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October 25, 2024
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M&A #24-040-01

Mr. Kerry Garza
Touchstone Communities
9815 Mira Mesa Boulevard
San Diego, CA 92131

Biological Resource Letter Report
Pasqual Heights Project
(County of San Diego Record ID/Environmental Log No.
PDS2024-TM-5657/PDS2024-ER-24-08-006)

Dear Mr. Garza:

On behalf of Touchstone Communities, Merkel & Associates, Inc. biologist, Amanda Gonzales (County Approved Biological Consultant) has prepared the following biological resource letter report for the proposed Pasqual Heights Project. This report has been written in accordance with the County of San Diego Report Format and Content Requirements [for] Biological Resources (County 2010b).

If you have any questions concerning this report, please do not hesitate to contact me at (858) 560-5465 or agonzales@merkelinc.com.

Sincerely,

Amanda K. Gonzales
Project Manager/County Approved Biological Consultant

Keith W. Merkel
Principal Consultant/County Approved Biological Consultant

INTRODUCTION, LOCATION, PROJECT DESCRIPTION, SETTING

On behalf of Touchstone Communities, Merkel & Associates, Inc. (M&A) has prepared this biological resource letter report for the proposed Pasqual Heights Project. The purpose of this report is to document the existing biological conditions within the biological study area (BSA), and identify potential impacts to biological resources that could result from implementation of the proposed project; and recommend measures to avoid, minimize, and/or mitigate significant impacts consistent with local rules and regulations under the California Environmental Quality Act (CEQA), including the County of San Diego (County) Resource Protection Ordinance (RPO) (2012) and Guidelines for Determining Significance [for] Biological Resources (County 2010a). All figures referenced within this report are included as Appendix A. Site photographs are included as Appendix B.

The approximate 10.7-acre project site is located on private property (Assessors Parcel Number [APN] 234-160-25) within an unincorporated area of northern San Diego County (Figure 1). The property address is 830 Idaho Avenue, Escondido and is located within unsectioned lands, Township 12 South, Range 2 West of the San Bernardino Base and Meridian; U.S. Geological Survey (USGS) Valley Center, California Quadrangle (Figure 2).

Touchstone Communities has entered into a purchase agreement with the private property owner with the intent to remove an existing single-family home and its accessory structures, and to construct a new 42-lot single family development. The project would accommodate all permanent best management practices (BMPs), water quality requirements, landscape, and fuel zone requirements within the project property; however, it would require some minor offsite utility and roadway improvements.

SURVEY METHODOLOGIES

In accordance with the County Report Format and Content Requirements [for] Biological Resources (County 2010b), the BSA includes 100 feet beyond the parcel boundary.

Historical and currently available biological literature and data pertaining to the project area were reviewed prior to initiation of the field investigation. This review included examination of:

- Aerial imagery from various dates between 1947 and 2024 (Historic Aerials [Netronline 2024], Google Earth Pro, NearMap 2023);
- Regionally mapped vegetation community/habitat types (San Diego Geographic Information Source [SanGIS] 2023a);
- Topographical data and topographic quadrangle map and (SanGIS 2015 and USGS 1998);
- Soil types (U.S. Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS] 1973, 2024, and SANGIS 2004);
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) (USFWS 2024a);
- Hydrology, floodplain, and watershed data (SanGIS 2023b, USGS 2024, Federal Emergency Management Agency [FEMA] 2023);
- Federally designated critical habitat for the project vicinity (USFWS 2024b);

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) and USFWS special status species records for the project vicinity (CDFW 2024a and USFWS 2024c, respectively); and
- Citizen science data of special status species records for the Project vicinity (e.g., iNaturalist 2024 Research Grade only; eBird Top eBirder observations 2024; Bumble Bee Watch 2024).

Field Surveys Conducted

M&A conducted a general biological investigation, preliminary aquatic resources delineation, and focused habitat assessment/burrow survey for the burrowing owl (*Athene cunicularia*) during the summer of 2024 (Table 1). In the summer of 2025, M&A conducted a ground-truthing survey and focused surveys for Crotch's bumble bee (*Bombus crotchii*).

Table 1. Survey Date(s) and Time(s)

Survey	Date	Time	Conditions (start to end)	Biologist(s)
General Biological Investigation and Aquatic Resources Delineation	2024 June 7	9:00 am - 1:20 pm	Weather: 100%-0% cc Wind: 1-2 BS Temperature: 62°-76° F	Amanda Gonzales
Focused Burrowing Owl Habitat Assessment	2024 July 31	6:40 pm - 8:45 pm	Weather: 0%-0% cc Wind: 1-0 BS Temperature: 78°-70° F	Amanda Gonzales
Updated Crotch's Bumble Bee Habitat Assessment and Focused Survey 1	2025 June 12	12:00 pm – 1:42 pm	Weather: 0%-0% cc Wind: 1-2 BS Temperature: 78°-78° F	Amanda Gonzales
Ground-truthing Survey	2025 June 12	1:42 pm – 3:00 pm	Weather: 0% cc Wind: 2 BS Temperature: 78° F	Amanda Gonzales
Crotch's Bumble Bee Survey 2	2025 June 26	9:00 am – 10:00 am	Weather: 100-20% cc Wind: 1-2 BS Temperature: 76°-82° F	Brandon Stidum
Crotch's Bumble Bee Survey 3	2025 July 10	9:00 am – 10: 15 am	Weather: 0-0% cc Wind: 0-1 BS Temperature: 76°-82° F	Brandon Stidum

cc = cloud cover; BS = Beaufort Scale (BS 1 = 1-3 miles per hour [mph], BS 2 = 4-6 mph); °F = degrees Fahrenheit

General Biological Survey and Directed Assessment for Special Status Species

The surveys were conducted on-foot with the aid of binoculars. Vegetation communities were mapped in accordance with the habitat classifications provided in Holland (1986) as revised by Oberbauer et al. (2008). A minimum mapping unit of 0.1 acre was used for the vegetation mapping. If determined to be biologically relevant, vegetation was mapped at a finer scale. Vegetation communities and sensitive resources were mapped onto a color aerial photograph of the site with topographical overlay and/or recorded using a mobile mapping application (i.e., Avenza) on a hand-held device. Data collected from the survey were digitized in ESRI Geographical Information System

(GIS) software, using ArcGIS for Desktop. Photographs of the property were taken to record the biological resources present within the BSA.

A list of detectable plant and wildlife species were recorded in a field notebook. Common plant species observed were identified by visual characteristics and morphology in the field. Wildlife species were determined through direct observation (aided by binoculars), identification of songs, call notes and alarm calls, or by detection of sign (e.g., scat, etc.).

A directed survey/assessment for special status species, as defined under CEQA was conducted concurrent with the general biological survey within the BSA. Any special status species were noted on the field map and/or recorded using a mobile mapping application. For the purposes of this report, special status species are: 1) federally and state-listed species (CDFW 2024b and 2024c); 2) CDFW Species of Special Concern (SSC), Fully Protected (FP), and Watch List (WL) species, and species designated as Special Plants or Special Animals in the CNDDB (CDFW 2024d and 2024e), which include all taxa inventoried by the CDFW, regardless of their legal or protection status; 3) County MSCP Narrow Endemic and Covered Species (County 2010b); and 4) species designated as sensitive by the County (County 2010b). The potential for special status species to occur within the BSA was assessed based on the presence of potentially suitable habitat, as well as historical and currently available species data. Table 2 lists criteria for evaluating special status species potential for occurrence.

Table 2. Criteria for Evaluating Special Status Species Potential for Occurrence

Potential for Occurrence	Criteria
Not Expected	Diagnostic habitats strongly associated with the species do not occur on or in the immediate vicinity of the BSA or species is restricted to habitats or environmental conditions that do not occur in the BSA.
Low Potential	Historical records for this species do not exist in the BSA, and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate Potential	Either a historical record exists of the species in the BSA and marginal habitat exists in the proposed work areas or the habitat requirements or environmental conditions associated with the species occur in the proposed work areas, but no historical records exist in the BSA.
High Potential	Both a historical record exists of the species and the habitat requirements and environmental conditions associated with the species occur in the BSA.

Burrowing Owl Habitat Assessment

M&A conducted a focused habitat assessment for burrowing owls. The habitat assessment was conducted in accordance with the current Survey Guidelines developed by CDFW (2012) and took place during the burrowing owl breeding season, which extends from February 1 through August 31 (peak of the breeding season is between April 15 and July 15). The survey was conducted on-foot, evaluating the entire BSA for suitable burrowing owl habitat consisting of (but not limited to) short or sparse vegetation (at least at some time of year), presence of burrows, burrow surrogates or presence of fossorial mammal dens, well-drained soils, and abundant and available prey (CDFW 2012).

Focused Surveys for Crotch's Bumble Bee

M&A conducted the initial habitat assessment for Crotch's bumble bee on June 7, 2024. Due to the potential presence for the species to occur onsite, M&A qualified biologists conducted an updated habitat assessment as well as three focused surveys between June and July 2025, for the purpose of determining the presence or absence of this species within the BSA. Historical and currently available biological literature and data pertaining to the Project area were reviewed prior to initiation of the 2025 field investigation. This review included examination of CDFW CNDDB special status bumble bee records for the project vicinity (CDFW 2025) as well as community science data of special status bumble bees for the Project vicinity (i.e., iNaturalist 2025, Research Grade only; Bumble Bee Watch 2025a, Pending and Research Grade). The surveys were conducted in accordance with CDFW's Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species (CDFW 2023).

Aquatic Resources Delineation

An aquatic resources delineation was conducted on-foot, throughout the BSA in 2024, using the routine onsite determination methods noted in the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a). M&A conducted a ground-truthing survey in 2025. Evidence supporting the delineation was recorded on USACE wetland determination data forms and depicted in photographs taken at the location of the data points. Data points were taken in areas that were both accessible and visually determined to best represent the characteristics of each potential wetland community type and/or jurisdictional resource identified within the BSA. Data were collected in the field using a mobile mapping application on a hand-held device.

The USACE routine onsite determination methods require the presence of three parameters to define an area as a wetland: 1) hydrophytic vegetation, 2) hydric soils, and 3) wetland hydrology. However, procedural deviations are required and allowed for under the delineation methods where normal circumstances do not exist (i.e., some wetland indicators of one or more of the parameters can be periodically lacking due to normal seasonal or annual variations in environmental conditions [i.e., problem areas] or effects of recent human activities or natural events [i.e., atypical situations]). At each data point location, the area was first assessed to determine if normal environmental conditions were present. Each data point was then evaluated for indicators of each of the wetland parameters.

Information on the overall delineation process and regulatory jurisdictions may be found in the USACE Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008a), as well as applicable federal, state, and local enacting legislation, or through guidance provided by judicial interpretation, solicitors opinions, and regulatory guidance issued to jurisdictional agencies.

Jurisdiction of Wetlands and Waterways

U.S. Army Corps of Engineers

The USACE has regulatory authority to issue permits for 1) the discharge of dredged or fill material in "waters of the U.S." (WoUS) under Section 404 of the CWA (33 U.S.C. 1344), and 2) work and

placement of structures in "navigable waters of the U.S." (TNW) under Sections 9 and 10 of the Rivers and Harbors Act (33 U.S.C. 401).

The term "navigable waters of the U.S." is defined in 33 CFR Part 329.4 as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce." The BSA does not support navigable waters of the U.S.; thus, they are not discussed further.

The regulatory purview of the USACE under Section 404 of the CWA has changed recently with the current definition of WoUS (defined below) in the final "Revised Definition of 'Waters of the United States" rule, published in the Federal Register on January 18, 2023 (USACE and USEPA 2023). This current rule became effective on September 8, 2023.

The term "waters of the U.S." is defined in 33 CFR Part 328.3(a) as:

> (1) Waters which are: (i) Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (ii) The territorial seas; or (iii) Interstate waters, including interstate wetlands; (2) Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section; (3) Tributaries of waters identified in paragraph (a)(1) or (2) of this section: (i) That are relatively permanent, standing or continuously flowing bodies of water; or (ii) That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section; (4) Wetlands adjacent to the following waters: (i) Waters identified in paragraph (a)(1) of this section; or (ii) Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3)(i) of this section and with a continuous surface connection to those waters; or (iii) Waters identified in paragraph (a)(2) or (3) of this section when the wetlands either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section; (5) Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) of this section: (i) That are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3)(i) of this section; or (ii) That either alone or in combination with similarly situated waters in the region, significantly affect the chemical, physical, or biological integrity of waters identified in paragraph (a)(1) of this section.

As defined in 33 CFR Part 328.3(b), the following are not "waters of the U.S." even where they otherwise meet the terms of 33 CFR Part 328.3 paragraphs (a)(2) through (5) listed above:

> (1) Waste treatment systems, including treatment ponds or lagoons, designed to meet the requirements of the Clean Water Act; (2) Prior converted cropland designated by the Secretary of Agriculture. The exclusion would cease upon a change of use, which means that the area is no longer available for the production of agricultural commodities. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA; (3) Ditches (including roadside ditches) excavated wholly in and draining only dry land and that do not carry a relatively permanent flow of water; (4) Artificially irrigated areas

that would revert to dry land if the irrigation ceased; (5) Artificial lakes or ponds created by excavating or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing; (6) Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating or diking dry land to retain water for primarily aesthetic reasons; (7) Waterfilled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the United States; and (8) Swales and erosional features (e.g., gullies, small washes) characterized by low volume, infrequent, or short duration flow.

"Wetlands" are defined in 33 CFR 328.3(c)(i) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Thus, all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present to classify an area as a USACE jurisdictional wetland under normal circumstances.

The limits of CWA jurisdiction in tidal WoUS as defined in 33 CFR 328.4(b) extend to the high tide line (HTL) or to the limits of adjacent non-tidal WoUS as described in the following sentence. The limits of jurisdiction in non-tidal WoUS [33 CFR 328.4(c)] extend to the limits of the wetlands or adjacent wetlands. Non-tidal WoUS that lack one or two of the wetland parameters may still be jurisdictional under the USACE as non-wetland waters of the U.S. (NWW). In the absence of wetlands or adjacent wetlands, the limits of jurisdiction in non-tidal WoUS extend to the ordinary high water mark (OHWM), which is defined in 33 CFR 328.3(c)(4) as, "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." Lateral limits of NWWs are evaluated using guidance provided in A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States: A Determination Manual (USACE 2008b and 2010) and Regulatory Guidance Letter 05-05 (USACE 2005), which identifies potential OHWM physical characteristics as (but not limited to) natural line impressed on the bank, presence of litter and debris, [sediment] deposition, bed and bank, water staining, and change in [rooted] plant material.

California State Water Resources Control Board/RWQCB

In California, the RWQCB, under the State Water Resources Control Board (SWRCB) regulates wastewater discharges to "waters of the State" (WoS), which is defined in Section 13050(e) of the California Water Code as "any surface water or groundwater, including saline waters, within the boundaries of the State." WoS includes all federally regulated WoUS.

In April 2019, the SWRCB adopted the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (Procedures) (SWRCB 2021a). The Procedures, which became effective in May 2020 expanded the definition of WoS to include "wetlands", defined as follows: "An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the

duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation." The wetland definition encompasses the full range of wetland types commonly recognized in California, including some features not protected under federal law.

For WoS that are federally regulated under the CWA, the RWQCB must provide state water quality certification pursuant to Section 401 of the CWA for activities that may result in discharge of pollutants into WoUS. Where no federal jurisdiction exists over waters of the State, the RWQCB retains regulatory authority under provisions of the Porter-Cologne Water Quality Control Act to protect water quality through issuance of waste discharge requirements.

The Procedures provide that RWQCB shall rely on a wetland delineation from a final aquatic resources delineation report verified by the USACE to determine the extent of wetland WoUS and WoS. If any potential wetland areas have not been delineated in a final aquatic resources delineation report verified by the USACE, the limits of such potential wetland WoS shall be identified using the USACE wetland delineation methods, except that a lack of vegetation (i.e., less than 5 percent areal coverage of plants during the peak of the growing season) does not preclude an area from meeting the definition of a wetland when hydric soils and wetland hydrology are present (SWRCB 2020).

California Department of Fish and Wildlife

Under Section 1602 of the California FGC, the CDFW has regulatory authority over any proposed activity that may "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

The CDFW regulates alterations of lakes or streambeds that may "substantially adversely affect fish and wildlife resources" through the development of a SAA under the Lake and Streambed Alteration (LSA) Program. Unlike the USACE process, the SAA is not a discretionary permit, but rather an Agreement developed between an applicant and the CDFW. This Agreement may include conditions of mitigation, impact reduction, or avoidance measures. These measures are subject to acceptance by the applicant or may be countered with alternative measures. If an Agreement cannot be reached between the CDFW and applicant, an arbitration process exists.

Under the LSA Program, California FGC Section 1602 applies to "all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state." CDFW jurisdiction differs from the USACE in that a "streambed" is not limited to the OHWM, but rather generally encompasses the entire width of the streambed, from bank to bank, regardless of the water level. CDFW regulatory authority extends not only to the bed and bank of streams or lakes, but also to "adjacent riparian habitats" that are supported by a river, stream, or lake, regardless of the riparian area's federal wetland status. For practical purposes of defining "adjacent riparian habitats," these habitats include the extent of the canopy for stream-associated vegetation that is rooted within, and dependent on the jurisdictional streambeds, as well as all adjacent hydrophytic vegetation. In some instances, small disjunctions between the stream course and adjacent riparian stands may occur where prior disturbance has occurred to fragment the riparian corridor. Adjacent riparian habitat does not include isolated trees or groves, or other wetland vegetation types in absence of proximate streambeds or lakes; and

Section 1602 does not extend to isolated wetlands and waters such as small ponds not located on a drainage, wet meadows, vernal pools, or tenajas.

County of San Diego

The County regulates development that may affect wetlands under the RPO (2012). Under the RPO, the County has defined an RPO jurisdictional "wetland" as follows:

1. Lands having one or more of the following attributes are "wetlands":
   (aa) At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places);
   (bb) The substratum is predominantly undrained hydric soil; or
   (cc) 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.

2. Notwithstanding paragraph (1) above, the following shall not be considered "wetlands":
   (aa) Lands which have attribute(s) specified in paragraph (1) solely due to man-made structures (e.g., culverts, ditches, road crossings, or agricultural ponds), provided that the Director of Planning and Development Services determines that they:
      (i) Have negligible biological function or value as wetlands;
      (ii) Are small and geographically isolated from other wetland systems;
      (iii) Are not vernal pools; and,
      (iv) Do not have substantial or locally important populations of wetland dependent sensitive species.
   (bb) 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 Development Services:
      (i) Have negligible biological function or value as wetlands even if restored to the extent feasible; and,
      (ii) Do not have substantial or locally important populations of wetland dependent sensitive species.

A "non-soil" substrate includes, but is not limited to, rock outcroppings, deepwater habitats (generally greater than 6.6 feet in depth), cobble rock, bedrock or scoured channels.

The above definition of wetlands is based on the same basic attributes (hydrophytic vegetation, hydric soils, and hydrology) as those of the CDFW and the USACE, although those agencies have definitions with slightly different language and requirements.

Survey Limitations

Biological inventories are generally subject to various survey limitations. Depending on the season and time of day during which field surveys are conducted, some species may not be detected due to temporal species variability. In the present case, the BSA was examined over five site visits, during the daylight hours and evening hours in summer; therefore, some fauna or spring annual plants may not have been detected. Based on the biological literature and data review performed, as well as

knowledge of the project area and species-specific habitat requirements, it is anticipated that any additional species potentially present on the project site can be fairly accurately predicted, and that the surveys conducted were sufficient in obtaining a thorough review of the biological resources present on the site for the purposes of this project analysis.

APPLICABLE REGULATIONS

A variety of federal and state, and local regulations may apply to the proposed Project. These regulations are listed herein with a brief description.

Federal Regulations and Standards

Federal Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 (16 USC 1513 et seq.), as amended, is administered by the USFWS, National Oceanic and Atmospheric Administration (NOAA), and National Marine Fisheries Service (NMFS). This legislation is intended to provide a means to conserve the ecosystems upon which endangered and threatened species depend and provide programs for the conservation of those species, thus preventing extinction of plants and wildlife. Under provisions of Section 9 [16 USC 1538(a)(1)(B)] of federal ESA, it is unlawful to "take" any listed species except under certain circumstances and only with authorization from the USFWS through a permit under Section 4(d), 7 or 10(a) of the federal ESA. "Take" is defined in Section 3 [16 USC 1532(19)] of the federal ESA as harassing, harming, shooting, wounding, killing, trapping, capturing, or collecting, or attempting to engage in any of these activities without a permit.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703 et. seq.), as amended, is administered by the USFWS. Its purpose is to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA. Under the MBTA, it is unlawful, except as permitted by the USFWS, to take, possess, transport, sell, purchase, barter, import, or export all species of birds protected by the MBTA, as well as their feathers, parts, nests, or eggs (USFWS 2003). Take means to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect (50 CFR 10.12). Birds protected by the MBTA include all birds covered by the treaties for the protection of migratory birds between the United States and Great Britain (on behalf of Canada, 1916), Mexico (1936), Japan (1972), and Russia (1976), and subsequent amendments.

It is important to note that since the MBTA addresses migratory birds by family rather than at a lower taxonomic level, most bird species are protected by the MBTA because most taxonomic families include migratory members. In addition, "take" as defined under the federal MBTA is not synonymous with "take" as defined under the federal ESA. The MBTA definition of "take" lacks a "harm and harassment" clause comparable to "take" under the ESA, thus, the MBTA authority does not extend to activities beyond the nests, eggs, feathers, or specific bird parts (i.e., activities or habitat modification in the vicinity of nesting birds that do not result in "take" as defined under the MBTA are not prohibited). Further, "a permit is not required to dislodge or destroy migratory bird nests that are not occupied by juveniles or eggs; however, any such destruction that results in take of any

migratory bird is a violation of the MBTA (i.e., where juveniles still depend on the nest for survival) (USFWS 2003)."

Federal Clean Water Act

In 1948, Congress first passed the Federal Water Pollution Control Act. This act was amended in 1972 and became known as the Clean Water Act (CWA) (33 USC 1251). The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the U.S. (WoUS). It gives the U.S. Environmental Protection Agency (USEPA) the authority to implement pollution control programs, including setting wastewater standards for industry and water quality standards for contaminants in surface waters. The CWA makes it unlawful for any person to discharge any pollutant from a point source into navigable waters, without a permit under its provisions. Under Section 404, permits need to be obtained from the U.S. Army Corps' of Engineers (USACE) for discharge of dredge or fill material into waters of the U.S. Projects are typically permitted on an individual basis or are covered under one of several approved general or nationwide permits. Under Section 401 of the CWA, an applicant for a federal permit for an activity that may result in a discharge to water body must obtain certification from the state that the proposed activity will comply with state water quality standards and water quality objectives. Section 401 provides the Regional Water Quality Control Board (RWQCB) with regulatory authority to certify or deny the proposed activity. A Section 401 Water Quality Certification must be obtained from the RWQCB prior to issuance of a Section 404 permit.

State Regulations and Standards

California Environmental Quality Act

CEQA requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

California Fish and Game Code

The California Fish and Game Code (FGC) implemented by the California Department of Fish & Wildlife (CDFW) regulates the taking or possession of birds, mammals, fish, amphibian and reptiles, as well as natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA) (Sections 2050-2115) and Streambed Alteration Agreement (SAA) regulations (Section 1600- 1616), as well as provisions for legal hunting and fishing, and tribal agreements for activities involving take of native wildlife.

In addition, Sections 3503, 3503.5, and 3513 of the FGC prohibit the "take, possession, or destruction of bird nests or eggs." Section 3503 states: "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Section 3503.5 provides a refined and greater protection for birds-of-prey and states: "It is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." The distinctions made for birds-of-prey are the inclusion of such birds themselves to the protections and the elimination of the term "needlessly" from the language of Section 3503. Section 3513 states: "It is unlawful to take or possess

any migratory nongame bird as designated in the MBTA or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act."

The definition of "take" under the FGC is not distinct from the definition of "take" under CESA, which is defined as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill" (California Fish and Game Code §86); however, it is important to note that the state definition of "take" again does not include a "harm and harassment" clause, and thus, activities or habitat modification in the vicinity of nesting birds that do not result in "take" as defined under the FGC/CESA are not prohibited.

