APPENDIX E

Biological Resources Background Information

Biological Report for the Dana Reserve Specific Plan

Biological Report

for

Dana Reserve Specific Plan

Master Vesting Tentative Tract Map 3159
APNs 091-301-029, -030, -031 and -073
Nipomo, San Luis Obispo County




Prepared for

Dana Reserve, LLC
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By

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As a County-approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of San Luis Obispo Department of Planning and Building and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that we were present throughout the period of site visit(s) associated with this report.

LynneDee Althouse
Principal Scientist

10/26/2021
Technical Edits
Reviewed 4/12/2022
Date

Adam Searcy
Sr. Biologist

10/26/2021
Date

Kyle Nessen
GIS Specialist

10/13/2021
Date

Cover Page: Top photos of Pismo clarkia and coast live oaks June 12 2018; bottom photos of California spineflower patch with doveweed June 12, 2018 (left); Burton mesa chaparral condition with chamise as dominant species on June 19, 2020. Photos by LynneDee Althouse and Sarah Termondt.

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SYNOPSIS

- This report describes biological resources on a 295.3-acre site (Study Area) located in the unincorporated community of Nipomo, San Luis Obispo County, and is comprised of Assessor's Parcel Numbers (APNs) 091-301-030, -031, and -073.
- The proposed residential and commercial development (Project) includes 1,270 housing units (multi- and single-family) in 12 neighborhoods, commercial business spaces (Village Commercial), a hotel, parks, public recreation areas, horse trails and a neighborhood barn, and an education center.
- Seven habitat types identified and mapped in the Study Area consist of coast live oak forest (coast live oak/poison oak association), coast live oak woodland (coast live oak/chamise-black sage association), Burton Mesa chaparral, California perennial grassland group, Mediterranean California naturalized perennial grassland group, annual brome grasslands, and developed anthropogenic areas. No wetlands or waters of the U.S. or state were detected.
- The Project proposes to impact a total of 266.5 acres comprised of the following habitat types: 21.7 acres of coast live oak forest, 75.3 acres of coast live oak woodland, 35 acres of Burton Mesa chaparral, 125acres of California perennial grassland group, 3.6 acres of Mediterranean California naturalized perennial grassland group, and 7.3 acres of annual brome grassland. Approximately 21.9 acres will be preserved onsite in a biological open space easement that includes 17 acres of coast live oak forest, 3.0 acres of coast live oak woodland, 1.0 acre of California perennial grassland group, and 0.9 acre of Burton Mesa chaparral. The Project area is 288.4 acres.
- The Alternative project, also 288.4 acres, involves modified access from Willow Road, and a reduced impact lot layout. The Alternative would impact 256.3 acres, comprised of 15.3 coast live oak forest, 70.0 acres of coast live oak woodland, 34.9 acres of Burton Mesa chaparral, 124.2 acres of California perennial grassland group, 3.6 acres of Mediterranean California naturalized perennial grassland group, and 7.3 acres of annual brome grassland. Approximately 32.1 acres would be preserved onsite in a biological open space easement, which includes 20.8 acres of coast live oak forest, 8.4 acres of coast live oak woodland, 1.8 acres of California perennial grassland group, and 1.0 acre of Burton Mesa chaparral.
- Mitigation measures are proposed to reduce project impacts to sensitive habitat types such as Burton Mesa chaparral, coast live oak woodland and forest.
- Floristically timed botanical surveys conducted from 2017 to 2021 identified 159 vascular plant taxa in the Study Area. Habitat and soil conditions are suitable for 18 special status plants. Eight (8) special status plant species were detected in the Study Area.
    - One federal and state listed plant species, Pismo Clarkia (*Clarkia speciosa* ssp. *immaculata*) was detected in the Study Area. Most of the occupied habitat will be avoided.
    - An Incidental Take Permit (ITP) with the California Department of Fish and Wildlife (CDFW) is required for any proposed impacts to Pismo clarkia.

  - The Project proposes to impact sensitive botanical resources, including ~37 individuals of Pismo clarkia, approximately 7,000 individuals of mesa horkelia, 324 individuals of sand mesa manzanita, 50 individuals of Nipomo mesa ceanothus, 155 individuals of sand almond, 21 individuals of sand buck brush, and 42.6 acres California spine flower. Onsite and offsite mitigation measures are provided with mitigation ratios dependent on the level of species rarity and threat ranking.

- Wildlife species detected in the Study Area include 10 invertebrates, 4 reptiles, no amphibians, 67 birds, and 17 mammals. Appropriate habitat is present on the property for 18 special status animals; coast horned lizard, American badger, and several sensitive bird and bat species were detected. No state or federally listed animals were detected in the Study Area.
- The Project proposes to impact wildlife resources through direct mortality, loss of habitat, and reduction of movement corridors. Mitigation measures are proposed to reduce impacts to sensitive wildlife, including bird and raptor avoidance measures during nesting season.

1 INTRODUCTION

1.1 Purpose

This Biological Report provides information regarding biological resources associated with Dana Reserve, a 295.3-acre site (Study Area) in San Luis Obispo County, California. Results include a habitat assessment, botanical and wildlife inventory, a discussion of special status species that have potential to occur within the Study Area, and an analysis of potential impacts to biological resources from the proposed subdivision (Project) and the Alternative. Mitigation recommendations for proposed impacts to biological resources are also provided.

1.2 Project Location

The Dana Reserve Study Area is in southwest San Luis Obispo County, immediately west of U.S. Highway 101, south of Willow Road, and is accessible from Cherokee Place. Approximate coordinates for the center of the Study Area are 120.50381°W, 35.06157°N (WGS84) in the Oceano and Nipomo United States Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1).

The Study Area includes a total of four parcels equivalent to approximately 295 acres. As shown in Figure 2, the largest parcel is 274.6 acres, while the other three parcels are divided (relatively) equally by the remaining acreage, approximately 7 acres each. The three smaller parcels (APNs 091-301-029, -030, and -031) are located northwest of Cherokee Place and the largest parcel, APN 091-301-073, is located southeast of Cherokee Place. Proposed access from Willow Road is from Parcels -031 and -030. Parcel -029 is an alternative to Parcel -030 access from Willow Road.

1.2.1 Local and Regional Context

The Study Area is situated approximately seven miles southeast of the City of Arroyo Grande and seven miles east of the Pacific Ocean on the Nipomo Mesa. The Dana Foothills to the east form the southernmost edge of the Santa Lucia Mountain range that transitions to the Santa Maria Valley to the south. The Nipomo Mesa landform was created by westerly winds blowing sand that established dunes from Pleistocene beaches thousands of years ago. Nipomo Creek is located offsite and to the east of Highway 101. Dana Reserve is located just outside the northern limits of the Nipomo Urban Reserve Line (San Luis Obispo County 2017b). Elevations range from approximately 343 to 420 feet above mean sea level with the lowest point adjacent to Pomeroy Road in the southwest corner of the property.

Surrounding land uses are mixed. North/northeast is U.S. Highway 101 bordered by commercial agricultural greenhouse and nursery operations. North/northwest land use is rural residential with confined animals (cattle, goats, horses, chickens, and various other fowl). South of Hetrick Avenue and Pomeroy Road most suburban lots contain single-family homes. To the east/southeast most rural residential/suburban lots contain single family homes (Figure 2).

1.3 Project Description

The Project is being proposed by Dana Reserve, LLC represented by Nick Tompkins for approval of a Specific Plan, Vesting Master Tentative Tract Map (V M TTM) 3159 and associate entitlements, as illustrated on the Overall Site Plan (Appendix A).

The Project proposes to subdivide 288.4-acres (Parcels 091-301-073, -031 and -030) into 20 private lots and 19 public lots. The private lots will be a mixture of multi-family and single-family residences, and commercial land uses equivalent to 201 acres (Lots 1 through 20). The public lots are comprised of roads, open space, recreation, and drainage basins equivalent to 88.3 acres. Approximately 22 acres of oak forest, woodland and adjacent habitats will be preserved as open space.

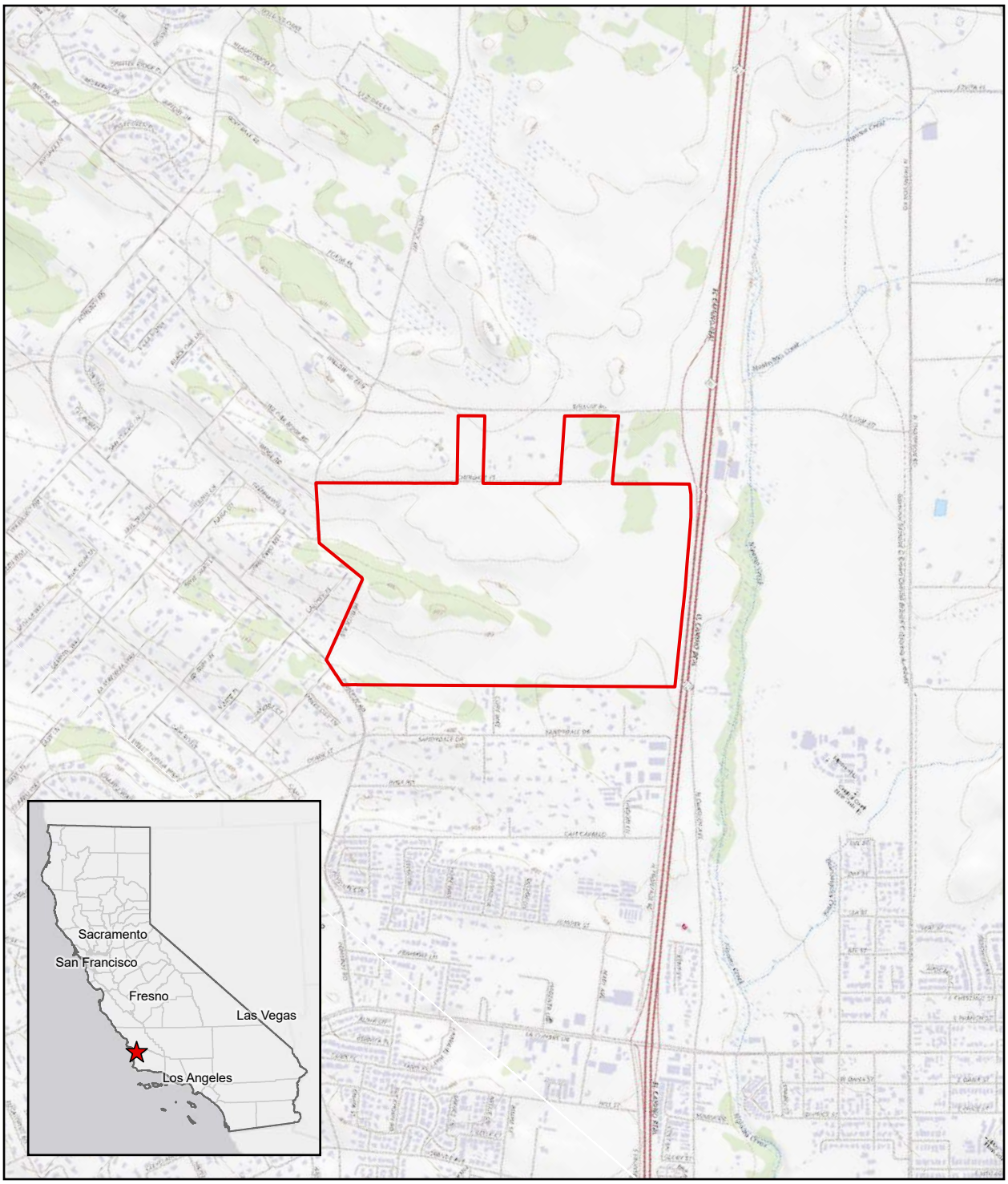
An Alternative project (Alternative) would similarly subdivide 288.4 acres (Parcels -091-301-073, -031 and -029), and preserve 32.1 acres of oak forest, woodland and adjacent habitats.

Responsible parties for the Project are listed in Table 1.

TABLE 1. RESPONSIBLE PARTIES

Owner	Planner	Lead Agency
Dana Reserve, LLC 684 Higuera St., Ste. B San Luis Obispo, CA 93401 (805) 541-9004 Contact: Nick Tompkins Nick@nktcommercial.com	**Urban Planning Concepts Inc.** 2624 Airpark Drive Santa Maria, CA 93455 (805) 934-5760 Contact: Laurie Tamura Laurie@urbanplanningconcepts.com	**San Luis Obispo County Department of Planning and Building** 976 Osos Street, Room 300 San Luis Obispo, CA 93408 Contact: Jennifer Guetschow jguetschow@co.slo.ca.us
Biological Consultant	**Land Surveyor**	**Architect and Engineer**
Althouse and Meade, Inc. 1602 Spring Street Paso Robles, CA 93446 (805) 237-9626 Contact: LynneDee Althouse LD@althouseandmeade.com	**MBS Land Surveys** 3559 S Higuera St, San Luis Obispo, CA 93401 (805)-594-1960 Contact: Mike Stanton mstanton@mbslandsurveys.com	**RRM Design Group** 3765 South Higuera St., Ste. 102 San Luis Obispo, CA 93401 (805) 543-1794 Contact: Vic Montgomery, AIA VMontgomery@rrmdesign.com Robert Camacho, P.E. RCamacho@rrmdesign.com

Figure 1. United States Geological Survey Topographic Map



Legend

Study Area

0 1,000 2,000 Feet

Dana Reserve
Map Center: 120.50242°W 35.04545°N
Nipomo, San Luis Obispo County

USGS Quadrangle: Oceano and Nipomo

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Map Updated:
October 06, 2021 12:48 PM by SAF

Figure 2. Aerial Photograph

Legend

Study Area APN

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50308°W 35.04692°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

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Map Updated:
October 05, 2021 02:03 PM by SAF

1.4 Regulatory Framework

Standards for environmental protection and restoration, in the form of laws and regulations, are created within three different organizational levels of government: Federal, State, and Local. Entities exist within each level to create and enforce regulations that help ensure protection of specific and pertinent regional issues threatening ecosystems and environments. Regulations applicable to the Project are described in Sections 1.5 to 1.8.

1.5 Federal Laws and Regulations

Endangered Species Act

The federal Endangered Species Act (ESA) provides the legal framework for the listing and protection of species (and their habitats) identified as being endangered or threatened with extinction. "Critical Habitat" is a term within ESA designed to guide actions by federal agencies and is defined as "an area occupied by a species listed as threatened or endangered within which are found physical or geographical features essential to the conservation of the species, or an area not currently occupied by the species which is itself essential to the conservation of the species." Actions that jeopardize endangered or threatened species and/or critical habitat are considered a 'take' under ESA. "Take" under federal definition means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Projects that would result in "take" of any federally listed threatened or endangered species, or critical habitats, are required to consult with the USFWS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan) of ESA, depending on the involvement by the federal government in permitting and/or funding of the project. The ESA does not protect plants unless there is a federal nexus. Plants may not be removed from lands under Federal jurisdiction, and activities with a Federal nexus have the consultation requirement described above (16 U.S. Code § 1536 - Interagency cooperation).

Migratory Bird Treaty Act

All migratory, non-game bird species that are native to the U.S. or its territories are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (USFWS 2006), as amended under the Migratory Bird Treaty Reform Act of 2004. The MBTA makes it illegal to purposefully take (pursue, hunt, shoot, wound, kill, trap, capture, or collect) any migratory bird, or the parts, nests, or eggs of such a bird, except under the terms of a valid Federal permit. Migratory non-game native bird species are protected by international treaty under the federal MBTA.

1.6 State Laws and Regulations

California Endangered Species Act

The California Endangered Species Act (CESA), like the federal ESA, contains a process for listing of species and regulating potential impacts to listed species. State threatened and endangered species include both plants and wildlife, but do not include invertebrates. The designation "rare species" applies only to California native plants. State threatened and endangered plant species are regulated largely under the Native Plant Preservation Act in conjunction with the CESA. State threatened and endangered animal species are legally protected against "take." The

CESA authorizes the California Department of Fish and Wildlife (CDFW) to enter into a memorandum of agreement for take of listed species to issue an incidental take permit for a state-listed threatened and endangered species only if specific criteria are met. Section 2080 of the CESA prohibits the take of species listed as threatened or endangered pursuant to the Act. Section 2081 allows CDFW to authorize take prohibited under Section 2080 provided that: 1) the taking is incidental to an otherwise lawful activity; 2) the taking will be minimized and fully mitigated; 3) the applicant ensures adequate funding for minimization and mitigation; and 4) the authorization will not jeopardize the continued existence of the listed species.

California Environmental Quality Act (CEQA)

CEQA defines a "project" as any action undertaken from a public or private entity that requires discretionary governmental review (a non-ministerial permittable action). All "projects" are required to undergo some level of environmental review pursuant to CEQA unless an exemption applies. CEQA's environmental review process includes an assessment of existing resources, broken up by categories (i.e., air quality, aesthetics, etc.), a catalog of potential impacts to those resources caused by the proposed project, and a quantifiable result determining the level of significance an impact would generate. The goal of environmental review under CEQA is to avoid or mitigate impacts that would lead to a "significant effect" on a given resource; section 15382 of the CEQA Guidelines defines "significant effect" as:

> *a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment but may be considered in determining whether the physical change is significant.*

Public agencies are required to implement CEQA and execute jurisdiction to determine when applicable activities are or are not subject to CEQA. A public agency with the most prominent nexus and jurisdiction to a project is called the lead agency. Lead agencies determine the scope of what is considered an impact and what constitutes a "significant effect". "Biological resources" is one of the varying categories considered during environmental review through CEQA. A lead agency can require a biological assessment to be prepared to report on existing biological resources and recommended mitigation measures that will reduce or lessen potential negative impacts to those biological resources. Questions listed in CEQA's Appendix G Biological Resources section are used to guide assessment of impacts to biological resources as follows:

- *Does the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?*
- *Does the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?*
- *Does the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?*

- *Does the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?*
- *Does the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
- *Does the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Section 15065 "Mandatory Findings of Significance" provides that a significant environmental effect occurs where a project has the potential to:

- *substantially reduce the habitat of a fish or wildlife species;*
- *cause a fish or wildlife population to drop below self-sustaining levels;*
- *threaten to eliminate a plant or animal community; or*
- *substantially reduce the number or restrict the range of an endangered, rare or threatened species [listed species]*

The concept of a "plant or animal community" as used in CEQA threshold "threaten to eliminate a plant or animal community" may be analogous to the reference to "sensitive natural plant communities" in San Luis Obispo County's 2010 General Plan Policy BR 2.6 (see Section 1.7).

Section 15370 "Mitigation" includes:

- *Avoiding the impact altogether by not taking a certain action or parts of an action.*
- *Minimizing impacts by limiting the degree or magnitude of the action and its implementation.*
- *Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.*
- *Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.*
- *Compensating for the impact by replacing or providing substitute resources or environments, including through permanent protection of such resources in the form of conservation easements.*

The lead agency has the final determination over whether a project is or is not permissible, based upon the environmental review, completed requirements and environmental documentation, and their judgement that the project will not have a significant effect on the environment, or that all significant effects have been mitigated.

California Public Resources Code Section 21083.4 (2005) Oak Woodlands Conservation

This code was derived from the Oak Woodlands Conservation Act (SB 1334 2004). A county shall determine whether a project within its jurisdiction may result in conversion of oak woodlands (i.e., *Quercus* sp. with a minimum of 5 inches diameter at breast height) that will have a significant effect on the environment. If a county determines that there may be a significant effect to oak woodlands, the county shall require one or more of the following oak woodlands mitigation alternatives to mitigate the significant effect of the conversion of oak woodlands:

1. *Conserve oak woodlands, by conservation easements.*

   (A) Plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees.

   (B) The requirement to maintain trees pursuant to this paragraph terminates seven years after the trees are planted.

   (C) Mitigation pursuant to this paragraph shall not fulfill more than one-half of the mitigation requirement for the project.

   (D) The requirements imposed pursuant to this paragraph also may be used to restore former oak woodlands.
2. *Contribute funds to the Oak Woodlands Conservation Fund, as established under subdivision (a) of Section 1363 of the Fish and Game Code, for the purpose of purchasing oak woodlands conservation easements, as specified under paragraph (1) of subdivision (d) of that section and the guidelines and criteria of the Wildlife Conservation Board. A project applicant that contributes funds under this paragraph shall not receive a grant from the Oak Woodlands Conservation Fund as part of the mitigation for the project.*
3. *Other mitigation measures developed by the county.*

California Fish and Game Code

The California Fish and Game Code (CFGC) is one of the 29 legal codes that form the general statutory law of California. A myriad of statutes regarding fish and game are specified in the CFGC; the following codes are specifically relevant to the proposed Project:

California Native Plant Protection Act. Sections 1900-1913 of CFGC contain regulations of the Native Plant Protection Act of 1977. The intent of this act is to help conserve and protect rare and endangered plants in the state. The act allowed the CFGC to designate plants as rare or endangered.

Nesting Birds. Sections 3503, 3503.5 and 3513 of CFGC states that it is:

> *unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto,"* and *"unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird"* unless authorized.

Natural Community Conservation Planning (NCCP) Act of 1991

The NCCP Act is designed to conserve natural communities at the ecosystem scale while accommodating compatible land use. CDFW is the primary state agency that implements the NCCP. The NCCP plan provides for the comprehensive management and conservation of multiple wildlife species. It identifies and provides for regional protection of natural wildlife diversity while allowing for compatible and appropriate development and growth.

1.7 San Luis Obispo County

Conservation and Open Space Element (COSE)

The COSE focuses on conservation and protection of the County's unique natural resources while balancing the needs of the natural and build environment. The Biological Resources (BR) chapter of the COSE includes the goals and policies intended to sustain healthy ecosystems, preserve biodiversity, restore degraded habitats, and protect diverse landscapes. The following goals, policies, and implementation strategies are applicable to this Project and summarized below.

Goal BR 1

Native habitat and biodiversity will be protected, restored, and enhanced. To achieve this goal, the County has outlined 17 different policies that focus on protection of sensitive areas and the management of these areas through the County's environmental review process. Implementation strategies focus on minimizing development in areas that contain essential habitat for special-status species, sensitive natural communities, wetlands, coastal and riparian habitats, and for maintaining/protecting movement corridors and wildlife nursery sites.

Policy BR 1.4 No Net Loss. Requires development projects to be approved with conditions and mitigation measures that ensure protection of sensitive resources to achieve "no net loss" of sensitive habitat acreage, values, and function. Avoidance of sensitive habitat is highest priority. If avoidance is not feasible, replacement habitat onsite through restoration and/or creation. If onsite mitigation is not feasible, then offsite mitigation is required and shall reflect "no net loss" of habitat.

Policy BR 1.12 Development Impacts to Corridors. Ensures protection of important wildlife movement corridors as a condition of discretionary permits.

- BR 1.12.1 Identify and Protect Wildlife Corridors. Require discretionary development applications in rural areas, including land divisions, to identify and protect wildlife corridors, and avoid disturbance of identified key wildlife corridors.
- BR 1.12.2 Mitigate Impacts to Wildlife Corridors. If avoidance is not feasible, re-establish and/or restore important wildlife corridors that may have been damaged or disrupted.

Policy BR 1.15 Restrict Disturbance in Sensitive Habitat During Nesting Season. Provides implementation strategies for protection of bird-nesting activities.

- BR 1.15.1 Identify Setbacks from Bird Nesting Areas. Require adequate setbacks from sensitive habitat that is occupied during nesting season.
- BR 1.15.2 Preconstruction Surveys for Bird Nesting Areas. Require preconstruction surveys using established protocols during nesting season to protect nests in active use.

Goal BR 2

Threatened, rare, endangered, and sensitive species will be protected. This goal is implemented through 11 different policies that focus on collaboration with trustee/responsible agencies and provides implementation strategies for impacts to threatened, rare, and endangered species. It also promotes efforts to minimize invasive plant species into the natural environment. Policies 2.1, 2.2, 2.4, 2.6 and 2.7 are described in further detail below.

Policy BR 2.1 Coordinate with Trustee Agencies. The County will consult with trustee and other relevant state and federal agencies during environmental review when special-status species, sensitive natural communities, marine resources, or wetlands may be affected. During review of discretionary development applications, coordinate with relevant trustee agencies and require evidence of compliance with any necessary permits from federal and state agencies prior to issuance of grading or building permits.

Policy BR 2.2 Promote Early Consultation with Other Agencies. Require applicants to consult with all agencies with review and/or permit authority for projects in areas supporting wetlands and special-status species at the earliest opportunity. Inform applicants during pre-application review or other pre- submittal activities about other agencies that may have jurisdiction, and the policies and standards of those agencies that may regulate proposed development activities.

Policy BR 2.4 Species Recovery Programs. Support recovery programs for endangered and threatened species. Require that applications for discretionary land use projects and land divisions located in the habitat for endangered or threatened species be consistent with applicable recovery plans.

Policy BR 2.6 Development Impacts to Listed Species. Ensure that potential adverse impacts to threatened, rare, and endangered species from development are avoided or minimized through project siting and design. Ensure that proposed development avoids significant disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species. When avoidance is not feasible, require no net loss of sensitive natural plant communities and critical habitat areas.

- BR 2.6.1 Use of Biological Resource Surveys. Require applications for discretionary projects and land divisions to provide a biological resource survey performed by a qualified biologist when needed to address special-status animal and plant species and their associated habitats.
- BR 2.6.2 Use of Habitat Preservation Ratio. Where avoidance, restoration, or replacement of habitat of special status species is not feasible, require preservation and/or enhancement of similar habitat at a minimum 2:1 ratio to avoid significant cumulative loss of valuable habitats and to achieve no net loss of habitat value.
- BR 2.6.3 Use of Easements to Protect Habitat. Obtain easements or dedications to protect habitat, especially where it is connected to other large areas of unique or sensitive habitat. Natural open space areas in development projects should be contiguous to natural areas adjacent to the site wherever possible.
- BR 2.6.4 Use of Habitat Banking or TDC Program. As an alternative to onsite mitigation and habitat protection, consider participation in an established habitat banking or Transfer of Development Credit (TDC) program if the project meets the criteria of the program. (Also refer to Policy OS 1.15.)
- BR 2.6.5 Use of Habitat Banking Program. Evaluate the use of a habitat banking program to mitigate the effects of development on unique or sensitive habitat.

Policy BR 2.7 Fire Suppression and Sensitive Plants and Habitats. Balance the need for fire suppression and/or vegetation (fuel) management with the need to protect sensitive biological resources. Where possible, design land divisions and development so that fuel-breaks, vegetation,

or fuel modification areas that are needed to reduce fire hazards do not disrupt special-status plant communities or critical habitat for special status animal species. Fuel-breaks and vegetation or fuel modification areas shall be located on the development side of required setbacks from sensitive features and shall be in addition to the required setbacks.

Policy BR 2.8 Invasive Plant Species. Promote and support efforts to reduce the effects of noxious weeds on natural habitats.

Goal BR 3

Maintain the acreage of native woodlands, forests, and trees at 2008 levels. The 5 policies outlined in this goal are consistent with the implementation of the Oak Woodland Ordinance, No. 3346, Chapter 22.58 of the Land Use Ordinance (LUO) (San Luis Obispo County 2008).

Policy BR 3.2 Protection of Native Trees in New Development. Provides an implementation strategy for impacts to native trees.

- BR 3.2.1 Tree Replacement in New Development. Mitigation measures are required if avoidance of native trees is not feasible for land use permits and land divisions. Example mitigation measures include tree replacement using native stock at specified ratios, replanting plans, reseeding disturbed open areas with native, drought, and fire-resistant species, and a required long-term monitoring plan.

Policy BR 3.3 Oak Woodland Preservation. Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat.

- BR 3.3.1 Implement Oak Woodlands Preservation Act. Comply with the Oak Woodlands Preservation Act (PRC Section 21083.4) through the review of proposed discretionary development by maintaining the integrity and diversity of oak woodlands, chaparral communities, and other significant vegetation.

Goal OS 1

Important open space areas will be identified, protected, sustained, and where necessary, restored and reclaimed. The policies outlined under this goal are intended to protect: 1) recreation areas, 2) ecosystems and environmentally sensitive resources such as natural area preserves, streams and riparian vegetation, unique, sensitive habitat, natural communities, significant marine resources, 3) archaeological, cultural, and historical resources, 4) scenic areas, 5) hazard areas, and 6) rural character. The implementation strategy is to incorporate up-to-date scientific information and techniques into programs to identify, protect, and manage open space resources."

Oak Woodland Ordinance

Chapter 22.58 of the LUO establishes the Oak Woodland Ordinance which applies to inland portions of the unincorporated areas of San Luis Obispo County. Under this ordinance a Minor Use Permit is required to remove between 1-3 acres of oak woodland habitat over a ten-year period, and a Conditional Use Permit is required to remove more than 3 acres over a ten-year period. This ordinance does not apply to the removal of individual trees unless they are heritage oaks which are defined (22.58.030) as oak trees with a diameter at breast height of at least 48 inches and that are separated from all stands and woodlands by at least 500 feet. This ordinance does not apply to the

establishment of residential land uses that otherwise require a ministerial (non-discretionary) land use permit. The ordinance notes:

> *Residential development may be subject to discretionary approval as required by other standards of this Code (Title 22, Land Use Ordinance) or through an application for a land division pursuant to Title 21, Real Property Division Ordinance, of the County Code. Discretionary land use permits, and land division applications are subject to the California Environmental Quality Act (CEQA), where potential impacts associated with tree removal may be evaluated and mitigated.*

The ordinance further provides that, where a Conditional Use Permit is required because more than 3 acres of oak woodland would be removed over a ten-year period, an "oak woodland management plan" shall be developed and approved as part of the Conditional Use Permit (CUP). As used in the ordinance, the term

> *'Oak Woodland Management Plan' means a plan prepared that provides for the long-term conservation and maintenance of the oak woodland, including but not limited to programs for the maintenance, regeneration and enhancement of the woodland, and the associated woodland habitat and monitoring programs to ensure the objectives of the plan are continuing to be met.*

In the absence of a Conditional Use Permit and Oak Woodland Management Plan the ordinance states that clear-cutting of an Oak Woodland shall not exceed 5 percent of a Site's total Oak Woodland Canopy. A CUP allows for clear-cutting with mitigation and an Oak Woodland Management Plan. From County Code 22.62.060 Conditional Use Permits:

> *Action on a Conditional Use Permit is discretionary and may include: approval based on the standards of this Title; approval with conditions; or disapproval, based on conflict with the provisions of this code, or information in the staff report or public hearing testimony.*

San Luis Obispo County Code 22.96.072 (H8)

Land Use Category Standards for the South County Sub-area, Residential Rural (RR), Dana Ranch [aka Dana Reserve]. The operative language provides as follows:

> *8. Cañada Ranch property - Specific Plan requirement. A Specific Plan shall be prepared for the Cañada Ranch property shown in Figure 98-40 under the guidance of the County upon the application and funding by the property owner(s) prior to the approval of land division applications, although a clustered land division proposed in compliance with the Residential Rural category, Section 22.22.140, and other applicable provisions of this Title, may be approved without Specific Plan preparation. The Specific Plan shall be prepared in compliance with Government Code Section 65450 to plan for the following:*
>
> *a. Types of uses. The concept of a Specific Plan is for uses in the following priority for acreage, scale and intensity: This ordinance requires a Specific Plan that would include:*
>
> *(1) Open space uses within the oak woodlands;*
>
> *(2) Industrial park(s) that will generate "basic" employment for the Nipomo and south county area;*
>
> *(3) Commercial service parks that do not conflict with downtown and community shopping commercial uses within Nipomo;*

(4) Retail uses to serve the daily shopping needs of employees and residents of the site in compliance with purpose and character statements for neighborhood shopping areas in Framework for Planning - Inland Area;

(5) Commercial retail uses that are in compliance with purpose and character statements in Framework for Planning - Inland Area for highway-oriented retail;

(6) Residential areas to contain a mix of housing unit types, a portion of which should be affordable to average employee incomes on the site, timing to be concurrent with or following establishment and operation of nonresidential uses, the timing to be determined by a market feasibility study.

b. Oak habitat preservation. Designation of the existing oak forest habitat for open space preservation, where limited recreational and open space uses may be allowed.

c. Pedestrian-oriented site planning. Location of workplaces, shopping, services, civic buildings and residences in close proximity to each other to facilitate walking and alternative transportation to the private vehicle.

d. Architecture and landscaping. Guidelines for architecture and landscaping that respond to the rural character of the area.

e. Resource, facility and services needs. Extent of necessary public, or private where applicable, needs including, but not limited to, safety, health, waste management and water supply."

