting all of the species encountered within a 5 m-wide belt transect along each transect (2.5 m on each side). All plants observed will be categorized by origin (native/non-native) and height layer.

7.4 ANNUAL REPORTS

As part of the monitoring program, annual reports prepared by the Restoration Specialist will be prepared and submitted evaluating the success of the translocation effort to date, along with any recommendations for future work that may be deemed necessary. Each annual monitoring report will include data collected throughout the year in addition to the annual monitoring visit. To detect the overall trend of the program, the annual monitoring report will contain comparisons of the monitoring data for the years that data are collected. Annual reports will be submitted to the County, CDFW, and USFWS.

7.5 REMEDIAL MEASURES/ADAPTIVE MANAGEMENT

If the program is not progressing as desired, corrective measures may be implemented. Corrective measures may include, but are not limited to: additional planting or seeding, altered maintenance effort, and increased watering regime.

7.6 MONITORING SCHEDULE

As described above, monthly inspections of the translocation and maintenance effort would be performed during Years 1 and 2, and every other month for the remainder of the 5-year maintenance and monitoring period. The first annual botanical monitoring event will occur in the first spring following installation. Reports will be prepared and submitted within 3 months of the annual monitoring visit.

8.0 COMPLETION OF PROGRAM

8.1 NOTIFICATION OF COMPLETION

The land owner shall notify the County, CDFW, and USFWS upon the mitigation site obtaining the Year 5 performance standards through the submittal of the final (Year 5) monitoring report.

8.2 CONFIRMATION

After receipt of the final monitoring report, the County, CDFW, and USFWS may inspect the sites to determine if the brodiaea translocation has been conducted in accordance with this plan.

8.3 LONG-TERM MANAGEMENT

The brodiaea receptor sites are located within the on-site biological open space of the Questhaven project. The Questhaven project will be responsible for establishing a conservation easement over the entire open space area (which also includes adjacent, off-site mitigation land) and will provide for long-term maintenance and monitoring until the sign-off of all on- and off-site mitigation efforts—including the translocation program. At that point, a designated long-term management entity will be responsible for managing the open space in accordance with an approved management plan. A Conceptual Upland Habitat Biological Resources Management Plan (Alden 2024b) has been prepared to guide the long-term management of the entire open space area.

9.0 CONTINGENCY MEASURES

9.1 INITIATING PROCEDURES

An integral part of a successful translocation effort is the ability to detect problems early in the process, determine the cause of the problem, and attempt to modify the program to accommodate emerging issues or situations. Minor problems such as trash, vandalism, isolated instances of plant mortality, or small-scale weed or pest infestations will be rectified as they are discovered during routine monitoring and would not warrant the implementation of contingency measures.

If a performance standard is not met for all or any portion of a receptor site in any year, or if the final performance standards are not met, the Restoration Specialist will prepare an analysis of the cause(s) of failure, and propose remedial action for approval by the County, CDFW, and USFWS. These measures may include additional planting/seeding, adjustment of the management activities, or other design changes.

9.2 FUNDING MECHANISM

The land owner shall be responsible for all costs associated with any remedial measures.

9.3 RESPONSIBLE PARTIES

The land owner shall be the responsible party for any remedial measures.

10.0 REFERENCES CITED

Alden Environmental, Inc. 2024a. Biological Technical Report for the Questhaven Tentative Map Project. May 6.

2024b. Conceptual Upland Habitat Biological Resources Management Plan for the Questhaven Tentative Map Project PDS2020-TM-5643. May 6.

California Native Plant Society. 2022. Calscape, Orcutt's Brodiaea. https://calscape.org/Brodiaea-orcuttii-()