California Endangered Species Act

The CESA generally parallels the main provisions of the federal ESA and is administered by the CDFW. The CESA prohibits "take" of any species that the California Fish and Game Commission determines to be a threatened or endangered species. CESA allows for take incidental to otherwise lawful development projects upon approval from CDFW. Under the FGC, "take" is defined as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act is substantively the California version of the Federal CWA. It provides for statewide coordination of water quality regulations through the establishment of the State Water Resources Control Board and nine separate RWQCBs that oversee water quality regulation on a day-to-day basis at the regional watershed basin level.

Natural Community Conservation Planning Act

The Natural Community Conservation Planning Act of 1991 (NCCP) is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. The CDFW is the principal state agency implementing the NCCP Program. NCCP Plans developed in accordance with the Act provide for comprehensive management and conservation of multiple wildlife species and identify and provide for the regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth.

Local Regulations and Standards

County of San Diego Resource Protection Ordinance

The County RPO restricts impacts to various natural resources including wetlands, Sensitive Habitat Lands, and Steep Slopes (County 2010b). The County RPO (2012) defines "Sensitive Habitat Lands" 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 California Department of Fish and Game listing of community associations." Thus, County RPO Sensitive Habitat Lands include, but may not be limited to: lands that include populations of sensitive species (i.e., federally and state listed species, County List A plant species, and County Group 1 wildlife species); lands that contain unique vegetation communities, as defined above (e.g., maritime succulent scrub, southern coastal bluff scrub, coastal and desert dunes, calcicolous scrub, maritime chaparral, valley sacaton grassland, hardpan and claypan vernal pools, montane meadows, mesquite bosque, native grassland, and Torrey pine forest); and additional vegetation communities (e.g., coastal sage scrub, oak woodland, chaparral, and non-native grassland) if they include populations of sensitive species (i.e., federally and state listed species, County List A plant species, and County Group 1 wildlife species), or are critical to a balanced ecosystem, or are part of a functioning wildlife corridor (County 2010b, Section 2.3).

The RPO also restricts impacts on wetlands buffers and floodplains. The RPO states that no impacts may occur on lands determined to be wetlands as defined by the ordinance (excepting aquaculture, scientific research, and/or wetland restoration) and requires that a wetlands buffer varying between 50 and 200 feet be provided to further protect existing resources. The buffer width is determined by the quality of the wetlands functions, vegetation, soils, and the landscape context. A 50-foot wetland buffer is required for lower quality RPO wetlands, 50 to 100 feet is required for moderate to high quality RPO wetlands, and 100 to 200 feet is required for wetlands within regional wildlife corridors, wetlands that support significant populations of wetland-associated sensitive species, or where stream physical factors indicate a wider buffer is necessary to preserve existing wildlife habitat.

County of San Diego Habitat Loss Permit Ordinance

The Habitat Loss Permit (HLP) Ordinance was adopted in March of 1994 in response to both the listing of the coastal California gnatcatcher (*Polioptila californica californica*) as a federally threatened species, and the adoption of the NCCP Act by the State of California. Pursuant to the Special 4(d) Rule under the ESA, the County is authorized to issue "take permits" for the California gnatcatcher (in the form of Habitat Loss Permits) in lieu of Section 7 or 10(a) Permits typically required from the USFWS. Although issued by the County, the wildlife agencies must concur with the issuance of an HLP for it to become valid as take authorization under the 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 will directly or indirectly impact any of several coastal sage scrub habitat types. The Ordinance requires an HLP if coastal sage scrub or related habitat will be impacted, regardless of whether the site is currently occupied by gnatcatchers. HLPs are not required for projects within the boundaries of the MSCP since take authorization is conveyed to those projects through compliance with the MSCP. HLPs are also not required for projects that have separately obtained Section 7 or 10(a) permits for take of the gnatcatcher.

SURVEY RESULTS

Regional Context, Local Setting, History

The BSA is in the draft North County MSCP Subarea. It does not appear to be located within or adjacent to a draft Priority Conservation Area (PCA) of the draft North County MSCP Subarea nor is it located within federally proposed or designated critical habitat (USFWS 2024b). The BSA does not support any areas mapped regionally as environmentally sensitive areas or wetlands (SanGIS 2022a, 2022b).

The property is located regionally within a transition area of dense development to the north, west, and south, and to less dense rural development to the east. It is immediately surrounded by rural residential development. It is bound to the north by a private road, to the east by San Pasqual Valley Road (State Route 78), to the south by Idaho Avenue, and to the west by single-family residential development. It is located on a sloping hillside, generally classified as east-facing. A single-family residence is located near the upper portion of the hillside, in the southwestern corner of the property off Idaho Avenue. In addition, what looks to be a water well, is located in the southeastern corner of the property. A dirt parking lot, authorized by the property owner for use by El Plantio Nursery & Landscaping staff is located along the eastern edge of the property, at the bottom of the hillside, off San Pasqual Valley Road.

The property ranges in elevation from approximately 796 feet above mean sea level (amsl) at the upper/western portion of the site to 710 feet amsl at the lower/eastern portion of the site. Onsite soils are mapped predominantly as Fallbrook-Vista Sandy Loam, 9 to 15 percent slopes while Ramona Sandy Loam 2 to 5 percent slopes and Ramona Sandy Loam 5 to 9 percent slopes are mapped for the southernmost portions of the site (Figure 4). The Fallbrook series consists of deep, well drained soils that formed in material weathered from granitic rocks; they typically occur on rolling hills and have slopes of 5 to 75 percent (USDA NRCS 2024). The Ramona soils are nearly level to moderately steep, typically on terraces and fans at elevations of 250 to 3,500 feet. They formed in alluvium derived mostly from granitic and related rock sources (USDA NRCS 2024).

Based on review of historic aerials (Historic Aerials 2024, Google Earth 2024), the property was historically (first available image 1947 – 1980's) used for orchard, row crops or similar agriculture use on a rotating schedule with either the western or eastern portion of the property planted, similar to the surrounding area at the time. Three hardscape features are visible in the historical aerial imagery, all in the western portion of the property. The first appears to be a residential structure with an associated pool or patio, located within the same general location as the current residence. Lastly, what appears to be a concrete lined irrigation pond or similar structure can be visible amongst the orchard; this feature is also still present onsite albeit the concrete is severely damaged and does not appear to hold any water nor is it draining (receiving water or draining into) any specific feature. Beginning in the mid 1980's, the agriculture use on the property appeared to have halted, and by approximately 1989, the site was devoid of most tall vegetation. The property has been kept free of most tall vegetation since this time via regular maintenance or similar activity, most notably mowing and/or light discing. The regular activity has been for weed abatement to maintain an open site to reduce the fuel load and prevent unauthorized use of the property including off-roading, dumping, and encampments, all of which have been ongoing issues for many years per the property owner

(Touchstone Communities pers. comm. 2024). Use of the eastern portion of the property (i.e., between the base of the hillside and San Pasqual Valley Road) as either an authorized or unauthorized staging area is evident, beginning in approximately 2002 and again in 2008. In addition, beginning in approximately 2012, large circular mounds of debris are visible in the same general location. As we understand, due to previous illegal dumping, the property owner built a small berm along the eastern perimeter along San Pasqual Valley Road with the intent to limit access onto the property and deter trespassing.

Based on the topography of the area, the site drains San Pasqual Valley Road as well as the local properties to the north and northwest (Figure 2 and 3). Runoff enters the project site along the northern edge of the property, either via sheet flow across the private road or via low spots along San Pasqual Valley Road. It then flows in a southeasterly direction through the low-lying portion of the property (same location used as dumping grounds) and within a slight swale. The slight swale is bisected by a dirt road; flows continue under the dirt road via an approximate three-inch diameter pipe. Flows appear to spread partially into the parking lot and ultimately drain offsite to the southeast via a culvert under Idaho Avenue. Based on discussions with a local private property owner as well as a long-time staff member of El Plantio Nursery, the property does receive a notable amount of surface runoff during rain events but the water drains offsite relatively quickly and does not appear to pond for extended periods of time (Local Community pers. comm. 2024). However, in more recent years, runoff from San Pasqual Valley Road has been observed to stay within the road right-of-way, likely due to the constructed berm along the paved roadway.

Habitats/Vegetation Communities

Four vegetation types were identified on the project property during the biological surveys (Table 3; Figure 5). Site photographs are included as Appendix B. A complete list of the floral species observed, and the faunal species observed or detected within the BSA during the biological surveys has been included as Appendix C and D, respectively.

Table 3. Habitats/Vegetation Communities

Vegetation Type	Holland/Oberbauer Code	MSCP Wetland/Upland Tier Habitat Type	Estimated Existing (acres)
Non-native Grassland: Broadleaf Dominated	42210	Upland, Tier III	2.4
Non-native Woodland	79000	Upland, Tier IV	0.9
Disturbed Habitat	11300	Upland, Tier IV	6.4
Urban/Developed	12000	Upland, Tier IV	1.0
		Total:	**10.7**

Non-native grassland has been mapped for the eastern portion of the site, between the base of the hillside and the dirt parking lot. This area also corresponds to the portion of the property previously used as a potential staging area and/or debris dump sites. The non-native grassland community supports a relatively high percentage of both non-native grasses, broad-leaved non-native forbs, and to a slightly lesser extent, native annual herbs. Dominant non-native grasses and forbs included

slender wild oat (*Avena barbata*), Italian ryegrass (*Festuca perennis*), rattail sixweeks grass (*Festuca myuros*), red brome (*Bromus madritensis* ssp. *rubens*), summer field mustard (*Hirschfeldia incana*), field mustard (*Brassica rapa*), tocalote (*Centaurea melitensis*), sourclover (*Melilotus indicus*), curly dock (*Rumex crispus*) and stinkwort (*Dittrichia graveolens*). Other non-native forbs or herbs present include mayweed (*Anthemis cotula*), scarlet pimpernel (*Lysimachia arvensis*), and Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*). Native forbs present in the area include American bird's-foot trefoil (*Acmispon americanus* var. *americanus*) and western ragweed (*Ambrosia psilostachya*). M&A has classified the area as non-native grassland: broadleaf-dominated. This is based on the coverage of broad-leaved forbs in relation to the coverage of non-native grasses. Overall, the percentage coverage is expected to be nearly equal with broad-leaved species accounting for just slightly more than 50 percent total vegetative cover throughout portions of the area, although this is likely subject to seasonal variation in which annual grasses are abundant in the spring only to be outcompeted in the summer by the broad-leaved non-native forbs. Classification of the area as non-native grassland versus disturbed habitat would be consistent with the County's San Diego Report Format and Content Requirements [for] Biological Resources (County 2010b) and Draft Vegetation Communities of San Diego County (Oberbauer et al. 2008) since the site appears to be recognizable as a grassland community albeit seasonally. Due to the recent history of the site serving as dumping grounds as well as the ongoing regular maintenance, the overall quality of the non-native grassland is expected to be low. There is an abundance of small mammal activity including California ground squirrel (*Spermophilus beecheyi nudipes*) and while the site is expected to serve as potential foraging grounds for commonly encountered raptors, the site is not expected to support a significant population of special status species. For these reasons, the site is not expected to be classified as County RPO Sensitive Habitat Lands.

Non-native woodland has been mapped for the individual or clustered groups of non-native trees or shrubs. This includes but is not limited to pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), castor bean (*Ricinus communis*), Mexican fan palm (*Washingtonia robusta*), acacia (*Acacia* sp.), and non-native ornamentals. The community is not expected to be classified as County RPO Sensitive Habitat Lands; however, some of the tree canopies could serve as raptor nesting habitat.

Disturbed habitat has been mapped for most of the western portion of the property as well as the dirt lot off San Pasqual Valley Road. While the entire property appears to receive annual weed abatement via mowing, the western portion of the site appears to be lightly disced (or similar), which has resulted in large patches of bare ground and/or a different, more sporadic vegetative growth pattern versus the eastern portion of the site. This routine maintenance complies with the direction provided by the local fire authority (Touchstone Communities pers. comm. 2024). Where vegetation was present, non-native forbs were dominant and included summer field mustard, scarlet pimpernel, stinkwort, tocalote, and horehound (*Marrubium vulgare*). Overall, less than five percent annual grass species comprised the vegetation. Native plants including coastal California buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*) are sporadically present throughout the western portion of the site; however, they are primarily low-growing and stunted due to the regular maintenance activities. In addition to several sporadic native plants, there is a small linear row of native plants along the property fence line (i.e., three-strand barbed wire fence) in the northwest corner of the site, within an area of approximately <0.01 acre. This area includes several coastal California buckwheat and white sage (*Salvia apiana*) intermixed with ornamental (likely planted), non-native cacti including silver dollar prickly-pear (*Opuntia robusta*), all with an understory of bare ground. The native plants

within the property are sporadic through the site and are not expected to function or provide the same type of biological value (e.g., foraging or breeding habitat) that a typical Diegan coastal sage scrub community would provide. Rather, the plants are expected to function as an extension of the surrounding disturbed habitat and provide limited space/coverage for local wildlife (e.g., birds or reptiles) in transit. Overall, the disturbed habitat is not expected to be classified as County RPO Sensitive Habitat Lands.

Urban/development has been mapped for the single-family residence and the surrounding urban use (e.g., parking lot, immediate back and side yard, etc.) on the property. Urban/development has also been mapped for most of the 100-foot mapping buffer. This includes paved roads, landscaping associated with the Escondido Christian Church on the south side of Idaho Avenue, El Plantio Nursery, vegetation along the private road to the north of the project property, and residential lots that appear to be enclosed by perimeter fencing and/or maintained to some degree. Overall, the urban/development is not expected to be classified as County RPO Sensitive Habitat Lands.

M&A conducted a ground-truthing survey in 2025. While there was a slight shift in the vegetation composition between the non-native grassland: broadleaf-dominated and disturbed habitat communities in the eastern portion of the site, the change is not expected to be significant or affect the estimated acreage of each habitat community.

The County allows up to five acres of clearing for the construction and development of single-family homes and associated features. For all other areas outside of the five-acre allowance, the County requires evidence that the disturbance has occurred legally (i.e. fire clearing authorization from fire authority) and/or a forensic analysis would need to be conducted to determine what habitat was previously present. The routine maintenance implemented throughout the property complies with the direction provided by the local fire authority (Touchstone Communities pers. comm. 2024).

Zoological Resources – Fauna

Wildlife species noted during the biological survey consisted of species commonly found in native and naturalized habitats throughout San Diego County, many of which are year-round residents. This includes the following reptile, butterfly, and bee species: western fence lizard (*Sceloporus occidentalis*), gophersnake (*Pituophis catenifer*); checkered white (*Pontia protodice*), common buckeye (*Junonia coenia grisea*), mourning cloak (*Nymphalis antiopa*), monarch (*Danaus Plexippus*), acmon blue (*Icaricia acmon acmon*) butterflies; and honey bee (*Apis* sp.).

California ground squirrel and desert cottontail (*Sylvilagus audubonii sanctidiegi*) were the two most common mammal species observed throughout the BSA; the site supports an abundance of burrows along the berm off San Pasqual Valley Road as well as throughout the disturbed habitat. An individual coyote (*Canis latrans clepticus*) was observed during the evening survey; it was resting within the disturbed habitat near a grove of non-native trees along the northern boundary of the property. Domesticated dogs (*Canis familiaris*) also reside at the residence on the project property and have access to the lands throughout the site. An individual bat was observed flying over the BSA during the evening survey. Based on the bat size, flight speed, wing beat speed, and height above canopy, it could potentially be a Mexican free-tailed bat (*Tadarida brasiliensis*) but identification is difficult and could not be confirmed (Stokes D. pers. comm. 2024). However, this species is expected to occur

within the local area. Mexican free-tailed bat along with yuma myotis (*Myotis yumanensis*) and big brown bat (*Eptesicus fuscus*) are the three species that were consistently found to be detected in western San Diego County (SDNHM 2014).

The following avian species were detected throughout the BSA: house finch (*Haemorhous mexicanus*), European starling (*Sturnus vulgaris*), Cassin's kingbird (*Tyrannus vociferans*), western kingbird (*Tyrannus verticalis*), California towhee (*Melozone crissalis*), hooded oriole (*Icterus cucullatus*), black phoebe (*Sayornis nigricans*), song sparrow (*Melospiza melodia*), Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), Nuttall's woodpecker (*Picoides nuttallii*), mourning dove (*Zenaida macroura*), spotted towhee (*Pipilo maculates*), and American crow (*Corvus brachyrhynchos*). Raptors observed flying over the BSA consisted of an individual turkey vulture (*Cathartes aura*). Raptors observed within the BSA consisted of American kestrel (*Falco sparverius*), Cooper's hawk (*Accipiter cooperii*), barn owl (*Tyto alba*), and red-tailed hawk (*Buteo jamaicensis*). An individual American kestrel was observed flying through the BSA and ultimately perched within a tree snag within the western portion of the 100-foot mapping buffer while the Cooper's hawk was observed flying into a grove on non-native trees along the northern portion of the project site; both species were observed during the day survey. An individual barn owl was observed during the evening survey; it was perched on the same tree snag and observed foraging within and just beyond the mapping buffer. Up to two red-tailed hawks were observed within and just beyond the mapping buffer in the southeast portion of the BSA. In addition, a red-tailed hawk nest could be seen in the eucalyptus trees just beyond the BSA to the southeast.

Special Status Species

Present within the BSA

Four special status species were detected within the BSA (Figure 5): monarch butterfly, Cooper's hawk, turkey vulture, and barn owl.

The monarch butterfly is a CNDDB Special Animal (overwintering population) and County Group 2 Sensitive Animal. An individual butterfly was observed flying through the eastern portion of the BSA. Due to the regular maintenance of the project site and lack of the species preferred plants for laying eggs, there is no suitable nesting habitat onsite, nor would the BSA be considered habitat for an overwintering population. It is expected that monarch butterfly's commonly utilize the plants within the adjacent El Plantio Nursery.

The Cooper's hawk is a CNDDB Special Animal (nesting location only), CDFW Species of Special Concern, and County Group 2 Sensitive Animal. An individual Cooper's hawk was observed flying into a grove of non-native trees along the northern portion of the project site. This species is a year-round resident of the County that frequently nests in dense stands of oak, riparian, eucalyptus, or similar habitats near water and along broken woodland habitat and edges; this species has adapted to urban areas. There is a moderate potential for the Cooper's hawk to nest within the trees throughout the BSA, particularly along the northern portion of the BSA.

The turkey vulture is a County Group 1 Sensitive Animal. An individual turkey vulture was observed flying over the BSA. This species is a year-round resident of the County that typically nests in areas

that are isolated from active urban disturbance; commonly nesting in caves, crevices of rock outcrops or similar areas. Due to the active use of the project site and surrounding area, there is no suitable nesting habitat within the BSA.

The Barn owl is a County Group 2 Sensitive Animal. An individual barn owl was observed during the evening survey; it was perched on a tree snag within the western portion of the 100-foot mapping buffer and observed foraging within and just beyond the mapping buffer. This species is a year-round resident of the County that is adapted to urban development. It will nest in a variety of locations including buildings, base of palm leaves or similar dense vegetation, tree cavities, or artificial nest boxes. There is a high potential for this species to nest within the BSA. There is a nest box just west of the project boundary along with a variety of suitable vegetation for this species to nest in.

Occurrence Potential for Special Status Species within the BSA

An evaluation of the potential for special status species to occur within the BSA was conducted based on historical detections, suitable habitat, and site conditions. Appendix E provides a complete listing of the special status species evaluated with their respective status, suitable habitat, and an assessment of their potential for presence. This list includes special status species from a CDFW, CNDDB, and USFWS records search within two miles of the BSA; this specific records search is included as Appendix F and G. It also includes a search via the USFWS Information for Planning and Consultation.

Five special status species have a moderate potential to occur within the BSA: American bumble bee, Crotch's bumble bee, burrowing owl, red-shouldered hawk (*Buteo lineatus*), and California horned lark (*Eremophila alpestris actia*). Below is a description of these species and their occurrence potential.

Bumble Bee

American bumble bee, a CNDDB Special Animal and Crotch's bumble bee, a CESA candidate for state listing as endangered were determined as part of the initial evaluation in 2024 to have at least a moderate potential to occur within the BSA. In support of the Project, M&A qualified biologists conducted an updated habitat assessment and three focused bumble bee surveys between June and July 2025, for the purpose of determining the presence or absence of these species within the BSA. The results are included as Appendix H. In summary, no *Bombus* species were observed during the 2025 focused surveys. Crotch's bumble bee or Crotch's bumble bee nests were not detected during the survey effort and are presumed to be absent from the Project site; this is the same conclusion for American bumble bee. Overall, the cover of flowering plant species and preferred nectar sources was low within the survey area. Suitable nesting substrate for Crotch's bumble bee was observed within the Project site, including leaf litter beneath some of the non-native trees and bare ground in areas that have been maintained. An active California ground squirrel population is also present, and their burrows could provide suitable nesting opportunities. However, because most of the burrows are actively used by squirrels, it is unlikely that bumble bees would occupy them. In addition, ongoing vegetation maintenance across the site is expected to further reduce nesting potential.

Burrowing Owl

The burrowing owl is a CDFW Candidate Species under the CESA (as of October 10, 2024), a designated Special Animal for burrowing/nesting sites and some wintering sites by the CNDDB, a USFWS Bird of Conservation Concern, and a Group 1 Species by the County.

The burrowing owl, a small ground-dwelling raptor, is a subspecies of burrowing owl, primarily restricted to the western United States and Mexico. As detailed in the Burrowing Owl Natural History and Threats section of CDFWs *Staff Report on Burrowing Owl Mitigation* (CDFW 2012), in California, its preferred habitat is generally sparse vegetation with few shrubs, level to gentle topography and well-drained soil conditions such as grasslands, deserts, and arid scrubland environments. The presence of underground burrows or other cavities is the essential component for suitable habitat; both natural and artificial burrows provide nesting during the breeding season and roosting and cover/protection, year-round. The owls will use burrows made by fossorial mammals, primarily those made by the California ground squirrel, as well as man-made structures such as storm drain culverts, openings beneath concrete or asphalt pavement, and within debris piles and construction material stockpiles. For these reasons, burrowing owls will also occupy urban areas, including agricultural areas, airports, and golf courses, where suitable burrows are found. Owls may use dens or holes dug by other fossorial species including badger (*Taxidea taxus*) and coyote (*Canis latrans*). Burrowing owls are opportunistic feeders, primarily feeding on arthropods (e.g., grasshoppers and beetles), small rodents and birds, as well as some amphibians and reptiles.

The burrowing owl is diurnal and typically perches during daylight at the entrance to its burrow or on adjacent structures, such as low posts. In California, the breeding season generally occurs between February 1 and August 31 with the peak of the season between April 15 and July 15 when most owls have active nests (eggs or young). Burrowing owls generally form a pair bond for more than one year and exhibit moderate to high site fidelity to general breeding areas and burrows/nest sites are reused at a higher rate if the bird has reproduced successfully at the site during the previous year (CDFW 2012). In addition, owl families often switch burrows, using “satellite” burrows every 10-15 days when the young are 3-4 weeks old, and remain as a loose-knit group until early fall when the young may begin to disperse to nearby burrows.

Burrows and the associated surrounding habitat are essential for burrowing owls throughout the year. Urbanization has greatly reduced the amount of suitable habitat for this species. Other contributions to the decline of this species include the poisoning of fossorial mammals, road and ditch maintenance, and collisions with automobiles (CDFW 2012).

Based on eBird (ebird 2024), an individual burrowing owl was detected at two separate locations approximately eight days apart in October 2022; located approximately 3.4 miles (and greater) east of the BSA. It is possible that the bird(s) was in transit to the Ramona Grasslands. The closest iNaturalist record is from 2018 and approximately 7.8 miles west of the site within the San Marcos vernal pool complex off S. Las Posas Road.

Overall, the project site supports variable vegetation coverage depending on weed abatement/maintenance activities. Without maintenance, the site is mostly an overgrown weedy field dominated nearly equally by non-native grasses and non-native forbs including mustard which

is not the preferred habitat type by the burrowing owl and thus would not be suitable for nesting and/or winter use. This was the site condition observed by M&A during the June 2024 survey. However, during the follow-up investigation in July 2024, the site had been mowed and all vegetation excluding the trees and large shrubs were cut to ground level. This condition of low, sparse vegetation with exposed burrows is ideal habitat for the burrowing owl.

No burrowing owl or evidence of burrowing owl (e.g., pellets, feathers, or owl whitewash) were detected within the BSA during the 2024 biological investigations. Representative photographs of the BSA are included as Attachment B.