San Luis Obispo County Code 22.98.070(D)

San Luis Obispo County Code 22.98.070(D) provides for open space preservation – cluster division incentive. Analysis of proposed land use shall identify the area necessary to maintain open space to preserve features of the applicable resource.

This standard applies to land where important physical, biological or historic resources are identified both on-site and on adjacent properties, to encourage cluster land divisions that will leave the resources in open space areas. Clustered land divisions may utilize an open space parcel area that is smaller than otherwise required by Chapter 22.22 where an important biological habitat, such as an oak woodland or the Nipomo Creek corridor, or land near an historic site such as the Dana Adobe, is identified through the application's review process. The size of the open space area may be determined by a visual, biological, or other applicable analysis of the area in question. The analysis shall identify the area that is necessary to maintain open space to preserve the features of the applicable resource.

The associated guideline states "retain land in open space in new land divisions that will preserve oak woodlands, riparian and other important biological habitats, and historic place surroundings."

Nipomo Community Park Master Plan Final Program EIR BR/mm-10(c)-Oak Tree Protection Guidelines (2017)

Nipomo Community Park Master Plan Final Program EIR BR/mm-10(c)-Oak Tree Protection Guidelines (San Luis Obispo County 2017a) describes typical County guidelines to protect oak trees retained within 50 feet of impact areas:

1. *A qualified arborist shall determine the critical root zone for each retained tree on a case-by-case basis, based upon tree species, age, and size. This area is generally*

defined as 1.0 to 1.5 times the distance from the tree base of the average measurement taken from the tree base to the edge of the canopy/dripline. At a minimum, the critical root zone shall be the distance from the trunk to the drip line of the tree.

2. *All trees to remain within 50 feet of construction or grading activities shall be marked for protection (e.g., with flagging) and their root zone fenced prior to any grading. Grading, utility trenching, compaction of soil, or placement of fill shall be avoided within these fenced areas. If grading in the root zone cannot be avoided, retaining walls shall be constructed to minimize cut and fill impacts. Care shall be taken to avoid surface roots within the top 18 inches of soil. If any roots must be removed or exposed, they shall be cleanly cut and not left exposed above the ground surface. The project arborist shall approve any work within the root protection zone.*
3. *Unless previously approved by the County, the following activities are not allowed within the root zone of existing or newly planted oak trees: year-round irrigation (no summer watering, unless "establishing" new tree or native compatible plants for up to seven years); grading (includes cutting and filling of material); compaction (e.g., regular use of vehicles); placement of impermeable surfaces (e.g., pavement); disturbance of soil that impacts roots (e.g., tilling).*
4. *The County shall minimize trimming of oak trees to remain onsite. Removal of larger lower branches should be minimized to: 1) avoid making tree top heavy and more susceptible to "blow-overs," 2) reduce having larger limb cuts that take longer to heal and are much more susceptible to disease and infestation, 3) retain wildlife habitat values associated with the lower branches, 4) retain shade to keep summer temperatures cooler (retains higher soil moisture, greater passive solar potential, provides better conditions for oak seedling volunteers), and 5) retain the natural shape of the tree. The amount of trimming (roots or canopy) done in any one season shall be limited as much as possible to reduce tree stress/shock (10% or less is best, 25% maximum). If trimming is necessary, the applicant shall use a certified arborist when removing limbs. Unless a hazardous or unsafe situation exists, major trimming shall be done only during the summer months.*

1.8 Special Status Species and Sensitive Habitat Regulations

For purposes of this Biological Report, special status species are those plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered by the USFWS under the ESA; those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the CESA; animals designated as "Species of Special Concern," "Fully Protected," or "Watch List" by the CDFW; and plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, or 4. In the following sections, further details are provided to highlight the different guidelines and qualifications that are used to help identify special status species in this report. In Sections 3.6 and 3.7, the various qualifications are listed in the special status species tables for each species with potential to occur in the project area.

1.8.1 Federal and State Endangered Species Listings

The Federal and California Endangered Species Acts are the regulatory documents that govern the listing and protection of species, and their habitats, identified as being endangered or threatened

with extinction. Possible listing status under both Federal and California ESA includes Endangered and Threatened (FE, FT, CE, or CT). Species in the process of being listed are given the status of either Proposed Federally Endangered/Threatened, Candidate for California Endangered/Threatened (PE, PT, CCE, or CCT). The CESA has one additional status: Rare (CR).

The USFWS published Birds of Conservation Concern (BCC) in 2018 that identified additional "species, subspecies and populations of all migratory nongame birds, that without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973." BCC species represent the USFWS' highest conservation priorities, beyond those already designated as threatened or endangered.

1.8.2 Global and State Ranks

Global and State Ranks reflect an assessment of the condition of the species or habitats across its entire range. Basic ranks assign a numerical value from 1 to 5, respectively for species with highest risk to most secure. Other ranking variations include rank ranges, rank qualifiers, and infraspecific taxon ranks. All Heritage Programs, such as the CNDDB use the same ranking methodology, originally developed by The Nature Conservancy, and now maintained and recently revised by NatureServe. Procedurally, state programs such as the CNDDB develop the State ranks. The Global ranks are determined collaboratively among the Heritage Programs for the states/provinces containing the species. Rank definitions, where G represents Global and S represents State, are as follows:

- GNR: Unranked – global rank not yet assessed
- G1/S1: Critically imperiled globally/in state because of extreme rarity (5 or fewer populations).
- G2/S2: Imperiled globally/in state because of rarity (6 to 20 populations).
- G3/S3: Vulnerable; rare and local throughout range or in a special habitat or narrowly endemic (on the order of 21 to 100 populations).
- G4/S4: Apparently secure globally/in state; uncommon but not rare (of no immediate conservation concern).
- G5/S5: Secure; common, widespread, and abundant.
- G#G#/S#S#: Rank range - numerical range indicating uncertainty in the status of a species, (e.g., G2G3 more certain than G3, but less certain that G2).
- G/S#?: Inexact numeric rank
- Q: Questionable taxonomy - Taxonomic distinctiveness of this entity is questionable.
- T#: Infraspecific taxa (subspecies or varieties) – indicating an infraspecific taxon that has a lower numerical ranking (rarer) than the given global rank of species.

1.8.3 California Rare Plant Ranks

Plant species are considered rare when their distribution is confined to localized areas, their habitat is threatened, they are declining in abundance, or they are threatened in a portion of their range. The California Rare Plant Rank (CRPR) categories range from species with a low threat (4) to species that are presumed extinct (1A). All but a few species are endemic to California. All of them are judged to be vulnerable under present circumstances, or to have a high potential for becoming vulnerable. Threat ranks are assigned as decimal values to a CRPR to further define the level of threat to a given species. The rare plant ranks and threat levels are defined below.

Ranks

- 1A: Plants presumed extirpated in California and either rare or extinct elsewhere.
- 1B: Plants rare, threatened, or endangered in California and elsewhere.
- 2A: Plants presumed extirpated in California, but common elsewhere
- 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
- 4: Plants of limited distribution - a watch list

Threat Levels

- 0.1: Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)
- 0.2: Moderately threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)
- 0.3: Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

1.8.4 California Department of Fish and Wildlife Animal Rank

The California Department of Fish and Wildlife (CDFW) assigns one of three ranks to Special Animals: Watch List (WL), Species of Special Concern (SSC), or Fully Protected (FP). Unranked species are referred to by the term Special Animal (SA).

Animals listed as Watch List (WL) are taxa that were previously designated as SSC, but no longer merit that status, or taxa that which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status.

Animals listed as California Species of Special Concern (SSC) may or may not be listed under California or federal Endangered Species Acts. They are considered rare or declining in abundance in California. The Special Concern designation is intended to provide the CDFW biologists, land planners, and managers with lists of species that require special consideration during the planning process to avert continued population declines and potential costly listing under federal and state endangered species laws. For many species of birds, the primary emphasis is on the breeding population in California. For some species that do not breed in California but winter here, emphasis is on wintering range. The SSC designation thus may include a comment regarding the specific protection provided such as nesting or wintering.

Animals listed as Fully Protected (FP) are those species considered by CDFW as rare or faced with possible extinction. Most, but not all, have subsequently been listed under the CESA or ESA.

Fully Protected species may not be taken or possessed at any time and no provision of the California Fish and Game code authorizes the issuance of permits or licenses to take any Fully Protected species.

1.8.5 Sensitive Habitats

Sensitive Natural Community is a state-wide designation given by CDFW to specific vegetation associations of ecological importance. Rarity and ranking of Sensitive Natural Communities involves the knowledge of range and distribution of a given type of vegetation, and the proportion of occurrences that are of good ecological integrity (CDFW 2021, CNDDB 2021b). Evaluation is conducted at both the Global (G) and State (S) levels, resulting in a rank ranging from 1 for very rare and threatened to 5 for demonstrably secure. Natural Communities with ranks of S1-S3 are considered Sensitive Natural Communities in California and may need to be addressed in the environmental review processes of CEQA and its equivalents.

1.8.6 California Native Plant Society Policy

In 1987 CNPS adopted a policy regarding mitigation of impacts to rare and endangered plants in 1987. The policy does not recognize off-site compensation as mitigation.

> *The policy of the California Native Plant Society is that all potential direct, indirect, and cumulative impacts to rare, threatened, or endangered plants and their habitats must be assessed and that appropriate measures be implemented to prevent such impacts resulting from projects. The policy of the Society is also that environmental documents and mitigation plans be based on complete, accurate and current scientific information. Viability of rare, threatened, or endangered plants and their habitats takes precedence over economic or political expediency. Because of the tremendous diversity of rare plant habitats in California, and the dependence of rare plants on their local habitats, it is imperative that mitigation measures be developed on a site specific basis. Local environmental conditions, species biology, land use patterns and other factors must be incorporated into the design of mitigation plans.*
>
> *The goals of this policy are to prevent the decline of rare plants and their habitats and to ensure that effective rare plant preservation measures are implemented.*
>
> *Of the mitigation measures listed in the California Environmental Quality Act, the Society fully endorses only that of avoiding the impact. Measures to minimize, to rectify, or to reduce or eliminate the impact over time are recognized by the Society as partial mitigation. The Society does not recognize off-site compensation as mitigation.*

CNPS (1998) provides guidance on mitigation options as they relate to CEQA Section 15370:

> *Of the five mitigation types in the California Environmental Quality Act, the California Native Plant Society fully supports those which avoid net reduction of population size or species viability. For most plant species this requires the protection of habitat essential to the survival of the species. In some instances, this also requires that impacts be fully avoided in order to prevent a significant impact (i.e., a net loss of plant numbers, habitat, or genetic variability essential to the future existence and recovery of the species). Alternatives such as site restoration and off-site introduction are generally unproven, and usually unsuccessful.*

Avoidance of impacts is the preferred mitigation and may be achieved by:

> *(1) pre-project planning and design; (2) reconfiguring an existing project design; or (3) adopting the no-project alternative. Project planning and design measures to avoid impacts may include arrangement of facilities on-site to avoid sensitive features. Additional measures are almost always required to protect avoided sites from impacts associated with construction and operation of the project. Such protection can include, but is not limited to, fencing, open space or conservation easements, and transfer of development rights.*

The Society believes that the other mitigation alternatives in CEQA do not fully mitigate for significant impacts to rare plants and their habitats for three reasons:

> *(1) These alternatives compromise and ultimately negate mitigation by allowing net losses of rare plant populations and habitat. Mitigation must, according to CEQA, fully offset or reduce significant impacts to a less than significant level.*
>
> *(2) Most rare plants are restricted to their known locations because they have specialized, poorly understood, habitat requirements. Creating the exact environmental conditions that these plants require may not be possible.*
>
> *(3) The Society does not endorse alteration of naturally occurring plant communities through transplantation because the methodology for most rare plants is untested and therefore unreliable and because most past attempts have ultimately failed.*

The Society recognizes that where losses are allowed or unavoidable:

> *off-site restoration, compensation, transplantation or other salvage methods should be attempted to enhance degraded populations or provide for partial survival of the sacrificed population. Such measures also provide additional knowledge of the species' horticultural and ecological requirements. Such measures should never be performed so that an otherwise unaffected population is in any way jeopardized, for example by genetic contamination.*

The Society recommends that mitigation alternatives other than avoidance can be used in combination to reduce impacts to less than significant levels. The alternatives should be used in conjunction with monitoring and long-term management agreements. Alternatives include:

> *Reducing Impacts:*
>
> *The significance of impacts may be minimized by reducing the size of the project (i.e., partial avoidance) and by locating the project in the least environmentally sensitive area. Areas where impacts are avoided should be surrounded by buffer zones where impacts are absorbed and set aside and permanently protected in conservation or open space easements. Efforts should be made to salvage portions of the population that will be lost.*
>
> *Restoration:*
>
> *Restoration can be used to mitigate impacts from projects approved prior to environmental regulations, or impacts allowed through a 'statement of overriding considerations.'*
>
> *Depending upon the degree of impact, habitat restoration may be as simple as removing debris and controlling public access. In more complex situations, however, partial or total restoration of degraded habitat may require extensive revegetation, and soil protection and stabilization programs. Restoration must be tailored to the specific project site based on the habitat and species involved. General guidelines for restoration projects involving rare plants are discussed in Appendix D* [of CNPS Mitigation Guidelines (1998).]

Reduction Over Time:

Impacts may be significantly reduced or eliminated by controlling public access and by fencing or staking the habitat area to prevent accidental intrusion into the site. Monitoring rare plants and habitats during all phases of a project will help ensure that construction and operation activities do not encroach on protected habitat.

When project actions have ended, restraints may or may not be removed depending on the completed project's potential for long-term impacts on the sensitive area. In most instances, control of public access to sensitive habitat sites needs to be continued beyond the construction phase of an individual project, especially in moderate and high-density development areas. Public education about the value of the protected resources should also be considered for these areas.

Attempts to reduce or eliminate impacts over the life of the project should be required for all projects if the potential exists for secondary impacts due to human access; mitigation agreements that require placement of a conservation or open space easement on the mitigation site should be considered to implement this measure.

Off-site Compensation:

Compensating for the impact by protecting substitute resources or environments has been used in some instances to mitigate unavoidable impacts. In most instances off-site compensation does not fully reduce impacts to an insignificant level because of a net loss of individuals or habitat that supports a natural self-sustaining rare plant population. In spite of this, off-site compensation is a useful tool under specific circumstances where other mitigation alternatives cannot be applied or do not fully mitigate significant impacts.

Off-site compensation has been approached in several different ways, including: 1) permanent protection of an existing off-site native population; 2) permanent protection of an off-site introduced population; 3) a combination of 1) and 2); or 4) mitigation banking.

Determining habitat value for off-site compensation is difficult. The size of the acquisition will vary depending upon the type, condition, extent and rarity of the habitat and species. In any case, the acquisition and permanent protection of an alternative parcel does not alter the fact that the loss of the initial site brings the rare habitat and species one step closer to ultimate extinction. Species preservation is greatly enhanced when plants are protected at a number of separate sites. Although the permanent protection of a vigorous, self-sustaining population of the species tends to reduce the endangerment potential of the species at that particular site, it does not necessarily fully compensate for the loss of the habitat known to support a viable population. To further reduce the endangerment potential for the species and habitat, the ratio of acquisition to loss must in most cases exceed 1:1 for any species. The ratio should be higher for rarer species, particularly for those that occupy irreplaceable habitats. In addition, enhancing off-site compensation areas (e.g., reducing grazing or OHV impacts) can help to more fully compensate for the net loss of plants at a project site.

If transfer of the threatened population is being attempted, an ecological study of the site, including an inventory of rare species, is needed to identify the feasibility of introduction. Genetic contamination can occur by mixing of populations of the rare plants and needs to be avoided, as does hybridization between the rare plant and close relatives that could occur at the introduction site. In no case are unthreatened populations to be jeopardized by the transfer

of genetic material from the threatened site. If the compensation site is considered suitable, acquisition or other permanent protection efforts are required to ensure adequate long-term protection, and therefore to mitigate for a net loss of rare plants or habitat. A propagation program should be developed for the salvage and transfer of rare plant populations from the initial parcel before initiating any activities. Permits may be required from California Department of Fish and Game (DFG) or the U.S. Fish and Wildlife Service. Propagation methods for the salvaged population must be developed on a case-specific basis. The propagation program schedule must provide adequate lead time to plan and carry out transfer at the correct time of the year. In order to serve as mitigation, the transfer must be successfully completed before the project's construction activities eliminate plants or habitats. Maintenance and monitoring programs which include the collection of data to document degree of success should also be developed for the compensation site to ensure the transplanted population is self-sufficient and thereby demonstrate success.

1.8.7 Sensitivity Criteria for Special Status Plants

The following information was used to evaluate impact significance for special status plants based on those listed or proposed for listing as rare, threatened, or endangered by the California Department of Fish and Wildlife (CDFW) under the California Endangered Species Act (CESA), and plants with a California Rare Plant Rank (CRPR) of 1 (considered threatened or endangered throughout its range), or 4 (limited distribution).

California Rare Plant Rank 4 plants are typically not considered special status species under San Luis Obispo County guidance. However, special circumstances may be considered to CRPR 4 local populations. For this Project we used the Final EIR for Jack Ranch (San Luis Obispo County 2018) as an example for determining significance to CRPR 4 special status plant species, where direct impacts cannot be avoided through redesign. Project impacts affecting more than 10 percent of the population within the Study Area would be mitigated offsite at a minimum ratio of 1:1. The mitigation ratio applies to plant count and occupied habitat (at least 1 plant preserved/protected for every 1 plant impacted and 1 acre preserved/protected for each occupied acre impacted) up to the significance threshold.

2 METHODS

2.1 Biological Resource Literature Review

Preliminary research includes review of relevant reference documents and agency data to determine what biological resources may occur near or in the Study Area. Literature review included:

- USFWS 5-year review on Pismo Clarkia (USFWS 2009);
- Queries of special-status species occurrence records and databases in November 2020;
- Review of literature on sensitive species and biological resources in the project area and region, including review of previous biological reports for the area, [including the 2018 Biological Constraints Analysis for Cañada Ranch (Althouse and Meade 2018)].

Althouse and Meade conducted a data search from the CNDDB and the California Native Plant Society (CNPS) On-line Inventory of Rare and Endangered Plants of California on June 3, 2020 (CNDDB 2021b, CNPS 2021b). Other database searches included online museum and herbarium specimen records for locality data within San Luis Obispo, as maintained by the Consortium of California Herbaria (CCH 2021). The data search area included the Oceano and Nipomo USGS 7.5-minute quadrangles and the 6 surrounding quadrangles (Arroyo Grande Northeast, Guadalupe, Pismo Beach, Point Sal, Santa Maria, and Tar Spring Ridge). Data was compiled for sensitive plant and wildlife species and reviewed according to each species potential to occur at the Study Area. The compiled list of CNDDB, CNPS, and CCH records are provided in Appendix C and Appendix D. We queried a list of federally proposed, candidate, threatened, and endangered species that may occur in the project region obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2014) provided in Appendix E and the USFWS National Wetlands Inventory (USFWS 2020, Appendix B).

Special status species lists produced by database and literature searches were cross-referenced and analyzed according to the described habitat types in the Study Area to identify all potential special status species that could occur in or near the Study Area. Each special status species that could occur in or near the Study Area is individually discussed in Sections 3.6.2 and 3.7.2. After review of the literature and completion of site visits the following criteria were used to determine the potential for special-status species to occur within the Study Area:

- **Present:** The species was observed in the Study Area during field surveys.
- **High Potential:** Highly suitable habitat and CNDDB or CNPS occurrence records indicate the species is likely to occur in the Study Area or the immediate vicinity. High potential is related to presence of appropriate soil, aspect, slope, microsite conditions, and proximity to occupied habitats. Individuals may not have been observed during field surveys; however, the species likely occurs in or near the Study Area.
- **Moderate Potential:** Suitable habitat is present in the Study Area and CNDDB occurrences or surveys have recorded the species in the vicinity of the Study Area. Individuals were not observed during field surveys, but the species could be present, at least seasonally or as a transient.
- **Low Potential:** Marginally suitable habitat is present in the Study Area, and there are no occurrence records or other historical (i.e., 50 years or older) records in the vicinity of the

Study Area. Individuals were not observed during surveys and are not expected to be present.

- **No Potential:** Suitable habitat for the species is not present in the Property, the species is a perennial shrub or tree that was not observed during site surveys, and/or the species is not known to occur in the region.

2.2 Soils

A soil report was created by importing the Study Area as an Area of Interest (AOI) into the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGRO) via their online portal. The resulting soil report was reviewed, and a map was created using the U.S. Department of Agriculture (USDA) NRCS Soil Survey GIS data (USDA 2018a). Soils data are summarized in Section 3.2.

2.3 Surveys

The Study Area was surveyed for biological resources from the winter of 2017 to summer 2021 (Table 2). Surveys were conducted by biologists LynneDee Althouse, Dan Meade, Jason Dart, Shannon Henke, Darcee Guttilla, Greg Salas, Bret Robinson, Will Knowlton, Sarah Termondt, Adam Searcy, and Kyle Nessen. Meandering transect surveys were conducted on foot to inventory existing species, special status plants and animals, and habitat types, and to collect photographic documentation of the Study Area. Each habitat type was field inspected and described by species composition in Section 3.3. All plant and animal species observed in the Study Area were identified and documented in Sections 3.6.3 and 3.7.3.

TABLE 2. BIOLOGICAL SURVEYS

Survey Date	Biologist(s)	Weather Observations	Activities
12/6/2017	LynneDee Althouse	56 °F, 0-5 mph, clear	Initial site visit
12/19/2017	Shannon Henke, Darcee Guttilla	59 to 66 °F, wind 0 to 8 mph, 5% cloud cover	Botanical survey and wildlife survey
12/29/2017	Shannon Henke, Darcee Guttilla	56 to 82 °F, wind 0 to 10 mph, 30% cloud cover	Botanical survey and wildlife survey
4/13/2018	Shannon Henke, Darcee Guttilla	55 to 72 °F, wind 12 mph, clear	Botanical survey and wildlife survey
5/18/2018	Shannon Henke	55 to 68 °F, wind 12 to 24 mph, 50% cloud cover	Botanical survey
6/1/2018	Shannon Henke	64 to 74 °F, wind 13 mph, clear	Botanical survey
6/12/2018	LynneDee Althouse, Shannon Henke	70 to 80 °F, wind 0-2 mph, clear	Botanical survey
7/3/2018	Shannon Henke	61 °F, wind 5 mph, 10% cloud cover	Botanical survey
6/14/2019	Kyle Nessen, Mallory Patino, Darcee Guttilla, Shannon Henke, LynneDee Althouse	55 °F, wind 0-2 mph, 100% cloud cover	Botanical survey, oak tree inventory, bird point count

Survey Date	Biologist(s)	Weather Observations	Activities
8/29/2019	Kyle Nessen, Charleen Rhodes	60-77 °F, wind 0-25 mph, 30% cloud cover	Oak tree inventory and botanical survey
9/18/2019	Kyle Nessen	52-78 °F, wind 8-14 mph, 25% cloud cover	Oak tree inventory and botanical Survey
9/19/2019	Kyle Nessen	57-75 °F, wind 6-24 mph, 100% cloud cover	Oak Tree Inventory and Botanical Survey
4/15/2020	Jason Dart, Greg Salas, Bret Robinson	60-72 °F, wind 1-5 mph, 0% cloud cover	Legless lizard, badger, and nesting bird surveys
4/17/2020	Will Knowlton	60-70 °F, wind 1-5 mph, 100% cloud cover	Nesting bird survey
4/21/2020	LynneDee Althouse, Sarah Termondt	65-80 °F, wind 0-5 mph, 25% cloud cover	Botanical Survey and habitat mapping of 7-acre parcel
4/24/20	Dan Meade	52-83 °F, wind 8-14 mph, 25% cloud cover	Invertebrate survey
5/6/2020	Will Knowlton	65-85 °F, wind 1-10 mph, 10% cloud cover	Legless lizard, badger, and nesting bird surveys
5/19/2020	LynneDee Althouse, Sarah Termondt, Kyle Nessen, Colby Boggs (Rincon Consultants)	65-85 °F, wind 0-5 mph, 10% cloud cover	Botanical survey, Pismo clarkia population counts
5/21/2020	Dan Meade	71 °F, wind 0-21 mph, clear	Pismo clarkia pollinator survey
5/26/2020	Justin Purnell	60-80 °F, wind 5-8 mph, 35% cloud cover	Bat habitat assessment, acoustic monitoring set up, evening emergence survey
5/27/2020	Sarah Termondt. Kyle Nessen, Kyle Weichert (Rincon Consultants)	70-85 °F, wind 0-5 mph, 10% cloud cover	Botanical Survey, Pismo Clarkia SCP Data Collection
6/3/2020	LynneDee Althouse, Sarah Termondt, Aaron Harville (MBS Land Surveys), Colby Boggs (Rincon Consultants)	82-90 °F, wind 0-5 mph, 10% cloud cover	Pismo Clarkia mapping with Surveyor
6/9/2020	Sarah Termondt	70-90 °F, wind 0-5 mph, 10% cloud cover	Botanical survey
6/24/2020	LynneDee Althouse	75 °F, wind 0-5 mph, clear	Pismo Clarkia follow-up
7/21/2020	Bret Robinson	70-80 °F, wind 0-5 mph, clear	Reptile cover board inspection and raptor survey
3/9/2021	Kyle Nessen, Adam Searcy	51-58 °F, wind 3-11 mph, 35% cloud cover	Site assessment and survey for plant and animal species
4/09/2021	LynneDee Althouse	65 °F, gusty wind 10-15 mph, hazy	Pismo Clarkia and CA Spineflower spot-check
4/26/2021	LynneDee Althouse	60 °F, breezy 10-15 mph, slightly cloudy	Pismo Clarkia and CA Spineflower spot-check
5/25/2021	Kyle Nessen, Adam Searcy	63-75 °F, wind 4-14 mph, 40% cloud cover	Count oak trees and map Pismo clarkia populations

Survey Date	Biologist(s)	Weather Observations	Activities
5/27/2021	Adam Searcy, Heather Schneider (SBBG)	50-65 °F, wind 2-10 mph, 35% cloud cover	Tag Pismo Clarkia for seed collection
6/7/2021	Adam Searcy	52-62 °F, wind 1-10 mph, 60% cloud cover	Pismo Clarkia census and botanical survey
6/8/2021	Adam Searcy	55-65 °F, wind 2-14 mph, 20% cloud cover	Pismo Clarkia census and botanical survey
6/16/2021	Adam Searcy	72-92 °F, wind 2-8 mph, 35% cloud cover	Oak tree inventory
6/17/2021	Adam Searcy	65-78 °F, wind 1-8 mph, 25% cloud cover	Oak tree inventory
6/18/2021	Adam Searcy	61-73 °F, wind 2-8 mph, 15% cloud cover	Oak tree inventory
6/21/2021	Adam Searcy	55-66 °F, wind 2-9 mph, 45% cloud cover	Oak tree inventory
6/22/2021	Adam Searcy	58-69 °F, wind 1-10 mph, 35% cloud cover	Oak tree surveys
7/2/2021	Adam Searcy	56-67 °F, wind 1-9 mph, 40% cloud cover	Oak tree surveys
7/12/2021	Adam Searcy	57-70 °F, wind 2-8 mph, 30% cloud cover	Collected Pismo clarkia seed

2.3.1 Botanical Resources

Habitats

Each habitat type occurring in the Study Area was inspected, described, and identified using the hierarchical classification of *A Manual of California Vegetation* (CNPS 2021a, Section 3.3). The minimum mapping unit area was 1-acre. Natural habitat types were identified to the alliance or association level, when applicable, or to group level when they did not conform to a described alliance. Holland and Keil (1995) habitat descriptions were also reviewed. Habitats comprised primarily of introduced, naturalized vegetation are classified as semi-natural stands. Transects were utilized to map approximate boundaries of different vegetation types and hand notation of habitats on high-resolution aerials were digitized into polygon layers. Supplemental rapid assessment vegetation relevé sampling within each recognized habitat type was also recorded.

Trees and Woodlands

In 2018 we mapped and measured individual trees within a discrete 17-acre area (formerly called "Area 4") of the Dana Reserve to determine precisely how many trees per acre occurred in that part of the oak woodlands. We measured all trees over 4 inches in diameter at breast height (DBH, 4.5 feet above ground level). Where trees sprouted from a central base area, trunks were counted as one tree canopy when stems emerged from within one foot of their closest neighbor. The DBH measurements were combined for multi-stemmed trees. Canopy and height were measured for the multi-stemmed unit.

In 2021 we mapped the remaining individual oak trees on Dana Reserve and adjacent APN 091-301-030 and APN 091-301-29. We used ArcGIS QuickCapture for data entry and an Eos Arrow

100 GNSS unit for sub-meter accuracy. Six DBH categories were derived data from the 2018 Area 4 survey based on a Jenks natural breaks cluster analysis (Jenks, 1967). The 2021 mapping effort classified trees within these six size categories: 5-13", 14-22", 23-34", 34-47", 48"+, 48"+ (single stem). DBH class was estimated for each tree except for the largest specimens (larger than ca. 34" DBH) which were measured with a DBH tape.

Many oak trees within the Study Area are multi-stemmed groups and some are clearly growing from one root mass as they are connected by above-ground wood. Others may be connected below-ground, but most connections are not visible, and connectivity (or lack thereof) is not determinable without significant excavation. Multi-trunked trees were mapped based on the following criteria:

- If trunks were separated from each other by more than 18 inches of soil they were mapped as separate individuals
- If separate trunks were connected by above-ground wood at any distance they were mapped as one multi-stemmed individual
- If separate trunks were within 18 inches of each other, they were mapped as one individual. This applied to obvious circular clumps as well as irregular clumps that spanned many feet so long as a path existed between separate trunks with no between-trunk space exceeding 18 inches.