Overall, due to the lack of consistent low, sparse vegetation, and surrounding urban setting, the potential for burrowing owls to utilize the project site for nesting habitat is expected to be low. However, if the vegetation were consistently maintained low, there could be a potential for burrowing owls to use the site in transit and/or during the winter months. This is all dependent on factors including rainfall and maintenance activity.

Red-shouldered Hawk

Red-shouldered hawk is a County Group 1 Sensitive Animal. Although it was not observed during the biological surveys, it has a moderate possibility of occurring within the BSA due to suitable nesting (e.g., non-native trees) and foraging habitat.

California Horned Lark

The California horned lark is a CNDDB Special Animal, CDFW Watch List species, and County Group 2 Sensitive Animal. Although not observed during the biological surveys, it has a moderate possibility of occurring within the BSA when the vegetation is kept low.

JURISDICTIONAL WETLANDS AND WATERWAYS

The BSA is not located within a designated floodplain or floodway, nor are there any NWI or USGS drainages identified onsite. Two features were identified within the BSA but ultimately determined to not be subject to jurisdiction of the USACE, RWQCB, CDFW, or County.

The first feature is present in the western portion of the project site. It is visible in historic aerial images and could have historically been used as an irrigation pond or similar feature. This feature is still present but it is full of debris and the exposed concrete is severely damaged (see Appendix B, Photo Point 8). There is no evidence that the feature holds water nor that the feature drains runoff downslope.

The second feature is a slight swale in the eastern portion of the project site. As detailed in the above section, runoff enters the project site along the northern edge of the property either via sheet flow across the private road or via low spots along San Pasqual Valley Road. It then flows in a southeasterly direction through the low-lying portion of the property (same location used as dumping grounds) within a slight swale, partially spreading into the dirt parking lot and ultimately draining offsite to the southeast via a culvert under Idaho Avenue. Offsite, the surface runoff sheet flows through a portion of the Escondido Christan Church parking lot for approximately 80 feet before entering (if there is sufficient flow) a roadside drainage ditch that runs parallel with San Pasqual Valley Road. Based on

discussions with a local private property owner as well as a long-time staff member of El Plantio Nursery, the property does receive a notable amount of surface runoff during rain events but the water drains offsite relatively quickly and does not appear to pond for extended periods of time (Local Community pers. comm. 2024). However, in more recent years, runoff from San Pasqual Valley Road has been observed to stay within the road right-of-way, likely due to the constructed berm along the paved roadway. Based on the aquatic resources delineation, although the swale supports some hydric plants, it is not dominated by hydrophytic vegetation. In addition, while hydric features (e.g., redox features) are present within the soil, they are not sufficient to meet the hydric soil indicator criteria. Lastly, while there is a slight defined channel within the northerly portion of the feature, it is not consistent and there are no other ordinary high water mark features that would satisfy the USACE ordinary high water mark/hydrology criteria. As a result, this feature would not be regulated by the USACE, RWQCB, CDFW, or County. Supporting information includes maps of the features (Appendix B, Figure 6) and Wetland Determination Data Forms and corresponding photo points (Appendix I).

OTHER UNIQUE FEATURES/RESOURCES

There are no unique features such as wildlife corridors, rock outcrops, or sensitive soils within the BSA.

SIGNIFICANCE OF PROJECT IMPACTS AND PROPOSED MITIGATION

A biological impact is defined for this report to mean the occurrence of a sensitive biological resource within the BSA and if impacted by the proposed project would likely be considered a significant impact, in the context of CEQA and County rules and regulations that would require associated mitigation to reduce the impact below significance and/or require regulatory permits.

Potential project impacts were evaluated based on examination of the proposed project plans within the context of the biological resources documented during the field surveys, and those resources assessed as having a likely potential to occur in the project area. Direct impacts were determined by overlaying the project plans on the mapped vegetation communities and sensitive resources/species in GIS ESRI software platforms. Indirect impacts were determined based on the design, intended use, and location of the proposed project elements relative to biological resources.

Direct Impacts

Vegetation Communities

Implementation of the proposed project would result in direct, permanent impacts to all onsite communities, consisting of non-native grassland, non-native woodland, disturbed habitat, and urban/developed lands (Figure 7). Implementation of the project would also result in direct, permanent impacts to offsite communities, consisting of disturbed habitat and urban/developed as a result of necessary utility and roadway improvements. Impacts to non-native grassland would be significant and would require mitigation in accordance with Table 5 of the County's Guidelines for Determining Significance [for] Biological Resources (County 2010a). Implementation of habitat-based mitigation in accordance with Table 4 and as listed in Mitigation Measure **BIO-1** included in the below section of this report would be required to reduce impacts to a level below significance. Impacts to

non-native woodland, disturbed habitat and urban/developed lands would not be significant since these habitats are regionally not sensitive.

Table 4. Impacts to Vegetation Communities

Vegetation Type	Impact Acreage			Potential Mitigation Ratio	Potential Mitigation Required
	Onsite	Offsite	Total		
Non-native Grassland: Broadleaf Dominated	2.4	0.0	2.4	0.5:1	1.2
Non-native Woodland	0. 9	0.0	0.9	None	0.0
Disturbed Habitat	6.4	0.2	6.6	None	0.0
Urban/Developed	1.0	0.2	1.2	None	0.0
Total:	**10.7**	**0.4**	**11.1**		**1.2**

Special Status Species

Implementation of the project is not expected to impact any special status flora since none were detected within the BSA and none are expected to have a moderate or high potential to occur onsite.

Implementation of the proposed project would result in direct, permanent impacts to non-native grassland considered raptor (e.g., Cooper's hawk, barn owl, etc.) foraging habitat. Impacts to raptor foraging habitat would be significant per the County's Guidelines and would require mitigation. Implementation of Mitigation Measure **BIO-1** included in the below section of this report would be required to reduce impacts to a level below significance.

Implementation of the proposed project could result in direct, permanent impacts to nesting raptors such as the Cooper's hawk, barn owl or other avian species protected by the federal MBTA and Sections 3503, 3503.5, and 3513 of the FGC. Impacts to active migratory bird nests, if present at the time of construction, are prohibited under the federal MBTA and FGC Sections 3503 and 3513. Implementation of Mitigation Measure **BIO-2** included in the below section of this report would be required to reduce impacts to a level below significance.

Implementation of the proposed project is not expected to result in direct, permanent impacts to foraging habitat utilized by the Crotch's bumble bee or Crotch's bumble bee nests, since the species was not detected during the 2025 focused surveys and due to the low quality of foraging habitat onsite. However, if present at the time of construction, "take" of the Crotch's bumble bee, a CESA candidate for state listing, would be prohibited under CESA. Implementation of Mitigation Measure **BIO-3** included in the below section of this report would be required to reduce potential impacts to a level below significance.

An individual bat was observed foraging over the western portion of the BSA. Although the possibility of special status bat species to utilize the project site for nesting or roosting is expected to be low, there is a potential for common bat species such as the Mexican free-tailed bat to roost within the onsite palm trees with dead frond skirts; albeit due to the surrounding urban setting, it is expected that there is higher quality roosting habitat offsite. While there are only a few of these trees onsite

(approximately two), it is recommended that the project implement the following Site Design Measure to reduce potential impacts to roosting bats to the greatest extent feasible.

Site Design Measure 1: The removal of mature trees and snags shall be minimized to the greatest extent practicable. Mature trees and snags to be removed as part of the project shall be more closely evaluated by the Qualified Biologist for their potential to support maternity colonies of bats. Trees that are identified as suitable bat roost sites shall be removed using a two-step process that occurs over a 2-day period. On Day 1, branches and limbs that do not contain crevices or cavities shall be removed using hand tools or chainsaws. The goal is to create a disturbance sufficient to cause any bats roosting in the tree to leave that night and not return, but not at a level of intensity that will cause bats to fly out of the tree during the disturbance itself (i.e., during the daytime, when leaving the roost will likely result in predation). On Day 2, the remainder of the tree may be removed.

Tree trimming/removal activities shall be performed outside of the bat maternity season (typically April 1 through August 31), to avoid direct impacts to nonvolant (flightless) young that may roost in trees within the study area.

- If trimming or removal of trees during the bat maternity season (April 1 through August 31) cannot be avoided, all mature trees to be removed that have also been identified as containing suitable bat-roosting habitat will be surveyed at night within one week prior to removal. Any trees confirmed during those surveys as housing bat maternity colonies and/or special-status bat species will be avoided until the end of the maternity season.

Jurisdictional Resources

Implementation of the Project would not result in impacts to any aquatic resources regulated under Sections 404 or 401 of the Clean Water Act, Porter-Cologne Water Quality Control Act, and/or California FGC Streambed Alteration Agreement Section 1600-1616 since none are present onsite.

Other Unique Features/Resources

Implementation of the Project would not result in impacts to unique features such as wildlife corridor or nursery sites since none are present onsite.

Indirect Impacts

Implementation of the proposed project could result in indirect impacts to resources adjacent to the site, most notably from the effects of disturbance/clearing of vegetation within the project footprint. Fugitive dust created from clearing/grubbing of the site could negatively impact adjacent resources. In addition, exposed soils from clearing and grubbing may result in erosion and subsequent offsite sedimentation within offsite areas. Implementation of Mitigation Measure **BIO-4** included in the below section of this report would be required to avoid these potential indirect impacts.

Local Policies, Ordinances, and Adopted Plans

The following federal/state laws/regulations and local ordinances are applicable to the proposed Project and are evaluated below for consistency purposes.

Federal Migratory Bird Treaty Act and California Fish and Game Code

There is a potential for birds to nest within the trees, shrubs, and/or on the ground within the project site. Impacts to active migratory bird nests, if present at the time of construction, are prohibited under the federal MBTA and FGC Sections 3503 and 3513. Potential impacts to active migratory bird nests would be avoided with implementation of Mitigation Measure **BIO-2** included in the below section of this report.

County Resource Protection Ordinance

Implementation of the Project would not result in impacts to wetlands or other native habitats such as Diegan coastal sage scrub since these communities are not present onsite. However, the site would result in impacts to non-native grassland which is considered a County Sensitive Habitat Lands. Implementation of Mitigation Measure **BIO-1** included in the below section of this report would be required to reduce impacts to a level below significance.

In addition, implementation of the project would result in impacts to nesting raptors or other avian species protected by the MBTA and FGC Sections 3503 and 3513, if present during construction. Implementation of Mitigation Measure **BIO-2** included in the below section of this report would be required to reduce impacts to a level below significance.

Mitigation Measures

Implementation of the following mitigation measures would be required to avoid and/or reduce impacts to a level below significance.

BIO-1 Prior to issuance of the grading permit, the County would document that required project habitat mitigation for non-native grassland has been secured based on the mitigation ratios derived from and generally consistent with the mitigation ratios listed within County Guidelines for Determining Significance [for] Biological Resources (County 2010b). The Applicant would mitigate for project impacts to approximately 1.2-acre of non-native grassland at a 0.5:1 ratio. Mitigation can be achieved through a combination of 1.2 acres of habitat restoration, establishment, enhancement, preservation, and/or purchase of suitable credits from an approved mitigation bank, subject to approval by the County. The Applicant is proposing to mitigate impacts to non-native native grassland through purchase of 1.2 acres of non-native grassland credits from Cleveland Corridor Conservation Bank or another bank deemed acceptable to the County.

BIO-2 To avoid any direct impacts to raptors and other nesting birds protected by the MBTA and California FGC Sections 3503, 3503.5, and 3513 (Nesting Birds) present onsite, removal of habitat should occur outside of the breeding season for these species (generally January 15 to July 15 for raptors, February 15 to August 31 for all other birds). If removal of habitat must occur during the breeding season, a Qualified Biologist shall conduct a pre-construction survey(s) to determine the presence or absence of Nesting Birds on or immediately adjacent to the project site no more than 3 calendar days prior to the start of project activities. If construction is inactive for more than three days, an additional survey shall be conducted. The results of the pre-construction survey shall be documented by the Qualified Biologist and shall be provided to the County.

If the Qualified Biologist determines that no active migratory bird or raptor nests occur, the activities shall be allowed to proceed without any further requirements. If Nesting Birds are detected, then all construction activities undertaken for the project shall comply with regulatory requirements of the federal MBTA and FGC Sections 3503 and 3513 (and reported to the County, if determined necessary). This may include that the Biologist implement appropriate mitigation measures including, but not limited to, establishing a buffer around the active nest. The specific buffer width would be determined by the Biologist at the time of discovery and would vary according to the avian species, site conditions, and type of work necessary. The Designated Biologist shall monitor the nest at the onset of project activities, and at the onset of any changes in such project activities (e.g., increase in number or type of equipment, change in equipment usage, etc.) to determine the efficacy of the buffer. No construction activities would occur within the buffer until the young have fledged or the nest is no longer active. The Qualified Biologist shall halt all construction activities within proximity to an active nest if it is determined that the activities are harassing the nest and may result in nest abandonment or take. Work can resume within these avoidance areas when no other active nests are found.

BIO-3 To avoid impacts to Crotch's bumble bee, removal of habitat in the proposed area of disturbance should occur outside of the Colony Active Period between April 1 through August 31. If removal of habitat in the proposed area of disturbance must occur during the Colony Active Period, a Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of Crotch's bumble bee within the proposed area of disturbance.

The pre-construction survey shall be conducted during the Colony Active Period between April 1 through August 31 by the Qualified Biologist within one year prior to the initiation of project activities (including removal of vegetation). The pre-construction survey shall consist of photographic surveys and follow the methodology developed consistent with the CDFW Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023). The surveys shall consist of passive methods unless a Memorandum of Understanding is obtained. The surveys shall consist of three separate visits spaced a minimum of one week apart. Survey results are typically considered valid until the start of the next colony active period.

If additional activities (e.g., capture or handling) are deemed necessary to identify bumble bees of an unknown species that may be Crotch's bumble bee, then the Qualified Biologist shall obtain the required authorization via a Memorandum of Understanding or Scientific Collecting Permit pursuant to CDFW Survey Considerations for CESA Candidate Bumble Bee Species (CDFW 2023). Survey methods that involve lethal take of species are not acceptable.

The Qualified Biologist/owner permittee shall submit the results of the pre-construction survey to the County and CDFW for review and approval prior to initiating construction activities.

If pre-construction surveys identify Crotch's bumble bee individuals onsite, the Qualified Biologist shall notify and consult with CDFW to determine whether project activities would result in impacts to Crotch's bumble bee, in which case an Incidental Take Permit (ITP) may be required prior to initiating construction activities. Take of any endangered, threatened, candidate species that results from the project is prohibited, except as authorized by State law (California Fish and Game Code §§ 86, 2062, 2067, 2068, 2080, 2085; California Code of Regulations, Title 14, § 786.9) under CESA.

Survey data shall be submitted by the Qualified Biologist to the CNDDB in accordance with the Memorandum of Understanding with CDFW, or Scientific Collecting Permit requirements, as applicable.

BIO-4 To avoid impacts to resources adjacent to the project site, and to ensure compliance with all biological conditions imposed on the project, the following measures would be required:

- Construction-period and permanent best management practices (BMPs) and water quality requirements would be designed and implemented in accordance with applicable state and local rules and regulations. This includes temporary placement of silt fence or similar perimeter control at the property boundary to prevent any loss of sand, silt, or material from the site during construction activities.
- All construction activities would occur during normal daylight hours in accordance with the County and if applicable, City of Escondido local rules and regulations.
- A Qualified Biologist would be retained to inspect and oversee installation of temporary perimeter fencing, be onsite during the initial clearing and grubbing of habitat, and conduct regular inspections thereafter during grading operations to ensure compliance with the project biological requirements. The Biologist should be knowledgeable of upland biology and ecology, possess a bachelor's degree in a biological related field, and have at least two years of experience in field biology or current certification of a nationally recognized biological society. In lieu of the above qualifications, a resume would demonstrate to the satisfaction of the County that the proposed Biologist has the appropriate training and background to effectively implement the biological-related site design measures. The biologist would have the authority to halt construction activities, if needed and would report any detection of federally or state listed species and/or violation to the County and applicable resources agencies, if needed within 48 hours of detection.
- Environmental training would be provided for contractors and construction personnel by the Biologist prior to the start of construction work and annually thereafter. The training would be repeated if gaps in construction operations were required.

REFERENCES

California Department of Fish and Wildlife (CDFW). 2012. Staff Report on Burrowing Owl Mitigation. 19 pp + Appendices.

_____. 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. June 6, 2023. 14pp. Available from: https://wildlife.ca.gov/Conservation/Survey-Protocols377281281-invertebrates

_____. 2024a. California Natural Diversity Database (CNDDB). Biogeographic Data Branch. RareFind; GIS shapefile update, March 2024. Sacramento, California.

_____. 2024b October. State and Federally Listed Endangered & Threatened Animals of California [Internet]. Natural Diversity Database. Available from: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2024c October. State and Federally Listed Endangered & Threatened Plants of California [Internet]. Natural Diversity Database. Available from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2024d October. Special Vascular Plants, Bryophytes, and Lichens List [Internet]. Natural Diversity Database. Quarterly publication. Available from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2024e October. Special Animals [Internet]. Natural Diversity Database. Available from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. June 6, 2023. 14pp. Available from: https://wildlife.ca.gov/Conservation/Survey-Protocols377281281-invertebrates

_____. 2025. California Natural Diversity Database (CNDDB). Biogeographic Data Branch. RareFind; GIS shapefile update, June 2025. Sacramento, California.

County of San Diego. 2012. Resource Protection Ordinance (Amended Ord. No. 10224) [Internet]. Adopted 1989, Amended 1991, 2007, 2011, 2012. 17pp. Available from: https://www.sandiegocounty.gov/content/sdc/pds/procguid.html#biological.

_____. 2010a Sep 15. Report Format and Content Requirements [for] Biological Resources, Fourth Revision [Internet]. Land Use and Environment Group; Department of Planning and Land Use; Department of Public Works. 41pp. + Attachments A through H. Available from: https://www.sandiegocounty.gov/content/sdc/pds/procguid.html#biological.

_____. 2010b Sep 15. Guidelines for Determining Significance and Report Format and Content Requirements [for] Biological Resources, Fourth Revision [Internet]. Land Use and Environment Group; Department of Planning and Land Use; Department of Public Works.

33pp. + Attachments A through C Available from: https://www.sandiegocounty.gov/content/sdc/pds/procguid.html#biological.

eBird. 2024. San Diego County, CA. eBird - Cornell Lab of Ornithology. Accessed 2024.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual [Internet]. Technical Report Y-87-1, U.S. Army Corps of Engineers Waterways Experiment Station. Vicksburg, Mississippi. 92 pp + Appendices. Available from: http://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/Wetland-Delineations/.

Federal Emergency Management Agency (FEMA). 2023. Hydrology-Floodplain. Publication date 08/17/2023. Credits: SanGIS; Federal Emergency Management Agency; County of San Diego, Department of Public Works, Flood Control Engineering. Available from: http://www.sangis.org/.

Google Earth Pro™. 7.3.6.9796 (64-bit) [Software]. Build Date Thursday, February 22, 2024 10:13:06 PM UTC. Available from: http://www.earth.google.com. Accessed 2024.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Resources Agency, Department of Fish and Game. Sacramento, California. 157 pp.

iNaturalist. 2024 and 2025. Available from https://www.inaturalist.org. Accessed Research Grade Only 2024 and 2025.

Local Communtiy. 2024. In person discussion between Merkel & Associates, Inc. biologist Amanda Gonzales and a local property owner as well as a long time staff member of El Plantio Nursery & Landscaping on June 7, 2024 regarding general information about the subject parcel including rain events and flooding.

NearMap 2023. Aerial imagery, 2023. Available from: http://www.sangis.org/

Netronline. 2024. Historic Aerials by Netronline. Available from: https://www.historicaerials.com/. Accessed 2024.

Oberbauer, T., M. Kelly, and J. Buegge. 2008, Revised 1996 and 2006. Draft Vegetation Communities of San Diego County [Internet]. Based on "Preliminary Descriptions of the Terrestrial Natural Communities of California", Holland RF, PhD., 1986. Available from: http://www.sdcounty.ca.gov/dplu/docs/Veg_Comm_SDCounty_2008.pdf

Osborne, J.L., A.P. Martin, C.R. Shortall, A.D. Todd, D. Goulson, M.E. Knight, R.J. Hale, and R.A. Sanderson. 2008. Quantifying and comparing bumble bee nest densities in gardens and countryside habitats. Journal of Applied Ecology 45:784-792.

San Diego Geographic Information Source (SanGIS). 2004. Geology, Generalized Soil Download (zip) updated 2004 [Internet]. Available from: http://www.sangis.org/. Data source: U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS).

_____. 2015. Topo. Two Foot Contours. Publication date 11/30/2015. Credits: SanGIS, United States Geological Survey (USGS). Available from: http://www.sangis.org/.

_____. 2022a. Environmentally Sensitive Area. Publication date 08/24/2022. Credits: County of San Diego Land Use and Environment Group GIS. Available from: http://www.sangis.org/.

_____. 2022b. Wetlands. Publication date 12/15/2022. Credits: U.S. Fish and Wildlife Service. Available from: http://www.sangis.org/.

_____. 2023a. Vegetation. Publication date 08/31/2023. Credits: City of San Diego; SANDAG; County of San Diego, Planning & Development Services, LUEG-GIS Services. Available from: http://www.sangis.org/.

_____. 2023b. Hydrology-Floodplain. Publication date 08/17/2023. Credits: SanGIS; Federal Emergency Management Agency; County of San Diego, Department of Public Works, Flood Control Engineering. Available from: http://www.sangis.org/.

San Diego Natural History Museum. 2014. Bat Research and Management Ideas for San Diego County Reserve Lands. By Drew Stokes. Available from: https://sdmmp.com/upload/SDMMP_Repository/0/wj7209zvk1fnhq5cb6mtygrx3d4sp.pdf

State Water Resources Control Board (SWRCB). 2020. Implementation Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. April 2020.

_____. Revised 2021a Apr 6. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. Adopted April 2, 2019 and Revised April 6, 2021. Available from: https://www.waterboards.ca.gov/water_issues/programs/cwa401/wrapp.html

Stokes Drew. 2024. E-mail correspondence between Ms. Amanda Gonzales with Merkel & Associates, Inc. and Mr. Drew Stokes with the San Diego Natural History Museum regarding potential bat species observed within the BSA.

U.S. Army Corps of Engineers (USACE). 2005. Ordinary High-Water Mark Identification. USACE Regulatory Guidance Letter (RGL) 05-05. December. Available from: https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/Guidance-Letters/

_____. 2008a. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), ed. [Internet]. JS Wakeley, RW Lichvar, and CV Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center. Available

from: http://www.spl.usace.army.mil/Missions/Regulatory/Jurisdictional-Determination/Wetland-Delineations/

_____. 2008b. A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States: A Determination Manual. August. Available from: https://erdc-library.erdc.dren.mil/jspui/bitstream/11681/5308/1/CRREL-TR-08-12.pdf

_____. 2010. Updated Datasheet for the Identification of the Ordinary High Water Mark (OHWM) in the Aird West Region of the Western United States.

U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (USEPA). 2023 Jan. 18. Federal Register. Volume. 88, Number 11, Page 3004-3144. Wednesday January 18, 2023. Action: Final Rule. Revised Definition of ''Waters of the United States''. Available from: https://www.federalregister.gov/documents/2023/01/18/2022-28595/revised-definition-of-waters-of-the-united-states#citation-43-p3019

U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). 1973. Soil Survey. San Diego Area, California.

_____. 2024. Official Soil Series Descriptions. Available from: https://www.nrcs.usda.gov/resources/data-and-reports/official-soil-series-descriptions-osd Accessed 2024.

U.S. Fish and Wildlife Service (USFWS). 2003 Apr. 15. Migratory Bird Permit Memorandum. MBPM-2. Available from: https://www.fws.gov/

_____. 2024a. National Wetlands Inventory (NWI). Available from: http://www.fws.gov/wetlands/. Accessed: 2024.

_____. 2024b. Critical Habitat Portal [Internet]. Data Download (zip) updated April 2024. Available from: http://criticalhabitat.fws.gov/.

_____. 2024c. Carlsbad Fish and Wildlife Office (CFWO), GIS Division Species Occurrence Data Download (zip) updated Map, March 2024 [Internet]. Available from: http://www.fws.gov/carlsbad/giswebpage/giswebpage

U.S. Geological Survey (USGS). 1998. California Quadrangle Maps; California Digital Raster Graphics, 7.5 Minute (0) Series, Albers NAD 27. Teale Data Center. Sacramento, California. Accessed: 2024.

_____. 2024. National Hydrography Dataset. Available from: https://www.usgs.gov/national-hydrography/access-national-hydrography-products. Accessed: 2024.

PREPARER(S) AND PERSONS/ORGANIZATIONS CONTACTED

Merkel & Associates, Inc.

Amanda Gonzales, Associate Principal with 24 years of professional biological experience (biologist with M&A since 2003); Certified Wetland Delineator, Trained CRAM Practitioner, Authorized to Independently Conduct Protocol Surveys for the Coastal California Gnatcatcher and Southwestern Willow Flycatcher, and Trained Bumble Bee Surveyor for the Bumble Bee Watch, participated in virtual and in-person trainings hosted by the Xerces Society between 2023 and 2025, active bumble bee volunteer with records for Crotch's bumble bee and other non-sensitive bumble bee species uploaded to Bumble Bee Watch and iNaturalist. Project Field Biologist and Primary Report Author.

Brandon Stidum, Senior Biologist with 20 years of professional biological experience (biologist with M&A since 2014); Experienced Bumble Bee Surveyor and has participated in virtual trainings hosted by the Xerces Society in 2025, active bumble bee volunteer with records uploaded to iNaturalist. Other certifications include Certified Wetland Delineator, Trained CRAM Practitioner, and Authorized to Independently Conduct Protocol Surveys for the Coastal California Gnatcatcher. Field Biologist.

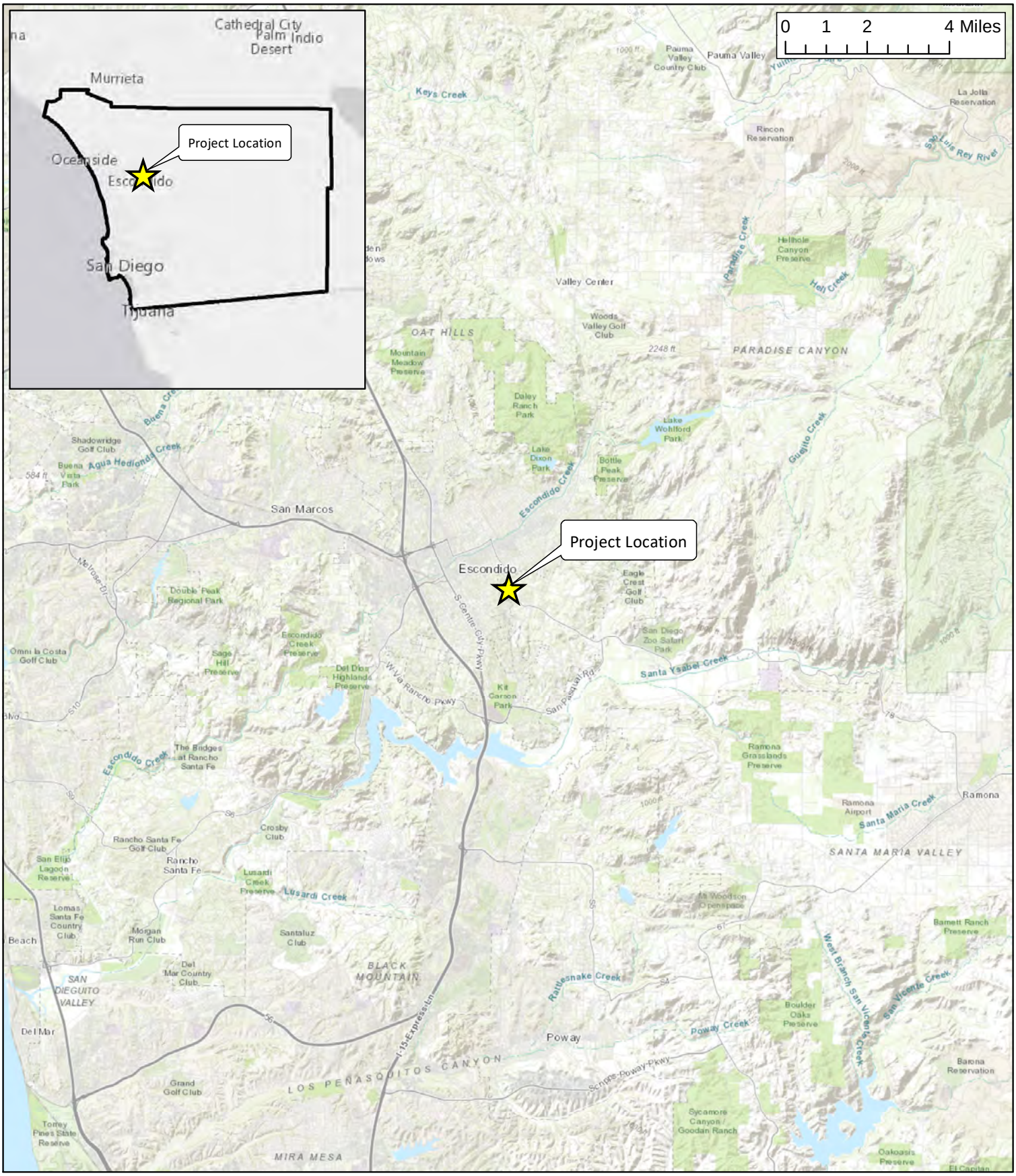
Kyle Ince, Senior Biologist and Restoration Specialist with more than 35 years of professional biological experience (biologist with M&A since 1995); Senior Botanist, Certified Wetland Delineator, Authorized to Independently Conduct Protocol Surveys for the Coastal California Gnatcatcher, Quino Checkerspot Butterfly, and Vernal Pool Branchiopods, Certified Arborist and California State Pesticide Applicators License. Project Report Review.

Brad M. Kelly, GIS Specialist with 21 years professional GIS experience (GIS Specialist with M&A since 2003). Project Graphics Preparation and Numeric Analyses.

Jenny Nicholson, Administrative Support. Project Report Quality Control.

Keith W. Merkel, Principal Consultant/Principal Ecologist. Mr. Merkel has over 40 years of professional consulting experience inclusive of native habitat mitigation and restoration experience and is a Principal and Corporate Officer at M&A since incorporated in 1994.

APPENDIX A. FIGURES



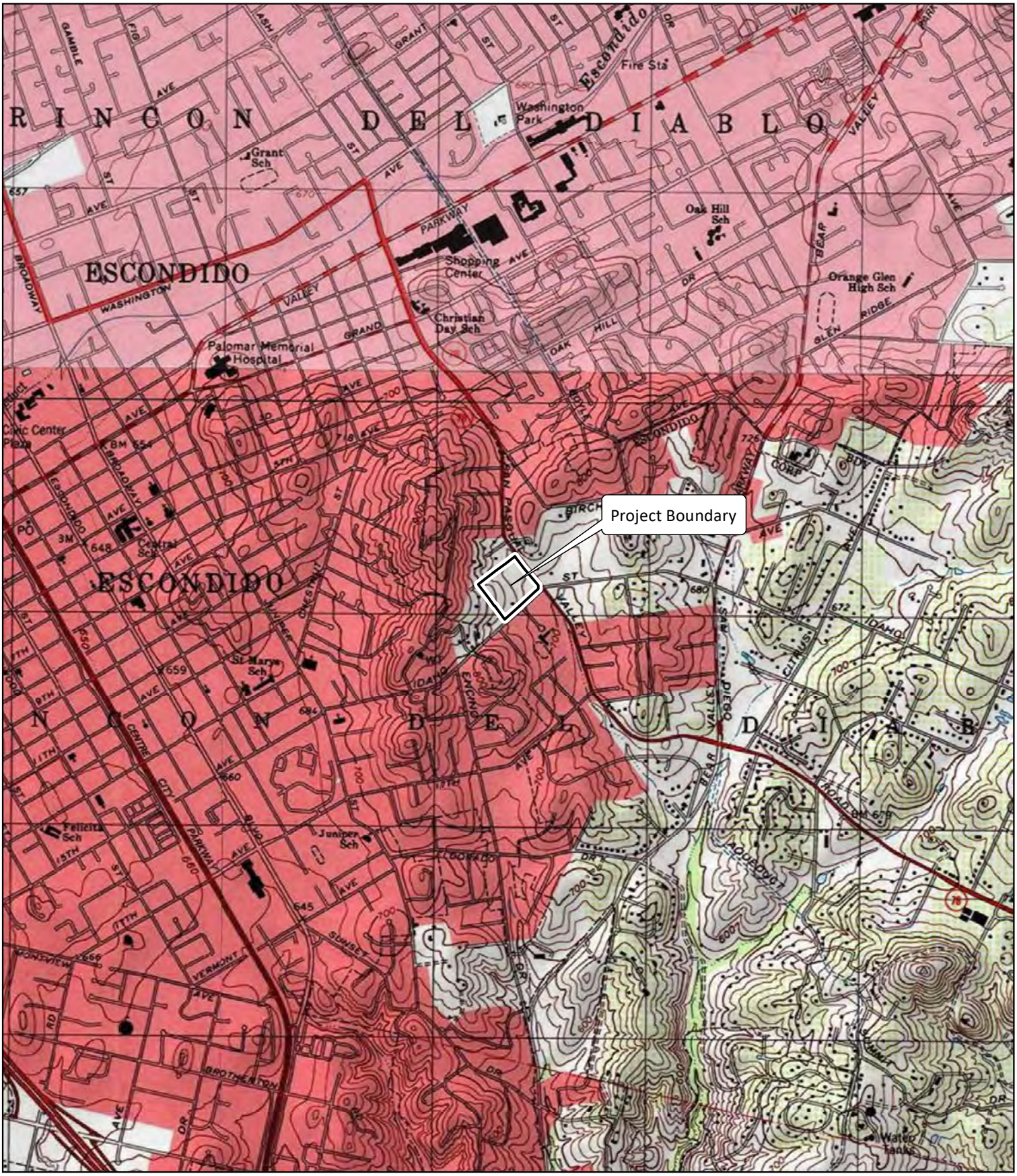
Regional Setting Map

Pasqual Heights Project

Aerial Source: ESRI 2025

Created on October 21, 2024

Figure 1



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USGS Quadrangle Map

Pasqual Heights Project

Source: USGS 7.5' Valley Center, CA Quadrangle

Figure 2

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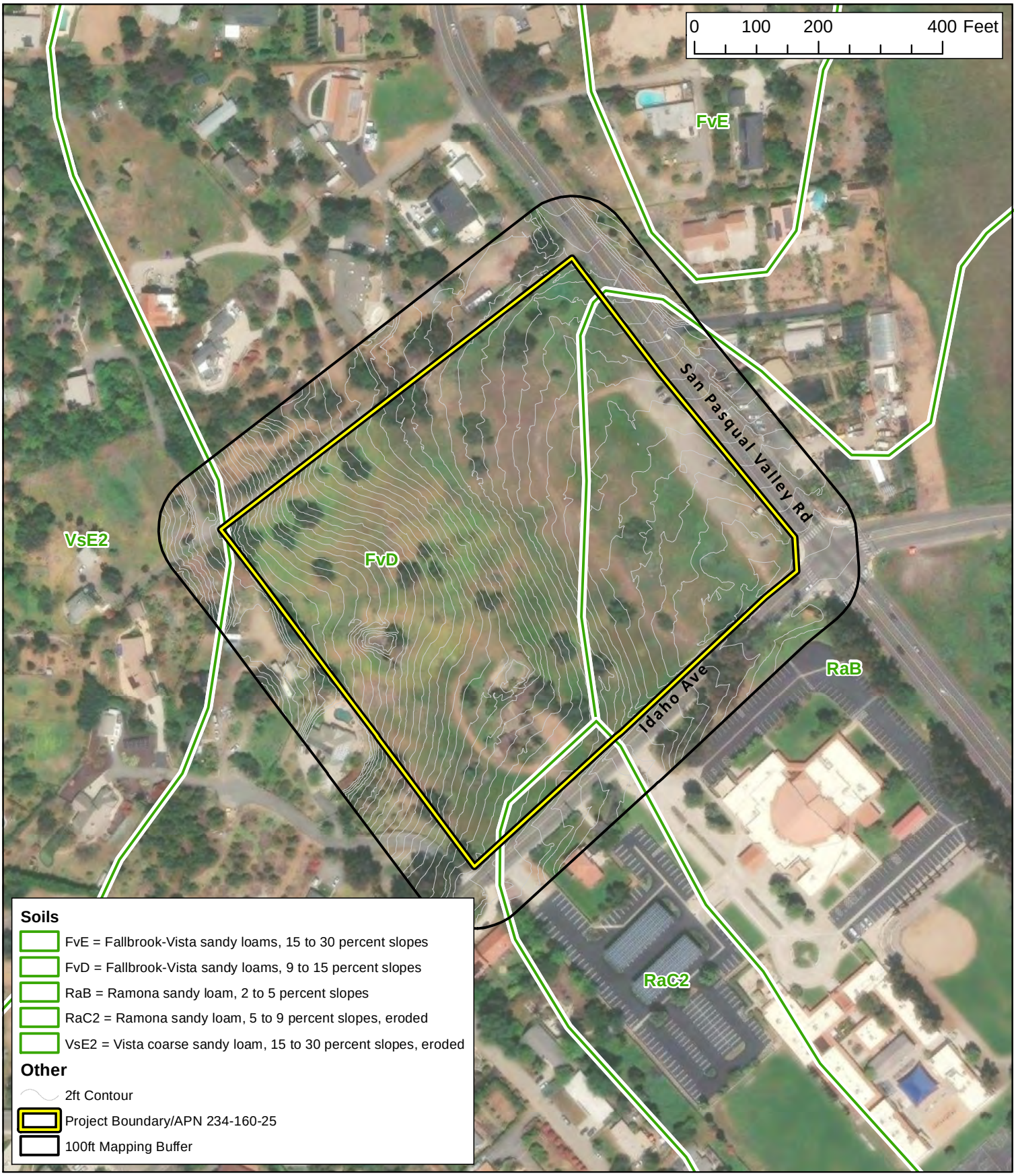
Project Vicinity Map

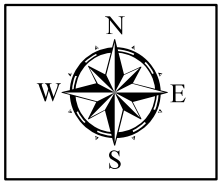
Pasqual Heights Project

Aerial Source: ESRI 2025

Created on October 21, 2024

Figure 3





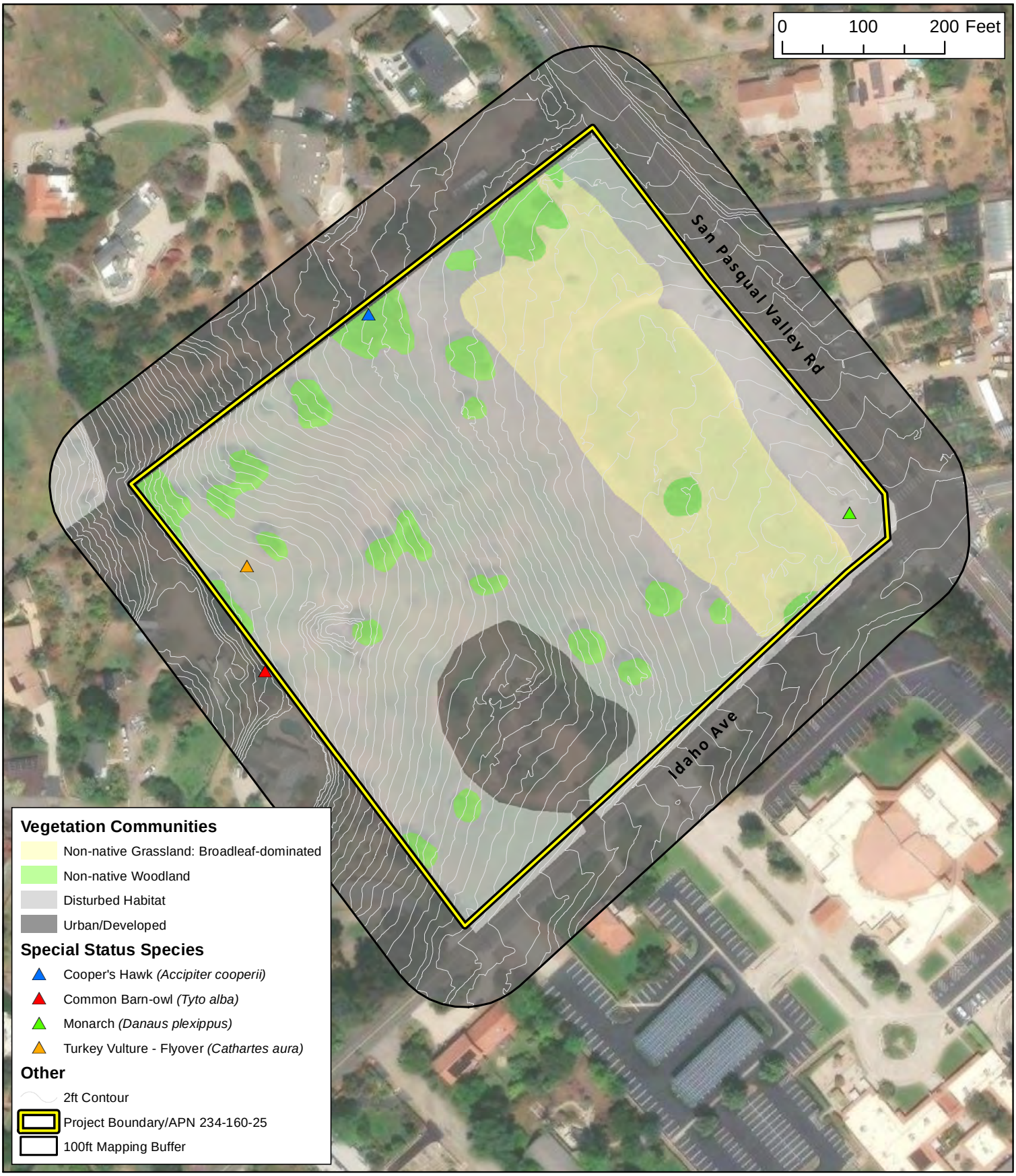
Local Setting Map

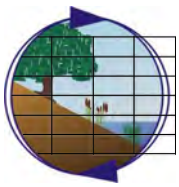
Pasqual Heights Project

Aerial Source: ESRI 2025

Created on October 21, 2024

Figure 4





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Biological Resources Map

Pasqual Heights Project

Aerial Source: ESRI 2025

Created on October 21, 2024

Figure 5

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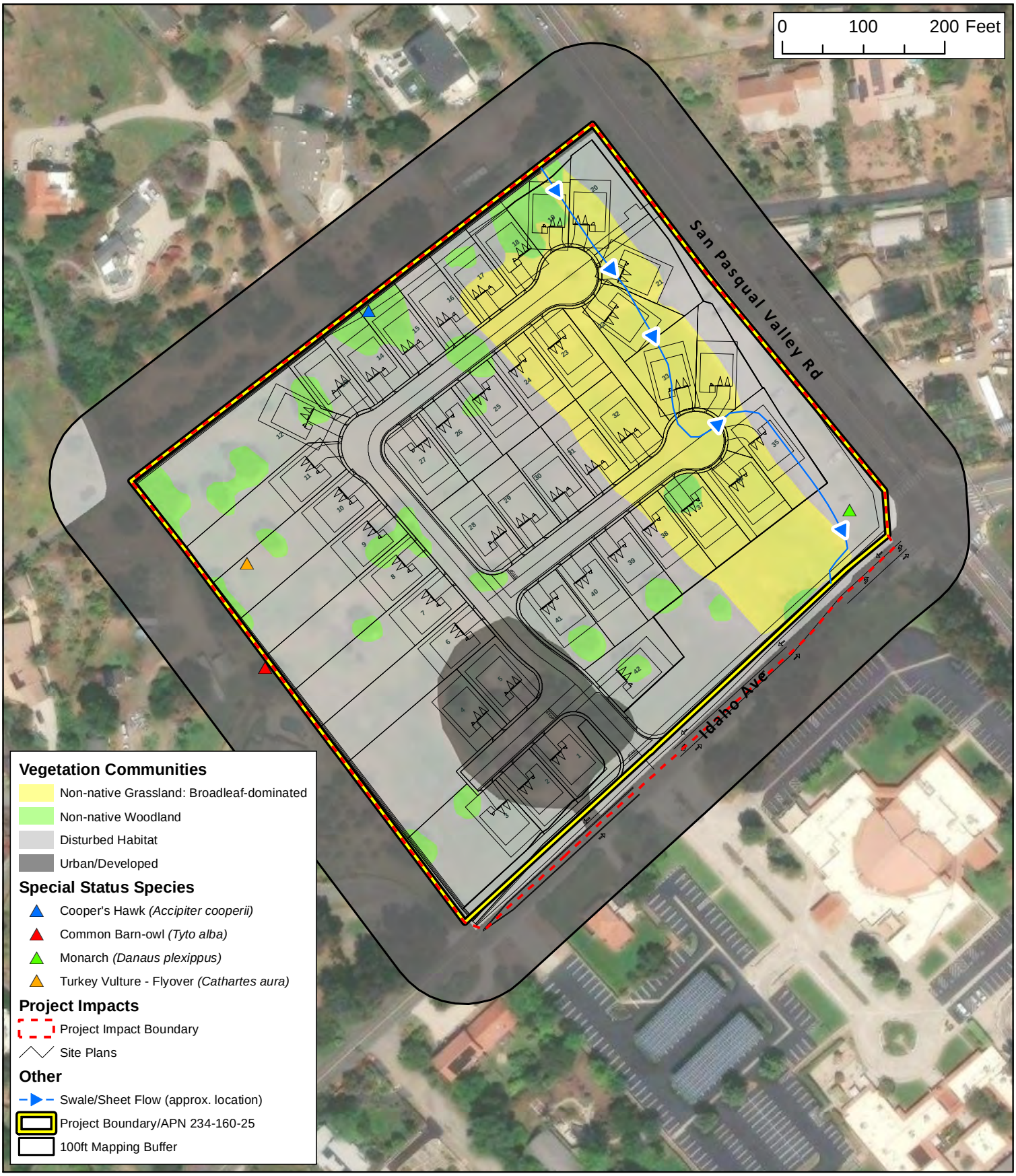
Aquatic Resources Map

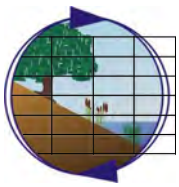
Pasqual Heights Project

Aerial Source: ESRI 2025

Created on October 21, 2024

Figure 6





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Impacts to Biological Resources Map

Pasqual Heights Project

Aerial Source: ESRI 2025

Created on July 22, 2025

Figure 7

APPENDIX B. SITE PHOTOGRAPHS

Photo Point 1. Overview photo of the project site. Taken from the northern corner of the site off San Pasqual Valley Road (in view) and the private road. Photo taken on June 7, 2024 and directed south. Area within the foreground dominated by non-native forbs including mustards with a minor inclusion of weedy native plants including western ragweed.

Photo Point 2. Photo taken from Photo Point 1 and directed west.

Photo Point 3. Close up view of the project site. Taken on June 7, 2024 and directed west. The general area within the foreground is dominated by non-native forbs including mustards, non-native herbs including mayweed, and non-native grasses within a minor inclusion of native weedy species including western ragweed.

Photo Point 4. Photo of the project site. Taken on June 7, 2024 and directed north. Taken from the dirt parking lot off San Pasqual Valley Road.

Photo Point 5. Photo of the project site taken from the northwestern portion of the site. Photo taken on June 7, 2024 and directed eastward. Sage scrub associated plants are within the foreground along the fence line intermixed with non-native ornamental cacti.

Photo Point 6. Photo taken from the western portion of the site and directed east toward San Pasqual Valley Road. Photo taken on June 7, 2024 and directed east. Area dominated by non-native forbs.

Photo Point 7. Overview photo of the project site. Taken on June 7, 2024 and directed east toward the existing residence. Area dominated by non-native forbs or bare ground.

Photo Point 8. Photo of the old irrigation pond or similar. Exposed concrete is damaged. Area full of debris and no evidence of ponding. Taken on June 7, 2024 and directed west.

Photo Point 9. View of the project site after regular maintenance. Photo taken from the dirt lot off San Pasqual Valley Road. Taken on July 31, 2024 and directed west.

Photo Point 10. Photo taken from the western portion of the site after the maintenance event. Taken on July 31, 2024 and directed east.

APPENDIX C. FLORA SPECIES OBSERVED WITHIN THE SURVEY AREA[1]

Habitat Types:

N = Non-Native Grassland: Broadleaf Dominated
W = Non-Native Woodland
D = Disturbed Habitat and Urban/Developed

* = Denotes non-native flora species.