For discussion regarding oak tree Critical Root Zones (CRZ), we referred to the Nipomo Mesa Community Park Master Plan Program EIR (2017a) described in Section 1.7 and an MND for a project in Arroyo Grande on a 317-acre site (San Luis Obispo County 2019a). The initial study for the MND states:

> *The County requires mitigation for impacts to, or removal of, native oak trees with a diameter at breast height (DBH) of five inches or greater, as measured at a height of four feet six inches above ground. Impacts include any ground disturbance within the critical root zone of one and one-half times the canopy/drip line diameter, trunk damage, or any pruning of branches three inches in diameter or greater. Mitigation ratios to removed and impacted trees are 4:1 and 2:1, respectively.*

Another initial study for an Arroyo Grande project on a 28-acre parcel (San Luis Obispo County 2019b) stated:

> *…all trees to remain on-site that are within fifty feet of construction or grading activities shall be marked for protection (e.g., with flagging) and their root zone fenced. The outer edge of the tree root zone is 1-1/2 times the distance from the trunk to the drip line of the tree. Grading, utility trenching, compaction of soil, or placement of fill shall be avoided within these fenced areas. If grading in the root zone cannot be avoided, retaining walls shall be constructed to minimize cut and fill impacts. Care shall be taken to avoid surface roots within the top 18 inches of soil. If any roots must be removed or exposed, they shall be cleanly cut and not left exposed above the ground surface.*

Botanical Surveys

Identification of botanical resources included field observations and laboratory microscope inspection of collected material (refer to Table 6). Botanical surveys were conducted between the winter of 2017 to early summer of 2021 (Table 2) according to survey guidelines (USFWS 2000, CDFW 2018, CNPS 1998, San Luis Obispo County 2000). Reconnaissance transects were

meandering with an emphasis on locating habitat appropriate for special status plants. All plant species observed on the Property were identified and recorded by a qualified botanist (Section 3.7.3). Point data was collected for populations containing less than 100 individuals within approximately 100 sq. ft. Polygon data was collected for species that occurred across areas larger than 100 sq. ft. and population count estimates were taken based on density sampling. Botanical surveys were appropriately timed to identify all special status plant species known from the region (refer to Table 4 and Table 5) that have potential to occur in the Study Area. Botanical nomenclature used in this document follows the Jepson eFlora (Jepson Flora Project 2020). Oak tree inventories, rapid assessments, and tree counts were conducted between 6/14/2019 and 7/2/2021.

2.3.2 Wildlife

Wildlife species were identified by direct observation or by visual signs of animal presence such as burrows/dens, nests, vocalization, tracks, and/or scat. All wildlife observations were recorded during Study Area field surveys (refer to Table 9). Nomenclature for birds is in accordance with the American Ornithological Society Checklist (Chesser et al. 2019), and mammals are consistent with the Revised Checklist of North American Mammals North of Mexico (Baker et al. 2003). Small mammal trap surveys were not in the scope of work for this biological report.

Sensitive Invertebrates

Flying insect surveys were conducted by Daniel E. Meade on April 24 and May 21, 2020, with the goal of identifying native bees gathering nectar on the property. Field work was timed to coincide with the height of the wildflower bloom season and the annual spring increase in worker bumblebees. Sweep netting was used to capture flower-visiting insects. This method targets pollinators, specifically bees. Sweeps were conducted rapidly over flowers using an aerial net, which was checked often, and captured insects were transferred to jars or vials. Sweep surveys were conducted across flower fields and flowering shrubs (primarily *Lupinus arboreus*) throughout the property. Large native bees observed on flowers, especially bumblebees, were targeted for capture. Abundant European honeybees (*Apis mellifera*) were not targeted. Sampling began at 12:00 PM near the entrance to the property on Hetrick Avenue and moved through wildflower fields from the southwest to the northeast, ending at 3:43 PM.

Northern California legless lizard

Northern California legless lizard surveys were conducted over multiple days in April and May 2020. Suitable habitat within the Study Area was surveyed by hand and with potato rakes. Leaf litter and topsoil were carefully raked to inspect for legless lizards or signs of their presence. Additionally, on April 15, 2020, 15 flattened cardboard coverboards (24 x 28-inch) were installed throughout the Study Area. Litter was raked clear and edges of the coverboard buried after placement and then secured with a brick. Coverboard locations were mapped and they will be periodically monitored throughout the year.

Sensitive and Nesting Birds

Birds were identified by direct observations using 10-power binoculars and/or by vocalizations. Nesting bird surveys were conducted by avian biologist Will Knowlton on April 17 and May 6, 2020. Nests and tree cavities were searched for while identifying all birds encountered. Nest

searches were conducted by visually inspecting trees and scanning under tree canopy with binoculars and by observing the behavior of birds. All large and medium-sized stick nest locations were recorded with a GPS unit. Trees were also visually inspected for the presence of nest cavities and cavity-bearing tree locations were recorded with a GPS unit.

Presence of burrowing owls (*Athene cunicularia*) was assessed by inspecting suitable California ground squirrel (*Otospermophilus beecheyi*) burrow complexes incidentally while conducting nesting bird surveys. Binoculars were used to scan for burrowing owls and suitable burrows were inspected for signs of burrowing owl occupation (e.g., pellets, whitewash).

Sensitive Bats

Dana Reserve contains thousands of coast live oak trees, which could serve as daytime roosting sites, and adjacent open areas that provide potential foraging habitat for numerous bat species. Any trees with sufficient foliage, crevices, or loose bark could provide cover for bats.

Methods for the focused bat survey included a visual inspection of trees, evening visual bat emergence survey, and three consecutive nights of acoustic monitoring. The bat survey was performed by biologist Justin Purnell on May 26, 2020. Bat detectors were placed in Lots shown as DR-REC and DR-MF on the Land Use & Public Roads map included in Appendix A. Two Petterson D500X bat detectors with external microphones were placed at the entrance of narrow tree corridors directed toward open habitat, to maximize bat detections while bats foraged in the open habitat. Bat detectors were in place May 26 to 29, 2020. Sound files gathered during acoustic surveys were analyzed with Sonobat software to determine species. The emergence survey was conducted by visual monitoring of trees on the property at dusk with intent to determine if bats emerged from daytime roosting areas on the property. The biologist conducted the evening visual emergence survey from 6:30 PM until 9:30 PM.

American Badger

A survey of the Study Area was conducted on April 15 and May 6, 2020, for American badger. During the survey effort, all potential burrows were examined for size and any sign of use by badgers. Two motion sensing wildlife cameras were placed on game trails in the Study Area on April 15, 2020. These cameras were removed on May 6, 2020, and all photographs were reviewed. A GPS point was taken using AmigoCollect for each camera location and all observed species were documented.

2.4 Maps

Mapping efforts utilized Samsung Galaxy Tab 4 tablets equipped with an EOS Arrow 100 GNSS receiver with sub-meter accuracy. Maps were created by importing GPS data into ArcGIS Pro, a Geographic Information System (GIS) software program. Biological resource data were collected in the field by staff biologists then imported into Esri ArcGIS software program.

Data were overlaid onto airborne digital photographs of the Study Area acquired on May 19, 2020 by 14 CFR Part 107 certified pilot Kyle Nessen. A georeferenced composite image of the Study Area was generated from the acquired aerial images for baseline review and image analysis (USDA 2018b). All flight operations were conducted within visual line of sight and below a maximum altitude of 400 feet above-ground level. The Study Area occurs within Class G airspace and flight operations were conducted with prior permission from the property owner.

3 RESULTS

3.1 Existing Conditions and Site History

The Study Area and adjacent landscapes are comprised of gently rolling hills that generally slope from the highest point near Hetrick Avenue (southwestern side) toward U.S. Highway 101 (northeastern side). No watercourses are located on the property. Nipomo Creek (offsite) occurs east of U.S. Highway 101, conveying water southeast toward the Santa Maria River. Between U.S. Highway 101 and Pomeroy Road the Study Area is bordered by dense oak woodland on the southern end, and patches of landscape trees, oaks, and a line of eucalyptus trees (*Eucalyptus globulus*) closer to U.S. Highway. The main Dana Reserve parcel is undeveloped and has been used as farm and livestock rangeland for more than a century. The County identifies this parcel as Dana Ranch (San Luis Obispo County Code 22.96.072).

Evidence of episodic disturbance was observed in the field and from aerial imagery dating back to 1939. Field evidence of very old woodland clearcutting suggests a link to an historic drought between 1862 and 1864 when ranchers were compelled to fell trees for livestock consumption (Guinn 1890; and author's personal communication with Jim Sinton, family rancher familiar with the Nipomo Mesa). Google Earth imagery indicates that the grassland west of Highway 101 was last farmed in about 2002, or possibly 2006. Aerial imagery from UC Santa Barbara's geography library and Google Earth imagery are provided in Appendix B.

Farming, mowing, and chaparral (brush) removal appears to have been conducted for decades. The 1939 image shows evidence of brush clearing on rolling topography and farmed fields on flatter terrain. The 1949 image indicates some of the brush cover and associated coast live oaks were starting to grow back. Some brush clearing is evidenced in 1957. The 1969 to 1994 aerials show chaparral cover generally increasing in areas not actively farmed. Between 1994 and 2002, shrub reduction appears to have reduced brush cover while retaining young trees barely visible in the 1994 imagery. Aerial images from 2002 and years thereafter show reduced brush cover. Livestock pens are visible in 2011 to 2013 aerial imagery.

Two additional parcels provide a connection to Cherokee Place on the north side of the ranch to Willow Road. The western 7-acre parcel is undeveloped and shows evidence of significant site disturbance from past dry farming. There are no trees, weedy species dominate, and a few bushes have recruited since 2010 when the last mowing appears to have occurred. The eastern 7-acre parcel (shown as Lots 12, A and E) is densely wooded with a residence and numerous animal pens for horses, chickens, and other animals.

3.2 Soils

The Soil Survey of San Luis Obispo County, California, Coastal Part (USDA 1984) identifies Oceano sand as two soil map units, depending on slope. See Figure 3 for digitized spatial data from the USDA soil survey overlaid on an aerial photo. The soil survey map may not indicate small inclusions or other soil types within the Study Area such as sandy loam and fine sand soils.

Oceano sand, 0 to 9 percent slopes (184) and 9 to 30 percent slopes (185) is a very deep and excessively drained soil from stabilized sand dunes formed through deposits of windblown sand. The slope can be nearly flat to moderate (184) to strongly sloping (185). The soil type formed in deposits of windblown sand. Included in this map unit are areas of Baywood fine sand, Garey

sandy loam, and dune land. Permeability is rapid, and the available water capacity is low causing droughty conditions making the soil poorly suited for rangeland. Water erosion is slight to moderate (Ernstrom 1984).

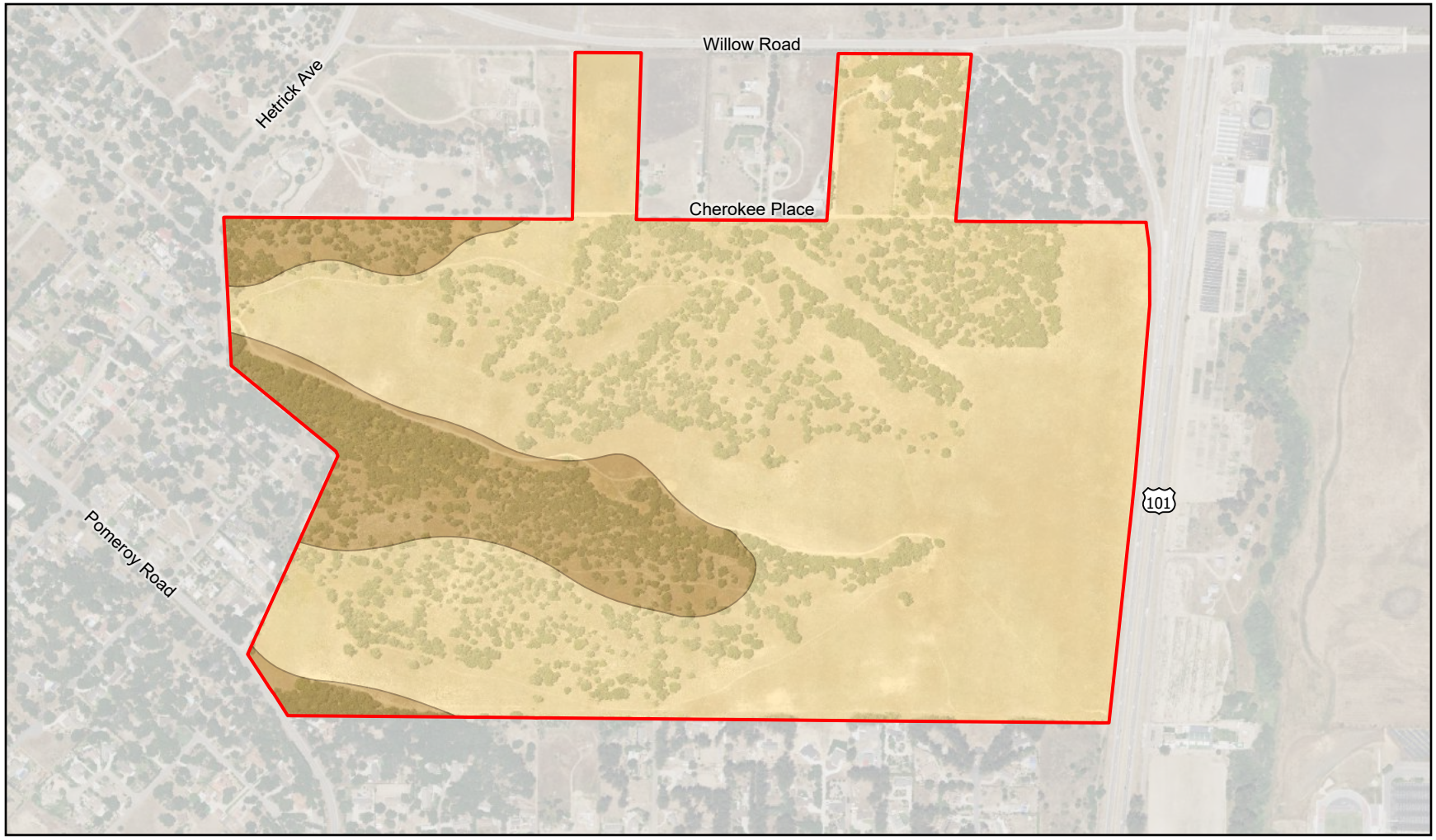
3.3 Habitat Types

Habitat types in the Study Area include coast live oak forest, coast live oak woodland, Burton Mesa chaparral, California perennial grassland group (vegetation with native plants diagnostically present), Mediterranean California naturalized annual grassland (stands strongly dominated by non-native plants), annual brome grasslands alliance, and anthropogenic (Figure 4; Table 3; CNPS 2021a). Habitats were identified to the alliance or association level when possible and to the group level when the onsite habitat did not conform to a known alliance. Sensitive associations were considered when applicable. Global and State ranks are not applied at the group level and, therefore, are not provided for habitat "groups".

TABLE 3. HABITAT TYPES

Habitat Type	Global/State Rank	Location	Area (Acres.)
Coast live oak forest (*Quercus agrifolia* / *Toxicodendron diversilobum*)	GNR	Common on slopes in the Study Area	40.5
Coast live oak woodland (*Quercus agrifolia* / *Adenostoma fasciculatum* – *Salvia mellifera*)	G3/S3	Throughout Study Area, commonly integrading with coast live oak forest and Burton Mesa chaparral	78.3
Burton Mesa chaparral (*Arctostaphylos* (*purissima*, *ru dis*) Shrubland Special Stands)	G1/S1	Occasional on slopes, in areas lacking canopy cover	36
California perennial grassland group	N/A	Common on lower elevation flats in the Study Area	126
Mediterranean California naturalized perennial grassland group	N/A	Northern parcel in Study Area	5.1
Annual brome grasslands alliance	N/A	Northern parcel in Study Area	7.2
Anthropogenic	N/A	Existing roads and structures	2.2
TOTAL			**295.3**

Figure 3. USDA Soil Survey



Legend

- Study Area
- Oceano sand, 0 to 9 percent slopes (83%)
- Oceano sand, 9 to 30 percent slopes (17%)

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50284°W 35.04649°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

Figure 4. Habitats

Legend

- Study Area
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Coast Live Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Coast Live Oak Woodland* - S3

*Sensitive Natural Communities with State Rank

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50284°W 35.04649°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
October 06, 2021 12:47 PM by SAF

3.3.1 Coast live oak forest (Quercus agrifolia / Toxicodendron diversilobum) (G5 /S4)

Mature, coast live oak (*Quercus agrifolia* var. *agrifolia*) forest occurs on flats and gentle north-trending slopes within the Study Area (Photo 1). This habitat meets the alliance membership rule of coast live oak comprising greater than 50 percent average cover in the tree canopy. There are generally few gaps in the canopy with multiple trees creating a continuous overstory. Trees within coast live oak forest are on average taller than trees in coast live oak woodland and Burton Mesa chaparral and fewer show evidence of historic pruning. Other than a single Peruvian pepper tree (*Schinus molle*) in the northeast near Cherokee Place and individual pine trees (*Pinus* sp.) near both the northeastern and southwestern boundary, the Study Area only contains coast live oaks as the tree canopy in this alliance. The shaded understory is dominated by nonnative annual grasses, poison oak (*Toxicodendron diversilobum*) thickets, and occasional shade-tolerant shrubs such as coffeeberry (*Frangula californica)*, while chaparral species are conspicuously absent. As such, we identify coast live oak forest as the *Quercus agrifolia / Toxicodendron diversilobum* association, which is not a sensitive natural community (CDFW 2021). Rare plant species such as Mesa horkelia (*Horkelia cuneata* var. *puberula)* and Michael's rein orchid (*Piperia michaelii*) are restricted to openings in and around the periphery of coast live oak forest. Of particular note, Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*) is located along the northern edge of coast live oak forest habitat. Coast live oak forest occupies 38.7 acres on Dana Reserve's Project. The proposed project will impact 21.7 acres of coast live oak forest, while the Alternative will impact 15.3 acres (Figure 11 and Figure 12).

The following Species of Special Concern (SSC) are supported by coast live oak forest but are unlikely to be observed without appropriately timed focused surveys: northern California legless lizard (*Anniella pulchra*), pallid bat (*Antrozous pallidus*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillii*); and Special Animals (SA) hoary bat (*Lasiurus cinereus*) and Yuma myotis (*Myotis yumanensis*). USFWS Birds of Conservation Concern (BCC) observed in oak woodland include the cavity nesting Oak Titmouse (*Baeolophus inornatus*) and Nuttall's Woodpecker (*Picoides nuttallii;* USFWS 2018). Coast live oak forest supports many songbirds, raptors, and common rodents such as mice, voles, and woodrats. Oak tree canopies, cavities, and loose bark may provide roosting habitat for multiple bat species including little brown bat (*Myotis lucifugus*) and California myotis (*Myotis californicus*).

Photo 1. Coast live oak forest, view west. June 14, 2019.

3.3.2 Coast live oak woodland (Quercus agrifolia / Adenostoma fasciculatum – Salvia mellifera) (G3 /S3)

Coast live oak woodland occurs on gentle slopes and flats within the Study Area (photo 2). Characteristics of this habitat within the Study Area meet the alliance membership rule of coast live oak comprising between 20-50 percent cover and a mixture of open and closed canopy. This habitat integrates with adjacent coast live oak forest, Burton Mesa chaparral, and grassland habitats, creating a heterogeneous mosaic. Many of the understory species present in Burton Mesa chaparral are also present here, including chamise, black sage, and sand mesa manzanita. However, we do not consider these areas Burton Mesa chaparral because oak cover is generally too high to be regarded as a shrub-dominated vegetation community (CNPS 2021a). We identify coast live oak woodland as the *Quercus agrifolia / Adenostoma fasciculatum – (Salvia mellifera)* association, which is a G3/S3 sensitive natural community (CDFW 2021). Evidence of historic clearcutting was observed within the coast live oak woodland in the Study Area along with decades of land management for livestock grazing and fire fuel reduction (see Section 3.1).

Coast live oak woodland habitat supports a unique assemblage of rare plants. All special status plant species observed within the Study Area occur within coast live oak woodland or along its gaps and edges, including sand mesa manzanita (*Arctostaphylos rudis*), sand buck brush (*Ceanothus cuneatus* var. *fascicularis*), Nipomo mesa ceanothus (*Ceanothus impressus* var. *nipomensis*), sand almond (*Prunus fasciculata* var. *punctata*), mesa horkelia (*Horkelia cuneata* var. *puberula*), California spine flower (*Mucronea californica*). Sand mesa manzanita, sand buck brush, Nipomo mesa ceanothus, and sand almond occur in areas where coast live oak woodland integrates with Burton Mesa chaparral. Mesa horkelia is locally abundant and occurs along the margins of oak woodland and tree canopy dripline where this habitat transitions to more open grassland and shrubland vegetation. Pismo clarkia, California spineflower, and Michael's rein orchid were encountered along margins of oak woodland habitat where it transitions to grassland.

Coast live oak woodland occupies 78.3 acres on Dana Reserve's Project. The Project will impact 75.3 acres of coast live oak woodland, while the Alternative will impact 69.9 acres of coast live oak woodland (Figure 11 and Figure 12).

Photo 2. Coast live oak woodland, view north. September 3, 2019

Coast live oak woodland habitat within the Study Area supports Blainville's horned lizard (*Phrynosoma blainvillii*) that was observed onsite, a California Species of Special Concern (SSC). The following SSCs are also supported by coast live oak woodland habitat but are unlikely to be observed without appropriately timed focused surveys: northern California legless lizard (*Anniella pulchra*), pallid bat (*Antrozous pallidus*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillii*); and Special Animals (SA) hoary bat (*Lasiurus cinereus*) and Yuma myotis (*Myotis yumanensis*). USFWS Birds of Conservation Concern (BCC) observed in oak woodland include the cavity nesting Oak Titmouse (*Baeolophus inornatus*) and Nuttall's Woodpecker (*Picoides nuttallii;* USFWS 2018). Coast live oak woodland supports many songbirds, raptors, and common rodents such as mice, voles, and woodrats. Oak tree canopies, cavities, and loose bark may provide roosting habitat for multiple bat species including little brown bat (*Myotis lucifugus*) and California myotis (*Myotis californicus*).

*3.3.3 Burton Mesa chaparral (*Arctostaphylos *(*purissima*,* rudis*) Shrubland Special Stands) (G1/ S1, disturbed)*

Dana Reserve has a high potential to support maritime chaparral because of its coastal summer fog influence, sandy nutrient-poor soils, and presence of narrowly endemic plants, especially ceanothus and manzanita species (Davis et al., 1988 and Vasey et al. 2012). The current condition of the chaparral on site is degraded.

Burton Mesa chaparral is a type of maritime chaparral that occurs in southern San Luis Obispo County and northern Santa Barbara County, generally within 12 miles of the ocean. Maritime chaparral is a fire dependent vegetation type that supports exceptional biodiversity particularly in areas subject to periodic fires. The intermediate fire-return interval typically burns with high-intensity crown fires (Conard and Weise 1998) followed by growth periods that last over 15 years (Keeley et al. 2005, Sommers et al. 2011). In the first few years after fire, chaparral persistence depends on shrubs successfully competing with invading grasses (Keeley et al. 2005). Intense rodent herbivory can facilitate the exclusion of exotic grasses from shrublands, indirectly benefitting shrubs and limiting exotic grass invasion (Hendricks 2020). Many maritime chaparral species such as rare manzanitas and ceanothus are obligate seeders (they do not resprout) and require fire to reproduce. Exposure of mineral soil, scarification of seeds, heat, and charate are shown to improve reproduction of obligate seeders following fire (Keeley 1987; Wahlert et al., 2009).

Characteristic species of Burton Mesa chaparral listed in the CNPS Manual of California Vegetation Online (2021a) include *Arctostaphylos purissima* and/or *Arctostaphylos rudis* are dominant or characteristically present in the shrub canopy with *Adenostoma fasciculatum, Arctostaphylos crustacea* ssp. *eastwoodiana, Artemisia californica, Baccharis pilularis, Ceanothus cuneatus* var. *fascicularis, Ceanothus impressus, Diplacus aurantiacus, Ericameria ericoides, Eriophyllum confertiflorum, Helianthemum scoparium, Lotus scoparius* and *Salvia mellifera.* Emergent trees may be present at low cover, including *Quercus agrifolia* or *Quercus parvula* var. *shrevei*. Shrubs are generally less than 5 meters (16 feet tall) canopy open to continuous. Herbaceous layer is variable and may include cryptogamic crust. Soils are derived from Pleistocene sand deposits, occasionally marine siltstones overlain with a thin sand layer.

On Dana Reserve, Burton Mesa chaparral habitat occurs primarily on south trending slopes in areas dominated by re-sprouting shrubs with an open canopy, disturbed by routine brush removal

(Photo 3). Annual Mediterranean grasses dominate the remainder of this habitat that exhibits vegetation type conversion from chaparral to annual grasses and scattered oaks as described by Pratt 2022. Sand mesa manzanita (*Arctostaphylos rudis*), a rare shrub (CRPR 1B.2, Photo 4) endemic to southern San Luis Obispo County and northern Santa Barbara County, is regularly scattered across Dana Reserve's chaparral and open woodland habitats, though never reaching more than 1-2% cover. Burton Mesa chaparral (*Arctostaphylos* (*purissima*, *rudis*) Shrubland Special Stands) is a Sensitive Natural Community listed by CDFW as G1/S1 and is considered a Special Stand by CNPS, which defines this habitat type by the characteristic presence of sand mesa manzanita (CDFW 2021, CNPS 2021a).

Weedy grasses, such as ripgut brome and veldt grass (*Ehrharta calycina*) are the dominant vegetation. However, crown-sprouting Chamise (*Adenostoma fasciculatum*) and black sage (*Salvia mellifera*) co-dominate the shrub layer with variable abundance (Photo 3). Similarly, associated maritime species such as deerweed (*Acmispon glaber*), sticky monkeyflower (*Mimulus aurantiacus*), coffeeberry, hollyleaf cherry (*Prunus ilicifolia*), and broom rush-rose (*Crocanthemum scoparium*) occur in low but persistent cover.

Special status species in this habitat include scattered individuals and groups of sand mesa manzanita, sand almond, sand buckbrush, mesa horkelia, and California spineflower.

Coast live oak trees are commonly found within Burton Mesa chaparral, but canopy does not exceed 20% absolute cover in our mapping effort. Many of the species described within Burton Mesa chaparral are also present in coast live oak woodland, as both habitats often integrade. The primary distinction between these two habitats is the canopy cover of coast live oaks, which, when greater than 20%, is considered a woodland or forest. See coast live oak woodland description for further details.

Photo 3. Re-sprouting shrubs in the disturbed Burton Mesa chaparral habitat which receives routine brush clearing, view north. May 18, 2018

Photo 4. Re-sprouting sand mesa manzanita. June 9, 2020.

3.3.4 California perennial grassland group (disturbed)

Disturbed California perennial grassland group occurs on the sandy flats of the Study Area which appear to have been routinely tilled (i.e., disced) rangeland and support a unique assemblage of plants species (Photo 5 and Photo 6). This habitat type does not conform to a described vegetation alliance in the Manual of California Vegetation (online) and is identified at the group level. The

habitat is strongly dominated by non-native annual plants and generally contains five (5) percent relative cover of native species.

Native perennial plants are consistently diagnostically present, although only two native perennial grasses were observed in small patches: salt grass *(Distichlis spicata)* and coast range melic *(Melica imperfecta)*. All the other grasses are introduced species. The most abundant native plants include California croton (*Croton californicus*) and California spineflower with occasional patches of slender buckwheat (*Eriogonum gracile* var. *gracile*) and emergent shrubs including deerweed, broom rush-rose, mock heather (*Ericameria ericoides*), California sagebrush (*Artemisia californica*) and coastal bush lupine (*Lupinus arboreus*). Ubiquitous introduced annual species, such as ripgut brome and filaree species (*Erodium botrys, E. brachycarpum,* and *E. cicutarium*) are also present. Occasional mature individual coast live oak trees are scattered throughout this habitat type.

This habitat supports special status plant species including abundant California spineflower and occasional mesa horkelia, sand almond, and sand mesa manzanita. This habitat is utilized by a variety of birds, mammals, reptiles, and invertebrates.

Photo 5. California perennial grassland with the special status plant California spineflower (red-colored herb in the foreground), view southwest. May 18, 2018.

Photo 6. California perennial grassland with 4-spot Clarkia in foreground, view east. April 26, 2021.

3.3.5 Mediterranean California naturalized annual and perennial grassland group

The smaller parcels along the western and northwestern portions of the Study Area contain habitat identified as Mediterranean California naturalized perennial grassland group. This habitat is dominated by non-native perennial veldt grass (Photo 7 and Photo 8). Perennial veldt grass is a highly invasive plant species, known to invade sandy soils on the California central coast. This habitat has low plant diversity and is nearly a monoculture of perennial veldt grass. Other occasional plant species include ripgut brome, deer weed, wild oats (*Avena fatua*), telegraph weed (*Heterotheca grandiflora*), Santa Barbara wirelettuce (*Stephanomeria elata*) and California croton. Few mature individual coast live oak trees are scattered throughout this habitat type and oak canopy cover is sparse. This habitat type does not conform to a described vegetation alliance in the Manual of California Vegetation (online) and was consequently identified at the group level.

This habitat supports special status plant species including multiple mature sand buck brush and Nipomo mesa ceanothus as well as a single individual of Mesa horkelia. This habitat is utilized

by a variety of birds, mammals, reptiles, and invertebrates. American badger (SSC) dens were observed in this habitat.

Photo 7. Mediterranean California naturalized perennial grassland habitat view southeast. July 3, 2018.

Photo 8. Mediterranean California naturalized perennial grassland habitat view north. May 27 2020.

3.3.6 Annual brome grassland -Herbaceous Semi-Natural Alliance

The northern portion on the Study Area contains annual brome grassland. This habitat is dominated by a mix of non-native annual grasses (Photo 9 and Photo 10) with abundant ripgut brome, perennial veldt grass, wild oats, and short fruited filaree and occasional California croton and scattered individual mock heather. Ripgut brome constitutes over 60 percent relative cover with other non-natives in the herbaceous layer, with a variety of annuals at low cover, conforming to the membership rules of the *Avena* spp. - *Bromus* spp. herbaceous semi-natural alliance (CNDDB 2021b). No special status plant species were observed in this habitat.

No global or state rank is applied to this vegetation alliance because it is comprised of non-native species and is not a suitable target for conservation activities (CNDDB 2021b). This habitat is utilized by a variety of birds, mammals, reptiles, and invertebrates. A shed skin of a Northern Pacific rattlesnake (*Crotalus oreganus* ssp. *oreganus*) was observed in this habitat.

Photo 9. Annual brome grasslands view northwest. July 3, 2018.

Photo 10. Annual brome grasslands view northwest. June 3, 2020.

3.3.7 Anthropogenic

In general, anthropogenic land uses onsite consist of areas that no longer support native vegetation due to physical alteration. This may include construction of structures, hardscape, pavement and/or landscaping. Anthropogenic land consists of approximately 1.2 acres comprised of Cherokee Place roadway and a private driveway and associate structures used for storage (parcel located northeast of Cherokee Place). Other land uses within this land use category are holding pens for horses and goats, a water tank, garden and landscaped areas, parking areas, and maintained areas for fire/brush clearing purposes. Several isolated oaks occur within this land use classification and were mapped separately from the oak habitats described above.

3.4 Potential Wetlands and Jurisdictional Waters

No evidence of potentially jurisdictional wetlands or waters were observed in the Study Area during 2017, 2018, 2019, and 2020 surveys. The very deep, excessively drained sandy soils of these ancient dunes have rapid permeability with low water capacity. USFWS National Wetland Inventory shows wetlands east of Highway 101 and on property north of Willow Road and east of Hetrick Avenue (Appendix B).