Scientific Name	Common Name	Habitat
DICOTYLEDONS		
Aizoaceae – Fig-Marigold Family		
**Carpobrotus chilensis* (Molina) N. E. Br.	sea fig	D
Amaranthaceae – Amaranth Family		
**Amaranthus albus* L.	tumbleweed	N, D
Anacardiaceae – Sumac Family		
Malosma laurina (Nutt.) Nutt. Ex Abrams	laurel sumac	D
**Schinus molle* L.	pepper tree	W
Asteraceae – Sunflower Family		
Ambrosia psilostachya DC.	western ragweed	N
**Anthemis cotula* L.	mayweed	N, D
Baccharis sarothroides A. Gray	broom baccharis	D
**Carduus pycnocephalus* L. ssp. *pycnocephalus*	Italian thistle	N
**Centaurea melitensis* L.	tocalote, Maltese star-thistle	N, D
Deinandra fasciculata (DC.) E. Greene	fascicled tarplant	N, D
**Dittrichia graveolens* (L.) Greuter	stinkwort	D
**Erigeron bonariensis* L.	flax-leaf fleabane	N
**Glebionis coronaria* (L.) Spach	garland, crown daisy	N, D
**Hedypnois rhagadioloides* (L.) F. W. Schmidt	Crete weed	N, D
**Oncosiphon piluliferum* (L. f.) Källersjö	stinknet	N, D
**Sonchus oleraceus* L.	common sow thistle	N, D
Boraginaceae – Borage Family		
**Echium candicans* L. f.	pride of Madeira	D
Heliotropium curassavicum L. var. *oculatum*	seaside or alkali heliotrope	N
Brassicaceae – Mustard Family		
**Brassica rapa* L.	turnip, field mustard	N, D
**Hirschfeldia incana* (L.) Lagr.-Fossat	summer field mustard	N, D
**Lobularia maritima* (L.) Desv.	Common sweet alyssum	D
**Raphanus sativus* L.	radish	N, D
**Sisymbrium irio* L.	London rocket	N
Cactaceae – Cactus Family		
**Opuntia ficus-indica* (L.) Mill.	mission prickly-pear	D
**Opuntia robusta*	silver dollar prickly-pear	D
Chenopodiaceae – Goosefoot Family		
**Atriplex semibaccata* R. Br.	Australian saltbush	N, D
**Salsola tragus* L.	Russian thistle, tumbleweed	N, D

Scientific Name	Common Name	Habitat
Convolvulaceae – Morning-Glory Family		
Calystegia macrostegia (Greene) Brummit	southern California morning-glory	N
Euphorbiaceae – Spurge Family		
Croton setiger Hook.	doveweed, turkey mullein	N, D
**Ricinus communis* L.	castor bean	N, D
Fabaceae – Pea Family		
**Acacia sp.*	acacia	W
Acmispon americanus (Nutt.) Rydb. var. *americanus*	American bird's-foot trefoil	N
**Erythrostemon mexicanus*	Mexican holdback	D
**Medicago polymorpha* L.	California burclover	N, D
**Melilotus indicus* (L.) All.	sourclover	N, D
**Parkinsonia aculeata* L.	Mexican palo verde	W
Geraniaceae - Geranium Family		
**Erodium cicutarium* (L.) L'Hér. ex Aiton	red-stem filaree	N, D
**Erodium moschatum* (L.) L'Hér. ex Aiton	green-stem filaree	N, D
Juglandaceae - Walnut Family		
**Carya illinoinensis*	pecan	W
Lamiaceae – Mint Family		
**Marrubium vulgare* L.	horehound	N, D
Salvia apiana Jeps.	white sage	D
Lythraceae – Loosestrife Family		
**Lythrum hyssopifolia* L.	hyssop loosestrife	N
**Punica granatum*	pomegranate	D
Malvaceae – Mallow Family		
**Malva parviflora* L.	cheeseweed, little mallow	N, D
Myrtaceae – Myrtle Family		
**Eucalyptus citriodora* Hook.	lemon-scented gum	W
**Eucalyptus sideroxylon* A. Cunn. ex Woolls	red iron bark	W
Myrsinaceae – Myrsine Family		
**Lysimachia arvensis* (L.) U. Manns & Anderb.	scarlet pimpernel	N, D
Nyctaginaceae – Four-O'Clock Family		
**Bougainvillea* sp.	bougainvillea	D

Scientific Name	Common Name	Habitat
Oleaceae – Olive Family		
**Olea europaea* L.	olive	W
Onagraceae – Evening-Primrose Family		
Camissoniopsis hirtella (Greene) W.L. Wagner & Hoch	hairy sun cup	N, D
**Gaura lindheimeri*	pink gaura	N
**Oenothera speciosa* Nutt	Mexican evening-primrose	N, D
Papaveraceae – Poppy Family		
Eschscholzia californica Cham.	California poppy	N
Plantaginaceae – Plantain Family		
**Kickxia elatine* (L.) Dumort.	sharp-leaved fluellin	N
Polygonaceae – Buckwheat Family		
Eriogonum fasciculatum Benth. var. *fasciculatum*	coastal California buckwheat	D
**Polygonum aviculare* L. ssp. *depressum* (Meisn.) Arcang.	prostrate knotweed	D
**Rumex crispus* L.	curly dock	N
Solanaceae – Nightshade Family		
**Nicotiana glauca* Graham	tree tobacco	D
MONOCOTYLEDONS		
Arecaceae – Palm Family		
**Syagrus romanzoffiana* (Chamisso) Glassman	queen palm	W
**Washingtonia robusta* H. Wendl.	Mexican fan palm	W
Asparagaceae – Asparagus Family		
**Asparagus aethiopicus* (Kunth) Jessop	asparagus	D
Cyperaceae – Sedge Family		
Cyperus eragrostis Lam.	tall flatsedge	N
Iridaceae – Iris Family		
**Iris* sp.	iris	D
Poaceae – Grass Family		
**Avena barbata* Link	slender wild oat	N, D
**Bromus diandrus* Roth	ripgut grass	N, D
**Bromus madritensis* L. ssp. *rubens* (L.) Husnot	red brome, foxtail chess	N, D
**Cynodon dactylon* (L.)Pers.	Bermuda grass	N, D
**Festuca myuros*	rattail sixweeks grass	N, D
**Festuca perennis* (L.) Columbus & J.P. Sm.	Italian ryegrass	N
**Hordeum murinum*	hare barley	N, D

Scientific Name	Common Name	Habitat
**Paspalum dilatatum* Poir.	Dallis grass	D
**Polypogon monspeliensis* (L.) Desf.	annual beard grass	N
**Stenotaphrum* sp.	Saint Augustine grass	D
**Stipa miliacea* (L.) Hoover var. *miliacea*	smilo grass	D

APPENDIX D. FAUNA SPECIES OBSERVED OR DETECTED WITHIN THE SURVEY AREA[1]

Habitat Types:

N = Non-Native Grassland: Broadleaf Dominated
W = Non-Native Woodland
D = Disturbed Habitat and Urban/Developed
FO = Flyover

* = denotes introduced species

Abundance Codes (birds only):

A = Abundant: Almost always encountered in moderate to large numbers in suitable habitat and the indicated season.

C = Common: Usually encountered in proper habitat at the given season.

U = Uncommon: Infrequently detected in suitable habitat. May occur in small numbers or only locally in the given season.

R = Rare: Applies to species that are found in very low numbers.

"Numbers" indicate the number of individuals observed during the field survey work.

Status Codes (birds only):

M = Migrant: Uses the site for brief periods of time, primarily during the spring and fall months.

R = Year-round resident: Probable breeder on-site or in the vicinity.

S = Spring/summer resident: Probable breeder on-site or in the vicinity unless combined with transient status.

T = Transient: Uses site irregularly in summer but unlikely to breed. Not a true migrant and actual status often poorly known.

W = Winter visitor: Does not breed locally.

V = Casual vagrant: Not expected; out of normal geographic or seasonal range and by definition rare.

Common Name	Scientific Name	Habitat	Abundance	Status
BEES				
Apidae (Honey Bee)				
*Honey bee	*Apis* sp.	N, D	-	-
BUTTERFLIES				
Pieridae (Whites and Sulfurs)				
checkered (common) white	*Pontia protodice*	All	-	-
Lycaenidae (Gossamer-wing Butterflies)				
acmon blue	*Icaricia acmon acmon*	N	-	-
Nymphalidae (Brushfoots)				
mourning cloak	*Nymphalis antiopa*	D	-	-
common buckeye	*Junonia coenia grisea*	D	-	-
monarch	*Danaus plexippus*	D	-	-
REPTILES				
Phrynosomatidae				
western fence lizard	*Sceloporus occidentalis*	D	-	-
sideblotched lizard	*Uta stansburiana*	D, W	-	-
Colubridae (Colubrids)				
gophersnake	*Pituophis catenifer*	D	-	-
BIRDS				
Cathartidae (New World Vultures)				
turkey vulture	*Cathartes aura*	FO	C	T, R
Accipitridae (Kites, Old World Vultures, Eagles, and Hawks)				
Cooper's hawk	*Astur cooperii*	W	C	M, R
red-tailed hawk	*Buteo jamaicensis*	W, FO	C	R, M, W
Columbidae (Doves and Pigeons)				
mourning dove	*Zenaida macroura*	All	C	R
Tytonidae (Bay Owls and Barn Owls)				
western barn owl	*Tyto alba*	D	C	R
Trochilidae (Hummingbirds)				
Anna's hummingbird	*Calypte anna*	D	C	R

Common Name	Scientific Name	Habitat	Abundance	Status
Picidae (Woodpeckers)				
Nuttall's woodpecker	*Dryobates nuttallii*	W	C	R
Falconidae (Caracaras and Falcons)				
American kestrel	*Falco sparverius*	FO	C	R
Tyrannidae (Tyrant Flycatchers and Allies)				
Cassin's kingbird	*Tyrannus vociferans*	D	C	R, M
western kingbird	*Tyrannus verticalis*	D	C	M, S
black phoebe	*Sayornis nigricans*	D	C	R
Corvidae (Crows, Jays, and Magpies)				
American crow	*Corvus brachyrhynchos*	FO	A	R
Troglodytidae (Wrens)				
Bewick's wren	*Thryomanes bewickii*	D	C	R
Sturnidae (Starlings)				
*common starling	*Sturnus vulgaris*	All	A	R
Passerellidae (New World Sparrows)				
song sparrow	*Melospiza melodia*	D	A	R
California towhee	*Melozone crissalis*	D	C	R
spotted towhee	*Pipilo maculates*	W	C	R
Icteridae (New World Blackbirds, Troupials, and Allies)				
hooded oriole	*Icterus cucullatus*	W, D	C	M, S
Fringillidae (Finches, Euphonias, and Allies)				
house finch	*Haemorhous mexicanus*	D	A	R
lesser goldfinch	*Spinus psaltria*	D	C	M, R
MAMMALS				
Sciuridae (Squirrels)				
California ground squirrel	*Spermophilus beecheyi nudipes*	All	-	-
Leporidae (Hares and Rabbits)				
desert cottontail	*Sylvilagus audubonii sanctidiegi*	All	-	-
Molossidae (Free-tailed Bats)				
Mexican free-tailed bat (presumed based on size and flight)	*Tadarida brasiliensis mexicana*	FO	-	-

Common Name	Scientific Name	Habitat	Abundance	Status
Canidae (Coyotes, Dogs, Foxes, Jackals, and Wolves)				
*feral/domestic dog	*Canis familiaris*[1]	D	-	-
coyote	*Canis latrans clepticus*	D	-	-

APPENDIX E. OCCURRENCE OR POTENTIAL OF SPECIAL STATUS SPECIES WITHIN THE BIOLOGICAL SURVEY AREA

Key to abbreviations:

Federal Endangered Species Act (ESA)
FE = Federally-listed as Endangered
FT = Federally-listed as Threatened
FPE = Federally proposed for listing as Endangered
FPT = Federally proposed for listing as Threatened
FPD = Federally proposed for delisting
FC = Federal candidate species
SC = Species of concern
Delisted species are monitored for 5 years
BCC = Birds of Conservation Concern

California Endangered Species Act (CESA)
SE = State-listed as Endangered
ST = State-listed as Threatened
SCE = State candidate for listing as Endangered
SCT = State candidate for listing as Threatened
SCD = State candidate for de-listing
SR = California Rare Species

California Natural Diversity Database (CNDDB)
SP = Special Plant
SA = Special Animal

California Department of Fish and Wildlife (DFW)
SSC = Species of Special Concern
FP = California fully protected species
WL = Watch List

California Rare Plant Rank (CRPR)
List 1A = Plants presumed extinct in California
List 1B = Plants rare, threatened, or endangered in California and elsewhere
List 2 = Plants rare, threatened, or endangered in California, but more common elsewhere
List 3 = Plants about which more information is needed (a review list)
List 4 = Plants of limited distribution (a watch list); Threat level:
0.1-Seriously threatened in California (high degree/immediacy of threat)
0.2-Fairly threatened in California (moderate degree/immediacy of threat)
0.3-Not very threatened in California (low degree/immediacy of threats/ no current threats known)

Multiple Species/Habitat Conservation Program (MSCP)/(MHCP)
NE = Narrow Endemic Species
CS = Covered Species

Vernal Pool Habitat Conservation Plan (VPHCP)
VP = Vernal Pool Species

County of San Diego
Plant List A = Plants rare, threatened or endangered in California and elsewhere
Plant List B = Plants rare, threatened or endangered in California but more common elsewhere
Plant List C = Plants which may be quite rare, but need more information to determine their true rarity
Plant List D = Plants of limited distribution and are uncommon, but not presently rare or endangered
Animal Group 1 = Animals rare, threatened or endangered in California and elsewhere
Animal Group 2 = Animals rare, threatened or endangered in California but more common elsewhere

U.S. Fish and Wildlife Service (USFWS)
BCC = Birds of Conservation Concern

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
PLANTS					
Acanthomintha ilicifolia San Diego thornmint	ESA: FT CESA: SE CNDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A MHCP: NE, CS	Native, annual herb that has a distinctive microhabitat, preferring grassy openings in chaparral or sage scrub on gabbroic substrate with friable or broken clay soils, including vernal pools; ranges in elevation from 10-960 meters (33-3,150 ft); blooming period April-June.	No	Not Expected	Not observed during the 2024 biological investigation. Species preferred soil conditions are not present within the BSA.
Ambrosia pumila San Diego ambrosia	ESA: FE CNDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A MHCP: NE, CS	Native, perennial, rhizomatous herb that prefers creek beds, seasonally dry drainages, and floodplains; usually a protective tree canopy is absent and it grows on the periphery of willow woodland; ranges in elevation from 20-450 m (66-1,476 ft.); blooming period April-October.	No	Not Expected	Not observed during the 2024 biological investigation. No suitable habitat within the BSA or local area.
Baccharis vanessae Encinitas baccharis	ESA: FT CESA: SE CNDDB: SP CRPR 1B.1 MSCP: NE, CS MHCP: NE, CS Cnty of SD List: A	Native, deciduous shrub that prefers mature but relatively low-growing chaparral; at inland locales may be associated with large granitic boulders; blooming period August-November.	No	Not Expected	Not observed during the 2024 biological investigation. No suitable habitat within the BSA.
Berberis nevinii Nevin's barberry	ESA: FE CESA: SE CNDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	Native/CA endemic, evergreen shrub that occurs in sandy/ gravelly areas along the margins of dry washes and coarse soils in chaparral, at elevations ranging from 274-825 meters (898-2,706 ft.); current range extends from the foothills of the San Gabriel Mountains to the foothills of the Santa Ana and Palomar Mountains; blooming period March-June.	No	Not Expected	Not observed during the 2024 biological investigation. No suitable habitat within the BSA.
Brodiaea filifolia thread-leaved brodiaea	ESA: FT CESA: SE	Perennial bulbiferous herb that prefers vernally moist grasslands and the periphery	No	Not Expected	Not observed during the 2024 biological investigation. No suitable

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
	CNDDB: SP CRPR 1B.1 MSCP: NE, CS Cnty of SD List: A	of vernal pools are the typical locales where this species has been found. Species such as *Sisyrinchium bellum* and *Nassella pulchra* may grow nearby; elevation 25-1,220 meters (82-4,000 ft.); blooming period March-June.			habitat within the BSA.
Centromadia (=Hemizonia) parryi ssp. *australis* southern tarplant	CNDDB: SP CRPR 1B.1 Cnty of SD List: A	Native, annual herb that occurs in mesic areas within grasslands, alkaline locales, vernal pools, and salt marsh; blooming period May-November.	No	Low	Not observed during the 2024 biological investigation. Weedy conditions occur within the swale that runs through the project site; however, this species was not detected. Historic record within 2 miles of the BSA but the record is from 1916 (CNDDB record from 1916; record listed as "presumed extant").
Eryngium aristulatum var. *parishii* San Diego button celery	ESA: FE CESA: SE CNDDB: SP CRPR 1B.1 MSCP: NE (City of SD only), CS MHCP: NE VPHCP: VP Cnty of SD List: A	Annual/perennial herb found in vernal pools or vernally moist coastal scrub, valley and foothill grassland adjacent to vernal pools; elevation 20-620 meters (65-2,035 ft.); blooming period April-June.	No	Not Expected	Not observed during the 2024 biological investigation. No suitable habitat within the BSA.
Monardella viminea willowy monardella	ESA: FE CESA: SE CNDDB: SP CRPR 1B.1 MSCP: CS Cnty of SD List: A	Perennial herb found in alluvial ephemeral washes of closed-cone coniferous forest, chaparral, coastal sage scrub, riparian scrub, riparian woodland; elevation 50-225 meters (164-738 ft.); blooming period June-August.	No	Not Expected	Not observed during the 2024 biological investigation. No suitable habitat within the BSA.
INVERTEBRATES					
Bombus pensylvanicus [including *B. sonorus*] American bumble bee	CNDDB: SA	A relatively large bee, the fuzzy black-and-yellow American bumble bee prefers the habitats offered by farmlands and open	No	Moderate	No *Bombus* species were observed during the 2024 biological investigation and none were

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
		fields, where they nest below the grass or underground.			observed during the focused Bumble Bee Surveys conducted in 2025. There are multiple Bumble Bee Watch records for this species from San Diego County but all records are greater than 2 miles away from the BSA; species reported in a variety of areas including urban gardens. Suitable nectar resources are limited within the BSA and frequent vegetation clearing on the project site reduces the potential for nectar resources to persist. Suitable nesting habitat is present throughout the BSA in the form of burrows or small cavities in the soil; however, active use by ground squirrel throughout the project site reduce the potential for bumble bees to use these burrows. Historic record within 2 miles of the BSA (CNDDB record from 1982; record listed as "presumed extant").
Bombus crotchii *Crotch bumble bee*	CESA: SCE CNDDB: SA	The Crotch bumble bee is nearly endemic to California, and historically occupied grasslands and shrublands in southern to central California, with occasional records in the northern portion of the state. Like all bumble bees, the species requires floral resources, and undisturbed nest sites and overwintering sites; primarily nests underground and may rely on sufficient	No	Moderate	No *Bombus* species were observed during the 2024 biological investigation and none were observed during the focused Bumble Bee Surveys conducted in 2025. There are multiple Bumble Bee Watch records for this species from San Diego County but all records

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
		availability of rodent and other animal burrows to provide potential nesting sites. Crotch bumble bees are generalist foragers and have been reported visiting a wide variety of flowering plants. The Crotch bumble bee has a short tongue, and thus is best suited to forage at open flowers with short corollas. The plant families most commonly visited in California include Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, Hydrophyllacae, Asclepiadaceae and Boraginaceae. The flight period for Crotch bumble bee queens in California is from late February to late October. Their flight period peaks in early April and there is a second pulse in July. The flight period for workers and males in California is from late March through September; worker and male abundance peak in early July.			are greater than 2 miles away from the BSA; the closest record is approximately 3.5 miles south of the BSA. Species reported in a variety of areas including urban gardens. Suitable nectar resources are limited within the BSA and frequent vegetation clearing on the project site reduces the potential for nectar resources to persist. However, suitable nectar resources are abundantly present immediately adjacent to the BSA within El Plantio Nursery & Landscaping. Suitable nesting habitat is present throughout the BSA in the form of burrows or small cavities in the soil
Danaus plexippus monarch butterfly	CNDDB: SA Cnty of SD Group: 2	This species occurs throughout North America and migrates to wintering sites in central Mexico and along the California coast generally from August to October (Opler et al. 2006). This butterfly utilizes open habitats including fields, meadows, weedy areas, marshes, and roadsides. Caterpillar host plants include milkweeds (*Asclepius* sp.), and adult nectaring resources include a variety of flowers. In southern California, this butterfly may breed year round.	Yes	Present (individual)	An individual was observed flying through the BSA; the eastern portion of the BSA. However, the BSA does not support suitable habitat for wintering populations of monarch.
Euphydryas editha quino quino checkerspot butterfly	ESA: FE CNDDB: SA	Coastal habitats of sage scrub and chaparral; more inland, can be found in open meadows	No	Not Expected	No suitable habitat within the BSA.

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
	Cnty of SD Group: 1 MSCP: NE (Cnty of SD only)	adjacent to sage scrub, chaparral and oak woodland, as well as juniper woodland and semi-desert scrub; habitats must have open areas with low growing and sparse vegetation; other suitable habitat conditions include dirt trails/roads, especially along hilltops, and clay soils and cryptogrammic crusts, which favor host plant growth; primary caterpillar host plants include *Plantago erecta* at lower elevations and *P. patagonica* and *Antirrhinum coulterianum* at higher elevations; additional host plants may include *Cordylanthus rigidus* and *Castilleja exserta*; adults nectar on low growing annuals; adult flight period typically Mar-Apr, depending on winter rainfall and temperatures.			
AMPHIBIANS					
Anaxyrus californicus (=*Bufo microscaphus californicus*) arroyo toad	ESA: FE CNDDB: SA CDFW: SSC Cnty of SD Group: 1 MSCP: CS South Cnty MSCP: NE	This species utilizes shallow pools, open sand, and gravel flood terraces of intermittent to perennial streams, and may aestivate in adjacent upland communities within approximately 1.2 kilometers.	No	Not Expected	No suitable habitat.
Spea hammondii western spadefoot toad	CNDDB: SA CDFW: SSC Cnty of SD Group: 2 North Cnty MSCP: CS MHCP: CS	Breeding and egg laying occur almost exclusively in shallow, temporary pools formed by heavy winter rains, typically within grassland habitat.	No	Low	No suitable habitat. No evidence of ponding for a period long enough to support breeding including metamorphosis. Historic record within 2 miles of the BSA but the records are from 1929 and 1966 (CNDDB records from 1929 and 1966; records listed as "possibly extirpated" and "presumed extant", respectively).

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
REPTILES					
Anniella stebbinsi Southern California legless lizard	CNDDB: SA CDFW: SSC	Occurs from the coast to desert drainages in southern California and from the coast to the interior foothills in northern Baja California; absent from higher regions. Lives mostly underground, burrowing in loose sandy soil.	No	Low	Preferred habitat conditions and loose sandy soil not present within the BSA. Historic record within 2 miles of the BSA but the record is from 1952 (CNDDB record from 1952; records listed as "presumed extant").
Aspidoscelis hyperythra orange-throated whiptail	CNDDB: SA CDFW: WL Cnty of SD Group: 2 MSCP: CS MHCP: CS	This species is a diurnal reptile from early spring to late summer that prefers washes and other sandy areas with patches of brush and rocks in coastal scrub and chaparral.	No	Low	Preferred habitat conditions are not present within the BSA. Frequent vegetation clearing eliminates sufficient cover. Historic record within 2 miles of the BSA but the record is from 1972 (CNDDB record from 1972; records listed as "possibly extirpated").
Emys (*=Emmys =Clemmys) marmorata pallida* Western (=southern pacific) pond turtle	CDFW: SSC CNDDB: SA Cnty of SD Group: 1 MSCP: NE (Cnty of SD only), CS MHCP: CS	Permanent or nearly permanent bodies of water below 600 ft. Require basking sites such as partially submerged logs, vegetation mats or open mud banks	No	Not Expected	No suitable habitat within the BSA or local area.
Phrynosoma coronatum (*=blainvillii*) coast (San Diego) horned lizard	CNDDB: SA CDFW: SSC Cnty of SD Group: 2 MHCP: CS	This species is endemic to southern California and northern Baja California, Mexico (USFWS 2006). This diurnal lizard occurs in a variety of habitats, including coastal sage scrub, chaparral, grassland, coniferous forest, oak woodland, riparian, and the margins of higher elevation desert, with an abundance of open areas for basking and obtaining prey (i.e., native ants and insects), and loose, fine soils that provide camouflage and allow burrowing for protection from predators.	No	Low	No suitable habitat within the BSA or local area. Frequent vegetation clearing eliminates sufficient cover. Historic record within 2 miles of the BSA but the record is from 1929 (CNDDB record from 1929; record listed as "possibly extirpated").

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
BIRDS					
Accipiter cooperii Cooper's hawk	CNDDB[4]: SA CDFW : WL Cnty of SD Group: 1 MSCP: CS MHCP: CS	Year-round resident of San Diego County that frequently nests in dense stands of live oak, riparian deciduous or other forest habitats located near water and along broken woodland habitat and edges, where it can perch under cover and hunt prey, including amphibians, reptiles, and small birds and mammals.	Yes	Present	Individual observed flying into the cluster of pepper trees along the northern border of the project site during the 2024 biological investigation. No nests detected but there is a potential for this species to nest onsite within the pepper trees.
Agelaius tricolor tricolored blackbird	CDFW: SSC CNDDB[4]: SA Cnty of SD Group: 1 MSCP: NE (North Cnty SD), CS	Year-round resident that nests in colonies preferably in cattail marshes and forages in nearby grassland, pastures or agricultural fields. Breeds from mid-March through July. Wanders nomadically in flocks during the winter but is still often found near nesting sites.	No	Not Expected	No suitable habitat within the BSA or local vicinity. Historic record within 2 miles of the BSA but the record is from 1906 (CNDDB record from 1906; record listed as "possibly extirpated").
Athene cunicularia burrowing owl	CESA: Candidate CNDDB[4, 5]: SA CDFW: SSC MSCP: CS North Cnty MSCP: NE South Cnty MSCP: NE Cnty of SD Group: 1 MHCP: CS USFWS: BCC	Occurs in open dry grasslands, agricultural, rangelands and desert habitats as well as airports, golf courses, and vacant urban lots.	No	Low	There is an abundant population of California ground squirrels and their burrows on the project site. The site could be suitable for burrowing owl use only when the vegetation is low (mowed/maintained). Otherwise, the tall weedy vegetation would not be suitable for nesting or winter use. Based on eBird, burrowing owls have been detected approximately 3.4 miles (or greater) east, during the winter months (October 2022); this bird could have been in transit to the Ramona Grasslands. There are no records of the species occurring within the BSA within recent years (since 1924) and there

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
					was no sign (e.g., owls, feathers, pellets, etc.) of burrowing owl during the 2024 biological investigation. Historic record within 2 miles of the BSA (CNDDB record from 1924; record listed as "presumed extant"). There are no records from iNaturalist within 2 miles of the BSA. The closest iNaturalist record is from 2018 and approximately 7.8 miles west of the site within the San Marcos vernal pool complex off S. Las Posas Road.
Buteo lineatus red-shouldered hawk	Cnty of SD Group: 1	Year-round resident that has adapted to loss of habitat. Once found primarily in riparian woodlands it has expanded into rural residences, eucalyptus woodlands, and orchards.	No	Moderate	Species not observed during the 2024 biological investigation but this species has adapted to urban development and there is a potential for nesting to occur onsite.
Buteo swainsoni Swainson's hawk	CESA: ST CNDDB[4]: SA MSCP: CS Cnty of SD Group[4]: 1 USFWS: BCC	Migrates through the desert in the fall and spring. Can be found staging in open desert, grasslands or cropland containing scattered, large trees or small groves.	No	Not Expected	No suitable nesting habitat within the BSA or local vicinity. Historic record within 2 miles of the BSA but the record is from 1923 (CNDDB record from 1923; record listed as "possibly extirpated").
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	CDFW: SSC CNDDB: SA MSCP: NE (Cnty of SD only), CS MHCP: NE, CS Cnty of SD Group: 1 USFWS: BCC	A year-round resident that occurs in cactus dominated Diegan coastal sage scrub. The cactus wren nests in coast cholla (*Cylindropuntia prolifera*) and prickly pear (*Opuntia littoralis*).	No	Not Expected	No suitable nesting habitat within the BSA or local vicinity. Historic record within 2 miles of the BSA but the record is from 1923 (CNDDB record from 1923; record listed as "possibly extirpated").
Cathartes aura	Cnty of SD Group: 1	Year-round resident, that uses extensive	Yes	Present	An individual turkey vulture was

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
turkey vulture		open areas with protective roost sites provided by large trees, snags, thickets, shrubs. Nests in the crevices of rock outcrops; they typically lay their eggs on bare ground, with little or no construction of an actual nest; hunts from the air or by perch, aided by the sense of smell, and feeds primarily on carrion.			observed flying over the BSA during the 2024 biological investigation. No suitable nesting habitat within the BSA.
Coccyzus americanus occidentalis western yellow-billed cuckoo	ESA: FT CESA: SE CNDDB[4]: SA MSCP: NE (Cnty of SD only) Cnty of SD Group: 1 USFWS: BCC	Occurs in extensive stands of mature riparian woodland; rarely observed in San Diego County area	No	Not Expected	No suitable habitat within the BSA or local vicinity. Historic record within 2 miles of the BSA but the record is from 1932 (CNDDB record from 1932; record listed as "extirpated").
Eremophila alpestris actia California horned lark	CDFW: WL CNDDB: SA Cnty of SD Group: 2	Year-round resident; prefers grasslands, disturbed areas and open habitats with sparse, low vegetation.	No	Moderate	Suitable habitat is present within the BSA only when the vegetation is cut/maintained.
Laterallus jamaicensis coturniculus California black rail	CESA: ST CDFW: FP CNDDB: SA MSCP: NE (Cnty of SD only) Cnty of SD Group: 2 USFWS: BCC	Extirpated from San Diego County in 1954 with only a few vagrants observed since then. Still occurs in Imperial Valley along the Colorado River. Occurs in tidal salt marshes and freshwater marshes.	No	Not Expected	No suitable habitat within the BSA or local vicinity. Historical record within 2 miles of the BSA but the record is from 1907 (CNDDB record from 1907; record listed as "presumed extant").
Plegadis chihi white-faced ibis	CDFW: WL CNDDB[4]: SA MSCP: CS MHCP: CS Cnty of SD Group: 1	Year-round resident with increased numbers during the winter. Nests in freshwater marshes and forages in shallow water and wet grasslands.	No	Not Expected	No suitable habitat within the BSA or local vicinity. Historic record within 2 miles of the BSA but the record is from 1901 (CNDDB record from 1901; record listed as "presumed extant").
Polioptila californica californica coastal California gnatcatcher	ESA: FT CDFW: SSC CNDDB: SA	Year-round resident in coastal areas below 500 m (1,500 ft); prefers coastal sage scrub habitat that is dominated by *Eriogonum*	No	Low	No suitable habitat within the BSA or local vicinity. Historic records within 2 miles of

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
	MSCP: NE (Cnty of SD only); CS MHCP: CS Cnty of SD Group: 1	*fasciculatum* var. *fasciculatum* and *Artemisia californica* as well as open chaparral.			the BSA. CNDDB records from 1928 and 1980 listed as "possibly extirpated" and "presumed extant", respectively. USFWS records within 2 miles of the BSA from 1999, 2006, and 2016; the closest record is approximately one mile south/southeast of the BSA.
Tyto alba barn owl	Cnty of SD Group: 2	Year-round resident that is widespread in coastal lowlands. Occurs in agricultural and residential areas, grasslands, riparian and oak woodlands, and in broken chaparral near sandstone bluffs. Will nest in buildings, base of palm leaves, tree cavities or natural cliff ledges.	Yes	Present	An individual barn owl was observed during the evening survey of the 2024 biological investigation. It was perched on a tree snag within the western portion of the 100-foot mapping buffer and observed foraging within and just beyond the mapping buffer. There is an artificial nest box on the adjacent property; species could nest within the BSA.
Vireo bellii pusillus least Bell's vireo	ESA: FE CESA: SE CNDDB[4]: SA MSCP: NE (Cnty of SD only), CS MHCP: CS Cnty of SD Group: 1	Summer visitor to southern willow scrub habitat and mesquite thickets. Arrives in San Diego County by late March or early April and leaves by the end of September.	No	Not Expected	No suitable habitat within the BSA or local vicinity. Historic record within 2 miles of the BSA. CNDDB record from 1903 and 1930 listed as "presumed extant" and "possibly extirpated", respectively.
MAMMALS					
Antrozous pallidus pallid bat	CNDDB: SA CDFW: SSC North Cnty MSCP: CS East Cnty MSCP draft: CS Cnty of SD Group: 2	Nocturnal bat species that is a yearlong resident throughout California and occurs in a wide variety of habitats, including grasslands, shrublands, woodlands, and forests, but prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, may forage up to 2.5 km (3 mi)	No	Low	An individual bat, expected to be a Mexican free-tailed bat (*Tadarida brasiliensis*) (not sensitive) was observed during the evening survey foraging over the western portion of the BSA. Within the BSA, suitable roosting

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
		from day roost.			habitat for bat species is expected to be limited to palm trees with dead frond skirts; there is only one to two trees onsite that fit this general description. Due to the limited roosting habitat onsite and urban setting, the potential for roosting (or nesting) to occur onsite is expected to be low. Historic record within 2 miles of the BSA (CNDDB record from 1968; record listed as "presumed extant").
Chaetodipus californicus femoralis Dulzura (California) pocket mouse	CNDDB: SA CDFW: SSC Cnty of SD Group: 2	Nocturnal species that occurs in a variety of habitats, including coastal scrub, chaparral and grasslands, typically in brushy areas along grass-chaparral edge.	No	Low	No suitable habitat within the BSA or local area. Historic record within 2 miles of the BSA (CNDDB record from 1953; record listed as "presumed extant").
Corynorhinus townsendii Townsend's western big-eared bat	CDFW: SSC CNDDB: SA Cnty of SD Group: 2	Roosts in caves and abandoned mines but have also been reported to utilize buildings, bridges, rock crevices and hollow trees. Forages in forest/woodland habitats or along habitat edges within 15 km of roost site.	No	Low	Species preferred roosting habitat is not present within the BSA. Historic record within 2 miles of the BSA (CNDDB record from 1932; record listed as "presumed extant").
Lasiurus cinereus hoary bat	CNDDB: SA	This common, solitary species winters along the coast and in southern California, breeding inland and north of the winter range. Habitats suitable for bearing young (and roosting) include all woodlands and forests with medium to large-size trees and dense foliage.	No	Low	Some trees are present within the BSA; however, the habitat is not optimal due to the absence of consistent water source. Historic record within 2 miles of the BSA (CNDDB record from 1966; record listed as "presumed extant").
Lasiurus xanthinus	CNDDB: SA	The western yellow bat is uncommon in	No	Low	Although several Mexican fan palm

Scientific Name **Common Name**	**Sensitivity Codes and Status[1, 2]**	**Habitat Preferences/Requirements[3]**	**Verified In BSA**	**Potential To Occur In BSA**	**Factual Basis for Determination of Occurrence Potential**
western yellow bat	CDFW: SSC	California, known only in Los Angeles and San Bernardino Cos. south to the Mexican border. This species has been recorded below 600 m (2000 ft) in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Feeds on flying insects. Forages over water and among trees. Flight is slow and steady. Capable of rapid flight but fairly maneuverable.			are present within the BSA, the habitat is not optimal due to the absence of consistent water source. Historic record within 2 miles of the BSA (CNDDB record from 1984; record listed as "presumed extant").
Nyctinomops femorosaccus pocketed free-tailed bat	CNDDB: SA CDFW: SSC Cnty of SD Group: 2	Nocturnal species that prefers rocky desert areas with high cliffs or rock outcrops. Habitats used include pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert wash, alkali desert scrub, Joshua tree, and palm oasis.	No	Not Expected	Species preferred roosting habitat is not present within the BSA or local area. Historic record within 2 miles of the BSA (CNDDB record from 1988; record listed as "presumed extant").
Nyctinomops macrotis big free-tailed bat	CNDDB: SA CDFW: SSC Cnty of SD Group: 2	Nocturnal species that prefers rugged, rocky canyons but has been found in urban areas; roosts in buildings, caves, and occasionally holes in trees, and feeds primarily on large moths. Takes a variety of other flying insects as well. Often caught foraging over water sources.	No	Low	Species preferred roosting habitat is not present within the BSA or local area. Historic record within 2 miles of the BSA (CNDDB record from 1988; record listed as "presumed extant").
Taxidea taxus American badger	CNDDB: SA CDFW: SSC MSCP: CS Cnty of SD Group: 2	Nocturnal and diurnal carnivore that is most abundant in drier open stages of most shrub, forest, and herbaceous habitats with friable soils for digging burrows for cover.	No	Low	Species or evidence of presence was not detected during the 2024 biological investigation. Although burrows were identified onsite, they were not appropriately sized burrows for this species. Historic record within 2 miles of the BSA (CNDDB record from unknown date; record listed as "presumed extant").

[1] References for Sensitivity Codes and Status: County 1997, Ogden et al. 1998, AMEC 2003, County 2010, CDFW 2024b – 2024e

[2] California Natural Diversity Database Special Plants/Animals = A general term that refers to all taxa inventoried by the CDFW CNDDB, regardless of their legal or protection status; these taxa include species, subspecies, or varieties that fall into one of the above categories and/or one or more of the following categories: 1) Taxa officially listed or proposed for listing under the federal and/or state ESA; 2) Taxa which meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines, which may include California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) Lists 1 and 2, and some List 3 plants; U.S. Fish and Wildlife Service (USFWS) (S) Species; 3) Taxa considered SSC by the CDFW; 4) Taxa listed by the CNPS; 5) Taxa that are biologically rare, very restricted in distribution, declining throughout their range but are not currently threatened with extirpation, or have a critical, vulnerable stage in their life cycle that warrants monitoring; 6) Populations in California that may be peripheral to the major portion of a taxon's range, but are threatened with extirpation in California; 7) Taxa closely associated with a habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, valley shrubland habitats, vernal pools, etc.); and 8) In addition to the above taxa, those taxa designated as a special status, sensitive, or declining species by other state or federal agencies, or non-governmental organization (NGO) [e.g., The World Conservation Union (IUCN) Conservation Dependent (CD), Critically Endangered (CR), Data Deficient (DD), Endangered (EN), Least Concern (LC), Near Threatened (NT), Vulnerable (V) species; California Department of Forestry and Fire Protection (CDF) Sensitive (S) species; National Marine Fisheries Service (NMFS) Species of Concern (SC); American Fisheries Society (AFS) Endangered (EN), Threatened (TH), Vulnerable (VU) species; Xerces Society (XERCES) Critically Imperiled (CI), Data Deficient (DD), Imperiled (IM), Vulnerable (VU) invertebrate species; USFWS Birds of Conservation Concern (BCC); American Bird Conservancy (ABC) U.S. Watch List of Birds of Conservation Concern (WLBCC); Marine Mammal Commission (MMC) Marine Mammal Species of Special Concern (SSC); and The Western Bat Working Group (WBWG) High (H), Low-Medium (LP), Medium (M), Medium-High (MH) Priority species].

[3] References for Habitat Preferences/Requirements: (plants) Reiser 2001, CNPS 2024; (butterflies) Faulkner and Klein 2004, Opler 2024, CDFW 2023; (amphibians and reptiles) Stebbins 2003, CDFW 2010; (birds) Birds of the World 2022 and CDFW 2010; (mammals) CDFW 2016.

[4] CNDDB only tracks the nesting locations of these bird species; the location of the nest or any indication of breeding (i.e., territorial males, adults carrying nest material, adults carrying food, the presence of newly fledged young, etc.) is acceptable evidence of nesting. County of San Diego listing is for breeding populations only.

[5] CNDDB only tracks the wintering range of these bird species. County of San Diego listing is for wintering populations only.

REFERENCES

AMEC Earth & Environmental, Inc., Conservation Biology Institute, Onaka Planning & Economics, and The Rick Alexander Company. 2003a. Volume I, Final MHCP Plan. Prepared for the Multiple Habitat Conservation Program. Administered by SANDAG for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. 9 Sections + Attachments A and B.

Birds of the World. 2022. Edited by S. M. Billerman, B. K. Keeney, P. G. Rodewald, and T. S. Schulenberg. Cornell Laboratory of Ornithology, Ithaca, NY, USA. On-line Subscription. Available from: https://birdsoftheworld.org/bow/home

California Department of Fish and Wildlife (CDFW). 2016. Life History Accounts and Range Maps [Internet]. California Wildlife Habitat Relationships System. Edited by Zeiner DC, et al. 1988-1990, updated. Available from: https://map.dfg.ca.gov/imaps/cwhr/cwhrlife.html

_____. 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species.

_____. 2024b October. State and Federally Listed Endangered & Threatened Animals of California [Internet]. Natural Diversity Database. Available from: https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2024c October. State and Federally Listed Endangered & Threatened Plants of California [Internet]. Natural Diversity Database. Available from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2024d October. Special Vascular Plants, Bryophytes, and Lichens List [Internet]. Natural Diversity Database. Quarterly publication. Available from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

_____. 2024e October. Special Animals [Internet]. Natural Diversity Database. Available from: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals

California Native Plant Society (CNPS). 2024. Inventory of Rare and Endangered Plants (on-line edition) [Internet]. California Native Plant Society. Sacramento, CA. Available from: http://www.rareplants.cnps.org/.

County of San Diego. 1997. South County MSCP Subarea Plan. 4 Sections + appendices. Prepared in conjunction with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Available from: http://dplu-mscp.sdcounty.ca.gov//4_sub_ar_pl/4_sbarpl.html.

_____. 2010 Sep 15. Guidelines for Determining Significance and Report Format and Content Requirements [for] Biological Resources, Fourth Revision [Internet]. Land Use and Environment Group; Department of Planning and Land Use; Department of Public Works. 33pp. + Attachments A through C Available from: http://www.sdcounty.ca.gov/dplu/docs/Biological_Guidelines.pdf.

eBird. 2024. San Diego County, CA. eBird - Cornell Lab of Ornithology. Accessed 2024.

Faulkner, D., and M. Klein. 2004. San Diego's Sensitive Butterflies, A Workshop Focusing on Nine Local Species. 60 pp.

Ogden, in conjunction with the Resource Agencies, Local Jurisdictions, and members of environmental, building and development communities [Internet]. 1998. Final Multiple Species Conservation Program MSCP Plan. 8 sections + attachments. Available from: http://dplu-mscp.sdcounty.ca.gov//2_bmo/2FinalMSCPProgramPlan.pdf.

Opler, P.A., K. Lotts, T. Naberhaus, coordinators. 2024. Butterflies and Moths of North America [Internet]. Bozeman, MT: Big Sky Institute. Available from: http://www.butterfliesandmoths.org/.

Reiser, C.H. 2001 February. Rare Plants of San Diego County. Aquafir Press. 2001 edition. 299 pp.

Stebbins, R.C. 2003. Peterson Field Guide: Western Reptiles and Amphibians. 3rd Edition.

Appendix F. CNDDB Records Search within 2 miles of the Biological Study Area (July 2024)

Scientific Name	Common Name	Key Quad Name	Accuracy	Presence	Site Date	Owner Management	Federal Status	State Status	Rare Plant Rank	CDFW Status	Other Status	Taxon Group	Project Survey Area
Spea hammondii	western spadefoot	Escondido	1 mile	Presumed Extant	19660507	UNKNOWN	Proposed Threatened	None		SSC	BLM_S; IUCN_NT	Amphibians	No
Spea hammondii	western spadefoot	Escondido	1 mile	Possibly Extirpated	19290613	UNKNOWN	Proposed Threatened	None		SSC	BLM_S; IUCN_NT	Amphibians	Yes
Agelaius tricolor	tricolored blackbird	Escondido	5 miles	Possibly Extirpated	1906XXXX	UNKNOWN	None	Threatened		SSC	BLM_S; IUCN_EN; USFWS_BCC	Birds	Yes
Athene cunicularia	burrowing owl	Escondido	1 mile	Presumed Extant	19240510	UNKNOWN	None	None		SSC	BLM_S; IUCN_LC; USFWS_BCC	Birds	Yes
Buteo swainsoni	Swainson's hawk	Escondido	1 mile	Possibly Extirpated	19230422	UNKNOWN	None	Threatened			BLM_S; IUCN_LC	Birds	Yes
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	Escondido	2/5 mile	Possibly Extirpated	19900420	UNKNOWN	None	None		SSC	USFS_S; USFWS_BCC	Birds	No
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	Escondido	1/5 mile	Presumed Extant	19900420	UNKNOWN	None	None		SSC	USFS_S; USFWS_BCC	Birds	No
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Escondido	1 mile	Extirpated	19320702	UNKNOWN	Threatened	Endangered			BLM_S; USFS_S	Birds	Yes
Laterallus jamaicensis coturniculus	California black rail	Escondido	1 mile	Presumed Extant	1907XXXX	UNKNOWN	None	Threatened		FP	BLM_S; IUCN_EN	Birds	Yes
Plegadis chihi	white-faced ibis	Escondido	1 mile	Presumed Extant	1901XXXX	UNKNOWN	None	None		WL	IUCN_LC	Birds	Yes
Polioptila californica californica	coastal California gnatcatcher	Escondido	1 mile	Possibly Extirpated	19280510	UNKNOWN	Threatened	None		SSC		Birds	Yes
Polioptila californica californica	coastal California gnatcatcher	Escondido	1/5 mile	Presumed Extant	1980XXXX	UNKNOWN	Threatened	None		SSC		Birds	No
Polioptila californica californica	coastal California gnatcatcher	Escondido	1/5 mile	Presumed Extant	1980XXXX	UNKNOWN	Threatened	None		SSC		Birds	No
Vireo bellii pusillus	least Bell's vireo	Valley Center	1 mile	Presumed Extant	19030406	UNKNOWN	Endangered	Endangered				Birds	No
Vireo bellii pusillus	least Bell's vireo	Escondido	1 mile	Possibly Extirpated	19300528	CITY OF ESCONDIDO	Endangered	Endangered				Birds	Yes
Centromadia parryi ssp. australis	southern tarplant	Escondido	1 mile	Presumed Extant	19160813	UNKNOWN	None	None	1B.1		SB_CalBG/RSABG; SB_CRES; SB	Dicots	Yes
Bombus pensylvanicus	American bumble bee	Escondido	1 mile	Presumed Extant	19820729	UNKNOWN	None	None			IUCN_VU	Insects	Yes
Antrozous pallidus	pallid bat	Escondido	1 mile	Presumed Extant	19680417	UNKNOWN	None	None		SSC	BLM_S; IUCN_LC; USFS_S	Mammals	Yes
Chaetodipus californicus femoralis	Dulzura pocket mouse	Valley Center	1 mile	Presumed Extant	19531114	UNKNOWN	None	None				Mammals	No
Chaetodipus californicus femoralis	Dulzura pocket mouse	Escondido	1 mile	Presumed Extant	19610825	UNKNOWN	None	None				Mammals	Yes
Corynorhinus townsendii	Townsend's big-eared bat	Escondido	1 mile	Presumed Extant	19320305	UNKNOWN	None	None		SSC	BLM_S; IUCN_LC; USFS_S	Mammals	Yes
Lasiurus cinereus	hoary bat	Escondido	1 mile	Presumed Extant	19661204	UNKNOWN	None	None			IUCN_LC	Mammals	Yes
Lasiurus xanthinus	western yellow bat	Escondido	1 mile	Presumed Extant	19840224	UNKNOWN	None	None		SSC	IUCN_LC	Mammals	Yes
Nyctinomops femorosaccus	pocketed free-tailed bat	Escondido	1 mile	Presumed Extant	19881010	UNKNOWN	None	None		SSC	IUCN_LC	Mammals	Yes
Nyctinomops macrotis	big free-tailed bat	Escondido	1 mile	Presumed Extant	19881206	UNKNOWN	None	None		SSC	IUCN_LC	Mammals	Yes
Taxidea taxus	American badger	Escondido	1 mile	Presumed Extant	XXXXXXXX	UNKNOWN	None	None		SSC	IUCN_LC	Mammals	Yes
Anniella stebbinsi	Southern California legless lizard	Escondido	1 mile	Presumed Extant	19520415	UNKNOWN	None	None		SSC	USFS_S	Reptiles	Yes
Aspidoscelis hyperythra	orange-throated whiptail	Escondido	1 mile	Possibly Extirpated	197211XX	UNKNOWN	None	None		WL	IUCN_LC; USFS_S	Reptiles	Yes
Phrynosoma blainvillii	coast horned lizard	Escondido	1 mile	Possibly Extirpated	19290613	UNKNOWN	None	None		SSC	BLM_S; IUCN_LC	Reptiles	Yes
Southern Riparian Forest	Southern Riparian Forest	Escondido	specific area	Presumed Extant	1986XXXX	UNKNOWN	None	None				Riparian	No

Appendix G. USFWS Records Search within 2 miles of the Biological Study Area (July 2024)

Scientific Name	Common Name	Species	Survey Date	Surveyor	Doc Source	Site Name	Location	Accuracy	Project Survey Area
Polioptila californica californica	coastal California gnatcatcher	CAGN	19991102	QUON L./BEYER K./PRINE J./HOLLAND C.	KEA ENVIRONMENTAL INC.	KIT CARSON PARK	ESCONDIDO	Within a 2 km diameter	No
Polioptila californica californica	coastal California gnatcatcher	CAGN	20060515	SCHEIDT V./ALLEN S.	VINCENT N. SCHEIDT	SUN PROPERTY	SAN DIEGO COUNT	Within a 160 m diameter	No
Polioptila californica californica	coastal California gnatcatcher	CAGN	20160825	HUMPHREY R./MOLIOO T./BENNETT A.	ESA	PHASE 1 AGRICULTURAL REUSE AND SALT REDUCTION PROJECT	CITY OF ESCONDID	Within a 160 m diameter	No
Polioptila californica californica	coastal California gnatcatcher	CAGN	20160825	HUMPHREY R./MOLIOO T./BENNETT A.	ESA	PHASE 1 AGRICULTURAL REUSE AND SALT REDUCTION PROJECT	CITY OF ESCONDID	Within a 160 m diameter	No
Polioptila californica californica	coastal California gnatcatcher	CAGN	20160825	HUMPHREY R./MOLIOO T./BENNETT A.	ESA	PHASE 1 AGRICULTURAL REUSE AND SALT REDUCTION PROJECT	CITY OF ESCONDID	Within a 160 m diameter	No

APPENDIX H. 2025 FOCUSED CROTCH'S BUMBLE BEE SURVEY REPORT FOR THE PASQUAL HEIGHTS PROJECT

Merkel & Associates, Inc.
5434 Ruffin Road, San Diego, CA 92123
Tel: 858/560-5465 • Fax: 858/560-7779
e-mail: associates@merkelinc.com

July 18, 2025
M&A #24-040-01

Mr. Kerry Garza
Touchstone Communities
9815 Mira Mesa Boulevard
San Diego, CA 92131

Re: 2025 Focused Crotch's Bumble Bee Survey Report for the Pasqual Heights Project, Unincorporated San Diego County, California

Dear Mr. Garza:

SUMMARY

Merkel & Associates, Inc. conducted a habitat assessment and three focused surveys between June and July 2025 for Crotch's bumble bee (*Bombus crotchii*), for the purpose of determining the presence or absence of this species on the Pasqual Heights Project site. The surveys were conducted in accordance with the California Department of Fish and Wildlife *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (2023). No Crotch's bumble bee or other bumble bee species were detected within the survey area.