3.5 Sensitive Natural Communities

The Study Site contains two recoginzed sensitive natural communities, Burton Mesa chaparral (Arctostaphylos (purissima, rudis) Shrubland Special Stands, G1/S1) and coast live oak woodland (*Quercus agrifolia / Adenostoma fasciculatum* - (*Salvia mellifera*) association, G3/S3) (CDFW 2021). Both habitats supports a unique assemblage of rare plant species that are associated with maritime climate and sandy soils.

No additional sensitive natural communities were identified in the Study Area (Section 3.3 Habitat Types, Table 3). California perennial grassland and Mediterranean California naturalized perennial grassland groups do not conform to a known alliance and do not have global or state ranks because ranking systems are applied at the alliance level in *A Manual of California Vegetation* (CNPS 2021a).

3.6 Botanical Resources

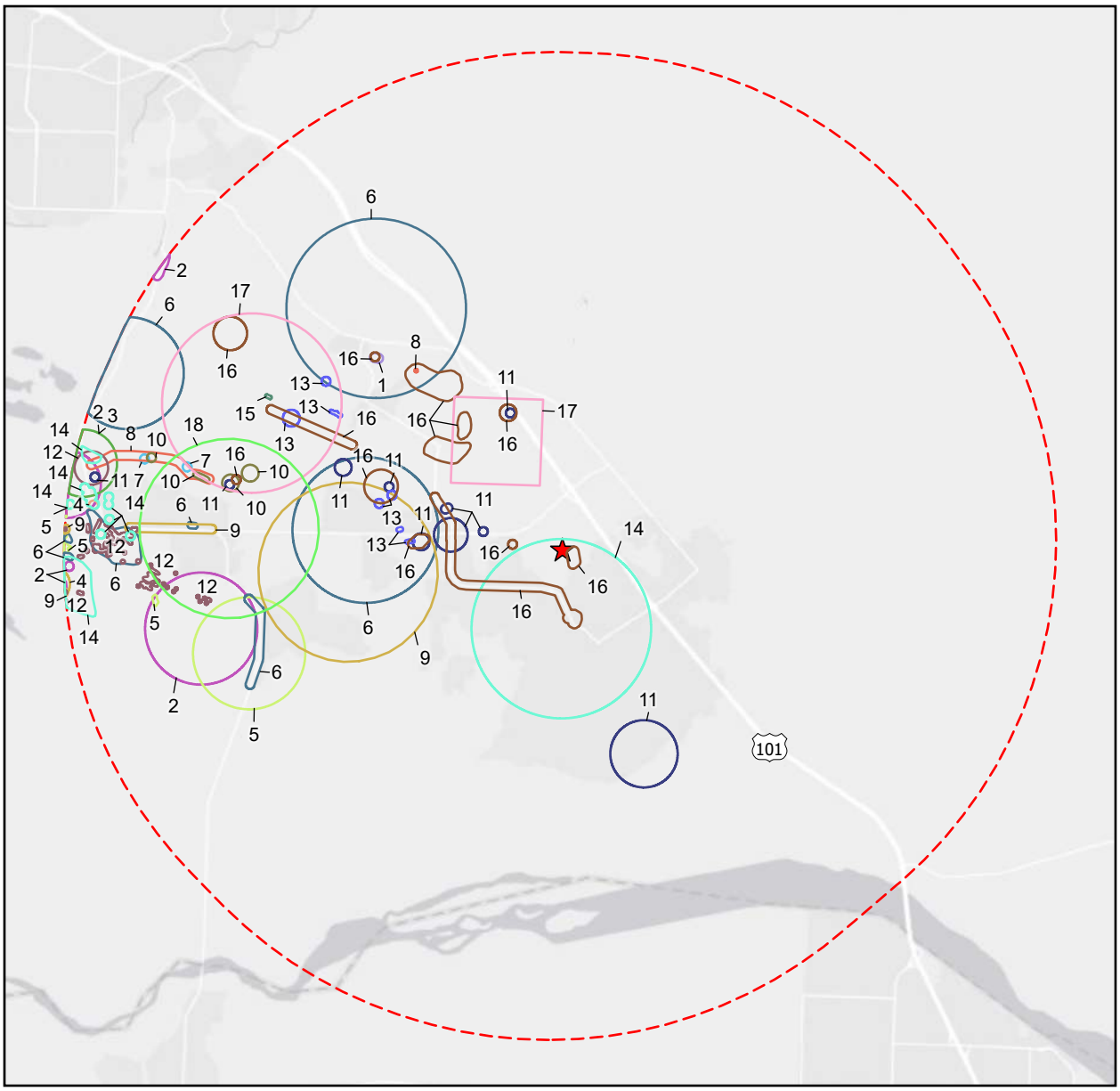
Research on special status plant occurrences conducted within the designated search area (see Methods) determined that 81 special status plant taxa are known to occur in the region (Appendix C). Figure 5 and Figure 9 depict the current GIS data for USFWS Critical Habitat and special status plants mapped near the Study Area by the CNDDB.

Within an 8-quad search radius around the Study Area 18 special status plant taxa could potentially occur. Plant taxa potential to occur is based on habitat requirements. For information regarding special status designations refer to Section 1.9.6 for Special Status Species and Sensitive Natural Communities Definitions. A discussion of the 18 plant taxa with potential to occur is provided in Section 3.6.2.

3.6.1 Potential Special Status Plant Species

Table 4 and Table 5 list 18 special status plants for which appropriate soil and habitat conditions exist, and therefore could potentially occur in the Study Area. Table 4 lists 8 special status plant taxa observed and Table 5 lists 10 special status plant taxa not detected but with potential to occur onsite. The tables include Federal and California State status, Global and State rank, CRPR, typical blooming periods, and habitat preferences for each taxon (CNPS 2021b, CNDDB 2021b, Jepson Flora Project 2020). Each taxon's potential for occurrence onsite is assessed. Taxa are listed alphabetically by scientific name.

Figure 5. California Natural Diversity Database Plant Records



Label	Common Name	Federal/State Status	Rare Plant Rank
1	Black-flowered figwort	None/none	1B.2
2	Blochman's leafy daisy	None/none	1B.2
3	California saw-grass	None/none	2B.2
4	Coastal goosefoot	None/none	1B.2
5	Crisp monardella	None/none	1B.2
6	Dune larkspur	None/none	1B.2
7	Gambel's water cress	FE/ST	1B.1
8	Hoover's bent grass	None/none	1B.2
9	Kellogg's horkelia	None/none	1B.1
10	Marsh sandwort	FE/SE	1B.1
11	Nipomo Mesa ceanothus	None/none	1B.2
12	Nipomo Mesa lupine	FE/SE	1B.1
13	Pismo clarkia	FE/SR	1B.1
14	San Luis Obispo monardella	None/none	1B.2
15	San Luis Obispo owl's-clover	None/none	1B.2
16	Sand mesa manzanita	None/none	1B.2
17	Santa Margarita manzanita	None/none	1B.2
18	Southern curly-leaved monardella	None/none	1B.2

Legend

Project Location

5-Mile Radius

N

0 1 2 Miles

Dana Reserve
Map Center: 120.50293°W 35.04603°N
Nipomo, San Luis Obispo County

CNDDB GIS Data Last Updated: October 2020

TABLE 4. SPECIAL STATUS PLANT LIST – OBSERVED

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	*Arctostaphylos rudis*	Sand Mesa Manzanita	-/- G2/S2 1B.2	Nov-Feb	Chaparral. Sandy soils. <380 m.	Present. Suitable sandy chaparral habitat is present in the Study Area and species was observed during surveys.
2.	*Ceanothus cuneatus* var. *fascicularis*	Sand buck brush	-/- G5T4/S4 4.2	Feb-Apr	Coastal chaparral. Sandy substrates. <275 m.	Present. Suitable habitat is present in the Study Area and species was observed during surveys.
3.	*Ceanothus impressus* var. *nipomensis*	Nipomo Mesa Ceanothus	-/- G3T2/S2 1B.2	Feb-Apr	Chaparral. Canyons, flats. Sandy substrates. <200 m.	Present. Suitable habitat is present in the Study Area and species was observed during surveys.
4.	*Clarkia speciosa* ssp. *immaculata*	Pismo Clarkia	FE/SR G4T1/S1 1B.1	May-Jul	Woodland edges, chaparral, disturbed grassland. Openings in sandy soil. < 100 m	Present. Suitable habitat is present in the Study Area and species was observed during surveys.
5.	*Horkelia cuneata* var. *puberula*	Mesa Horkelia	-/- G4T1/S1 1B.1	Feb-July	Coastal chaparral, woodland. Dry, sandy or gravelly sites. 70-870 m.	Present. Suitable habitat is present in the Study Area and species was observed during surveys.
6.	*Mucronea californica*	California Spineflower	-/- G3/S3 4.2	Mar-Aug	Chaparral, woodland, coastal scrub, grassland. Sandy soil. <1000 m.	Present. Suitable habitat is present in the Study Area and species was observed during surveys.
7.	*Piperia michaelii*	Michael's Rein-Orchid*	-/- G3/S3 4.2	April-Aug	Coastal scrub, woodland, chaparral. Generally on dry sites. <700 m.	Present. Suitable habitat is present in the Study Area and species was observed during surveys.
8.	*Prunus fasciculata* var. *punctata*	Sand Almond	-/- G5T4/S4 4.3	Mar-Apr	Coastal scrub, chaparral, woodland. Sandy flats. <200 m.	Present. Suitable habitat is present in the Study Area and species was observed during surveys.

TABLE 5. SPECIAL STATUS PLANT LIST – NOT DETECTED ONSITE

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	*Agrostis hooveri*	Hoover's Bent Grass	-/- G2/S2 1B.2	Apr-Jul	Open chaparral, oak woodland. Dry sandy soils. <600 m.	High. Suitable habitat is present in the Study Area. CNDDB #8 located 3.8 (1988) miles west of Study Area.
2.	*Calandrinia breweri*	Brewer's Calandrinia	-/- G4/S4 4.2	Mar-Jun	Chaparral, coastal scrub. Disturbed sites, burns. Sandy to loamy soil. <1200 m.	Moderate. Suitable habitat is present in the Study Area. CCH record (1948) located 9.5 miles to the north west.
3.	*Chorizanthe rectispina*	Straight-Awned Spineflower	-/- G2/S2 1B.3	Apr-Jul	Chaparral, cismontane woodland, coastal scrub. In disintegrating shale, often on granite. 200-600 m.	Low. Marginal suitable habitat is present in the Study Area. CNDDB #20 (2003) located 7.3 miles to the north west.
4.	*Deinandra paniculata*	Paniculate Tarplant	-/- G4/S4 4.2	Mar-Dec	Grassland, open chaparral and woodland. Disturbed areas, often in sandy soils in mesic sites. <1320 m.	Low. Marginal suitable habitat is present in the Study Area and CCH record (RSA699628; 1935) is located ~5 miles to the west.
5.	*Delphinium parryi* ssp. *blochmaniae*	Dune Larkspur	-/- G4T2/S2 1B.2	Apr-Jun	Coastal chaparral and dunes. Sandy soils. <200 m.	High. Suitable habitat is present in the Study Area. CNDDB #23 (1936) located 1.5 miles to the east. Multiple CNDDB occurrences within near vicinity.
6.	*Erysimum suffrutescens*	Suffrutescent Wallflower	-/- G3/S3 4.2	Jan-Aug	Stabilized coastal sand dunes, coastal scrub. Coastal dunes and bluffs. <150 m.	Low. Study Area is inland of species known range and marginal suitable habitat present in the Study Area. CCH Record (UCSB041306; 1988) located >5 miles to west.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
7.	*Horkelia cuneata* var. *sericea*	Kellogg's Horkelia	-/- G4T1?/S1? 1B.1	Apr-Sep	Coastal scrub and dunes, coniferous forest, chaparral. Old dunes, coastal sandhills, openings in sand. <200 m.	High. Suitable habitat is present in the Study Area. CNDDB #4 (1969) located 1.8 miles to the west.
8.	*Monardella sinuata* ssp. *sinuata*	Southern Curly-Leaved Monardella	-/- G3T2/S2 1B.2	Apr-Sep	Chaparral, woodland, coastal sage scrub and dunes. Sandy soils, coastal strand, dune. <300 m	High. Suitable sandy chaparral and woodland habitats are present in the Study Area. CNDDB #28 (1948) located 2.7 miles to west.
9.	*Monardella undulata* ssp. *undulata*	San Luis Obispo Monardella	-/- G2/S2 1B.2	May-Sep	Coastal scrub, stabilized dunes. Stabilized sandy soils. <200 m.	High. Suitable habitat (stabilized sandy soil) is present in the Study Area. A portion of CNDDB #37 (1979) occurs within the Study Area to the south. Additional CCH records in the near vicinity.
10.	*Scrophularia atrata*	Black-Flowered Figwort	-/- G2?/S2? 1B.2	Mar-Jul	Coniferous forest, chaparral, coastal scrub, riparian scrub. Sand, calcium-diatom-rich soils, around swales. <400 m.	High. Suitable sandy coastal habitats are present in the Study Area. CNDDB #63 (2005) located 2.75 miles to the northwest.

See Section 1.8 for status and rank definitions. References: CCH 2021, CNDDB 2021b

3.6.2 Special Status Plants Discussion

Eighteen special status plant taxa could potentially occur in the Study Area based on analysis of their known ecological requirements and habitat conditions observed in the Study Area. Eight special status plant taxa were detected during 2017-2020 surveys. One federal and state listed plant, Pismo Clarkia, was detected during 2019 and 2020 surveys. A discussion of each taxon with their typical habitat, range, known occurrences, potential to occur onsite, and survey results for the Study Area are provided below. Figure 6A and Figure 6B shows mapped locations of sensitive plant taxa observed on an aerial photograph and topographic map respectively. Plants are listed in alphabetical order by scientific name.

Special Status Plant Taxa Observed

1. Sand Mesa Manzanita (*Arctostaphylos rudis*) is a CRPR 1B.2 species endemic to San Luis Obispo and Santa Barbara Counties. It is known to occur on sandy soils in maritime chaparral and coastal scrub habitats less than 380 meters elevation, and typically blooms between November and February. Sandy soil in the Study Area's chaparral and woodland habitats is highly suitable for this species. A portion of a known record (CNDDB #16) occurs in the Study Area. A total of 324 sand mesa manzanitas were detected in the Study Area during the 2017-2020 surveys. Individuals are scattered across the Study Area and the majority are less than two feet tall. Stumps appear to have been previously burned or masticated and are regenerating from underground root burls (Photo 11 and Photo 12).

Photo 11. Sand Mesa Manzanita individual observed within Study Area. June 9, 2020.

Photo 12. Sand Mesa Manzanita individual observed within Study Area, view east. June 9, 2020.

2. Sand Buck Brush (*Ceanothus cuneatus* var. *fascicularis*) is a CRPR 4.2 variety endemic to Santa Barbara and San Luis Obispo Counties. It is known to occur in coastal chaparral habitats on sandy soils below 275 meters elevation. It is an evergreen shrub that typically blooms between February and April. The sandy chaparral habitat in the Study Area is highly suitable for this taxon. A total of 20 sand buck brush shrubs were detected in the Study Area during the 2017-2020 surveys. Individuals predominantly occur in the northeastern portion of the Study Area and many are less than 4 feet tall (Photo 13 and Photo 14). A total of 16 CCH records exist within a 8-

quadrangle search, with aerial review depicting two records likely extirpated due to development/agriculture and all others presumed extant.

Photo 13. Sand buck brush individual observed within Study Area. June 3, 2020.

Photo 14. Sand buck brush observed within Study Area, view northwest. June 3, 2020.

3. Nipomo Mesa Ceanothus (*Ceanothus impressus* var. *nipomensis*) is a CRPR 1B.2 variety endemic to Santa Barbara and San Luis Obispo Counties. It is known to occur in chaparral habitats on sandy soils below 200 meters elevation. It is an evergreen shrub that typically blooms between February and April. The sandy chaparral habitat in the Study Area is highly suitable for this taxon. A total of 50 Nipomo Mesa Ceanothus shrubs were detected in the Study Area during the 2017-2020 surveys. Individuals predominantly occur in the northeastern portion of the Study Area and many are less than 4 feet tall (Photo 15 and Photo 16).

Photo 15. Nipomo Mesa Ceanothus individual observed within Study Area. June 3, 2020.

Photo 16. Nipomo Mesa Ceanothus observed within Study Area, view east. June 3, 2020.

4. Pismo Clarkia (*Clarkia speciosa* ssp. *immaculata*) is listed as Endangered under the federal Endangered Species Act (ESA), as Rare by the State of California under the Native Plant Protection Act (NPPA), and is a CRPR 1B.1 subspecies endemic to southern San Luis Obispo County. It is known to occur on sandy soils in disturbed grassland, openings in chaparral, and edges of woodland habitats below 100 meters elevation. It is an annual herb that typically blooms between May and July. The closest known records range from approximately 1.4 to 1.9 miles west of the Study Area (CNDDB #10, #16 and #17) and are reported as possibly extirpated. The closest known record presumed to be extant is approximately 3.1 miles northwest of the Study Area (CNDDB #21). The sandy soils in grassland, chaparral, and woodland habitats in the Study Area are highly suitable for this taxon. A reference site was visited, and confirmed Pismo clarkia was in bloom on May 18, June 1, June 12, and July 3, 2018, at the nearby known occurrence in Arroyo Grande (CNDDB #8). Pismo clarkia was detected in the Study Area during the 2019 and 2020 surveys (Photo 17, Photo 18, and photo 19). The occurrence consists of 8 micro-populations (patches) comprising 0.22 acres and occurs immediately south of a quarter-mile section of the main dirt access road in the central portion of the Study Area. A total of 6,139 individuals were counted on May 19th, 2020, when the population was assessed in peak bloom. Patch boundary extents were flagged by botanists and then recorded by licensed surveyor Aaron Harville (MBS Land Surveys, Figure 7) on June 3, 2020.

Photo 17. Pismo Clarkia with white and spotted patterns June 14, 2019

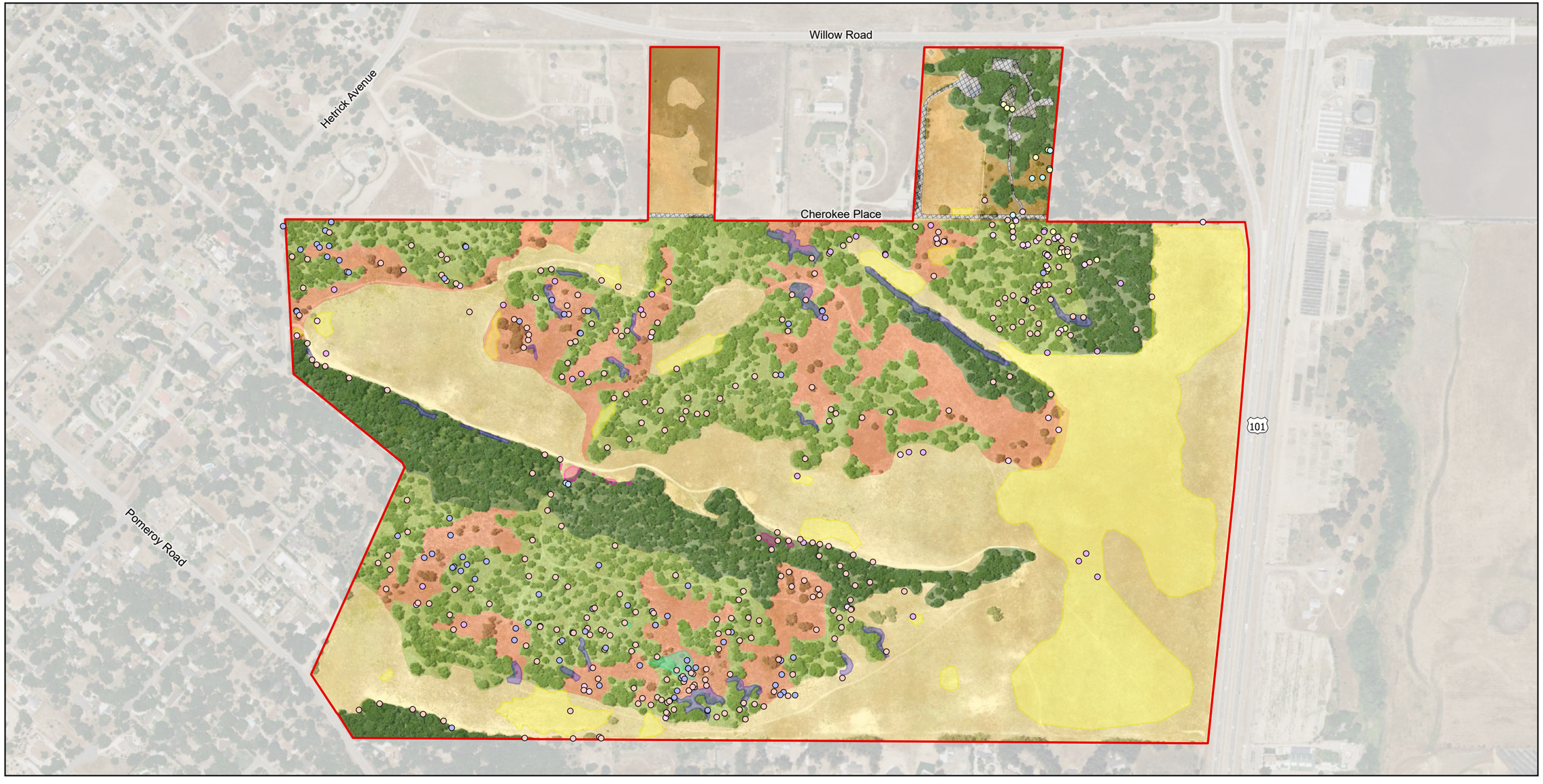
Photo 18. Pismo Clarkia Patch 1. View northeast from main ranch road. June 14, 2019.

Clarkia speciosa ssp. *immaculata* differs from the more abundant ssp. *speciosa* in having somewhat larger flowers with a different petal-color pattern (lacking a red spot); genetic studies (Lewis and Lewis 1955) showed "considerable" genetic differentiation between these two subspecies. The population growing on Dana Reserve contains both spotted and “immaculate” flowers in all patches.

The USFWS reported in their 1998 Recovery Plan that a small amount of seed from two populations is being maintained for conservation purposes in the long-term seed banking program at Rancho Santa Ana Botanic Garden. No other taxon-specific conservation efforts have been undertaken.

Photo 19. Patch 3 with botanist mapping distribution and density of Pismo Clarkia on May 19, 2020. View southeast.

Figure 6A. Biological Resources - Plants on Aerial



Legend

- Study Area
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Coast Live Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Coast Live Oak Woodland* - S3

Species

- California Spineflower
- Mesa Horkelia
- Sand Mesa Manzanita
- Pismo Clarkia
- California spineflower
- Mesa horkelia
- Michael's rein orchid
- Nipomo mesa ceanothus
- Sand almond
- Sand buck brush
- Sand mesa manzanita

*Sensitive Natural Communities with State Rank

0 250 500 Feet

Dana Reserve
Map Center: 120.50364°W 35.04662°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

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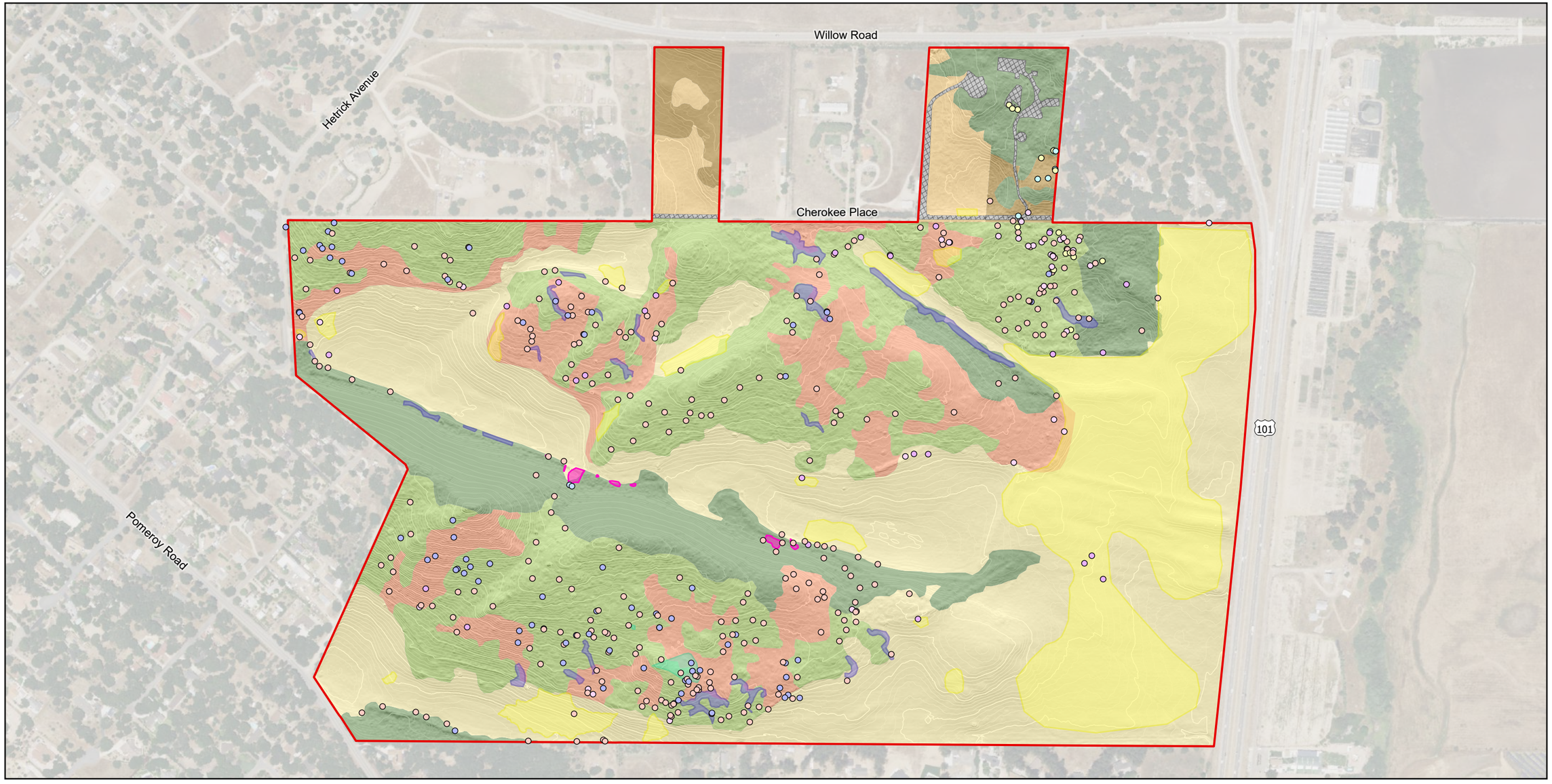
Map Updated:
October 06, 2021 12:47 PM by SAF

Figure 6B. Biological Resources - Plants on Topographic Map



Legend

- Study Area
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Closed Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Open Oak Woodland* - S3

Species

- California Spineflower
- Mesa Horkelia
- Sand Mesa Manzanita
- Pismo Clarkia
- California spineflower
- Mesa horkelia
- Michael's rein orchid
- Nipomo mesa ceanothus
- Sand almond
- Sand buck brush
- Sand mesa manzanita
- 1-foot Contour

*Sensitive Natural Communities with State Rank

0 250 500 Feet

Dana Reserve
Map Center: 120.50364°W 35.04662°N
Nipomo, San Luis Obispo County

Contour Source: MBS Land Surveys
Imagery Source: USDA NAIP, 05/21/2020

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Map Updated:
October 06, 2021 12:46 PM by SAF

Figure 7. Pismo Clarkia Detailed Locations

Legend

Study Area

Pismo Clarkia (Clarkia speciosa ssp. immaculata) - FE/SE/1B.1

0 100 200 Feet

Dana Reserve
Map Center: 120.50374°W 35.04443°N
Nipomo, San Luis Obispo County

Imagery Source: Althouse & Meade Inc., 05/19/2020

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Map Updated:
October 06, 2021 12:45 PM by SAF

5. Mesa Horkelia (*Horkelia cuneata* var. *puberula*) is a CRPR 1B.1 variety endemic to the region from San Luis Obispo County to San Diego County. It occurs on sandy and gravelly substrates in coastal chaparral and woodland habitats between 70- and 870-meters elevation. It is a matted, perennial herb that typically blooms between February and July (Photo 20 and Photo 21). The closest known record is approximately 7.4 miles west of the Study Area (CNDDB #91). The sandy woodland and chaparral habitats in the Study Area are highly suitable for this variety. Approximately 7,553 Mesa horkelia rosettes were detected across the Study Area during the 2017-2020 surveys, predominantly within or near coast live oak woodland. Plants were frequently encountered along the dripline of oak tree canopy.

Photo 20. Mesa horkelia individual observed within Study Area. June 6, 2018.

Photo 21. Mesa horkelia individual observed within Study Area. June 9, 2020.

6. California Spineflower (*Mucronea californica*) is a CRPR 4.2 species that occurs from Monterey to San Diego Counties. It is an annual herb that grows in sandy soils in grassland, coastal scrub, woodland, and chaparral habitats below 1,000 meters elevation. It typically blooms between March and August. The sandy woodland, chaparral, and dune habitats in the Study Area are highly suitable for this species. California spineflower was abundant within the grassland habitat in the Study Area during the 2017-2020 surveys. The delicate plant was dispersed in a mosaic across approximately 42.6 acres. Distribution of these plants across the occupied habitat is patchy. Less than 15 percent of the absolute vegetative cover is California spineflower in occupied grassland habitat. This cover appears to vary significantly from year-to-year, depending on seasonal conditions and grazing intensity the previous year. The northeastern portion of the Study Area near Highway 101 supports the largest concentration of plants, with smaller patches scattered across the remainder of the site. Patch densities were variable (Photo 22 and Photo 23). Aerial review of historic CCH records within an 8-quad search of the Study Area reveals development and agriculture have substantially reduced the local extent of California spineflower.

Photo 22. Low-density California spineflower in grassland near Highway 101, view south. June 3, 2020.

Photo 23. Dense area of California spineflower in grassland near Highway 101, view southeast. June 3, 2020.

7. Michael's Rein Orchid (*Piperia michaelii*) is a CRPR 4.2 variety endemic to the region from San Luis Obispo County to San Diego County. It occurs in dry sites within coastal scrub, woodland, and chaparral below 700 meters elevation. It is a perennial herb that typically blooms between April and August. The coast live oak and chaparral habitats in the Study Area are highly suitable for this species. A total of 7 Michael's Rein Orchid individuals were detected in the Study Area in 2020. All individuals were located within 50 feet of Pismo Clarkia Patch 3 along the edge of coast live oak woodland in the central portion of the Study Area (Photo 24 and Photo 25).

Photo 24. Michael's rein orchid individual observed within Study Area. May 27, 2020.

Photo 25. Michael's rein orchid individual observed within Study Area. June 14, 2019.

8. Sand Almond (*Prunus fasciculata* var. *punctata*) is a CRPR 4.3 variety endemic to San Luis Obispo and Santa Barbara Counties. It is known to occur in sandy habitats in maritime chaparral, coastal dune and scrub, and woodland habitats below 200 meters elevation. It is a deciduous shrub that typically blooms between March and April but was observed blooming in the Study Area in early June. The sandy woodland, chaparral, and dune habitats in the Study Area are highly suitable for this taxon. Sand almond was detected in the Study Area during 2017-2020 surveys. A total of 141 sand almond plants were detected across the Study Area, primarily near the edges of the oak

woodland habitat (Photo 26 and Photo 27). A total of 10 CCH records are known within an 8-quadrangle search. Aerial review shows that two records in San Luis Obispo County are likely extirpated from development/agriculture.