INTRODUCTION

On behalf of Touchstone Communities, Merkel & Associates, Inc. (M&A) conducted a habitat assessment and three focused surveys for Crotch's bumble bee (*Bombus crotchii*), a candidate species under the California Endangered Species Act (CESA), for the purpose of determining the presence or absence of this species on the Pasqual Heights Project site. The surveys were conducted in accordance with the California Department of Fish and Wildlife (CDFW) *Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species* (2023) (hereafter referred to as the *Survey Guidelines*) which also recommends reporting all results to CDFW. All figures referenced within this report are included as Appendix A. Site photographs are included as Appendix B.

The approximate 10.74-acre Project site is located on private property at 830 Idaho Avenue within the City of Escondido (Assessors Parcel Number 234-160-25), in an unincorporated area of San Diego County (Figure 1). The property is located within unsectioned lands, Township 12 South, Range 2 West of the San Bernardino Base and Meridian; U.S. Geological Survey (USGS) Valley Center, California Quadrangle (Figure 2). The latitude and longitude of the approximate center of the Project site is 33.115667, -117.060517.

The property is regionally located within a transition area of dense development to the north, west, and south, and less dense rural development to the east. It is immediately surrounded by rural residential development and is located on an east facing hillside. A single-family residence is located near the upper portion of the hillside, in the southwestern corner of the property off Idaho Avenue. A dirt parking lot, authorized by the property owner for use by El Plantio Nursery & Landscaping staff, is situated along the eastern edge of the property, at the bottom of the hillside, off San

Pasqual Valley Road. The remaining portion of the property is vacant. Based on a review of historic aerials (Historic Aerials 2024, Google Earth 2024), the property was historically (available imagery 1947 – 1980's) used for orchard, row crops or similar agriculture use on a rotating schedule with either the western or eastern portion of the property planted. This is consistent with similar agriculture practices of the area during this period. Since approximately 1989, the site has been devoid of most tall vegetation and maintained on a regular basis, by mowing, light discing, or similar activity. The purpose of the maintenance is to reduce fuel load and deter unauthorized access onto the site (Touchstone Communities pers. comm. 2024).

The Project proposes to remove the existing single-family home and construct a new residential development on the parcel. Construction is expected to occur immediately upon acquisition of all project approvals; construction is tentatively scheduled for 2026.

CROTCH'S BUMBLE BEE

Crotch's bumble bee is one of several candidate bumble bee species for listing under CESA. Of the species under consideration, only Crotch's bumble bee occurs in San Diego County. Crotch's bumble bee is generally distributed throughout wildlands and rural areas at low to middle elevations (i.e., sea level to at least 6,000 feet) in California and exploits a wide range of habitats including native and exotic grasslands, coastal marshes, scrub and chaparral, oak-juniper woodlands, pinon woodlands, and desert transition vegetation (on western margins of the Mojave and Colorado deserts). However, there are records of Crotch's bumble bee within urban sites as well.

Bumble bees including the Crotch's bumble bee are generalist foragers and have been reported visiting a wide variety of flowering plants to feed on pollen and nectar resources (Xerces Society 2018, Koch et al. 2012). Crotch's bumble bee has a short tongue and thus may be best suited to forage at open flowers with short corollas. The plant families most commonly associated with Crotch bumble bee sightings in California include but are not limited to Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, Hydrophyllacae, Asclepiadaceae, and Boraginaceae (Thorp et al. 1983). Example plant genera that the Crotch's bumble bee have been reported to feed on include but are not limited to milkweed (*Asclepias* spp.), phacelia (*Phacelia* spp.), and sage (*Salvia* spp.) (Williams et al. 2014) as well as snapdragon (*Antirrhinum* spp.), clarkia (*Clarkia* spp.), bush poppy (*Dendromecon* spp.), poppy (*Eschscholzia* including *E. californica*), and buckwheat (*Eriogonum* spp.) (Koch et al. 2012).

Community science platforms such as Bumble Bee Watch and iNaturalist also provide a space for collaborative efforts to track bumble bee records. Example plant species that Crotch's bumble bee have been reported to feed on per verified Bumble Bee Watch records spanning 2017 to 2025 include (by Family): Fabaceae – vetch (*Vicia villosa*), deerweed (*Acmispon glaber*), and *Robinia pseudoacacia*; Apocynaceae – kotolo milkweed (*Asclepias eriocarpa*); Asteraceae – everlasting (*Pseudognaphalium* sp.); Lamiaceae – black sage (*Salvia mellifera*), white sage (*Salvia apiana*), Cleveland sage (*Salvia clevelandii*), Salvia "Pozo Blue' (hybrid of *S. clevelandii* and *S. leucophylla*), and lobster bush (*Plectranthus neochilus*); Plantaginaceae – keckiella (*Keckiella antirrhinoides*); Polygonaceae – California buckwheat (*Eriogonum fasciculatum*); Orobanchaceae – bird's beak (*Cordylanthus rigidus*); and Scrophulariaceae – butterfly bush (*Buddleja* sp.) (Bumble Bee Watch 2025a).

Queens emerge first, in the late winter/early spring (approx. February) to establish a colony. Nesting occurs primarily underground, often in abandoned holes made by rodents or occasionally abandoned bird nests or other cavities (e.g., brush piles, rock piles, fallen logs, holes in building foundations, rubble or abandoned furniture, etc.) typical of most bumble bee species (Xerces Society 2018; Osborne et al. 2008; Koch et al. 2012; CDFW 2023). As the spring season progresses, workers (small female non-reproductive bees) are produced with increasing numbers and escalate the provisioning of the colony, which continues to grow until early to mid-summer when new males are produced along with the new generation of future queens (gynes). Workers and males live for only a few weeks while the queen generally dies at the end of the season. Mated gynes (future founding queens) overwinter in soil cavities (Xerces 2023; CDFW 2023) and emerge in the late winter/early spring to begin new colonies, provisioning their young with pollen and nectar.

METHODS

Historical and currently available biological literature and data pertaining to the Project area were reviewed prior to initiation of the field investigation. This review included examination of CDFW California Natural Diversity Database (CNDDB) special status bumble bee records for the project vicinity (CDFW 2025) as well as community science data of special status bumble bees for the Project vicinity (i.e., iNaturalist 2025, Research Grade only; Bumble Bee Watch 2025a, Pending and Research Grade).

M&A conducted the initial habitat assessment for Crotch's bumble bee on June 7, 2024, during the initial biological investigation and habitat mapping effort for the proposed Project (M&A 2024). During this initial investigation, the site was mapped predominantly as disturbed habitat, with some areas of non-native grassland: broadleaf-dominated, urban/developed, and non-native woodland, with most of the site maintained (i.e., mowed and/or disced) to reduce fuel load. It was determined at that time, that there was a low to moderate potential for Crotch's bumble bee to forage onsite due to the limited foraging resources and more importantly very few example plant species that Crotch's bumble bee have been reported to feed. Specifically, suitable foraging habitat for these species was limited to an area along the property fence line in the northwestern portion of the site. This area (totaling <0.01 acre) includes individual coastal California buckwheat (*Eriogonum fasciculatum* var. *fasciculatum*) and white sage (*Salvia apiana*). Suitable habitat also occurred in areas of the non-native grassland and disturbed habitat where other potential nectar resources were present. The 2024 report also evaluated the potential presence for American bumble bee (*Bombus pensylvanicus* [including *B. sonorous*]. *Bombus pensylvanicus* is a CNDDB Special Animal. Per Bumble Bee Watch (2025b), Sonoran bumble bee (*B. sonorous*) may be a subspecies of *B. pensylvanicus* but more taxonomic research is needed; thus, for purposes of this report, we have assumed that the species of bumble bee in San Diego County could be called either name, *B. pensylvanicus* or *B. sonorous*. The potential for this species of bumble bee to forage onsite was also determined to be low to moderate.

As part of the ongoing 2025 investigation, M&A conducted a ground-truthing survey on June 12, 2025, and confirmed that nectar resources, though sporadic, are still present throughout portions of the survey area.

M&A conducted three focused surveys for Crotch's bumble bee within the survey area between June and July 2025 (Table 1). The surveys were conducted by qualified biologists in accordance with CDFW's *Survey Guidelines* which recommends that surveys occur at least two weeks apart during the Colony Active Period (i.e., April – August). Surveys were conducted on-foot, during the day, at least one hour after sunrise and at least two hours before sunset. They were conducted during optimal conditions when there was sunny to partly sunny skies with temperatures that were greater than 65° Fahrenheit and low wind (sustained winds less than 8 miles per hour). Suitable floral resource habitat was identified within the survey area. For each survey, the floral resources were evaluated and visually surveyed with the aid of binoculars, at the estimated rate of one person-hour of searching per approximately three acres of suitable habitat.

Biologists walked meandering transects through the project site. Biologists paused and focused survey effort where suitable habitat was present, with a goal of observing bumble bees in passing, foraging on nectar resources, and/or observing bumble bee nest sites associated with small mammal burrows. Only photographs were taken to verify species presence. No capture, netting, or collection of bumble bees occurred. A portion of the survey area extended offsite into the 100-foot buffer; this offsite area was evaluated from the edge of the Project site as well as from public right-of-way, aided by binoculars.

Please note that Survey #1 included discussions with a long-time employee at El Plantio Nursery regarding the potential presence of bumble bees in the nursey, as well as an inspection of the publicly accessible nursery area.

Table 1. Survey Dates, Times, and Conditions

Survey No.	Date	Time	Approx. Acres per Hour/Day[1]	Biologist	Conditions (cloud cover, temperature, wind speed from start-end)
1	2025 June 12	1210–1342[2]	2 per hour/ 3 per day	Amanda Gonzales	0%–0% cloud cover, 2–4 mph wind, 78°–78° F
2	2025 June 26	0900–1000	3 per hour/ 3 per day	Brandon Stidum	100%–20% cloud cover, 2–7 mph wind, 64°–73° F
3	2025 July 10	0900–1015	2.4 per hour/ 3 per day	Brandon Stidum	0%–0% cloud cover, 0–3 mph wind, 76°–82° F

[1] Approximate acres of suitable Crotch's bumble bee habitat.

[2] Ms. Gonzales remained onsite from approximately 1342-1500 to conduct a ground-truthing survey and walk the publicly accessible El Plantio Nursey area.

RESULTS

Literature Search

There are no records of Crotch's bumble bee within two miles of the survey area in either CNDDB or Bumble Bee Watch. Of the two databases, the closest records are from Bumble Bee Watch: approximately 3.4 miles to the south (April 22, 2021, verified sighting in an urban setting on a black locust tree, female), 5.4 miles to the west (June 16, 2024, verified sighting on black sage, female),

and 6.5 miles to the west (June 21, 2024, verified sighting on black sage, female) (Bumble Bee Watch 2025a). iNaturalist lists two records from July 2024, both male Crotch's bumble bee on coastal California buckwheat within the two-mile buffer. However, both records are marked as "obscured", meaning their locations are only accurate within approximately 18 miles of the obscured coordinate. The closest "open" record for Crotch's bumble bee is approximately 2.1 miles to the west (August 5, 2024, male in an urban setting) (iNaturalist 2025).

There are no records of the American bumble bee within two miles of the survey area; most Bumble Bee Watch and iNaturalist records for this species are located along the coast, at least 10 miles to the west of the survey area.

Habitat Assessment

Overall, the survey area supports approximately 3.0 acres of suitable bumble bee habitat. This is comprised of areas mapped as non-native grassland, non-native woodland, disturbed habitat, and urban/developed, all of which support a low percentage of foraging resources (Figure 3). Below is a brief description of the vegetation communities.

Non-native grassland: broadleaf-dominated has been mapped for the eastern portion of the Project parcel, between the base of the hillside and the dirt parking lot. This area also corresponds to the portion of the property previously used as a potential staging area and/or debris dump site. The non-native grassland community supports a relatively high percentage of both non-native grasses, broad-leaved non-native forbs, and to a slightly lesser extent, native annual forbs. Dominant non-native grasses and forbs included slender wild oat (*Avena barbata*), Italian ryegrass (*Festuca perennis*), rattail sixweeks grass (*Festuca myuros*), red brome (*Bromus madritensis* ssp. *rubens*), summer field mustard (*Hirschfeldia incana*), field mustard (*Brassica rapa*), tocalote (*Centaurea melitensis*), sourclover (*Melilotus indicus*), curly dock (*Rumex crispus*) and stinkwort (*Dittrichia graveolens*). Other non-native forbs present include mayweed (*Anthemis cotula*), scarlet pimpernel (*Lysimachia arvensis*), and Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*). Native forbs present in the area include American bird's-foot trefoil (*Acmispon americanus* var. *americanus*), western ragweed (*Ambrosia psilostachya*), alkali heliotrope (*Heliotropium curassavicum*) along with an individual California poppy.

Non-native woodland has been mapped for the individual or clustered groups of non-native trees or shrubs. This includes but is not limited to pepper tree (*Schinus molle*), eucalyptus (*Eucalyptus* sp.), castor bean (*Ricinus communis*), Mexican fan palm (*Washingtonia robusta*), acacia (*Acacia* sp.), and non-native ornamentals.

Disturbed habitat has been mapped for most of the western portion of the property as well as the dirt lot off San Pasqual Valley Road. While the entire property appears to receive annual weed abatement via mowing, the western portion of the site appears to be lightly disced (or similar), which has resulted in large patches of bare ground and/or a different, more sporadic vegetative growth pattern versus the eastern portion of the site. Where vegetation was present, non-native forbs were dominant and included summer field mustard, scarlet pimpernel, stinkwort, tocalote, and horehound (*Marrubium vulgare*). Native plants including coastal California buckwheat are sporadically present throughout the western portion of the site (very few individuals); however, they are primarily low-growing and stunted due to the regular maintenance activities. In addition to

several sporadic native plants, there is a small linear row of native plants along the property fence line in the northwest corner of the site, within an area of approximately <0.01 acre. This area includes several coastal California buckwheat and white sage plants intermixed with ornamental cactus (likely planted), including silver dollar prickly-pear (*Opuntia robusta*).

Urban/development has been mapped for the single-family residence and the surrounding urban use (e.g., parking lot, immediate back and side yard, etc.) on the property. Urban/development has also been mapped for most of the 100-foot mapping buffer. This includes paved roads, landscaping associated with the Escondido Christian Church on the south side of Idaho Avenue, El Plantio Nursery, vegetation along the private road to the north of the project property, and residential lots.

Approximately 20% of the survey area had flowering resources available for nectaring. However, of this percentage, the known preferred nectar sources for Crotch's bumble bee was approximately less than 5%. Flowering plant species were recorded during each survey, and the results are presented in Table 2. Annual maintenance of the onsite property occurred just prior to Survey No. 3.

Table 2. Flowering Plant Species Observed During Focused Surveys within the Survey Area

Family	Scientific Name*	Common Name	Survey #[1]
DICOTYLEDONS			
Aizoaceae	*Carpobrotus chilensis**	sea fig	1, 2
Anacardiaceae	*Schinus molle**	pepper tree	3
Asteraceae[2]	*Anthemis cotula**	mayweed	1, 2
	*Centaurea melitensis**	tocalote, Maltese star-thistle	1
	Deinandra fasciculata	fascicled tarplant	1
	*Glebionis coronaria**	garland, crown daisy	1
	*Hedypnois rhagadioloides**	Crete weed	1
	*Oncosiphon piluliferum**	stinknet	1, 3
	*Sonchus oleraceus**	common sow thistle	1
Boraginaceae[2]	*Echium candicans**	pride of Madeira	1, 2
	Heliotropium curassavicum	seaside or alkali heliotrope	1
Brassicaceae	*Hirschfeldia incana**	summer field mustard	1, 2, 3
	*Lobularia maritima**	common sweet alyssum	1, 2
	*Raphanus sativus**	radish	1, 2
Cactaceae	*Opuntia ficus-indica**	mission prickly-pear	1, 2
	*Opuntia robusta**	silver dollar prickly-pear	1,2
Convolvulacea	*Calystegia macrostegia*	Southern California morning-glory	1
Fabaceae[2]	*Acmispon americanus* var. *americanus*	American bird's-foot trefoil	1
	*Erythrostemon mexicanus**	Mexican holdback	1

Family	Scientific Name*	Common Name	Survey #[1]
	Medicago sp.*	burclover	1
	*Parkinsonia aculeata**	Mexican palo verde	1, 2
Geraniaceae	*Erodium cicutarium**	red-stem filaree	1, 2
	*Erodium moschatum**	green-stem filaree	1, 2
Juglandaceae	*Carya illinoinensis**	Pecan	1
Lamiaceae[2]	***Salvia[3] apiana***	**white sage**	**1, 2**
Myrsinaceae	*Lysimachia arvensis**	scarlet pimpernel	1, 2, 3
Myrtaceae	*Eucalyptus citriodora**	lemon scented gum	1
	*Eucalyptus sideroxylon**	red-iron bark	1
Onagraceae[2]	*Camissoniopsis hirtella*	hairy sun cup	1
	*Gaura lindheimeri**	pink gaura	1
	Oenothera speciosa	Mexican evening-primrose	1
Papaveraceae[2]	*Eschscholzia californica*	California poppy	1
Polygonaceae[2]	***Eriogonum[3] fasciculatum* var. *fasciculatum***	**coastal California buckwheat**	**1, 2, 3**
	*Rumex crispus**	curly dock	1
Solanaceae	*Nicotiana glauca**	tree tobacco	1, 3
MONOCOTYLEDONS			
Arecaceae	*Syagrus romanzoffiana**	queen palm	1
	*Washingtonia robusta**	Mexican fan palm	1
Asparagaceae	*Asparagus aethiopicus**	asparagus	1
Iridaceae	*Iris* sp.*	iris	1
Poaceae	*Avena barbata**	slender wild oat	1
	*Bromus diandrus**	ripgut grass	1
	*Cynodon dactylon**	Bermuda grass	1
	*Ehrharta erecta**	panic veldt grass	1
	*Festuca perennis**	Italian ryegrass	1
	*Hordeum murinum**	hare barley	1
	*Paspalum dilatatum**	dallis grass	1
	Stenotaphrum sp.*	Saint Augustine grass	1
	Stipa miliacea var. *miliacea**	smilo grass	1

* Non-native species.

[1] Bumble bee focused survey # during which observation of flowering species took place.

[2] Example plant families commonly associated with Crotch bumble bee sightings (Thorp et al. 1983 and Koch et al. 2012).

[3] Example plant genera that Crotch's bumble bee have been reported to feed on per verified Bumble Bee Watch records spanning 2017 to 2025 (Bumble Bee Watch 2025).

Suitable nesting substrate for Crotch's bumble bee was observed within the Project site, including leaf litter beneath some of the non-native trees and bare ground in areas that have been maintained. An active California ground squirrel (*Otospermophilus beecheyi*) population is also

present, and their burrows could provide suitable nesting opportunities. However, because most of the burrows are actively used by squirrels, it is unlikely that bumble bees would occupy them. In addition, ongoing vegetation maintenance across the site is expected to further reduce nesting potential.

Focused Surveys

Bee species observed during the survey effort were limited to honey bee (*Apis mellifera*). No *Bombus* species were observed within the survey area nor were any observed within El Plantio Nursey. Crotch's bumble bee or Crotch's bumble bee nests were not detected during the survey effort and are presumed to be absent from the Project site. Similarly, American bumble bee and/or their nests were not detected during the survey effort and are presumed to be absent.

If you have any questions concerning this report, please do not hesitate to contact me at (858) 560-5465 or agonzales@merkelinc.com.

Sincerely,

Amanda K. Gonzales
Associate Principal/Project Manager

Brandon L. Stidum
Senior Biologist

Keith W. Merkel
Principal Consultant

Appendix A. Figures
Appendix B. Site Photographs

REFERENCES

Bumble Bee Watch. 2025a. The Xerces Society, Wildlife Preservation Canada, York University, University of Ottawa, The Montreal Insectarium, The London Natural History Museum, BeeSpotter. Data accessed from Bumble Bee Watch, a collaborative website to track and conserve North America's bumble bees. Available from http://www.bumblebeewatch.org/app/#/bees/lists. Accessed: 2025.

_____. 2025b. Bombus pensylvanicus is a CNDDB Special Animal. Per Bumble Bee Watch dataset and per e-mail coordination with Mr. Leif Richardson in July 2025, Bombus sonorous may be a subspecies of Bombus pensylvanicus. However, additional taxonomic research is needed. For purposes of this report, we have assumed that the bumble bee in San Diego County could be called either name, Bombus pensylvanicus or Bombus sonorous.

California Department of Fish and Wildlife (CDFW). 2023. Survey Considerations for California Endangered Species Act (CESA) Candidate Bumble Bee Species. June 6, 2023. 14pp. Available from: https://wildlife.ca.gov/Conservation/Survey-Protocols377281281-invertebrates.

_____. 2025. California Natural Diversity Database (CNDDB). Biogeographic Data Branch. RareFind; GIS shapefile update, June 2025. Sacramento, California.

iNaturalist. 2025. Available from https://www.inaturalist.org. Accessed Research Grade Only 2025.

Koch, J., J. Strange, and P. Williams. 2012. Bumble Bees of the Western United States. A product of the U.S. Forest Service and the Pollinator Partnership with funding from the National Fish and Wildlife Foundation. Available from: https://www.pollinator.org/shop/books.

Merkel & Associates, Inc. 2024. Biological Constraints Report [for] Pasqual Heights Project. 31 pp + Appendices.

Osborne, J.L., A.P. Martin, C.R. Shortall, A.D. Todd, D. Goulson, M.E. Knight, R.J. Hale, and R.A. Sanderson. 2008. Quantifying and comparing bumble bee nest densities in gardens and countryside habitats. Journal of Applied Ecology 45:784-792.

Thorp, R.W., D.S. Horning, Jr., and L.L. Dunning. 1983. Bumble bees and cuckoo bumble bees of California (Hymenoptera: Apidae). Bulletin of the California Insect Survey 23:1-79.

Touchstone Communities. 2024. Communication between Touchstone Communities and the Property Owner regarding vegetation maintenance. Per the Property Owner, she has been issued notifications from the local fire official to maintain the property to reduce fuel load. Maintenance has also occurred to prevent transient use of the vacant portions of the property. Touchstone Communities conveyed this information to Merkel & Associates, Inc. biologist Amanda Gonzales in 2024.

U.S. Geological Survey (USGS). 1998. California Quadrangle Maps; California Digital Raster Graphics, 7.5 Minute (0) Series, Albers NAD 27. Teale Data Center. Sacramento, California. Accessed: 2024.

Williams, P.H., R.W. Thorp, L.L. Richardson, and S R. Colla. 2014. The Bumble bees of North America: An Identification guide. Princeton University Press, Princeton.

Xerces Society. 2018. A Petition to the State of California Fish and Game Commission to List the Crotch bumble bee (*Bombus suckleyi*), and western bumble bee (*Bombus occidentalis occidentalis*) as Endangered under the California Endangered Species Act. Submitted by The Xerces Society for Invertebrate Conservation, Defenders of Wildlife Center for Food Safety. October 2018. 119 pp.

_____. 2023. Bumble Bees: Nesting and Overwintering. Available from: https://xerces.org/bumble-bees/nesting-overwintering.

PREPARER(S) AND PERSONS/ORGANIZATIONS CONTACTED

Merkel & Associates, Inc.

Amanda Gonzales, Associate Principal with 24 years of professional biological experience (biologist with M&A since 2003); Project Field Biologist and Primary Report Author; Trained Bumble Bee Surveyor for the Bumble Bee Watch, participated in virtual and in-person trainings hosted by the Xerces Society between 2023 and 2025, active bumble bee volunteer with records for Crotch's bumble bee and other non-sensitive bumble bee species uploaded to Bumble Bee Watch and iNaturalist. Other certifications include Certified Wetland Delineator, Trained CRAM Practitioner, and Authorized to Independently Conduct Protocol Surveys for the Coastal California Gnatcatcher and Southwestern Willow Flycatcher.

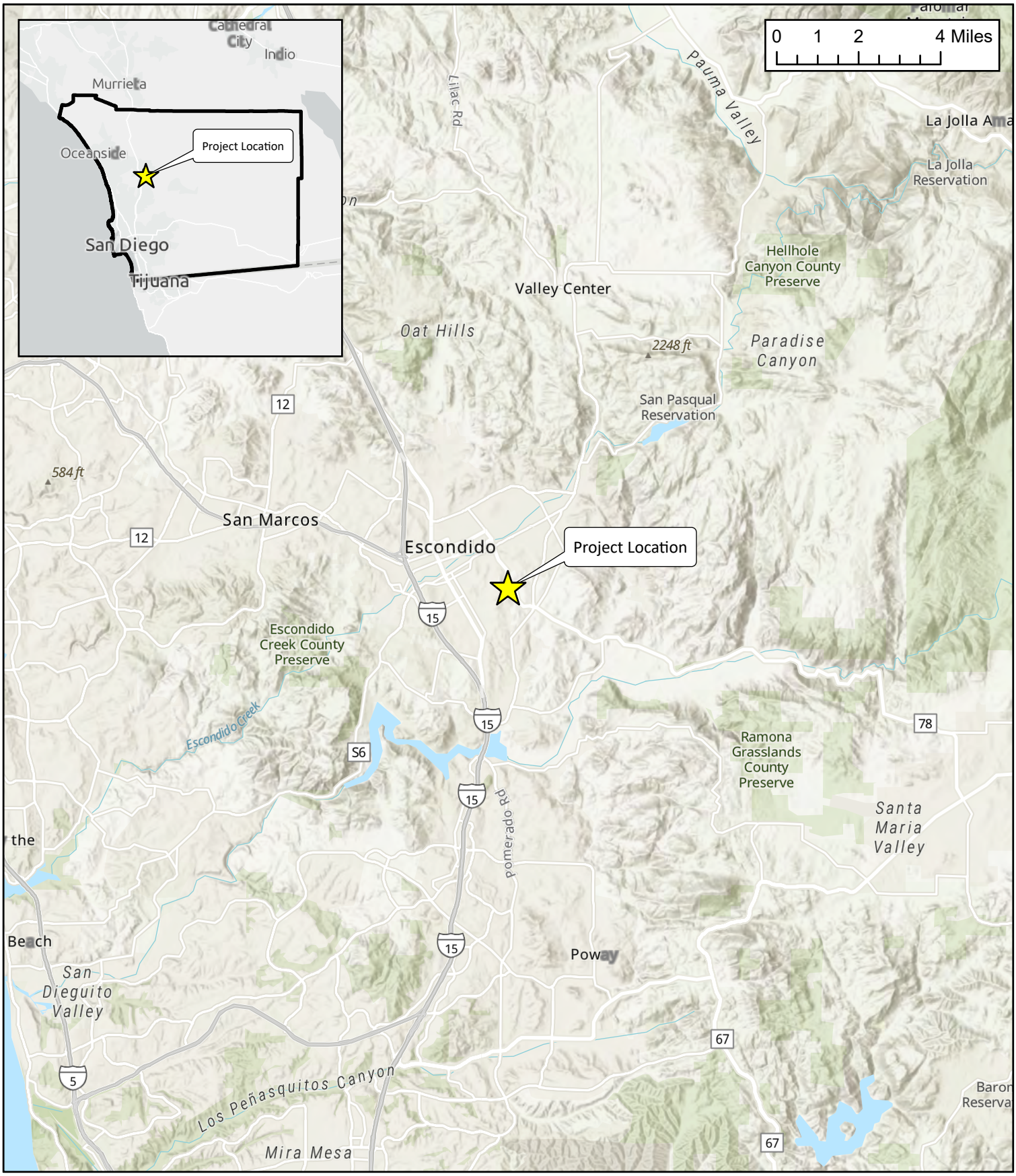
Brandon Stidum, Senior Biologist with 20 years of professional biological experience (biologist with M&A since 2014); Field Biologist; Experienced Bumble Bee Surveyor and has participated in virtual trainings hosted by the Xerces Society in 2025, active bumble bee volunteer with records uploaded to iNaturalist. Other certifications include Certified Wetland Delineator, Trained CRAM Practitioner, and Authorized to Independently Conduct Protocol Surveys for the Coastal California Gnatcatcher.

Brad M. Kelly, GIS Specialist with 23 years professional GIS experience (GIS Specialist with M&A since 2003). Project Graphics Preparation and Numeric Analyses.

Jenny Nicholson, Administrative Support. Project Report Quality Control.

Keith W. Merkel, Principal Consultant/Principal Ecologist.

APPENDIX A. FIGURES



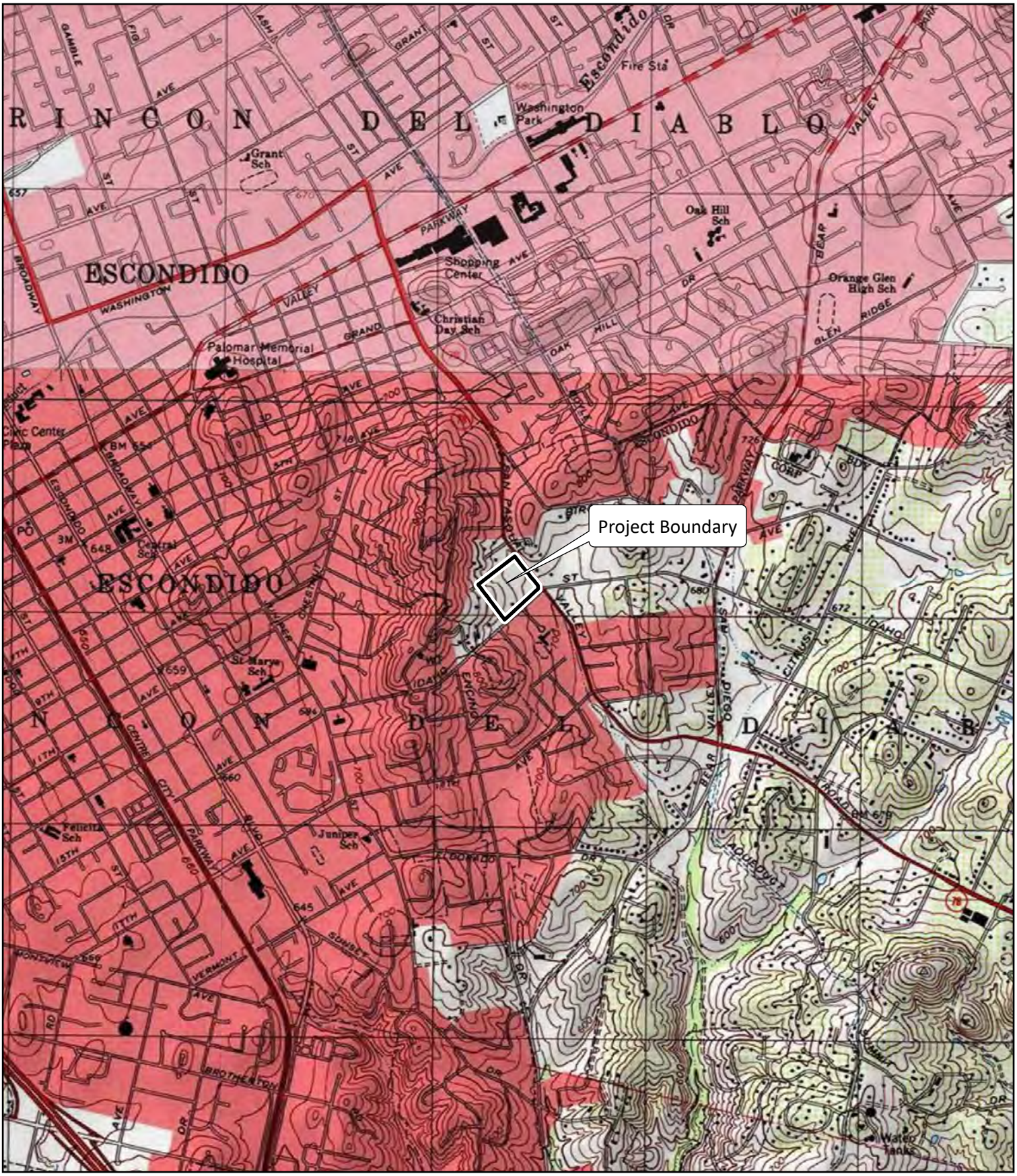
Regional Setting Map

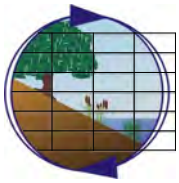
Pasqual Heights Project

Aerial Source: NearMap 2023

Created on October 21, 2024

Figure 1





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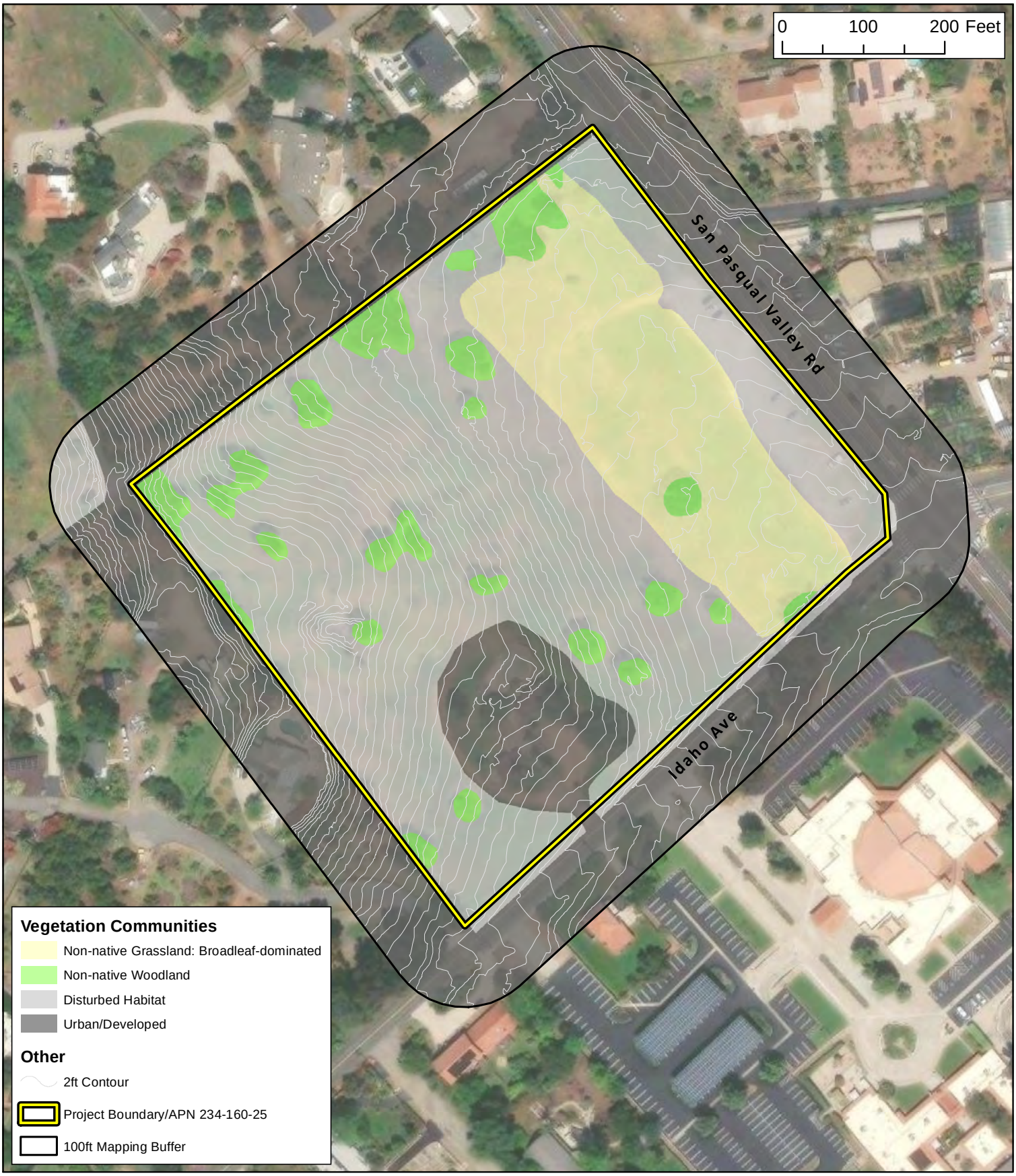
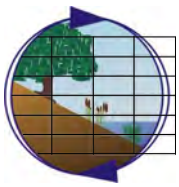
USGS Quadrangle Map

Pasqual Heights Project

Source: USGS 7.5' Valley Center, CA Quadrangle

Figure 2





N
W E
S

Biological Resources Map

Pasqual Heights Project

Aerial Source: ESRI April 2025

Figure 3

APPENDIX B. SITE PHOTOGRAPHS

Photo Point 1. Overview photo of the project site. Taken from the southeastern portion of the parcel near the dirt parking lot. Taken on June 12, 2025 and directed south.

Photo Point 2. Photo taken from Photo Point 1 but directed west. Taken on June 12, 2025 and directed south.

Photo Point 3. Photo taken from Photo Point 1 but directed north. Taken on June 12, 2025.

Photo Point 4. Photo taken from the northwest portion of the project site, along the fence line where some coastal California buckwheat, white sage, and non-native cactus including silver dollar prickly-pear is present. Taken on June 12, 2025 and directed eastward.

APPENDIX I. WETLAND DELINEATION PHOTO POINTS AND DATA FORMS

Photo Point 1. Wetland Data Point 1. Data point taken at the location of the shovel. Photo taken on June 7, 2024 and directed northeast toward San Pasqual Valley Road. The approximate location of Data Point 2 is identified by an arrow; see Photo Point #s 3 – 4 for additional photos of Data Point 2.

Photo Point 2. Wetland Data Point 1. Soil at the Data Point. Photo taken on June 7, 2024.

Photo Point 3. Wetland Data Point 2. Data point taken at the location of the shovel. Photo taken on June 7, 2024 and directed north/northwest.

Photo Point 4. Wetland Data Point 2. Soil at the Data Point. Photo taken on June 7, 2024.

Photo Point 5. Wetland Data Point 3. Data point taken at the location of the shovel. Photo taken on June 7, 2024 and directed northeast toward San Pasqual Valley Road. The approximate location of Data Point 4 is identified by an arrow; see Photo Point #s 7 – 8 for additional photos of Data Point 4.

Photo Point 6. Wetland Data Point 3. Soil at the Data Point. Photo taken on June 7, 2024.

Photo Point 7. Wetland Data Point 4. Data point taken at the location of the shovel. Photo taken on June 7, 2024 and directed north/northwest.

Photo Point 8. Wetland Data Point 3. Soil at the Data Point. Photo taken on June 7, 2024.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pasqual Heights City/County: San Diego County Sampling Date: 6/7/2024
Applicant/Owner: Trichstone Communities State: CA Sampling Point: 1
Investigator(s): Amanda Morales Section, Township, Range: Unsectioned, T12S, R2W
Landform (hillslope, terrace, etc.): Base of hillside Local relief (concave, convex, none): None Slope (%): 0
Subregion (LRR): LRR-C Lat: 33.11614 Long: -117.05998 Datum: WGS84
Soil Map Unit Name: RaB Ramona sandy loam, 2-5% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
DP not located w/in a wetland. History of site - historically orchard or similar Ag use. Ag use stopped and used as staging area/dumping area for veg/soil/debris. Field also mowed regularly.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 20x20)			
1. —			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20x20)			
1. —			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 20x20)			
1. Festuca myuros	40	Y	UPL
2. Hirschfeldia incana	30	Y	UPL
3. Bromus madritensis	20	N	UPL
4. Centaurea melitensis	5	N	UPL
5. Acmispon americanus var. am.	5	N	UPL
6. Cardus pycnocephalus ssp. pyc.	3	N	FACU
7. Erigeron bonariensis	2	N	FAC
8.		N	
	105 = Total Cover		
Woody Vine Stratum (Plot size: 20x20)			
1. —			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 6
FAC species 2	x 3 = 6
FACU species 3	x 4 = 12
UPL species 100	x 5 = 500
Column Totals: 105 (A)	518 (B)

Prevalence Index = B/A = 4.9

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
DP located at the base of the hillside along the upper edge of a low-point in the property. San Pasqual Valley Road to E. Dirt parking lot immed. adjacent to vacant site.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 3/2	100	—				Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Hydric soils not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pasqual Heights City/County: San Diego County Sampling Date: 6/7/2024
Applicant/Owner: Trichstone Communities State: CA Sampling Point: 2
Investigator(s): Amanda Morales Section, Township, Range: Unsectioned, T12S, R2W
Landform (hillslope, terrace, etc.): Slight Swale Local relief (concave, convex, none): Slight concave Slope (%): Slight
Subregion (LRR): LRR-C Lat: 33.11618 Long: -117.05793 Datum: WGS 84
Soil Map Unit Name: RaB Ramona sandy loam, 2-5% slopes NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: DP not located w/in a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30x20)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30x20)			
1. —			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 30x20)			
1. Ambrosia psilostachya	40	Y	FACU
2. Rumex crispus	20	Y	FAC
3. Hirschfeldia incana	10	N	UPL
4. Anthemis cotula	10	N	UPL
5. Acnispon americanus	10	N	UPL
6. Bromus madritensis	10	N	UPL
7. Festuca perennis	5	N	FAC
8. Sonchus oleraceus	3	N	UPL
Cardus pycnoc.	2	N	FACU
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30x20)			
1. —			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum <1 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	42	x 4 =	168
UPL species	43	x 5 =	215
Column Totals:	110 (A)		458 (B)

Prevalence Index = B/A = 4.16

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
DP located w/in a slight swale. Area receives runoff from road area but water not present long enough to support enough hydrophytic vegetation.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	90	—				loam	No redox features but soil feels like debris, lots plus some small manmade debris e.g. concrete
4-8	10YR 3/6	90	5YR 5/8	2	C	M	sandy clay loam	hard to dig likely associated w/ previous dumping.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

Some redox features present but not enough to satisfy criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): —

Water Table Present? Yes ____ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DP located w/in a slight swale. Can see how H2O/sheet flow may drain N to S/SE but area does not appear to hold H2O long enough to create/meet indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pasqual Heights City/County: San Diego County Sampling Date: 6/7/2024
Applicant/Owner: Tachstone Communities State: CA Sampling Point: 3
Investigator(s): Amanda. Gonzalez Section, Township, Range: Unsectioned, T12S, R2W
Landform (hillslope, terrace, etc.): Flat vacant field. Local relief (concave, convex, none): None Slope (%): ~0
Subregion (LRR): LRR-C Lat: 33.11658 Long: -117.06020 Datum: WGS84
Soil Map Unit Name: FVD Fallbrook-Vista Sandy Loams, 9-15% NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks: DP not located w/in wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30x30)			
1. —			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 30x30)			
1. Hirsch. incana	50	Y	UPL
2. Rumex crispus	15	Y	FAC
3. Ambrosia psilo.	15	Y	FACU
4. Lysimachia arvensis	15	Y	FAC
5. Carduus pycnocep.	10	N	FACU
6. Erigeron bonariensis	5	N	FAC
7. Cythium hyssophia	3	N	OBL
8. Bromus madritensis	2	N	UPL
	115	= Total Cover	
Woody Vine Stratum (Plot size: 30x30)			
1. —			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum ~2 % Cover of Biotic Crust Ø

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	25	x 4 =	100
UPL species	52	x 5 =	260
Column Totals:	100 (A)		423 (B)

Prevalence Index = B/A = 4.23

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks: Other sp's present but <1%: Anthemis cotula, Marrubium vulgare, Polypogon monspeliensis, Heliotropium curassavicum

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/1	90	—				Sandy loam	Fills like layer 1
6-12	10YR 3/4	90					Silt loam	fill - no redox.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:
Hydric soils not present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Hydrology not present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pasqual Heights City/County: San Diego County Sampling Date: 6/7/2024
Applicant/Owner: Trichstone Communities State: CA Sampling Point: 4
Investigator(s): Amanda Gonzalez Section, Township, Range: Unsectioned, T12S, R2W
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): concave Slope (%): Slight
Subregion (LRR): LRR-C Lat: 33.11660 Long: -117.06016 Datum: WGS84
Soil Map Unit Name: FvD Fallbrook-Vista Sandy Loams, 9-15% NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ____	

Remarks:
DP not located w/in a wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 x 8)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 30 x 8)			
1. —			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 30 x 8)			
1. Rumex crispus	40	Y	FAC
2. Cyperus eragrostis	15	Y	FACW
3. Marrubium vulgare	15	Y	FACU
4. Ambrosia psila	15	Y	FACU
5. Hirsch. incana	5	N	UPL
6. Lythrum hyssiphia	2	N	OBL
7. Lysimacha arvensis	2	N	FAC
8. Carduus pycno.	2	N	FACU
	98	= Total Cover	
Woody Vine Stratum (Plot size: 30 x 8)			
1. —			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 2	x 1 = 2
FACW species 15	x 2 = 30
FAC species 2	x 3 = 6
FACU species 32	x 4 = 128
UPL species 7	x 5 = 35
Column Totals: 58 (A)	201 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
9. Sonchus 2, N, UPL 10. Kickxia spurria <1%, N, UPL 10. Brassica nigra <1%
DP located w/in a swale, just upside/stream of a sm. pipe culvert under the dirt road. Area receives sheet flow and H2O must sit here a little longer b/c of the pipe but not long enough to be dominated by hydrophytic plants.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	—						Sand	
2-10	10YR 3/2	90	10YR 6/8	2	M	C	Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No ✓

Remarks: Redox feature present but not enough to meet criteria.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ___ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Some drainage patterns present but not sufficient; very short portion of incision, rest of feature does not.