Photo 26. Sand almond fruiting individual observed within Study Area. June 1, 2018.

Photo 27. Sand almond plants observed within Study Area, view south east. June 3, 2020.

Special Status Plant Taxa Not Observed

1. Hoover's Bent Grass (*Agrostis hooveri*) is a CRPR 1B.2 species endemic to San Luis Obispo and Santa Barbara Counties. It is known to occur in coastal mountains on dry sandy soils of woodlands, chaparral, and grasslands below 600 meters elevation. It is a perennial bunchgrass that typically blooms between April and July. The closest known record is approximately 3.8 miles west of the Study Area (CNDDB #8). The dry sandy soil within chaparral and coast live oak woodland in the Study Area provide highly suitable habitat for this species and it was assessed to have a High potential to occur. Hoover's bent grass was not detected in the Study Area during 2017-2020 surveys.

2. Brewer's Calandrinia (*Calandrinia breweri*) is a CRPR 4.2 species that occurs from Lake County to Baja California. It is known to inhabit disturbed, oftentimes burned, sites within maritime chaparral and coastal scrub at elevations below 1,200 meters. It is an annual herb that typically blooms between March and June. The closest known CCH record is approximately 9.5 miles northwest of the Study Area (SD71144; 1948). Although no records occur in the immediate vicinity, the disturbed sandy soil within chaparral and coast live oak woodland in the Study Area provide suitable habitat for this species and it was assessed to have a moderate potential to occur. Brewer's calandrinia was not detected in the Study Area during the during 2017-2020 surveys.

3. Straight-awned Spineflower (*Chorizanthe rectispina*) is a CRPR 1B.3 species endemic to Monterey, San Luis Obispo, and Santa Barbara Counties. It is known to occur on sand or gravel in open areas of chaparral, cismontane woodland, and coastal scrub habitats between 200- and 600-meters elevation. It is often found on granite. It is an annual herb that typically blooms between April and July. The closest known record is approximately 7.3 miles northwest of the Study Area (CNDDB #20). The dune sands in the Study Area are unlikely to support this species, which is most associated with sandy soils derived from decomposed granite. Consequently, marginal suitable habitat exists within the Study Area for this species and it was assessed to have a low potential to occur. Straight-awned spineflower was not detected in the Study Area during the during 2017-2020 surveys.

4. Paniculate Tarplant (*Deinandra paniculata*) is a CRPR 4.2 species known from the San Francisco Bay area south to northern Baja California. It is known to occur on sandy soils in grassland, coastal scrub, and sometimes in vernal pools below 1,320 meters elevation. It is an annual herb that typically blooms between May and November. The closest known record is an historical collection from 1935 and is located approximately 4.6 miles west of the Study Area (RSA699628; CCH 2021). This species is usually encountered in vernally mesic sites, which were not identified in the Study Area. Consequently, marginal suitable habitat exists within the Study Area for this species and it was assessed to have a low potential to occur. Paniculate tarplant was not detected in the Study Area during the during 2017-2020 surveys.

5. Dune Larkspur (*Delphinium parryi* ssp. *blochmaniae*) is a CRPR 1B.2 endemic to San Luis Obispo, Santa Barbara and Ventura Counties. It is known to occur in dune, coastal scrub, and maritime chaparral habitats below 200 meters elevation. It is a perennial herb that typically blooms between April and June. The closest known record is approximately 1.5 mile west of the Study Area (CNDDB #23; 1936) with additional occurrences nearby. The chaparral and openings in coast live oak woodland within the Study Area provide highly suitable habitat for this taxon which was assessed to have high potential to occur. Dune larkspur was not detected in the Study Area during the 2017-2020 surveys.

6. Suffrutescent Wallflower (*Erysimum suffrutescens*) is a CRPR 4.2 species endemic to coastal region from San Luis Obispo to San Diego Counties. It is known to occur in coastal scrub, maritime chaparral, and coastal bluff scrub habitat below 150 meters elevation. It is a perennial herb that typically blooms between January and August. The closest known record is an historical collection from 1937, approximately1.3 miles northwest of the Study Area (GH387468, CCH 2021). This species is typically associated with coastal sands and the Study Area is slightly inland of this species typical distribution. Marginal habitat for this species exists in the Study Area and it was assessed to have a low potential to occur. Suffrutescent wallflower was not detected in the Study Area during the 2017-2020 surveys.

7. Kellogg's Horkelia (*Horkelia cuneata* var. *sericea*) is a CRPR 1B.1 variety endemic to the region from Marin County south to Santa Barbara County. It is known to occur in sandy or gravelly substrates in coastal scrub, maritime chaparral, and closed-cone coniferous forest habitats between 70- and 870-meters elevation. It is a perennial herb that typically blooms between February and September. The closest known record is approximately 1.0 mile west of the Study Area (CNDDB #4; 1969). The sandy maritime chaparral habitats in the Study Area are highly suitable for this variety and it was assessed to have high potential to occur. Kellogg's horkelia was not detected in the Study Area during the 2017-2020 surveys.

8. Southern Curly-leaved Monardella (*Monardella sinuata* ssp. *sinuata*) is a CRPR 1B.2 subspecies that occurs from Monterey to Ventura County on sandy soils in dune, coastal strand, coastal chaparral and sagebrush scrub. It is a annual herb that flowers from April to September. The closest known record is approximately 2.7 miles west of the Study Area (CNDDB #28; 1948). The sandy chaparral habitat in the Study Area is highly suitable for this subspecies and it was assessed to have a high potential to occur. Southern curly-leaved monardella was not detected in the Study Area during the 2017-2020 surveys.

9. San Luis Obispo Monardella (*Monardella undulata* ssp. *undulata*) is a CRPR 1B.2 subspecies endemic to San Luis Obispo and Santa Barbara Counties. It is known to occur on sandy substrates in stabilized dune and coastal scrub habitats below 200 meters elevation. It is a rhizomatous perennial herb that typically blooms between May and September. The closest known

record occurs within the southern portion of the Study Area (CNDDB #37; 1979). The stabilized sandy dune habitat in the Study Area is highly suitable for this subspecies and it was assessed to have a high potential to occur within the Study Area. San Luis Obispo monardella was not detected in the Study Area during the 2017-2020 surveys.

10. Black-flowered Figwort (*Scrophularia atrata*) is a CRPR 1B.2 species endemic to Santa Barbara and San Luis Obispo Counties. It is known to occur in coast dune, coastal scrub, riparian scrub, chaparral, and closed-cone coniferous forest habitats below 400 meters elevation. It is a perennial herb that typically blooms between March and July. The closest known record is approximately 2.75 miles northwest of the Study Area (CNDDB #63). The sandy chaparral habitats in the Study Area are highly suitable for this species and it was assessed to have a high potential to occur. Black -flowered figwort was not detected in the Study Area during the 2017-2020 surveys.

3.6.3 Botanical Survey Results

The botanical surveys identified four rare shrubs (sand mesa manzanita, Nipomo mesa ceanothus, sand buck brush, and sand almond) and four rare herbs (Pismo clarkia, Michael's rein orchid, mesa horkelia, and California spineflower). Refer to Section 3.7.2 for discussion of rare plant taxa and Figure 6 for location data. Table 6 lists all 159 taxa observed during 2017, 2018, 2019 and 2020 inspections. The 159 species, subspecies and varieties of vascular plants identified at the Study Area consist of 97 native and 62 introduced taxa. The vascular plant list is separated into general life form categories, within which the taxa are listed alphabetically by scientific name.

TABLE 6. VASCULAR PLANT LIST

Scientific Name	Common Name	Special Status	Origin
Trees - 6 Species			
Acacia longifolia	Sydney golden wattle	--	Introduced
Pinus sp.	Pine	--	Planted/Escaped
Quercus agrifolia var. *agrifolia*	Coast live oak	--	Native
Schinus molle	Peruvian pepper tree	--	Introduced
Nicotiana glauca	Tree tobacco	--	Introduced
Shrubs - 17 Species			
Adenostoma fasciculatum	Chamise	--	Native
Arctostaphylos rudis	Sand mesa manzanita	CRPR 1B.2	Native
Artemisia californica	California sagebrush	--	Native
Baccharis pilularis	Coyote brush	--	Native
Ceanothus impressus var. *nipomensis*	Nipomo mesa ceanothus	CRPR 1B.2	Native
Ceanothus cuneatus var. *fascicularis*	Sand buck brush	CRPR 4.2	Native
Cercocarpus betuloides var. *betuloides*	Birch-leaf mountain-mahogany	--	Native
Ericameria ericoides	Mock heather	--	Native
Frangula californica	California coffee berry	--	Native
Heteromeles arbutifolia	Toyon	--	Native
Lupinus arboreus	Yellow bush lupine	--	Native
Prunus ilicifolia	Hollyleaf cherry	--	Native
Prunus fasciculata var. *punctata*	Sand almond	CRPR 4.3	Native

Scientific Name	Common Name	Special Status	Origin
Rhamnus crocea	Spiny redberry	--	Native
Salvia mellifera	Black sage	--	Native
Sambucus nigra ssp. *caerulea*	Blue elderberry	--	Native
Symphoricarpos mollis	Creeping snowberry	--	Native
Toxicodendron diversilobum	Western poison oak	--	Native
Forbs - 121 Species			
Acmispon americanus	American bird's foot trefoil	--	Native
Acmispon glaber	Deer weed	--	Native
Acmispon strigosus	Strigose lotus	--	Native
Acourtia microcephala	Sacapellote	--	Native
Amaranthus blitoides	Prostrate pigweed	--	Introduced
Ambrosia acanthicarpa	Annual bur-sage	--	Native
Ambrosia psilostachya	Ragweed	--	Native
Amsinckia menziesii	Common fiddleneck	--	Native
Anaphalis margaritacea	Pearly everlasting	--	Native
Aphanes occidentalis	Western lady's mantle	--	Native
Aphyllon tuberosum	Chaparral broomrape	--	Native
Asclepias eriocarpa	Kotolo	--	Native
Brassica nigra	Black mustard	--	Introduced
Calandrinia menziesii	Red maids	--	Native
Calyptridium monandrum	Common pussypaws	--	Native
Camissonia strigulosa	Sandysoil suncup	--	Native
Camissoniopsis hirtella	Hairy sun cup	--	Native
Camissoniopsis micrantha	Spencer primrose	--	Native
Capsella bursa-pastoris	Shepard's purse	--	Introduced
Cardamine oligosperma	Bitter cress	--	Native
Cardionema ramosissimum	Sand mat	--	Native
Carduus pycnocephalus ssp. *pycnocephalus*	Italian thistle	--	Introduced
Carex globosa	Round-fruited sedge	--	Native
Castilleja exserta ssp. *exserta*	Purple owl's-clover	--	Native
Centaurea benedicta	Blessed thistle	--	Introduced
Centaurea melitensis	Tocalote	--	Introduced
Cerastium glomeratum	Large mouse ears	--	Introduced
Chenopodium californicum	California goosefoot	--	Native
Chenopodium murale	Nettle leaf goosefoot	--	Introduced
Chorizanthe angustifolia var. *eastwoodiae*	Narrow-leaf spineflower	--	Native
Cirsium occidentale	Cobweb thistle	--	Native
Cirsium vulgare	Bull thistle	--	Introduced
Clarkia purpurea ssp. *viminea*	Wine cup Clarkia	--	Native
Clarkia speciosa ssp. *immaculata*	Pismo Clarkia	FE, SR, CRPR 1B.1	Native
Claytonia parviflora ssp. *parviflora*	Miner's lettuce	--	Native

Scientific Name	Common Name	Special Status	Origin
Corethrogyne filaginifolia	Common tansyaster	--	Native
Cotula australis	Australian cotula	--	Introduced
Crassula connata	Pygmy-weed	--	Native
Croton californicus	California croton	--	Native
Croton setiger	Turkey-mullein	--	Native
Cryptantha clevelandii var. *florosa [Cryptantha hispidissima]*	Coastal cryptantha	--	Native
Cuscuta occidentalis	California dodder	--	Native
Daucus pusillus	American wild carrot	--	Native
Deinandra increscens ssp. *increscens*	Grassland tarweed	--	Native
Dichelostemma capitatum ssp. *capitatum*	Blue dicks	--	Native
Diplacus aurantiacus	Sticky monkeyflower	--	Native
Eriastrum densifolium ssp. *densifolium*	Giant eriastrum	--	Native
Erigeron bonariensis	Flax-leaved horseweed	--	Introduced
Erigeron canadensis	Horseweed	--	Native
Eriogonum gracile var. *gracile*	Slender buckwheat	--	Native
Erodium botrys	Long beaked filaree	--	Introduced
Erodium brachycarpum	Short fruited filaree	--	Introduced
Erodium cicutarium	Redstem filaree	--	Introduced
Euphorbia peplus	Petty spurge	--	Introduced
Galium aparine	Goose grass	--	Native
Galium californicum	California bedstraw	--	Native
Gamochaeta ustulata	Featherweed	--	Native
Geranium molle	Crane's bill geranium	--	Introduced
Geranium rotundifolium	Round leaved geranium	--	Introduced
Helianthemum scoparium	Broom rose	--	Native
Hesperocnide tenella	Western nettle	--	Native
Heterotheca grandiflora	Telegraph weed	--	Native
Hirschfeldia incana	Mustard	--	Introduced
Horkelia cuneata var. *puberula*	Mesa horkelia	CRPR 1B.1	Native
Hypochaeris glabra	Smooth cat's-ear	--	Introduced
Lactuca serriola	Prickly lettuce	--	Introduced
Lamium amplexicaule	Henbit	--	Introduced
Lastarriaea coriacea	Leather-spineflower	--	Native
Lepidium nitidum	Shining pepperweed	--	Native
Lessingia glandulifera var. *glandulifera*	Sticky lessingia	--	Native
Logfia filaginoides	California cottonrose	--	Native
Logfia gallica	Daggerleaf cottonrose	--	Introduced
Lupinus bicolor	Miniature lupine	--	Native
Lupinus nanus	Sky lupine	--	Native
Lupinus truncatus	Blunt leaved lupine	--	Native
Lysimachia arvensis	Scarlet pimpernel	--	Introduced

Scientific Name	Common Name	Special Status	Origin
Malva neglecta	Common mallow	--	Introduced
Malva parviflora	Cheeseweed	--	Introduced
Marah fabacea	California man-root	--	Native
Marrubium vulgare	Horehound	--	Introduced
Melilotus indicus	Annual yellow sweetclover	--	Introduced
Melilotus officinalis	Yellow sweetclover	--	Introduced
Mucronea californica	California spineflower	CRPR 4.2	Native
Muilla maritima	Common Muilla	--	Native
Navarretia hamata	Hooked navarretia	--	Native
Nemophila pedunculata	Meadow nemophila	--	Native
Nuttallanthus texanus	Blue toadflax	--	Native
Oxalis pes-caprae	Bermuda buttercup	--	Introduced
Paeonia californica	California peony	--	Native
Pedicularis densiflora	Warrior's plume	--	Native
Phacelia ramosissima	Branching phacelia	--	Native
Phacelia tanacetifolia	Lacy phacelia	--	Native
Pholistoma auritum	Fiesta flower	--	Native
Piperia michaelii	Michael's rein orchid	CRPR 4.2	Native
Plantago erecta	California plantain	--	Native
Plantago lanceolata	English plantain	--	Introduced
Pseudognaphalium californicum	Ladies' tobacco	--	Native
Pseudognaphalium luteoalbum	Jersey cudweed	--	Introduced
Pterostegia drymarioides	Fairy mist	--	Native
Raphanus sativus	Wild radish	--	Introduced
Rumex acetosella	Sheep sorrel	--	Introduced
Salvia columbariae	Chia sage	--	Native
Senecio vulgaris	Common groundsel	--	Introduced
Silene gallica	Small-flower catchfly	--	Introduced
Silene laciniata	Cardinal catchfly	--	Native
Silybum marianum	Milk thistle	--	Introduced
Sinapis arvensis	Charlock	--	Introduced
Sisymbrium irio	London rocket	--	Introduced
Solanum americanum	Common nightshade	--	Native
Solanum xanti	Chaparral nightshade	--	Native
Sonchus oleraceus	Common sow thistle	--	Introduced
Spergula arvensis	Stickwort	--	Introduced
Stellaria media	Common chickweed	--	Introduced
Stephanomeria elata	Santa Barbara stephanomeria	--	Native
Stephanomeria virgata	Rod wirelettuce	--	Native
Trifolium hirtum	Rose clover	--	Introduced
Uropappus lindleyi	Silver puffs	--	Native
Urtica urens	Dwarf nettle	--	Introduced

Scientific Name	Common Name	Special Status	Origin
Veronica peregrina ssp. *xalapensis*	Hairy purslane speedwell	--	Native
Vicia sativa	Common vetch	--	Introduced
Vicia villosa	Hairy vetch	--	Introduced
Graminoids – 15 Species			
Avena fatua	Wild oat	--	Introduced
Brachypodium distachyon	Purple false brome	--	Introduced
Bromus diandrus	Ripgut grass	--	Introduced
Bromus hordeaceus	Soft chess	--	Introduced
Bromus madritensis ssp. *rubens*	Red brome	--	Introduced
Distichlis spicata	Salt grass	--	Native
Ehrharta calycina	Perennial veldt grass	--	Introduced
Festuca myuros	Rattail six weeks grass	--	Introduced
Festuca perennis	Italian ryegrass	--	Introduced
Gastridium phleoides	Nit Grass	--	Introduced
Hordeum murinum	Wall barley	--	Introduced
Lamarckia aurea	Goldentop grass	--	Introduced
Melica imperfecta	Coast range melic	--	Native
Poa annua	Annual blue grass	--	Introduced
Schismus arabicus	Arabian schismus	--	Introduced

3.7 Wildlife Resources

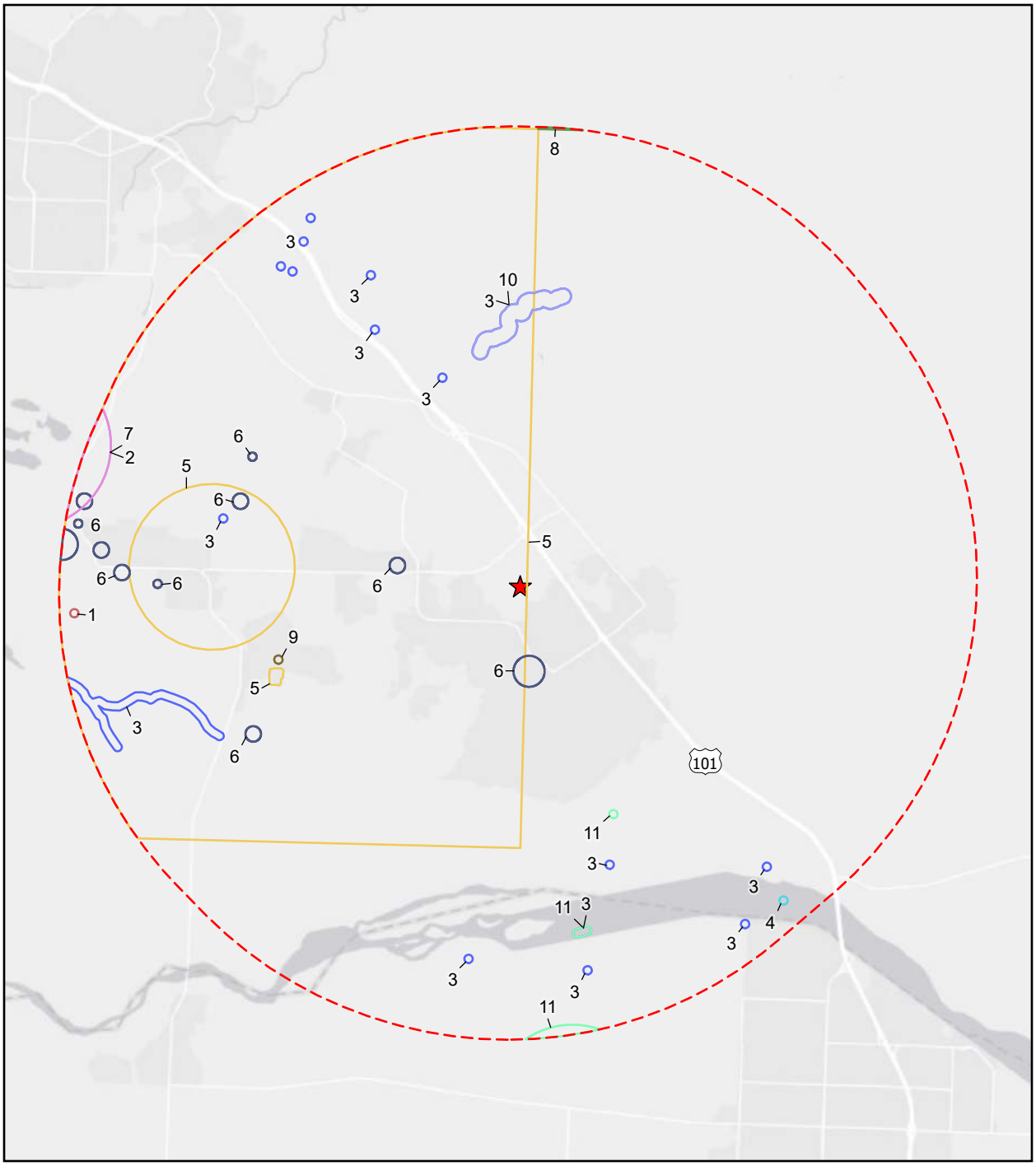
Research on special status animal occurrences conducted within the designated search area (see Methods) determined 47 special status animal species are known to occur in the region (Appendix D). Figure 8 and Figure 9 depict the current GIS data for special status animal species mapped near the Study Area by CNDDB and USFWS Critical Habitat (June 3, 2020).

Within an 8-quad search radius around the Study Area, 17 special status animals could potentially occur. Animal species' potential to occur is based on animal habitat requirements and ecology. For information regarding special status designations refer to Section 1.9. A discussion of the 17 animal taxa with potential to occur is provided in Section 3.7.2.

3.7.1 Potential Special Status Animal Species

Table 7 lists 10 special status animals detected onsite, and **Error! Reference source not found.** lists 8 special status animal species for which appropriate habitat conditions exist, and therefore could potentially occur in the Study Area. Federal and California State status, global and state rank, and CDFW listing status for each species are given. Typical nesting or breeding period, habitat (CNDDB 2021b) preference, potential for occurrence onsite, detection of the species within the Study Area, and effect of proposed activity are also provided. Species are listed alphabetically by scientific name, first by those detected (Table 7), and **Error! Reference source not found.** for those not detected during 2017-2020 surveys.

Figure 8. California Natural Diversity Database Animal Records



Label	Common Name	Federal/State Status
1	American badger	None/none
2	California black rail	None/ST
3	California red-legged frog	FT/none
4	Coast horned lizard	None/none
5	Monarch butterfly	None/none
6	Northern California legless lizard	None/none
7	Obscure bumble bee	None/none
8	Prairie falcon	None/none
9	Sharp-shinned hawk	None/none
10	Steelhead trout	FT/none
11	Western spadefoot	None/none

Legend

Project Location 5-Mile Radius

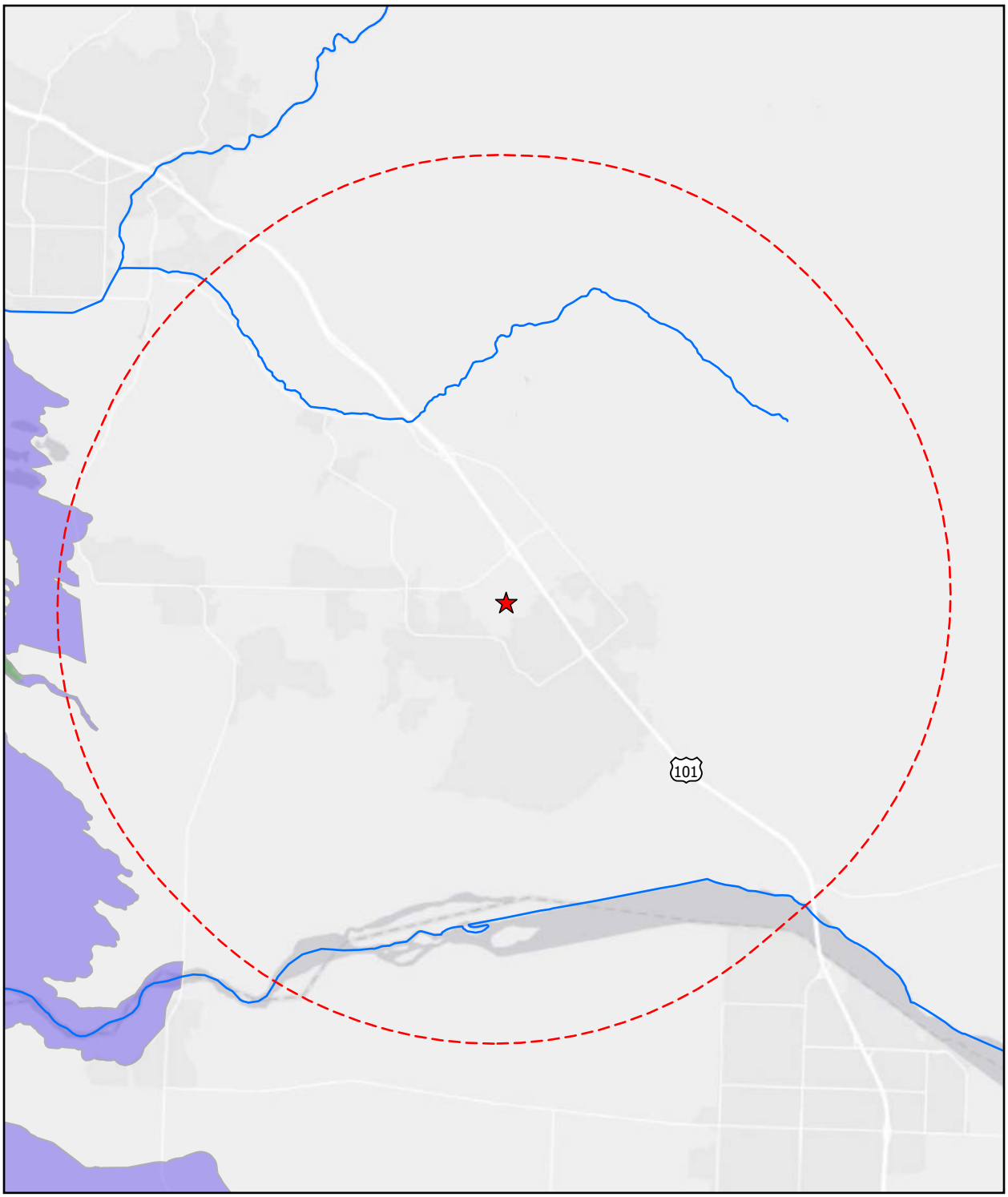
N

0 1 2 Miles

Dana Reserve
Map Center: 120.50293°W 35.04603°N
Nipomo, San Luis Obispo County

CNDDB GIS Data Last Updated: October 2020

Figure 9. USFWS & NMFS Critical Habitat



Legend

- Project Location
- 5-Mile Radius
- NMFS Critical Habitat
- Steelhead Trout
- USFWS Critical Habitat
- La Graciosa thistle
- Tidewater goby

N

0 1 2 Miles

Dana Reserve
Map Center: 120.50293°W 35.04603°N
Nipomo, San Luis Obispo County

USFWS/NMFS Data Last Updated: April, 2021

TABLE 7. SPECIAL STATUS ANIMAL LIST – DETECTED ONSITE

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	*Accipiter cooperii*	Cooper's Hawk	-/- G5/S4 WL (nesting)	Oak woodland, riparian, open fields, Nests in dense trees, especially coast live oak.	Present. This species was observed during 2020 surveys foraging in the coast live oak woodland habitat.
2.	*Antrozus pallidus*	Pallid Bat*	-/- G5/S3 SSC	Rock crevices, caves, tree hollows, mines, old buildings, and bridges.	Present. Limited roosting habitat (no structures and few tree cavities) in the Study Area. Vocalizations detected during 2020 acoustic surveys
3.	*Baeolophus inornatus*	Oak titmouse*	-/- G4/S4 USFWS BCC: WL (nesting)	Nests in cavities in oak woodland habitat. Non-migratory.	Present. Numerous oak titmice were observed during 2017, 2018, 2019, and 2020 surveys.
4.	*Elanus leucurus*	White-tailed Kite	-/- G5/S3S4 FP	Nests in dense tree canopy near open foraging areas	Present. Nests in dense tree canopy near open foraging areas. Suitable nesting and foraging habitat are available in the Study Area.
5.	*Lasiurnus noctiyagans*	Silver-haired Bat*	-/- G3G4/S3S4 SSC	Coastal and montane forests, often feeds over water. Roosts in hollow trees, loose bark, woodpecker cavities, rarely in rocks.	Present. Suitable roosting and foraging habitat are available in the Study Area. Vocalizations detected during 2020 acoustic surveys.
6.	*Lasiurus cinereus*	Hoary Bat*	-/- G5/S5 SA	Forages in open habitats or habitat mosaics with trees. Roosts in dense foliage of medium to large trees. Feeds on moths. Requires water.	Present. Suitable habitat is available in the Study Area. Vocalizations detected during 2020 acoustic surveys
7.	*Myotis yumanensis*	Yuma Myotis*	-/- G5/S5 SA	Caves, mines, buildings, tree cavities, rock crevices, or under bridges. Feeds near open water	Present. Suitable habitat is available in the Study Area. Vocalizations detected during 2020 acoustic surveys.
8.	*Phrynosoma blainvillii*	Blainvilles's [Coast] Horned Lizard	-/- G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Present. Two observations; suitable habitat is available in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
9.	*Picoides nuttallii*	Nuttall's Woodpecker*	-/- G4G5/ USFWS BCC	Oak, riparian woodlands	Present. Nuttall's woodpecker is a year-round resident of oak woodland habitat onsite and was observed during 2017, 2018, 2019, and 2020 surveys.
10.	*Taxidea taxus*	American Badger	-/- G5/S3 SSC	Needs friable soils in open ground with abundant food source such as California ground squirrels.	Present. Several dens observed; suitable grassland habitat and ground squirrels in the Study Area.

See Section 1.8 for status and rank definitions.

TABLE 8. SPECIAL STATUS ANIMAL LIST – NOT DETECTED

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	*Accipiter striatus*	Sharp-Shinned Hawk	-/- G5/S4 WL	Riparian, coniferous, and deciduous woodlands near water.	Moderate. Suitable prey (passerines) is available in the Study Area.
2.	*Anniella pulchra*	Northern California Legless Lizard	-/- G3/S3 SSC	Sandy or loose loamy soils under coastal scrub or oak trees. Soil moisture essential.	High. Suitable habitat is available in the Study Area.
3.	*Athene cunicularia*	Burrowing Owl	-/- G4/S3 SSC	Burrows in squirrel burrow complexes in open habitats with low vegetation.	Low. Suitable habitat (grazed grassland and squirrel burrows) available in the Study Area.
4.	*Bombus caliginosus*	Obscure Bumble Bee	-/- G4?/S1S2 SA	Open coastal grasslands and meadows. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Low. Habitat and nectar sources potentially suitable. Sensitive invertebrate surveys provided negative results for this species.
5.	*Bombus occidentalis*	Western Bumble Bee	-/CCE G2G3/S1 SA	Wide variety of natural, agricultural, urban, and rural habitats. Flower-rich meadows of forests and subalpine zones.	Low. Suitable habitat is available in the Study Area. Closest known historical occurrence is located 14 miles northwest (CNDDB #279). Focused sensitive invertebrate surveys provided negative results for this species.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
6.	*Danaus plexippus pop. 1*	Monarch - California Overwintering Population	-/- G4T2T3/S2S3 SA	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Low. Suitable habitat is not available in the Study Area, eucalyptus adjacent to property may be suitable.
7.	*Lasiurus blossevillii*	Western Red Bat*	-/- G5/S3 SSC	Roosts primarily in trees, from sea level up through mixed conifer forests.	High. Suitable habitat is available in the Study Area. Not detected during 2020 acoustic surveys.
8.	*Spinus lawrencei*	Lawrence's goldfinch (Nesting)**	-/- G3G4/S3/S4 SA,BCC	Arid and open woodlands within near vicinity of chaparral or other brushy areas; tall annual weed fields; and a water source such as a stream, small lake, or farm pond. Live oaks (Quercus spp.) and blue oaks (Q. douglasii) are predominant trees where this species nests (Linsdale 1950, Coutlee 1968).	Low. Marginally suitable nesting habitat is present in the oak woodland habitat onsite. This species is absent from Ebird records from nearby Nipomo Regional Park 2018-2020. Ebird range distribution map shows species' range in lower densities in coastal lowland areas. There are CNDDB records for this species, but not within the 8-quad search.

See Section 1.8 for status and rank definitions

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3.7.2 Special Status Animals Discussion

Based on an analysis of known ecological requirements for the special-status wildlife species reported or known from the region (Appendix D), and the habitat conditions that were observed during onsite surveys, it was determined that 8 special status animal species have potential to occur and 10 species were present within the Study Area (Cooper's hawk, pallid bat, oak titmouse, white-tailed kite, silver-haired bat, hoary bat, Yuma myotis, Blainville's [coast] horned lizard, Nuttall's woodpecker, and American badger). Two species (northern California legless lizard and western red bat) have a high potential to occur, one species (sharp-shinned hawk) has a moderate potential to occur, and five species (burrowing owl, obscure bumble bee, western bumble bee, monarch butterfly, and Lawrence's goldfinch) have a low potential to occur in the Study Area. No federally or state listed Animals were detected in the Study Area. A total of 18 species are discussed below, including description of habitat, range restrictions, known occurrences, and survey results for the Study Area. The first 10 animals were detected onsite, and the other 8 were not detected.

1. Cooper's Hawk (*Accipiter cooperii*) is a CDFW Watch List species (for nesting occurrences only) that occurs regularly in California during the winter months and during spring and fall migration (CNDDB 2021b). It is generally regarded as a regular but uncommon nesting species in San Luis Obispo County (Hall et al. 1992). Cooper's hawks frequent oak and riparian woodland habitats, and increasingly urban areas, where they prey primarily upon small birds (Curtis et al. 2006). A Cooper's hawk was observed foraging overhead during the 2020 site surveys.

2. Pallid Bat (*Antrozous pallidus*) is a California Species of Special Concern with a global rank of 5 (secure) and state rank of 3 (vulnerable). The pallid bat is a large long-eared bat that occurs throughout the state and occupies a wide variety of habitats. Although most common in open, dry areas ideal for foraging with rocky outcrops for roosting, pallid bats are also found regularly in oak and pine woodlands where they roost in caves, mines, rock crevices, hollow trees and buildings Nowak and Walker 1994). Bridges are also frequently used by pallid bats, often as night roosts between foraging periods (Pierson et al. 1996). There were no CNDDB records for the pallid bat in the 8-quad search, which is likely due to their nocturnal activity patterns and requirement for focused surveys. Due to presence of large coast live oak trees and sparsely vegetated habitats suitable for foraging, the pallid bat has a high potential to occur in the Study Area. A focused survey for bat roosts and species identification was conducted as part of this study. Pallid bats were observed visually and acoustically during the emergence survey.

3. Oak Titmouse (*Baeolophus inornatus*) is on the CDFW Watchlist and is a USFWS bird of conservation concern (USFWS 2008) due to loss of nesting habitat. Oak titmouse has a global and state rank of 4 (apparently secure). The oak titmouse is an oak woodland obligate, nesting in cavities of oak trees. It is a common species in oak woodlands on the central coast but is tracked by CDFW due to state-wide losses of oak woodland habitat. The oak titmouse nests in oak woodland habitat. There are no CNDDB occurrence records within the 8-quad search radius, however, oak titmouse is a year-round resident in the coast live oak woodland habitat onsite. Numerous oak titmice were observed during 2017-2020 surveys. Pre-construction surveys are recommended prior to activities that affect oak trees.

4. White-tailed Kite (*Elanus leucurus*) is a CDFW Fully Protected species with a global rank of G5 (stable) and a state rank of S3S4 (vulnerable, apparently secure). White-tailed kites occur throughout California, but they are known to forage and nest in certain areas of California in

fluctuating numbers (Lehman 2018, CDFW 2016). White-tailed kites nest primarily in evergreen trees, especially coast live oaks, near meadows, marshes, farmland or grasslands where they forage on small animals, especially voles (*Microtus californicus*; Dunk 1995). Communal nocturnal roosts sites, which may shift in location, are often used from early fall to early winter. The closest reported occurrence of nesting white-tailed kites is approximately 15.2 miles northeast of the Study Area (CNDDB #169). The 2017 record is a nesting pair in an oak tree. The tree is in a riparian open space corridor located in a residential development that is also adjacent to vineyards and pastureland. White-tailed kites were observed on the property during 8/29/2019 site surveys.

5. Silver-haired Bat (*Lasionycteris noctivagans*) is a CDFW Species of Special Concern with a global rank of G3G4 (vulnerable, apparently secure) and a state rank S3S4 (vulnerable, apparently secure). Silver-haired bat is a forest-dwelling species generally concentrated in the northern half of the state. However, there are reports of this species in San Luis Obispo, Santa Barbara, and Ventura counties. This species was detected acoustically at three locations on Vandenberg Air Force Base in 1997 and 1998 (Pierson et al. 2002). There were no CNDDB records for the silver-haired bat in the 8-quad search. Silver-haired bats roost almost exclusively in trees, using woodpecker hollows and flaking bark. They forage above the canopy, in clearings, and in riparian corridors along water courses. Oak woodlands provide suitable roosting habitat and open fields provide suitable foraging habitat. Silver-haired bats were confirmed present during 2020 nighttime acoustic surveys.

6. Hoary Bat (*Lasiurus cinereus*) is a Special Animal tracked by CDFW with a global and state rank of 5 (secure). It is widely distributed throughout most of California, though it is uncommon in southeastern deserts. Roosting habitat is primarily woodlands and forests, and it forages for moths in open areas and along habitat edges (CDFW 2016). Hoary bats roost mainly in dense foliage of medium to large deciduous or coniferous trees, near the ends of branches, typically in trees at the edge of a clearing. Roosting has also been documented in caves, under rock ledges, and in tree hollows (Bolster 2005). There were no CNDDB records for hoary bat in the 8-quad search, which is likely due to their nocturnal activity patterns and requirement for focused surveys. Suitable roosting habitat is present in oak woodlands and open areas provide suitable foraging habitat. Hoary bats were confirmed present during 2020 nighttime acoustic surveys.

7. Yuma Myotis (*Myotis yumanensis*) is a Special Animal tracked by CDFW. The Yuma myotis is a small bat widely distributed throughout western North America. This species of bat is most commonly associated with man-made structures. Crevices are preferred roost areas including those found in cliffs, buildings and bridges, but they will also roost in trees (Bogan et al. 2005). Yuma myotis is most closely associated with water for foraging compared to other any other bat species. There were no CNDDB records for the Yuma myotis in the 8-quad search, but it has been recorded at seven localities within San Luis Obispo County (Pierson et al. 2002). Oak woodlands onsite provide suitable roosting habitat and foraging aquatic resources occur in the vicinity of the Study Area. Yuma myotis were observed during 2020 nighttime acoustic surveys.

8. Blainville's Horned Lizard [Coast Horned Lizard] (*Phrynosoma blainvillii*) is a California Species of Special Concern with a global rank of G3G4 (vulnerable, apparently secure) a state rank of S3S4 (vulnerable, apparently secure). Blainville's horned lizard is distributed from northern Baja California through Northern California, occurring in open areas of valley foothill hardwood, conifer, riparian, pine-cypress, juniper and annual grassland habitats (CDFW 2007). Blainville's horned lizard needs friable sandy soil with rocks and logs essential for burrows and reproduction (CDFW 2007, Gerson 2011). Appropriate habitat for Blainville's horned lizard must

include an abundance of the native harvester ant (*Pogonomyrmex* and *Messor* sp.). Non-native Argentine ants (*Linepithema humile*) are detrimental to Blainville's horned lizard food resources, as they outcompete the native harvester ant, and the lizard will not eat the Argentine ant (CNDDB 2021b, Gerson 2011). Very little data exists on the habitat requirement for reproduction of Blainville's horned lizard; however, it has been reported that in southern California the egg-laying season is from late May through June (CDFW 2016). The closest CNDDB occurrence of Blainville's horned lizard is a 2008 record approximately 4.6 miles southeast of the Study Area on the south side of the Santa Maria River, 0.7 mile west of U.S. Highway 101 (CNDDB #675); four adults were observed in sandy soils with coyote brush, willow, and mulefat. The Study Area has suitable sandy soils and habitat for Blainville's horned lizard. Two Blainville's horned lizards were observed in the Study Area in 2018 and 2020 (Photo 28).

Photo 28. Blainville's horned lizard a CDFW species of special concern (SSC) observed in coast live oak woodland habitat in Study Area. May 18, 2018.

9. Nuttall's Woodpecker (*Picoides nuttallii*) has a global rank of G4G5 (apparently secure, secure; NatureServe Explorer 2018a), state rank S4 (apparently), and is a USFWS bird of conservation concern (BCC; USFWS 2018). Its current range limited to California which extends from the lower elevations of the Cascade-Sierra Nevada crest to the coast. This range also extends as far north as Humboldt County and as far south as San Diego County. Suitable habitats for Nuttall's woodpecker include riparian, deciduous, and oak woodland where it forages for invertebrates in the oak bark and takes cover in the leafy foliage and tree cavities. The breeding season is from late March to early July. As a primary cavity nester, Nuttall's woodpecker is important to other cavity nesting birds (Monahan and Koenig 2006). It excavates nesting cavities in the dead limbs of oak, cottonwood, willow, alder and sycamore. Nuttall's woodpecker eats mostly insects but will also eat nuts, sap berries and poison-oak seeds (CDFW 2016). Nuttall's woodpecker is a year-round resident of oak woodland habitat onsite and was observed during 2017-2020 surveys.

10. American Badger *(Taxidea taxus)* is a California Species of Special Concern with a widespread range across the state (Brehme et al. 2015, CDFW 2016). It is a permanent but uncommon resident in all parts of California, except for forested regions of the far northwestern corner, and is more abundant in dry, open areas of most shrub and forest habitats (CNDDB 2021b). The American badger requires friable soil to dig burrows for cover and breeding. The main food source for the species is fossorial rodents, mainly ground squirrels and pocket gophers (CDFW

2016). The breeding season for badgers is in summer and early fall, and females give birth to litters usually in March and April (CDFW 2016). The closest reported CNDDB occurrence of the American badger is located approximately 5.1 miles from the project (CNDDB #391), where an adult badger was observed at a den in the Oceano Dunes State Vehicular Recreation Area. Eight badger dens were documented in the Study Area during 2018 and 2020 surveys (Photo 29 and Figure 10). Due to presence of suitable habitat with friable soils, and observations of badger dens onsite, American badger presence onsite is confirmed. During 2020 surveys, two wildlife cameras placed along game trails April 15-May 6, 2020 did not record American badgers on either camera.

Photo 29. American Badger (SSC) den in perennial grassland, view southwest. April 14, 2018.

Special Status Animal Taxa Not Observed

1. Northern California Legless Lizard (*Anniella pulchra*) is a California Species of Special Concern that occurs from Contra Costa to Santa Barbara County. It has a Global Rank of G3 and a State Rank of S3, both of which indicate that this species is considered vulnerable. This species includes the subspecies formerly treated as *A. pulchra nigra* and *A. pulchra pulchra*, an invalid designation (Pearse and Pogson 2000). Northern California legless lizard inhabits friable soils in a variety of habitats from coastal dunes to oak woodlands and chaparral. Adapted to subterranean life, the legless lizard thrives near native coastal shrubs that produce an abundance of leaf litter and have strong roots systems (Kuhnz et al. 2005). Areas of exotic vegetation and open grassland do not provide suitable habitat for the silvery legless lizard since these plant communities support smaller populations of insect prey and offer little protection from higher ground temperatures and soil desiccation (Jennings and Hayes 1994; Slobodchikoff and Doyen 1977). Ten CNDDB records for northern California legless lizard were found in the 8-quad search radius. The closest reported occurrence of the northern California legless lizard is located approximately 0.9-mile northwest of the Study Area where two individuals were collected from the vicinity of Misty Glen Place at Willow Road in 1985 and 1986 (CNDDB #183). Chaparral and coast live oak woodland habitats in the Study Area are very likely to support northern California legless lizard. No northern California legless lizards were encountered during 2020 focused surveys despite intensive raking effort. Coverboards will be periodically inspected throughout the rest of 2020. None were detected as of July 21, 2020.

2. Western Red Bat (*Lasiurus blossevillii*) is a CDFW Species of Special Concern with a global rank of 5 (secure) and a state rank of 3 (vulnerable). In California, roosting habitat includes forests and woodlands from lowlands up through mixed conifer forests of mountains; foraging habitat includes grasslands, shrublands, open woodlands and forests, and croplands, but not deserts (CDFW 2016). Western red bats in California are strongly associated with riparian habitats, particularly mature stands of cottonwood/sycamore in the Central Valley and lower reaches of the large rivers that drain the Sierra Nevada (Pierson et al. 2006). There were no CNDDB records for western red bat in the 8-quad search, which is likely due to their nocturnal activity patterns and requirement for focused surveys, rather than absence. No western red bats were detected during 2020 nighttime acoustic surveys.

3. Sharp-Shinned Hawk (*Accipiter striatus*) has a secure global rank (G5) and a state rank of S4 (apparently secure), suggesting this species is uncommon but not rare with some cause for long-term concern due to declines or other factors. The sharp-shinned hawk is a CDFW Watch List species (for nesting occurrences only). It frequents open oak and riparian woodland habitats. It is a regular fall and winter migrant in San Luis Obispo County that seldom remains in the area through the nesting season. Sharp-shinned hawks prefer to nest in dense, closed canopy forests. Sharp-shinned hawks are unlikely to nest onsite but may forage for passerines in habitats found onsite. The nearest reported occurrence of nesting sharp-shinned hawks is a 2003 record, approximately 2.4 miles southwest of the Study Area (CNDDB #9). Sharp-shinned hawks were not observed on the Property during site surveys 2017-2020.

4. Burrowing Owl (*Athene cunicularia*) is a California Species of Special Concern with a global rank of G4 (apparently secure) and a state rank of S3 (vulnerable). The burrowing owl is a small, rare owl that occupies abandoned mammal holes in the ground, most notably those of the California ground squirrel. In California, the burrowing owl is a year-round resident in the Carrizo Plain, Central Valley, Imperial Valley and the San Francisco Bay region. In the winter months, burrowing owl individuals from other western populations will augment the year-round Californian populations (Shuford and Gardali 2008). The breeding season is generally from March through August. Suitable habitat types for the burrowing owl are dry, open annual or perennial grasslands and deserts with an abundance of burrows (CNDDB 2021b, CDFW 2016). More specifically, the owl is found in coastal prairie, coastal scrub, great basin, Mojavean and Sonoran Desert scrub and great basin, valley and foothill grassland habitats (CNDDB 2021b). The burrowing owl may also inhabit badger and fox dens and man-made holes, such as pipes and culverts. Rarely, it has been known to dig its own burrow in softer soil types (Coulombe 1971, Gervais et al. 2008). Burrows with high horizontal visibility and low vegetation coverage are preferred but burrows with dense vegetation with high perch sites will be used (Green and Anthony 1989). Orthoptera are the main food source for the owl but it also consumes other insects, as well as amphibians, carrion, small mammals, reptiles, and birds (Gervais et al. 2008, York et al. 2002, CDFW 2016). The closest of the four reported occurrences of the burrowing owl is approximately 7.5 miles (southwest) of Project (CNDDB #1803). The 2009 observation was an adult burrowing owl occupying a ground squirrel burrow in an open field surrounded by commercial and agricultural development west of Santa Maria. Due to presence of ground squirrel burrows and grazed perennial grassland in the Study Area, the site could support burrowing owls. Burrowing owls were not observed on the Property.

5. Obscure Bumble Bee (*Bombus caliginosus*) is designated by CDFW as a Special Animal and has a global rank of G4? and a state Rank of S1S2 (CNDDB 2021b). The global rank indicates

that the species is apparently secure with some uncertainty. The species is uncommon but not rare, though there is some cause for long-term concern due to declines or other factors such as climate change, habitat loss, and disease (Williams and Osborne 2009; Fürst et al. 2014; Graystock et al. 2014). The "?" added to the G4 rank represents more certainty than a G4G5 rank (apparently secure, secure), but less certainty than G4 (apparently secure). The state rank of S1S2 is indicative of uncertainty regarding whether this species is critically imperiled or imperiled, meaning the taxon is between rare and extremely rare due to steep declines, restricted range, minimal populations (5-20 or fewer), and/or other factors making it very vulnerable to extirpation from the state. The obscure bumble bee is considered uncommon throughout its range, which stretches along the Pacific Coast from southern British Columbia to southern California with scattered occurrence records from the east side of California's Central Valley. Obscure bumble bee inhabits open coastal grasslands and meadows with colonies occurring underground and/or in abandoned bird's nests. Obscure bumblebee is known to have occurred along the west coast of the United States from the Olympic peninsula to south Los Angeles County, and inland to the Sierra foothills in some Great Valley locations. The Xerces Society states, "Analyses suggest very high population decline range-wide, including range size reductions, persistence reductions, and relative abundance declines." (Xerces 2020). The range of *B. caliginosus* has apparently contracted from inland areas (Hatfield et al. 2014). Obscure bumblebee is a California Department of Fish and Wildlife Species of Special Concern and is Vulnerable according to the International Union for the Conservation of Nature (IUCN). There are four records of CNDDB occurrences from 1954 to 1973. The closest occurrence is a 1973 record from Dune Lakes approximately 3 miles south of Oceano and approximately 4.7 miles east of the Study Area (CNDDB #166). Obscure bumblebee workers would have been present in the wildflower field during the sensitive invertebrate survey if a colony were within reach of the survey area. Bumblebees (*Bombus terrestris*) have been located up to 631 meters (~0.4 mile) from their colony to forage on flowers (Osborne et al. 1999). The only species of bumblebee found during the 2020 focused survey was yellow-faced bumblebee (*Bombus vosnesenskii*). Obscure bumblebee was not found on the property during the appropriately timed 2020 survey.

6. Western Bumble Bee (*Bombus occidentalis*) is neither federally nor state listed; however, it is a designated Sensitive Species under the United States Forest Service (USFS) and has a global rank of G2G3 (imperiled, vulnerable) and a state rank of S1 (critically imperiled). According to NatureServe Explorer (2018b), the overall global rank of the species must be G4 because one or two of the subspecies appears to be secure based on substantial information from 2009 and more recently. However, western bumble bee is not secure in most of its range (Cameron et al. 2011). Though once widespread, disease is stipulated as the cause of the precipitous decline in this species from southern British Columbia to central California. The only reported occurrence within the 8-quad search radius is a 1936 record of a specimen collected from the historic community of Miles near Avila Beach, approximately 13.6 miles northwest of the Study Area (CNDDB #279). Presence of perennial grasslands and wildflowers in the Study Area may support western bumble bee; however, workers would have been present in the wildflower field during the sensitive invertebrate survey if a colony were within reach of the survey area. Bumblebees (*Bombus terrestris*) have been located up to 631 meters (~0.4 mile) from their colony to forage on flowers (Osborne et al. 1999). The only species of bumblebee found during focused survey was yellow-faced bumblebee. Western bumblebee was not found at the Study Area during appropriately timed 2020 survey.

7. Monarch Butterfly (*Danaus plexippus*) is a CDFW Special Animal with a global rank of G4T2T3 (apparently secure). Taxa which are subspecies or varieties receive a T-rank attached to their G-rank. Where the G-rank reflects the condition of the entire species, the T-rank reflects the global situation of just the subspecies. Therefore, the T2T3 global status of *D. plexippus* population 1 is imperiled, vulnerable. The state rank is S2S3 (imperiled, vulnerable).

Monarch butterflies migrate in the fall to wintering locations along the coast of central and southern California, and mainland Mexico. Monarch butterflies aggregate in eucalyptus, Monterey pine, Monterey cypress, and less commonly oak trees (CNDDB 2021b). The Nipomo Mesa is largely under-surveyed for monarch butterfly aggregation sites because most of the land is privately owned.

There are 21 CNDDB occurrences of monarch butterfly aggregation sites in the 8-quad search radius (CNDDB 2021b), two of which, list the entire Oceano quad, where the Study Area is located as an aggregation site because the records contain suppressed sensitive locational data (CNDDB #320, #399). As of 2014 both aggregation sites are presumed extant. The next nearest aggregation site is a 1983 record of a eucalyptus grove, located 2.2 miles west of the Study Area, believed to be extirpated by development and gradual reduction of the grove since 1994 (CNDDB #129).

A line of eucalyptus trees south of and outside of the Study Area contains marginal habitat for aggregating monarch butterflies (Dr. Daniel Meade, personal communication; Photo 30). This site is not documented as harboring an aggregation of monarch butterflies.

Photo 30. Eastern portion of the Study Area, view southeast across field of pink California spineflower. June 3, 2020.

8. Lawrence's goldfinch (*Spinus lawrencei*) is a Special Animal tracked by the CNDDB that nests in oak habitats in the mountain areas of northern and eastern San Luis Obispo County, and elsewhere in California. Flocks of Lawrence's goldfinches tend to be highly mobile, moving to seasonal food sources. Marginally suitable nesting habitat is present in the oak woodland habitat onsite. This species is absent from Ebird records from nearby Nipomo Regional Park 2018-2020. Ebird range distribution map shows species' range in lower densities in coastal lowland areas. There are CNDDB records for this species, but not within the 8-quad search.

3.7.3 Wildlife Survey Results

Wildlife species detected in the Study Area include 10 invertebrates, 4 reptiles, 67 birds, and 17 mammals. Ten special status animals observed onsite include: Cooper's hawk, pallid bat, silver-haired bat, hoary bat, Yuma myotis, Blainville's horned lizard, oak titmouse, white-tailed kite,

Nuttall's woodpecker, and American badger. Figure 10 documents sensitive status animal and nest observations. Refer to Section 3.7.3 for discussion of special status wildlife.

A list of wildlife taxa observed in the Study Area are provided in Table 9. We provide this list as a guide to wildlife observed in the Study Area and for species that could potentially be present, at least seasonally. Some species, particularly bats and birds, may occur as transients.

The following wildlife were detected during 2017-2020 surveys. The Special Status column indicates listing status of animals under the Federal Endangered Species Act, the California Endangered Species Act, and CDFW. Taxa are arranged by scientific name.

TABLE 9. WILDLIFE LIST

Common Name	Scientific Name	Special Status	Habitat Type
Invertebrates – 13+ Species			
European Honeybee	*Apis mellifera*	--	Diverse habitats, agricultural land, gardens
Yellow-Faced Bumblebee	*Bombus vosnesenskii*	--	Open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows
Leafcutter Bee	*Chelostoma sp.*	--	Diverse habitats, nest in rotting wood, gardens, agricultural land
Robber Flies (2 sp.)	*Family Asillidae*	--	Arid sunny habitats
Flower Flies (3 sp.)	*Family Syrphidae*	--	Diverse habitats
Small Heliothodes Moth	*Heliothodes diminutivus*	--	Dry grasslands at low elevations
Buckeye Butterfly	*Junonia coenia*	--	Open, sunny landscapes, old fields, roadsides, gardens, parks, yards, fallow agricultural land, scrubs, pine savannas, and weedlots
Cuckoo Wasp	*Omalus sp.*	--	Diverse habitats
Flies (many species)	*Order Diptera*	--	All habitats
Acmon Blue Butterfly	*Plebejus acmon*	--	Desert, fields, prairie hills, weedy areas, road edges.
Reptiles – 4 Species			
Northern Pacific Rattlesnake	*Crotalus oreganus*	--	Dry, rocky habitats
Blainville's (Coast) Horned Lizard	*Phrynosoma blainvillii*	**SSC**	Dune scrub, alkali scrub, chaparral, grasslands
Coast Range [=Western] Fence Lizard	*Sceloporus occidentalis bocourtii*	--	Wide range; variety of habitats

Common Name	Scientific Name	Special Status	Habitat Type
Side-blotched Lizard	*Uta stansburiana*	--	Dry habitats
Birds – 67 Species			
Cooper's Hawk	*Accipiter cooperii*	SA (nesting)	Oak, riparian woodland
White-throated Swift	*Aeronautes saxatilis*	--	Nests in cliffs
Red-winged Blackbird	*Agelaius phoeniceus*	--	Marshes, fields
California Scrub-jay	*Aphelocoma californica*	--	Oak, riparian woodlands
Oak Titmouse	*Baeolophus inornatus*	SA (nesting)	Oak woodland
Great Horned Owl	*Bubo virginianus*	--	Woodland, grassland
Red-tailed Hawk	*Buteo jamaicensis*	--	Open, semi-open country
Red-shouldered Hawk	*Buteo lineatus*	--	Oak, riparian woodlands
California Quail	*Callipepla californica*	--	Shrubby habitats
Anna's Hummingbird	*Calypte anna*	--	Many habitats
Turkey Vulture	*Cathartes aura*	--	Open country
Hermit Thrush	*Catharus guttatus*	--	Woodland and brush
Swainson's Thrush	*Catharus ustulatus*	--	Mixed woodlands
Vaux's swift	*Chaetura vauxi*	--	Near stream valleys and towns, nests in hollow trees
Lark Sparrow	*Chondestes grammacus*	--	Woodland edges
Rock Pigeon	*Columba livia*	--	Urban areas
American Crow	*Corvus brachyrhynchos*	--	Many habitats, esp. urban
White-tailed Kite	*Elanus leucurus*	G5/S3S4 FP	Evergreen woodlands near meadows, marshes, farmland or grasslands
Pacific-slope Flycatcher	*Empidonax difficilis*	--	Riparian, oak woodlands
Hammond's Flycatcher	*Empidonax hammondii*	--	Coniferous or mixed forests
American Kestrel	*Falco sparverius*	--	Open, semi-open country
MacGillivray's Warbler	*Geothlypis tolmiei*	--	Oak, riparian woodlands
House Finch	*Haemorhous mexicanus*	--	Riparian, grasslands, chaparral, woodlands, urban
Barn Swallow	*Hirundo rustica*	--	Riparian, grasslands, lakes
Bullock's Oriole	*Icterus bullockii*	--	Oak, riparian woodlands
Dark-eyed Junco	*Junco hyemalis*	--	Oak woodland

Common Name	Scientific Name	Special Status	Habitat Type
Acorn Woodpecker	*Melanerpes formicivorus*	--	Oak woodland, urban areas with oaks
Lincoln's Sparrow	*Melospiza lincolnii*	--	Dense brushy areas, willow thickets, often near water
California Towhee	*Melozone crissalis*	--	Chaparral scrub, shrubby urban areas
Northern Mockingbird	*Mimus polyglottos*	--	Riparian, chaparral, woodlands, urban
Ash-throated Flycatcher	*Myiarchus cinerascens*	--	Open, arid habitats
Orange-crowned warbler	*Oreothlypis celata*	--	Oak and riparian woodlands
Band-tailed Pigeon	*Patagioenas fasciata*	--	Woodlands, urban trees
Cliff Swallow	*Petrochelidon pyrrhonota*	--	Urban; open areas near water
Black-headed Grosbeak	*Pheucticus melanocephalus*	--	Woodlands
Nuttall's Woodpecker	*Picoides nuttallii*	G4G5/S4 USFWS BCC	Oak, riparian woodlands
Hairy Woodpecker	*Picoides villosus*	--	Oak, riparian woodlands
Spotted Towhee	*Pipilo maculatus*	--	Dense brushy areas
Western Tanager	*Piranga ludoviciana*	--	Oak, riparian woodlands
Blue-gray gnatcatcher	*Polioptila caerulea*	--	Chaparral
Bushtit	*Psaltriparus minimus*	--	Woodlands, chaparral
Ruby-crowned Kinglet	*Regulus calendula*	--	Oak, riparian woodlands
Black Phoebe	*Sayornis nigricans*	--	Near water in natural and urban settings
Say’s Phoebe	*Sayornis saya*	--	Open country, grassland
Yellow-rumped Warbler	*Setophaga coronata*	--	Coniferous and mixed woodland (breeding); shrubby areas and parks (winter)
Black-throated Gray Warbler	*Setophaga nigrescens*	--	Oak, riparian woodlands
Townsend's Warbler	*Setophaga townsendii*	--	Riparian, oak woodlands
Western Bluebird	*Sialia mexicana*	--	Woodland near open areas
Red-breasted Nuthatch	*Sitta canadensis*	--	Coniferous and mixed woodlands
Lesser Goldfinch	*Spinus psaltria*	--	Riparian, oak woodlands
American Goldfinch	*Spinus tristis*	--	Weedy fields, woodlands
Western Meadowlark	*Sturnella neglecta*	--	Open habitats, grasslands

Common Name	Scientific Name	Special Status	Habitat Type
European Starling	*Sturnus vulgaris*	--	Agricultural, livestock areas
Tree Swallow	*Tachycineta bicolor*	--	Oak, riparian woodlands, open areas near water
Bewick's Wren	*Thryomanes bewickii*	--	Riparian woodland, scrub
House Wren	*Troglodytes aedon*	--	Shrubby areas
American Robin	*Turdus migratorius*	--	Streamsides, woodlands, urban parks
Western Kingbird	*Tyrannus verticalis*	--	Grasslands, savannah
Cassin's Kingbird	*Tyrannus vociferans*	--	Open and semi-open areas
Barn Owl	*Tyto alba*	--	Agricultural, woodlands
Cassin's Vireo	*Vireo cassinii*	--	Confierous and mixed woodlands
Warbling Vireo	*Vireo gilvus*	--	Oak, riparian woodlands
Hutton's Vireo	*Vireo huttonii*	--	Oak, riparian woodlands
Wilson's Warbler	*Wilsonia pusilla*	--	Oak, riparian woodlands
Mourning Dove	*Zenaida macroura*	--	Open and semi-open habitats
Golden-crowned Sparrow	*Zonotrichia atricapilla*	--	Dense woodlands, brushy areas
Mammals – 17 Species			
Pallid Bat	*Antrozous pallidus*	G5/S3 SSC	Rock crevices, caves, tree hollows, mines, old buildings, and bridges
Cattle	*Bos taurus*	--	Agricultural fields, annual grasslands
Coyote	*Canis latrans*	--	Open woodlands, brushy areas, wide ranging.
Heermann's Kangaroo Rat	*Dipodomys heermanni*	--	Deserts, grasslands, semiarid areas
Big Brown Bat	*Eptesicus fuscus*	--	Deciduous forest areas, also in habitats ranging from timberline meadows to lowland deserts
Silver-haired Bat	*Lasionycteris noctivagans*	G3G4/S3S4 SSC	Coniferous or mixed coniferous and deciduous forests
Hoary Bat	*Lasiurus cinereus*	G5/S5 SA	Variety of habitats, roosts in foliage
Black-tailed Jackrabbit	*Lepus californicus*	--	Grasslands
California Myotis	*Myotis californicus*	--	Tunnels, hollow trees, buildings, bridges

Common Name	Scientific Name	Special Status	Habitat Type
Yuma Myotis	*Myotis yumanensis*	G5/S5 SA	Caves, mines, buildings, tree cavities, rock crevices, or under bridges. Feeds near open water.
Big-eared Woodrat	*Neotoma macrotis*	--	Oak woodland, riparian woodland
California Ground Squirrel	*Otospermophilus beecheyi*	--	Grassland, chaparral, and seral stage forests
Deer Mouse	*Peromyscus maniculatus*	--	All dry land habitats
Mexican Free-tailed Bat	*Tadarida brasiliensis*	--	Variety of habitats; roosts in bridges, buildings, caves
American Badger	*Taxidea taxus*	SSC	Open country
Valley Pocket Gopher	*Thomomys bottae*	--	Variety of habitats

Sensitive Invertebrates

Target pollinator plants included blunt leaved lupine (*Lupinus truncatus),* yellow bush lupine (*Lupinus arboreus*)*,* coastal cryptantha (*Cryptantha clevelandii* var. *florosa*)*,* and purple clarkia (*Clarkia purpurea* ssp. *quadrivulnera*)*.* Other field wildflowers in bloom included owl's clover (*Castilleja exserta* ssp. *exerta*)*,* miniature lupine (*Lupinus bicolor*), black sage (*Salvia mellifera*), and deerweed (*Acmispon glaber*)*.* Ten bumblebees were captured by netting and two specimens were collected for vouchers. Bumblebee identification followed descriptions in Williams, Thorp, Richardson and Colla (2014). All bumblebees were examined prior to release and were identified as yellow-faced bumblebee (*Bombus vosnesenskii*), a common species. No other bumblebee species was found. Very few native bees were observed or captured. Only one other native bee, a Megachile (leafcutter bee), *Chelostoma* sp. was found in sweeps. One cuckoo wasp (*Omalus* sp. [tentative], Chrysididae), metallic green, very tiny (3mm length), was collected. Many European honeybees were foraging in the wildflower fields. Many flower flies (Syrphidae), robber flies (Asillidae), and other flies (Diptera)- were captured. Most insects were released. A buckeye butterfly (*Junonia coenia*), three Acmon blue butterflies (*Plebejus acmon*) and one small Heliothodes moth (*Heliothodes diminutivus*) were captured in the sweeps and released.

Obscure bumblebee workers would have been present in the wildflower field during the survey period if a colony were within reach of the survey area. Bumblebees (*Bombus terrestris*) have been measured ranging up to 631 meters (~0.4 mile) from their colony to forage on flowers (Osborne et al. 1999). The only species of bumblebee found was yellow-faced bumblebee. Obscure bumblebee was not found on the property during an appropriately timed survey.

Northern California Legless lizard

Coverboards were left in place for a few months to create suitable microclimate for legless lizards. Coverboards will be monitored periodically through 2020. No legless lizards have been observed as of July 21, 2020.

Bats

A total of seven bat species were detected during May 26-29, 2020, acoustic monitoring survey (Table 10). The number of audio detections is not indicative of the number of bats present, but rather the number of vocalizations positively identified by the acoustic monitors, therefore a small number of bats could be responsible for many vocalizations. A total of 5 bats were observed during the emergence survey, one pallid bat, one large unidentified bat, and two smaller unidentified bats.

TABLE 10. SUMMARY OF ACOUSTIC BAT DETECTIONS

Common Name	Special Status	Number of Acoustic Detections
Pallid Bat	G5/S3 SSC	7
Big Brown Bat	--	25
Silver-haired Bat	G3G4/S3S4 SSC	2
Hoary Bat	G5/S5 SA	30
California Myotis	--	11
Yuma Myotis	G5/S5 SA	8
Mexican Free-tailed Bat	--	121
TOTAL		**204**

Mexican free-tailed bats were the dominant species detected during the acoustic surveys with 109 (59%) total detections, followed by silver-haired bat with 30 (15%) detections, and big brown bat with 25 (12%) detections. Mexican free-tailed bats are an abundant species with no special protection status. Mexican free-tailed bats roost in large numbers in caves and rock crevices on cliff faces and in manmade structures such as abandoned mines and tunnels, highway bridges and large culverts, buildings, and bat houses.

The silver-haired bat is a medium-sized bat with black or dark brown hairs that are silver-tipped. It is a forest-dwelling species generally thought to be concentrated in the northern half of the state and considered relatively uncommon throughout much of its range. There are reports of this species in San Luis Obispo, Santa Barbara, and Ventura counties. This species typically roosts in trees and has also been observed using structures such as attics and sheds. Silver-haired bats may roost in tree cavities or under loose tree bark onsite.

The big brown bat is a medium to large sized bat that has a wide distribution extending from Canada to northern South America. They are considered common within their range and tend to roost in man-made structures such as bridges, barns, and attics. They are known to forage only a few kilometers from their roost sites where they feed primarily on heavy-bodied insects. Big brown bats typically hibernate in small groups during winter months, but in the warmer southwestern portion of their range, they may not hibernate at all. Females roost communally with males at hibernation sites during the winter and roost separately from males in spring and summer.

Big brown bats may roost in old structures could potentially roost in structures in or near the Project site.

The number of acoustic detections for the remaining four species, ranged from 1 to 5 percent per species: California myotis 11 detections, Yuma myotis 8 detections, pallid bat 7 detections, hoary bat 2 detections.

The California myotis is a small, common bat that occupies many different habitats from British Columbia to western Texas. They immerge from day roosts soon after sunset and typically feed on moths and flies. Breeding takes place in fall and females give birth to a single offspring in July. They have been known to roost in a variety of substrates including caves, mines, rock crevices, tree hollows, under loose tree bark, and inside structures. Potential roosting habitat is present in large oak trees, groves, snags, and structures on the Project site.

The Yuma myotis primarily roosts in buildings and bridges, but may also use cliff crevices, mines, caves, and trees. This species is strongly associated with permanent sources of water, usually rivers and streams, which do not occur on the property. Mating occurs in fall, and females give birth between mid-spring and mid-summer in maternal colonies of up to several thousand. Males tend to roost singly in the summer. Potential roosting habitat is present in structures onsite, but maternity roosts are unlikely due to the colonial habits of females and lack of available large roosting areas.

The pallid bat is primarily a crevice-roosting species and selects roosts where they can retreat from view. Pallid bats prefer rocky outcroppings but may be found regularly in oak and pine woodland habitats where they roost in caves, mines, rock crevices, hollow trees, and buildings (Nowak and Walker 1994). Maternity colonies typically form starting in April, averaging 12 to 100 bats, and disband in late August. Young are born in May and June. Communal wintering or maternity colonies are more common in rock crevices and caves

The hoary bat is a CDFW Special Animal because there is a need for more research on the ecology of this species, and it is vulnerable to collisions with wind turbines in the western United States. Hoary bats roost in tree foliage and tree cavities, preferably away from developed areas. They are found year-round in California with the highest occurrences in winter, the season in which breeding occurs. Hoary bats prefer both deciduous and coniferous forests and prefer to roost in the dense foliage of medium to large trees with a water source in the vicinity. Hoary bats emerge in the late evening to feed, typically on moths. Potential roosting habitat is present in tree cavities in and near the Project site.

The low numbers of total detections over three nights of acoustic monitoring indicate that trees at Dana Reserve are not heavily utilized by bats for roosting sites. Bats detected during the survey were likely utilizing the property for foraging. The detector placed closer to U.S. 101 only picked up 15% of the detections and five of the seven species found onsite. Results may be due to sound interference from traffic or disturbance thresholds of bats. The detector placed in the interior of the Study Area picked up all seven species and 85% of the vocalizations.

Of the seven bat species detected at Dana Reserve in 2020, four are listed by CDFW as Species of Special Concern or Special Animals. Potential roosting habitat is present in or near the Project site for all the detected bat species. Potential roosting habitat is limited primarily to a few structures on the small northeast 7-acre parcel and coast live oak trees that will be removed. Potential roost habitat within the Project site is not likely to harbor maternity colonies of any bat species due to

limited infrastructure and cavity suitability limitations. Bats could roost singly or in small groups in trees that are scheduled for removal.

3.7.4 Habitat Connectivity and Wildlife Movement

The Study Area is bounded by roadways and residential properties, with poor to limited connectivity to open space for most wildlife. There is limited open space connectivity in the greater surrounding environs. Rural residential parcels along the northwest boundary of the Study Area (Cherokee Place) may provide moderate opportunity for wildlife movement between the Study Area and an undeveloped parcel north of Willow Road. U.S. Highway 101 restricts eastward movement of mammals and reptiles from the Study Area. Small residential parcels along the southeastern and southwestern boundaries of the Study Area inhibit wildlife movement south or west from the Study Area. Additionally, there are no undeveloped open space parcels or wildlife corridors available for wildlife movement south and west of the Study Area.

Figure 10. Biological Resources - Animals

Legend

- Study Area
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Closed Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Open Oak Woodland* - S3
- Badger Den
- Blainville's Horned Lizard
- Woodrat Midden

Nests

- Acorn Woodpecker
- American Crow
- Blue-Gray Gnatcatcher
- Dark-eyed Junco
- Great Horned Owl
- House Finch
- Nest Cavity
- Raptor Nest
- Red-Tailed Hawk
- Stick Nest

N

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50326°W 35.04678°N
Nipomo, San Luis Obispo County

Imagery Sources: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

*Sensitive Natural Communities with State Rank

4 ENVIRONMENTAL IMPACT ANALYSIS AND MITIGATION

4.1 Impacts and Mitigation Overview

This section includes an analysis of potential impacts to habitat, botanical, and wildlife resources from the proposed subdivision (Project), as well as from the alternative project plan (Alternative). Mitigation recommendations are provided for proposed impacts to biological resources from both the Project and the Alternative. The Project proposes to us a northern access to Dana Reserve from Willow Road through a heavily wooded parcel (091-301-030), and to maximize residential development and park improvements. Whereas the Alternative proposes northern access from Willow Road through a more disturbed parcel (091-301-029) with fewer oaks than parcel -030, and to preserve some oak forest and woodland habitat by reduced residential and parkland improvements compared to the Project.

4.1.1 CEQA Thresholds

CEQA threshold triggers listed in Appendix G, Biological Resources Section IV were considered throughout this analysis. General Plan policies were applied to thresholds. Does the project:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

   Thresholds:

   - Direct impacts to special status taxa and/or their protected habitat condition (e.g., nesting birds) listed in Table 11
   - Loss of 10 percent of sensitive population on subject property
   - No net loss of sensitive habitat acreage, values, and function (Policy BR1.4)
   - Maintain acreage of native woodlands (Policy BR 3.2)

2. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

   Threshold:

   - Loss of 10 percent loss of sensitive natural community on the Property
   - There is no riparian habitat on the Dana Reserve

3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
   - Not applicable – no wetland present or adjacent to Dana Reserve

4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Threshold:

- Interferes with movement corridor for resident wildlife

5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Thresholds:

- No net loss of sensitive habitat acreage, values, and function (Policy BR1.4)
- Preserve oak woodlands and important biological habitats. (County Code 22.98.070-D)

6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

- Not applicable. No HCP, NCCP or local/regional/state HCP.

4.1.2 CEQA Mandatory Findings

CEQA's Mandatory Findings of Significance guidelines section 15065 for biological resources were considered for this analysis. Thresholds are determined on a case-by-case basis to determine "substantially reduce" for each taxon, and on a yes/no basis for threats to sustainability for fish and wildlife or elimination of a plant or animal community.

Finding of Significance	**Threshold of Significance**
• Substantially reduce the habitat of a fish or wildlife species;	• Definition of substantial determined on a taxon-by-taxon basis, depending on habitat requirements of the listed species.
• Cause a fish or wildlife population to drop below self-sustaining levels;	• Yes
• Threaten to eliminate a plant or animal community; or	• Yes
• Substantially reduce the number or restrict the range of an endangered, rare or threatened species	• Definition of substantial determined on a taxon-by-taxon basis, depending on habitat requirements of the listed species.

4.1.3 Project Impacts and Mitigations Summary

The Project would affect biological resources, including sensitive habitat types, special status plants and animals, and nesting birds. This section provides mitigation recommendations designed to reduce impacts to biological resources onsite as summarized. The first 13 measures provide mitigations relevant to each impacted habitat or sensitive taxon. The last three measures are construction best practices, worker environmental training, and public education, important measures to protect biological resources. Table 11 summarizes impacts and mitigation measures.

TABLE 11. IMPACT AND MITIGATION SUMMARY

Biological Resource	Potential Effect from Proposed Project and Alternative	Recommended Mitigation Measures
Coast live oak forest and woodland oak tree impacts	Reduction of habitat and functions	BIO-1 to 4 (Onsite tree protection, replacement, and woodland habitat protection, plus offsite mitigation for woodland)
Coast live oak woodland (chamise/black sage)	Reduction of habitat and functions	BIO-4 (Offsite mitigation)
Burton Mesa chaparral	Reduction of habitat and functions	BIO-5 (Offsite mitigation)
California perennial grassland, Mediterranean California naturalized perennial grassland, annual brome grassland, and anthropogenic	Not considered biologically sensitive	None
Pismo clarkia	Minor direct and indirect impacts	BIO-6 (Onsite mitigation)
Mesa horkelia, Nipomo Mesa Ceanothus, Sand Mesa Manzanita, Michael's rein orchid	Direct and/or indirect impacts	BIO-7 (On-and offsite mitigation for CRPR 1B taxa)
California spineflower, sand buck brush, and sand almond	Direct reduction of regional population	BIO-8 (On-and offsite mitigation for CRPR 4 taxa)
Blainville's horned lizard	Direct removal, reduction of habitat, degradation of habitat, incidental mortality, invasion by Argentine ants, loss of food resources	BIO-9 (Individual relocation)
Northern California legless lizard [not observed, but potentially present]	Direct removal, reduction of potential habitat, degradation of habitat, incidental mortality	BIO-9 (Habitat protection, and individual relocation)

Biological Resource	Potential Effect from Proposed Project and Alternative	Recommended Mitigation Measures
Sensitive bird potential nesting habitat (Cooper's hawk, sharp-shinned hawk, oak titmouse, white-tailed kite, Nuttall's woodpecker)	Reduction of foraging habitat, loss of nesting habitat, direct removal	BIO-2, BIO-4, BIO-10 (Habitat protection and nest avoidance during construction)
Nesting birds	Direct removal, indirect impacts (noise, lighting, pet depredation)	BIO-2, BIO-3, BIO-10 (Habitat protection and nest avoidance during construction)
Silver-haired bat, hoary bat, and Yuma myotis	Loss of foraging and roosting habitat	BIO-2, BIO-3, BIO-11 (Habitat protection and passive relocation of non-maternal bats)
American badger	Reduction of habitat, degradation of habitat, incidental mortality, direct removal, indirect impacts	BIO-12 (Active den avoidance and relocation outside of natal season)
Habitat connectivity and wildlife movement, common wildlife	Loss of habitat, protective cover, indirect impacts (increased traffic, lighting, noise, vehicle collisions, anthropogenic disturbance)	BIO-13, BIO-14, BIO-15, BIO-16 (Habitat protection, cover excavations, use biodegradable erosion control, provide worker environmental training)

4.2 Habitats

The Project would impact approximately 266.4 acres, including 21.7 acres of coast live oak forest, 75.3 acres of coast live oak woodland, 35.0 acres of Burton Mesa chaparral, 125.0 acres of California perennial grassland, 3.0 acres of annual brome grassland, and 5.1 acres of Mediterranean California naturalized perennial grassland (Table 12, Figure 11) and Figure 12. Approximately 20 acres of coast live oak woodland and forest plus and 0.9-acre of Burton Mesa chaparral would be preserved onsite in a biological open space easement.

TABLE 12. HABITAT IMPACTS FROM PROJECT

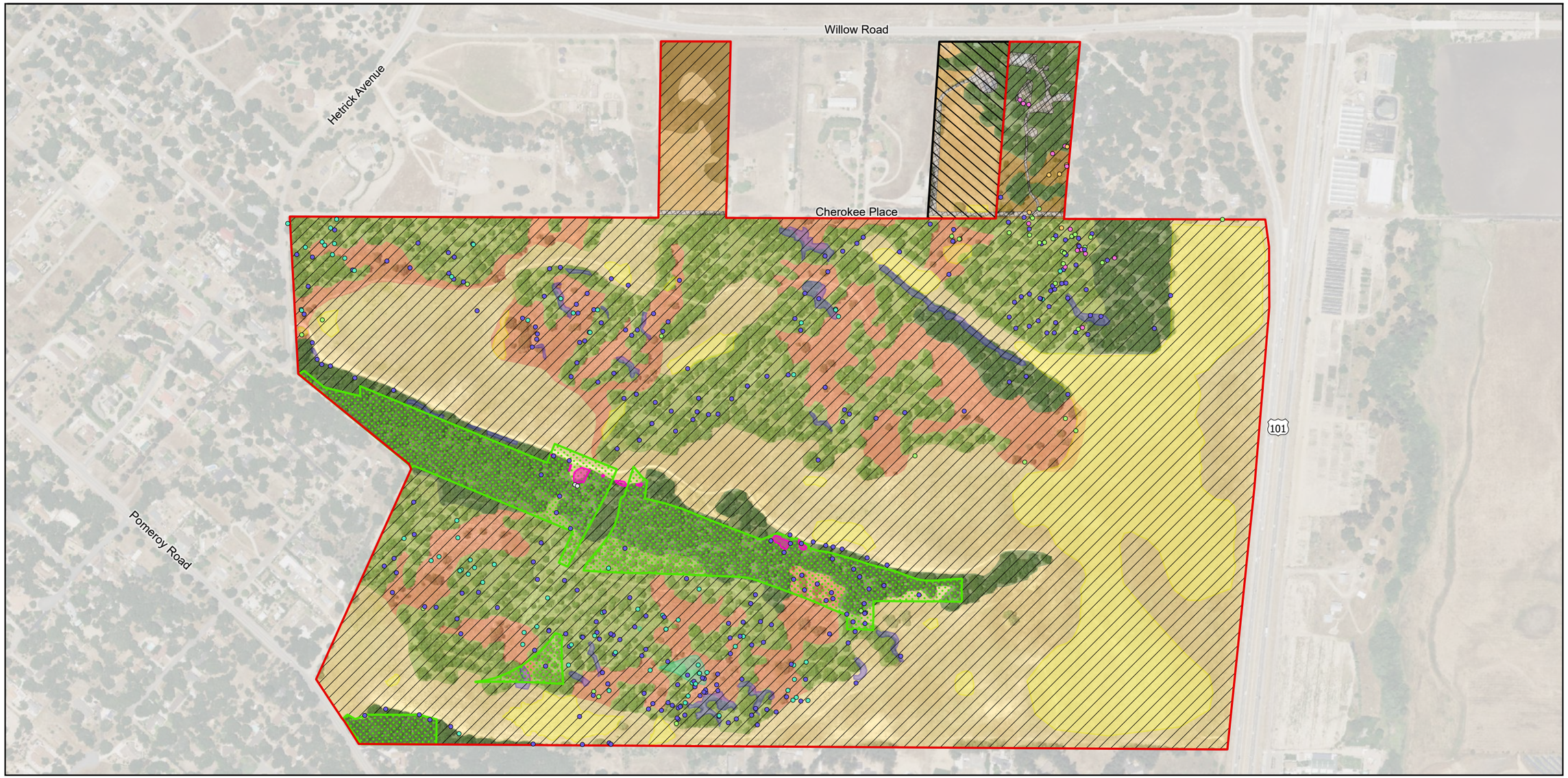
Habitat Type (Global/State Rank)	Impact (Ac.)	Preserved (Ac.)	Total (Ac.)
Coast live oak forest (GNR)	21.65	17.00	38.65
Coast live oak woodland (G3/ S3)	75.33	3.01	78.34
Burton Mesa chaparral (G1/ S1)	35.03	0.94	35.97
California perennial grassland group	125.04	0.99	126.03.03
Mediterranean California naturalized perennial grassland group	5.12	0	5.12
Annual brome grassland alliance	3.03	0	3.03
Anthropogenic	1.23	0	1.23
TOTAL	**266.433**	**21.94**	**288.37**

The Alternative would modify northern access from Willow Road and reduce lot layout impacts. The Alternative would impact 256.4 acres comprised of 15.3 acres of coast live oak forest, 70.0 acres of coast live oak woodland, 34.9 acres of Burton Mesa chaparral, 124.2 acres of California perennial grassland group, 3.6 acres of Mediterranean California naturalized perennial grassland group, and 7.3 acres of annual brome grassland. Approximately 32.0 acres would be preserved onsite in a biological open space easement that includes 20.8 acres of coast live oak forest, 8.3 acres of coast live oak woodland, 1.8 acres of California perennial grassland group, and 1.1 acres of Burton Mesa chaparral (Table 13).

TABLE 13. HABITAT IMPACTS FROM ALTERNATIVE

Habitat Type	Impact (Ac.)	Preserved (Ac.)	Total (Ac.)
Coast live oak forest (GNR)	15.3	20.8	36.1
Coast live oak woodland (G3/ S3)	70.0	8.3	78.3
Burton Mesa chaparral (G1/ S1)	34.9	1.1	36.0
California perennial grassland group	124.2	1.8	126.0
Mediterranean California naturalized perennial grassland group	3.6	0	3.6
Annual brome grassland alliance	7.3	0	7.3
Anthropogenic	1.1	0	1.1
TOTAL	**256.4**	**32.0**	**288.4**

Figure 11. Proposed Plan Impacts - Plants



Legend

- Plan Boundary
- Not Included
- Open Space (Not Impacted)
- Proposed Impacts
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Closed Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Open Oak Woodland* - S3
- California Spineflower
- Mesa Horkelia
- Sand Mesa Manzanita
- Pismo Clarkia
- Mesa horkelia
- Michael's rein orchid
- Nipomo mesa ceanothus
- Sand almond
- Sand buck brush
- Sand mesa manzanita

*Sensitive Natural Communities with State Rank

N

0 250 500 Feet

Dana Reserve
Map Center: 120.50364°W 35.04662°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

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October 06, 2021 12:43 PM by SAF

Figure 12. Alternative Plan Impacts - Plants

Legend

- Plan Boundary
- Not Included
- Open Space (Not Impacted)
- Proposed Impacts
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Closed Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Open Oak Woodland* - S3
- California Spineflower
- Mesa Horkelia
- Sand Mesa Manzanita
- Pismo Clarkia
- Mesa horkelia
- Michael's rein orchid
- Nipomo mesa ceanothus
- Sand almond
- Sand buck brush
- Sand mesa manzanita

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October 06, 2021 12:43 PM by SAF

4.2.1 Oak Habitats and Trees

San Luis Obispo's Land Use Category Standards for the South County Sub-area, Residential Rural (RR), provided for development on the Dana Ranch (aka Dana Reserve). The Proposed Plan would remove 3,943 oak trees and preserve 1,185 oak trees as shown in Figure 13 and Figure 15. The Alternative Plan would remove 3,376 oak trees and preserve 1,552 oak trees as shown in Figure 14 and Figure 16. These counts are based on the 2021 oak tree survey results (Section 3.2.1 Methods).

In the Project approximately 1,073 oak trees removed would be forest habitat, 2,676 would be from woodland habitat, and another 194 scattered among chaparral and grassland habitats. The Alternative would remove approximately 703 oaks from forest habitat and 2,498 trees from oak woodland habitat.

Primary access roads and development areas were aligned and designed to avoid the most intact forest habitat on the Dana Reserve property. Cross-streets, recreational trails, and hazard reduction activities (e.g., wildland fire fuel management) will impact the forest habitat. Up to 750 additional trees may have their Critical Root Zones (CRZ) impacted by construction activities and would need to be assessed by a qualified arborist and impacts mitigated appropriately (BIO-1).

Tables 14 and 15 list the number of oak trees found within seven habitat types: forest, woodland, chaparral, and two grassland types. Most of the trees proposed for removal are in the oak forest and woodland habitats. The remainder occur in chaparral and grassland habitats. Mitigation measures related to oaks preserved are in BIO-1, -2, and -3. Mitigation measures associated with oak removal are in BIO-4.

TABLE 14. PROPOSED PLAN OAK TREE IMPACTS BY HABITATS

Habitat Type	Preserved Trees	Removed Trees	Total Trees	Preserved Canopy (ac)	Impacted Canopy (ac)	Total Canopy (ac)
Coast live oak forest	1,059	1,073	2,132	12.0	15.0	27.0
Coast live oak woodland	116	2,676	2,792	1.1	34.2	35.3
Burton Mesa chaparral	10	155	165	0.2	2.3	2.5
California perennial grassland group	0	16	16	0	0.5	0.5
Mediterranean California naturalized perennial grassland group	0	9	9	0	0.2	0.2
Anthropogenic	0	14	14	0	0.3	0.3
Annual brome grasslands	0	0	0	0	0	0
TOTAL	**1,185**	**3,943**	**5,128**	**13.3**	**52.5**	**65.8**

TABLE 15. ALTERNATIVE PLAN OAK TREE IMPACTS BY HABITATS

Habitat Type	Preserved Trees	Removed Trees	Total Trees	Preserved Canopy (ac)	Impacted Canopy (ac)	Total Canopy (ac)
Coast live oak forest (G5/ S4)	1,248	703	1,951	14.6	10.5	25.1
Coast live oak woodland (G3/ S3)	294	2,498	2,792	3.9	31.6	35.5
Burton Mesa chaparral (G1/ S1)	10	155	165	0.2	2.3	2.5
California perennial grassland group (disturbed)	0	16	16	0	0.5	0.5
Mediterranean California naturalized perennial grassland group	0	0	0	0	0	0
Anthropogenic	0	1	1	0	0.1	0.1
Annual brome grasslands	0	3	3	0	0.1	0.1
TOTAL	**1,552**	**3,376**	**4,928**	**18.7**	**45.1**	**63.8**

4.2.2 Coast live oak forest (Quercus agrifolia / Toxicodendron diversilobum) (G5 /S4)

Approximately 40.5 acres of the 295.3-acre Study Area (14 percent) is coast live oak forest, specifically, the *Quercus agrifolia / Toxicodendron diversilobum* association. Coast live oak forest is identified as a biologically significant resource in San Luis Obispo County that provides important native habitat for plants and wildlife. The Project will result in the permanent loss of up to 21.7 acres in the proposed plan and up to 15.3 acres in the alternative plan of available coast live oak forest habitat. Approximately 17.0 acres (proposed plan) or 20.8 acres (alternative plan) of high-quality habitat will be protected as a biological open space easement.

Coast live oak forest contributes to the Study Area's overall biological diversity and supports eight special status plants (Pismo clarkia, mesa horkelia, Nipomo mesa ceanothus, mesa manzanita, Michael's rein orchid, California spineflower, sand almond, and sand buckbrush), and three special status nesting birds (Cooper's hawk, oak titmouse, white-tailed kite, and Nuttall's woodpecker). Sensitive reptiles such as Blainville's horned lizard are also supported by this habitat. California's Central Coast contains 90 percent of the state's coast live oak forests (Gaman 2008). This habitat type is considered sensitive due to its biological diversity and presence of sensitive plant and animal species; therefore, impacts would be considered significant and mitigation is required to reduce Project impacts.

4.2.3 Coast live oak woodland--Quercus agrifolia / Adenostoma fasciculatum - (Salvia mellifera) (G3/ S3)

Approximately 78.3 acres of the 295.3-acre Study Area (27 percent) is coast live oak woodland, specifically, the *Quercus agrifolia / Adenostoma fasciculatum - (Salvia mellifera)* association,

which is a G3/S3 sensitive community. Coast live oak woodland is identified as a biologically significant resource in San Luis Obispo County that provides important native habitat for plants and wildlife. The Project will result in the permanent loss of up to 75.3 acres in the proposed Project and 70 acres in the Alternative project of available coast live oak woodland habitat. Approximately 3 acres (Project) or 8.4 acres (Alternative) of high-quality habitat will be protected as a biological open space easement.

Coast live oak woodland contributes to the Study Area's overall biological diversity and supports eight special status plants (mesa horkelia, Nipomo mesa ceanothus, mesa manzanita, California spineflower, sand almond, and sand buckbrush), and three special status nesting birds (Cooper's hawk, oak titmouse, white-tailed kite, and Nuttall's woodpecker). Sensitive reptiles such as Blainville's horned lizard are also supported by this habitat. California's Central Coast contains 80 percent of the state's coast live oak woodlands (Gaman 2008). This habitat type is considered sensitive due to its biological diversity and presence of sensitive plant and animal species; therefore, impacts would be considered significant and mitigation is required to reduce Project impacts.

Onsite tree protection and mitigation planting in only intended to mitigate for construction impacts within the critical root zone or to tree canopies during construction. Offsite mitigation for loss of coast live oak forest and woodland habitat is proposed through conservation of oak forest and woodland habitats. Onsite mitigation opportunities are limited; therefore, offsite conservation of oak woodland and chamise chaparral is proposed (Tables 14, 15, and BIO-3, BIO-4, BIO-5).

BIO-1 Prepare Onsite Tree Protection Plan for Trees Retained

Prior to issuance of a grading permit, a qualified arborist shall prepare a Tree Protection Plan designed to protect retained oaks during construction. Tree protection guidelines and a root protection zone shall be established and implemented for each retained tree over 4 inches DBH within 50 feet of site disturbance. The following criteria shall be included:

A. Preserve Oak Forest Habitat on Dana Reserve. Designate oak forest habitat for open space preservation where limited recreational and open space uses may be allowed. Preserve a minimum of 20 acres of oak forest habitat onsite.

B. Map and Number Trees to be Retained. Tree canopies and trunks within 50 feet of proposed disturbance zones shall be mapped and numbered by a city-approved arborist or biologist and a licensed land surveyor. Data for each tree shall include date, species, number of stems, diameter at breast height (DBH) of each stem, CRZ diameter, canopy diameter, tree height, health, habitat notes, and nests observed.

Impacts shall be identified for native oak trees with a diameter at breast height (DBH) of four inches or greater, as measured at a height of 4.5 feet above ground. Impacts include any ground disturbance within the critical root zone, trunk damage, or any pruning of branches three inches in diameter or greater.

A qualified arborist shall determine the critical root zone (CRZ) for each retained tree on a case-by-case basis, generally 1.5 times the average canopy radius (distance from trunk to edge of drip line). For example, a tree with a 24-ft diameter canopy would have a 36-ft CRZ, or approximately 18 feet from the trunk. Where the canopy has been pruned prior to evaluation, the CRZ may be calculated as 1.5 feet per inch of the tree's DBH. For example, an 18-inch DBH tree would be assigned a 24-ft CRZ. The extent of the critical root zone shall be used as

the basis for a Tree Protection Zone (TPZ), such as the line of encroachment for the edge of a group of trees, shown on all construction plans.

C. Pre-Construction Meeting. On-site pre-construction meetings for each phase that affects oak trees shall be attended by the Arborist(s), Owner(s), Planning Staff, and the earth moving team. Explicit exhibits and discussion will focus on tree protection during construction and provisions of the TPP.

D. Install Protective Fencing. Tree protection fencing shall be installed at the perimeter of the TPZ. At a minimum, a tree protection zone (TPZ) shall be delineated as a no-construction zone. Preferably, install fencing six feet outside the TPZ. No construction equipment shall be staged, parked, or stored within six feet of any oak tree dripline.

The fence shall be installed with arborist field consultation before any construction or earth moving begins. The proposed fencing shall be shown on the grading plan. It must be a minimum of 4-ft high chain link, snow or safety fence staked (with t-posts 8 feet on center). The Owner/Applicant shall be responsible for maintaining an erect fence throughout the construction period. (For trees to be protected longer than 4 months, metal fencing is preferred to minimize maintenance requirements.) The arborist(s), upon notification, will inspect the fence placement once it is erected. After this time, fencing shall not be moved without arborist inspection/approval.

If plastic fencing is used, a minimum of four zip ties shall be used on each stake to secure the fence. Weatherproof signs shall be permanently posted on the fences every 50 feet, with the following information: Tree Protection Zone. No personnel, equipment, materials, or vehicles allowed.

E. Avoid and Minimize Tree Impacts. Impacts to the oak canopy or CRZ shall be avoided where feasible in light of project layout and the locations of physical structures, paved or otherwise altered surfaces, and infrastructure. Impacts include pruning branches over three (3) inches in diameter, any ground disturbance or soil compaction within the dripline or CRZ of the tree (whichever distance is greater), and trunk damage.

i. *No Tree Attachments*. Wires, signs and other similar items shall not be attached to the oak trees.

ii. *Pruning*: Pruning shall be implemented by, or under the direction of, a certified arborist. The purpose and type of pruning implemented shall be tracked by service date and class of pruning for each tree. A certified arborist shall direct all pruning. No pruning shall take more than 25 percent of the live crown of any native tree. Any trees that may need pruning for road/home clearance shall be pruned prior to any grading activities to avoid branch tearing. Unless a hazardous or unsafe situation exists, major trimming shall be done only during the summer months. (Coast live oaks, which retain their leaves year-round, are generally dormant July through October.)

Class 1 pruning emphasizes aesthetics, removal of dead, dying, decaying weak branches and selective thinning to lesson wind resistance.

Class 2 pruning is for structural integrity and tree health concerns. It consists of removal of dead, dying, decaying, interfering, obstructing and weak branches as well as selective thinning to lesson wind resistance.

Class 3 pruning is conducted for safety considerations and hazardous conditions.

Class 4 pruning includes crown reduction pruning, such as reduction of tops, sides or individual limbs.

Removal of larger lower branches shall be minimized to: avoid making tree top heavy and more susceptible to "blow-overs,"; reduce large limb cuts that are susceptible to disease and infestation, retain wildlife habitat values associated with the lower branches; retain shade to keep summer temperatures cooler (retains higher soil moisture, greater passive solar potential, provides better conditions for oak seedling volunteers); and retain the natural shape of the tree. The amount of trimming (roots or canopy) done in any one season shall be limited as much as possible to reduce tree stress/shock (10% or less is best, 25% maximum).

iii. *Protect Surface Roots*. Care shall be taken to avoid surface roots within the top 18 inches of soil. If any roots must be removed or exposed, they shall be cleanly cut and not left exposed above the ground surface.

iv. *Utility Placement*: All utilities, sewer and storm drains shall be placed down the roads and driveways and when possible outside of the critical root zones. The arborist shall supervise trenching within the critical root zone. All trenches in these areas shall be exposed by air spade or hand dug with utilities routed under/over roots larger than 3 inches in diameter. Boring under oaks is also acceptable.

v. *Permeable paving within 20 feet of CRZ*. Paving shall be pervious material where access roads or driveways encroach within 20 feet of a retained oak tree's CRZ.

vi. *Trenching Within CRZ*: All trenching within the CRZ of native trees shall be hand dug or implemented with an air spade or bore. All major roots shall be avoided whenever possible. All exposed roots larger than 1 inch in diameter shall be clean cut with sharp pruning tools and not left ragged. A mandatory meeting between the arborists and grading contractor(s) must take place prior to work start.

vii. *Grading Within the Critical Root Zone*: Grading shall not encroach within the CRZ unless authorized by the grading permit. Grading should not disrupt the normal drainage pattern around the trees. Fills should not create a ponding condition and excavations should not leave the tree on a rapidly draining mound. Any exposed roots shall be covered the same day they were exposed if possible. If left exposed for more than a day, roots must be covered with burlap or another suitable material and wetted down two times per day until reburied.

viii. *Equipment Operation*: Vehicles and all heavy equipment shall not be driven under the trees, as this will contribute to soil compaction. Also, there is to be no parking of equipment or personal vehicles in these areas. All areas behind fencing are off limits unless pre-approved by the arborist.

ix. *Existing Surfaces*: The existing ground surface within the critical root zone of all oak trees shall not be cut, filled, compacted or impaired, unless shown on the grading plans and approved by the arborist. If grading in the root zone cannot be avoided, retaining walls shall be constructed to minimize cut and fill impacts.

x. *Construction Materials and Waste*: No liquid or solid construction waste shall be dumped on the ground within the critical root zone of any native tree. The critical root zone areas

are not for storage of materials. No waste or contaminated water shall be dumped on the ground or into any grate between the outer edge of the CRZ and the base of the oak trees, or uphill from any oak tree where such substance might reach the roots through a leaching process.

xi. *No Permanent Irrigation within Dripline of Existing Oaks*: No permanent irrigation shall occur within the dripline of any existing oak tree

F. Correct Damage to Oaks. The Applicant shall be responsible for correcting any damage to oak trees on the property in a manner specified by an arborist approved by the County at the Applicant's expense.

i. *Impacted Root Treatment*: Roots impacted during construction (e.g., trenching or grading operations) shall be treated by the arborist on a case-by-case basis using best practices such as clean cuts accompanied by application of appropriate fungicides and insecticides by a licensed pest control applicator.

ii. *Soil Aeration Methods*: Soils within the CRZ that have been compacted by heavy equipment and/or construction activities must be returned to their original state before all work is completed. Methods include water jetting, adding organic matter, and boring small holes with an auger (18 inches deep, 2 to 3-feet apart with a 2 to 4-inch auger) and the application of moderate amounts of nitrogen fertilizer. The arborist(s) shall advise.

iii. *Chip Mulch*: All impacted areas within the CRZ of the trees shall receive a 4 to 6-inch layer of chip mulch to retain moisture, soil structure and reduce the effects of soil compaction.

iv. *Landscape*: All landscape within the CRZ shall consist of drought tolerant or native varieties. Lawns shall be avoided. All irrigation trenching shall be routed around critical root zones, otherwise above ground drip-irrigation shall be used. It is the owner's responsibility to notify the landscape contractor regarding this mitigation. For this site it is strongly recommended that drought tolerant native landscape is used with the approval of the arborist. This includes all sidewalk/greenbelt areas.

v. *Fertilization and Cultural Practices*: As the project moves toward completion, the arborist(s) may suggest either fertilization and/or mycorrhizal inoculation applications that will benefit tree health. Application of mycorrhizal inoculum offers several benefits to the host plant, including faster growth, improved nutrition, greater drought resistance, and protection from pathogens.

vi. *Post-Construction Tree Inspection*: Prior to occupancy of each phase, a letter from the arborist(s) shall be required that verifies health/condition of all impacted trees and provides recommendations for additional mitigation. The letter shall verify that the arborist(s) or his/her designee were onsite for all grading and/or trenching activity that encroached into the CRZ of the selected native trees, and that all work in these areas was completed to the standards set forth above.

G. Arborist supervision and treatment of impacted trees. A licensed arborist shall supervise all ground disturbances within the TPZ and activities that may impact branches. The arborist shall provide guidance such as temporary damaged root protection, use of air spades, timing between impact and root treatment by arborist, appropriate use of air spade or hand tools to

minimize tree damage specific to the action proposed, and to treat root zone and branch damage.

During construction and upon completion of construction the licensed arborist shall provide treatment, as the licensed arborist determines is appropriate, to maintain and improve the health of the tree, including pruning of the broken main stem, and soil supplement and watering programs. All root pruning shall be completed with sharpened hand pruners. Pruned roots shall be immediately covered with soil or moist fabric. Damaged roots shall be treated within 24 hours by a qualified tree specialist to inhibit fungus, insects, or other disease damage.

H. Report Tree Impacts. Damage to any tree during construction shall be reported to the project arborist within 24 hours. The damage should be treated as soon as possible, as appropriate, by an arborist or his/her designee approved by the County to prevent disease or pest infestation. Damage will be reported to the County and Applicant during each month of construction.

All monitoring will be documented on the field report form which will be forwarded to the project manager and County of San Luis Obispo.

I. Protect Replacement/Mitigation Oaks. The following activities are not allowed within the root zone of newly planted oak trees: year-round irrigation (no summer watering, unless "establishing" new tree or native compatible plants for up to seven years); grading (includes cutting and filling of material); compaction (e.g., regular use of vehicles); placement of impermeable surfaces (e.g., pavement); disturbance of soil that impacts roots (e.g., tilling).

J. Notes on Plans. The standards in BIO-1(A-G) shall be noted and shown on all grading and building plans, as well as an additional map sheet recorded with any Final Map in order to describe the activities prohibited outside the approved construction envelopes. All trees to be retained within 50 feet of impact areas shall be shown with TPZ for groups of trees and CRZ for individual trees.

K. Prepare and Implement Onsite Oak Tree Protection, Replacement, and Habitat Restoration Plan (TPRP). Prior to recordation of a Final Map for a land division on the property, the developer shall submit a Tree Protection Plan, Tree Replacement Plan (BIO-2) and Oak Woodland Habitat Restoration Plan (see BIO-3) for the Director's review and approval. The TPRRP will be approved by the County and provided to al contractors and subcontractors that work within or adjacent to the critical root zone of native trees. Include provisions of the TPRRP in the Worker Training Program to confirm that workers and supervisors are trained in maintaining fencing, protecting root zones and conforming to all tree protection goals. It is highly recommended that each contractor sign and acknowledge this Plan. Any future changes (within the CRZ) will need Project arborist review and implementation of potential mitigation measures before proceeding.

L. Mitigate Impacts to Preserved Trees. Damage that occurs to protected retained trees or sensitive habitats resulting from construction activities shall be mitigated in a manner approved by the Planning and Building Director (Director). Impacts to less than 10 percent of the tree's CRZ and canopy would be mitigated at a 2:1 ratio (plant two trees for each tree impacted). Impacts over 10 percent and less than 50 percent of the tree's CRZ and/or canopy would be mitigated at a 3:1 ratio. Impacts to more than 50 percent of the trees' CRZ would require mitigation at a 4:1 ratio. See BIO-2 for replacement tree performance criteria.

Track mitigation for impacted trees with the following information: Tree tag number, location (latitude/longitude WGS84 datum), number of trunks, DBH of main trunk, proposed CRZ impact percent, proposed mitigation ratio, actual impact percent, date of impact (month/year), document if accounted for in approved plans, actual replacement ratio, actual replacement number, date of planting (month/year), location of mitigation planting (Phase and general location), expected year performance criteria to be met.

Provide quarterly impact and proposed mitigation documentation to the County during active phases of construction. Provide annual reports until project is completed.

BIO-2 Onsite Tree Replacement Plan

Prior to issuance of the Grading Permit, include native oaks in the landscape planting plan for streets and recreational open spaces. Include plants typical of Nipomo Mesa native oak woodlands in open space planting palettes. Include herbs and shrubs that thrive near oaks, and generally require less irrigation than some of the landscaping commonly employed on the Central Coast. Onsite planting shall be at a 4:1 ratio (four trees for each tree removed from grassland habitats; e.g., 120 oaks planted for 30 removed). Oak tree planting benefits native songbirds that rely on oak canopy resources. Table 16 provides appropriate plants associated with oak trees, including species found on the Dana Reserve. This list includes several with California Rare Plant Rank (CRPR) status. We include common native understory species such as western nettle and California plantain as they may be naturally present in native landscapes and allowed to be retained by maintenance crews during restoration and site maintenance. Special status species should be encouraged to be represented in the native plant landscape plan, especially in areas where already present or in the vicinity.

TABLE 16. RECOMMENDED NATIVE PLANT SPECIES FOR LANDSCAPING

Scientific Name	Common Name	Special Status
Shrubs – 12 Native Taxa		
Artemisia californica	California sagebrush	--
Ceanothus impressus var. *nipomensis*	Nipomo mesa ceanothus	CRPR 1B.2
Ceanothus cuneatus var. *fascicularis*	Sand buck brush	CRPR 4.2
Cercocarpus betuloides var. *betuloides*	Birch-leaf mountain-mahogany	--
Frangula californica	California coffee berry	--
Heteromeles arbutifolia	Toyon	--
Prunus ilicifolia	Hollyleaf cherry	--
Prunus fasciculata var. *punctata*	Sand almond	CRPR 4.3
Rhamnus crocea	Spiny redberry	--
Salvia mellifera	Black sage	--
Sambucus nigra ssp. *caerulea*	Blue elderberry	--
Symphoricarpos mollis	Creeping snowberry	--
Forbs – 32 Annual and Perennial Native Taxa		
Acmispon americanus	American bird's foot trefoil	--
Acmispon glaber	Deer weed	--
Anaphalis margaritacea	Pearly everlasting	--

Scientific Name	Common Name	Special Status
Asclepias eriocarpa	Kotolo	--
Cirsium occidentale	Cobweb thistle	--
Clarkia purpurea ssp. *viminea*	Wine cup Clarkia	--
Claytonia parviflora ssp. *parviflora*	Miner's lettuce	--
Corethrogyne filaginifolia	Common tansyaster	--
Dichelostemma capitatum ssp. *capitatum*	Blue dicks	--
Diplacus aurantiacus	Sticky monkeyflower	--
Helianthemum scoparium	Broom rose	--
Hesperocnide tenella	Western nettle	--
Heterotheca grandiflora	Telegraph weed	--
Horkelia cuneata var. *puberula*	Mesa horkelia	CRPR 1B.1
Lupinus bicolor	Miniature lupine	--
Lupinus nanus	Sky lupine	--
Lupinus truncatus	Blunt leaved lupine	--
Paeonia californica	California peony	--
Pedicularis densiflora	Warrior's plume	--
Phacelia ramosissima	Branching phacelia	--
Phacelia tanacetifolia	Lacy phacelia	--
Pholistoma auritum	Fiesta flower	--
Piperia michaelii	Michael's rein orchid	CRPR 4.2
Plantago erecta	California plantain	--
Pseudognaphalium californicum	Ladies' tobacco	--
Pterostegia drymarioides	Fairy mist	--
Silene laciniata	Cardinal catchfly	--
Solanum americanum	Common nightshade	--
Solanum xanti	Chaparral nightshade	--

Performance Criteria for Replacement Trees:

i. Impacted trees shall be replaced at a 2:1, or two 1-inch caliper trees planted for each tree impacted less than 25 percent, or 4:1 ratio for trees impacted more than 50 percent. Mitigation trees must be from Central Coast acorns and may be planted to enhance the onsite oak woodland and/or included in the landscape planting plan.

ii. If locally sourced trees are not available, mitigation trees may be propagated from local acorns or seedlings grown in tree-pots at a 4:1 ratio for trees impacted less than 25% and 6:1 ratio for trees impacted over 50%.

iii. Mitigation trees shall be maintained and monitored for a minimum of 7 years and must have reached a minimum height of 6 feet prior to certification of completion.

iv. When onsite planting areas are not available, off-site oak habitat mitigation area shall be calculated at two times 1750 square feet per tree (assuming a 47 ft diameter average canopy of trees removed from grassland habitats).

BIO-3 Onsite Oak Woodland Habitat Protection and Management Plan

Protect onsite oak woodland resources intended to be retained and preserved on-site (BIO-1 and 2 with performance standards). Prior to issuance of the Grading Permit, the applicant shall submit an Oak Woodland Protection and Restoration Plan to be reviewed and approved by the County Department of Planning and Building. Coast live oak woodland and retained trees within 50 feet of development shall be shown on all grading and development plans. The plan shall be prepared by a qualified individual acceptable to the Director of Planning and Building. The plan shall specify short- and long-term management actions necessary to preserve and enhance the onsite biological open space and will include sections for (1) habitat protection, (2) monitoring during project construction, (3) reporting, (4) oak tree replacement planting, and (5) rare plant mitigation planting and protection, (6) wildlife habitat protection. The plan shall include (7) a fuel management component that provides measures to protect native understory vegetation and downed woody debris in a manner that optimizes wildlife habitat protection and reduces fire risk to neighborhoods.

Fire fuel management shall address reduction of fire fuel loads within 100 feet of structures. The first 30 feet from residences/structures (e.g., the back of yards) shall be maintained to remove dead plant material, and trees maintained to keep branches 10 feet from other trees. In the next 70 feet: cut or graze annual grass to a maximum average height of 4 inches. Create a horizontal space between patches of native shrubs. Remove fallen branches, twigs bark to reduce total fuel load. Retain patches of live shrubs. Mow/graze patches of annual wildflowers after seeds have set. Shape young trees that are in shrub-form to minimize fuel load but allow for trees to protect their trunks during the growth period. Remove heavy branches of mature trees at least 6 feet from the ground per Cal Fires "Prepare for Wildfire" recommendations to maintain defensible space (CAL FIRE 2019). Management of defensible space (100-feet from structures and 10 feet from roads) must protect special status plant and wildlife taxa as specified in BIO-1, 2, and 6 to 12.

BIO-4 Offsite Mitigation Options for Coast Live Oak Forest and Quercus agrifolia / Adenostoma fasciculatum - (Salvia mellifera) Oak Woodland Habitat

Prior to issuance of the Grading Permit, the applicant shall protect *Quercus agrifolia / Adenostoma fasciculatum* - (*Salvia mellifera*) oak woodland at a ratio of 2:1 (two acres conserved for each acre removed). A conservation easement over the protected habitat shall be controlled by a qualified conservation organization approved by the County. Potential conservation organizations include but are not limited to: The Nature Conservancy, San Luis Obispo Land Conservancy, Greenspace, or the Cambria Land Trust.

Applicant Proposed Mitigation: The applicant proposes to conserve 187 acres of coast live oak woodland and 67.5 acres of coast live oak forest that is intermixed with the 95.9 acres of chamise chaparral, 19.2 acres of La Panza manzanita chaparral, and 26.4 acres of annual grassland on the Dana Ridge Ranch. This property is located southeast of the Dana Reserve. Appendix G in this report provides habitat descriptions, a plant list, and figures associated with this offsite mitigation location. The Project proposes to impact 21.7 acres of coast live oak forest and 75.3 acres of coast live oak woodland (97.0 acres total). The applicant proposed mitigation on the Dana Ridge Ranch would yield a mitigation ratio of 3.1:1 for coast live oak forest and 2.5:1 for coast live oak woodland habitats (Table 17).

TABLE 17. COAST LIVE OAK FOREST AND OAK WOODLAND IMPACTS AND PROPOSED MITIGATIONS

Habitat Type (Global/State Rank)	Impact (Ac.)	Mitigation Area (ac)	Approximate Ratio
Coast live oak forest (GNR)	21.7	67.5	3.1:1
Coast live oak woodland (G3/S3)	75.3	187.0	2.5:1

Factors considered in the applicant's mitigation proposal included proximity to the Dana Reserve (South County coast live oak woodlands), and association with chamise chaparral, black sage, and a rare manzanita (*A. pilosula,* La Panza manzanita; CRPR 1B.2) on the mitigation site. The applicant also considered wildlife habitat, and connectivity to wildlife movement corridor(s), opportunities for public access, and general habitat diversity.

4.2.4 Summary of Oak Mitigations

These measures, taken together, are consistent with Public Resources Code section 21083.4 (oak woodlands conservation). Individual oak trees to be retained will be protected onsite (BIO-1). Individual trees removed from grassland will be mitigated onsite as part of the community landscape plan (BIO-2). The removal of approximately 21.7 acres of coast live oak forest and 75.3 acres of coast live oak woodland habitat will be mitigated onsite by conservation of approximately 17 acres of oak forest and 3 acres of oak woodland (BIO-3). Oak forest and woodland habitat loss will be mitigated by conservation of over 238 acres of coast live oak forest and woodland habitat associated with 120 acres of chamise-black sage chaparral and scattered oak habitat. More than half the mitigation for loss of oak woodland habitat will be fulfilled by placement of a conservation easement over at least 320 acres of coast live oak woodland and chamise – black sage chaparral (Table 15 and BIO-5, below).

4.2.5 Burton Mesa chaparral (G1/ S1)

Approximately 36 acres of the 295.3-acre site (12 percent) is degraded Burton Mesa chaparral with less than two percent cover of representative species. This habitat has been subjected to periodic mowing since at least the 1930s and is currently in poor condition, with low cover of constituent species. The proposed development will remove 35 acres (97 percent) and preserve 1 acre (3 percent) of this habitat onsite. The Burton Mesa chaparral regularly integrates with the coast live oak woodland and transitions into California perennial grassland. This diverse habitat supports a unique assemblage of six special status plants including mesa horkelia, sand mesa manzanita, California spineflower, Nipomo mesa ceanothus, sand buck brush, and sand almond. Constituent elements of this habitat currently contribute less than two percent, a relatively small canopy.

The Burton Mesa chaparral alliance has a global/state rank of G1/S1 and is considered critically imperiled. Therefore, loss of almost all (97 percent) Burton Mesa chaparral habitat would be considered significant, and mitigation is necessary to reduce Project impacts. Onsite mitigation opportunities are limited, and a fire regime to sustain diverse characteristic species within maritime chaparral is not practical in a suburban setting; therefore, offsite conservation of Burton Mesa chaparral is proposed (BIO-5).

BIO-5 Offsite Mitigation Options for Burton Mesa Chaparral Habitat

Prior to issuance of the Grading Permit, the applicant shall permanently protect (conserve), enhance (increase suitability of a site as habitat), restore (repair damaged habitat), and/or re-create (revegetate previously lost habitat) Burton Mesa chaparral in maritime coastal California. Re-creation of habitat areas contiguous with protected maritime chaparral shall be prioritized over isolated patches of chaparral mitigation. We recommend a combined approach for habitat mitigation that may include several options: expand contiguous habitat of protected Burton Mesa Chaparral, re-create, restore, and/or enhance contiguous areas of Burton Mesa Chaparral. A conservation easement over protected habitat shall be controlled by a qualified conservation organization approved by the County. Potential conservation organizations include but are not limited to: The Nature Conservancy, San Luis Obispo Land Conservancy, Greenspace, Cambria Land Trust, or the California Department of Fish and Wildlife. The County shall review and approve additional analysis prior to final approval of the proposed off-site conservation area.

A reduced mitigation ratio for re-creation of lost chaparral habitat or restoration of damaged habitat is warranted because the net result would provide significantly higher functional quality habitat than the habitat lost. The re-created Burton Mesa chaparral would be protected in perpetuity and managed for its ecosystem value compared to damaged chaparral on Dana Reserve disturbed periodically for at least 80 years. Restoration of damaged habitat would also substantially improve the functional value of restored habitat compared to the habitat lost. Mitigation as re-creation and/or restoration would increase native Burton Mesa chaparral representative species cover and improve ecosystem function to a more natural state than the current managed grazing land on the Dana Reserve. On Dana Reserve, Burton Mesa shrubs and herbaceous species currently cover approximately 7 acres of land. Re-creation would allow for a no-net-loss of cover by Burton Mesa chaparral constituent elements.

Applicant Proposed Mitigation: The applicant proposes to conserve, enhance, restore, and/or re-create from 8.5 acres to 70 acres of Burton Mesa chaparral at the following mitigation ratios: Conserve currently unprotected Burton Mesa Chaparral habitat in excellent condition at a 1.5:1 ratio. Enhance protected Burton Mesa Chaparral habitat currently in moderate to poor condition at a 2:1 ratio. Restore damaged protected Burton Mesa Chaparral habitat at a 0.5:1 ratio. Re-create high quality Burton Mesa Chaparral at a 0.25:1 ratio in appropriate habitat that has been completely disturbed (e.g., abandoned farmland). For example: Conserve unprotected Burton Mesa chaparral habitat in excellent condition at a 1.5:1 ratio (52 acres); or, enhance protected Burton Mesa chaparral currently in moderate to poor condition at a 2:1 ratio (70 acres); or, restore damaged protected Burton Mesa chaparral habitat at a 0.5:1 ratio (14 acres); or, recreate high quality Burton Mesa chaparral at a 0.25:1 ratio (8.5 acres). A combination of approaches may be applied to reach no-net-loss.

Habitat appropriate for restoration will ideally be located on the Nipomo Mesa with climatic and soil conditions that match those found on Dana Reserve. If appropriate habitat is not available on Nipomo Mesa, the applicant proposes to restore Burton Mesa chaparral within or near the Burton Mesa Ecological Reserve (BMER). Appropriate areas for restoration will either have sand mesa and/or La Purisima manzanita characteristically present or have the appropriate soil and climate conditions to allow restoration that includes one or both species (Appendix H). Appropriate planting palettes will be tailored to the specific restoration area. Characteristics of healthy Burton Mesa chaparral from the surrounding area will be used to determine species proportions (percent cover) as well as performance targets. Constituent elements present on the Dana Reserve

(e.g., mesa horkelia, Nipomo mesa ceanothus, sand buck brush, and sand almond, and California spineflower) will be included in the restoration plan as appropriate (BIO-7 and BIO-8). California perennial grassland group

Approximately 126 acres of the Project or Alternative 288.4 acres (44 percent) contains California perennial grassland. This habitat supports both native and non-native perennial and annual grasses as well as common herbaceous species and scattered shrubs. The Project would result in the loss of all California perennial grassland, including approximately 42.6 acres with a mosaic of California spineflower, a CRPR 4.2 species that occupies this habitat. Individuals and small patches of mesa horkelia, sand mesa manzanita, and sand almond that occur within this habitat will also be impacted.

This habitat type is not considered sensitive and is not ranked globally or statewide. Therefore, loss of California perennial grassland would be considered less than significant. Refer to Section 4.3.2 mitigation recommendations for special status plants.

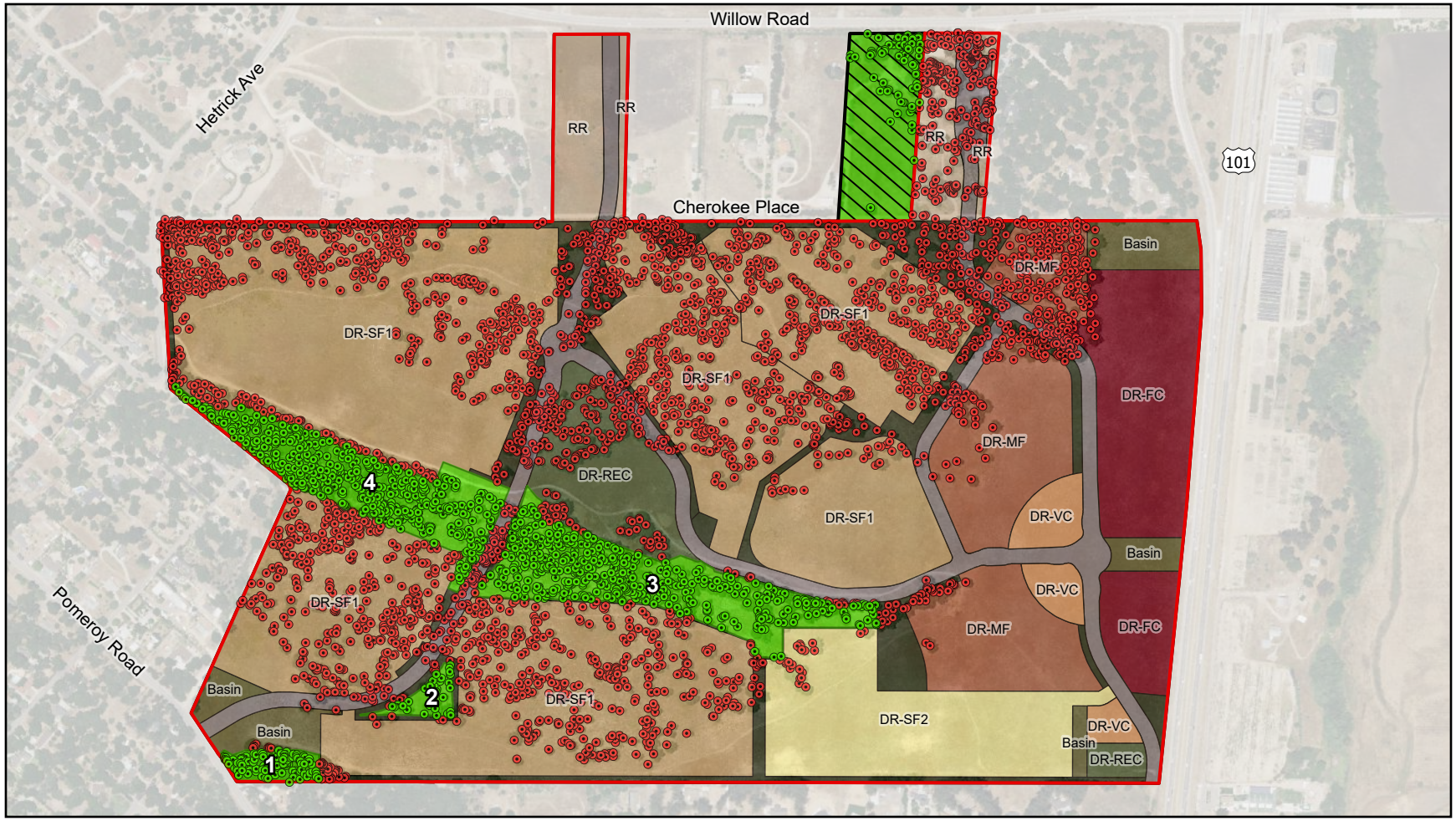
4.2.6 Mediterranean California naturalized perennial grassland group

Approximately 3.6 acres the Project or Alternative 288.4 acres (1 percent) is Mediterranean California naturalized perennial grassland. This habitat is primarily comprised of non-native perennial and annual grasses, and all if it would be removed. This habitat type is not considered sensitive and is not ranked globally or statewide, although it supports special status plants including sand buck brush, Nipomo mesa ceanothus, Mesa horkelia. Mitigation measures for rare plants are provided in Section 4.3.2.

4.2.7 Annual brome grasslands

Approximately 7.3 acres of the 288.4 Project or Alternative (2 percent) is annual brome grassland. The Project would result in the loss of all (100 percent) annual brome grassland encountered within the Study Area. This habitat type is not considered sensitive and is not ranked globally or statewide. Therefore, impacts to annual brome grassland is considered less than significant. No mitigation is recommended for this habitat type.

Figure 13. Proposed Plan Oak Tree Impacts



Legend

- Plan Boundary
- Not Included
- Impacted Oak Tree
- Not Impacted Oak Tree
- Not Impacted Area
- Basin
- Flex Commercial (DR-FC)
- Open Space (DR-OS)
- Primary Roads
- Recreation (DR-REC)
- Residential Multi-Family (DR-MF)
- Residential Single Family - Traditional (DR-SF1)
- Residential Single Family (DR-SF2)
- Rural Residential - Existing (RR)
- Village Commercial (DR-VC)

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50308°W 35.04692°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020

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Map Updated:
October 11, 2021 10:44 AM by SAF

Figure 14. Alternative Plan Oak Tree Impacts

Legend

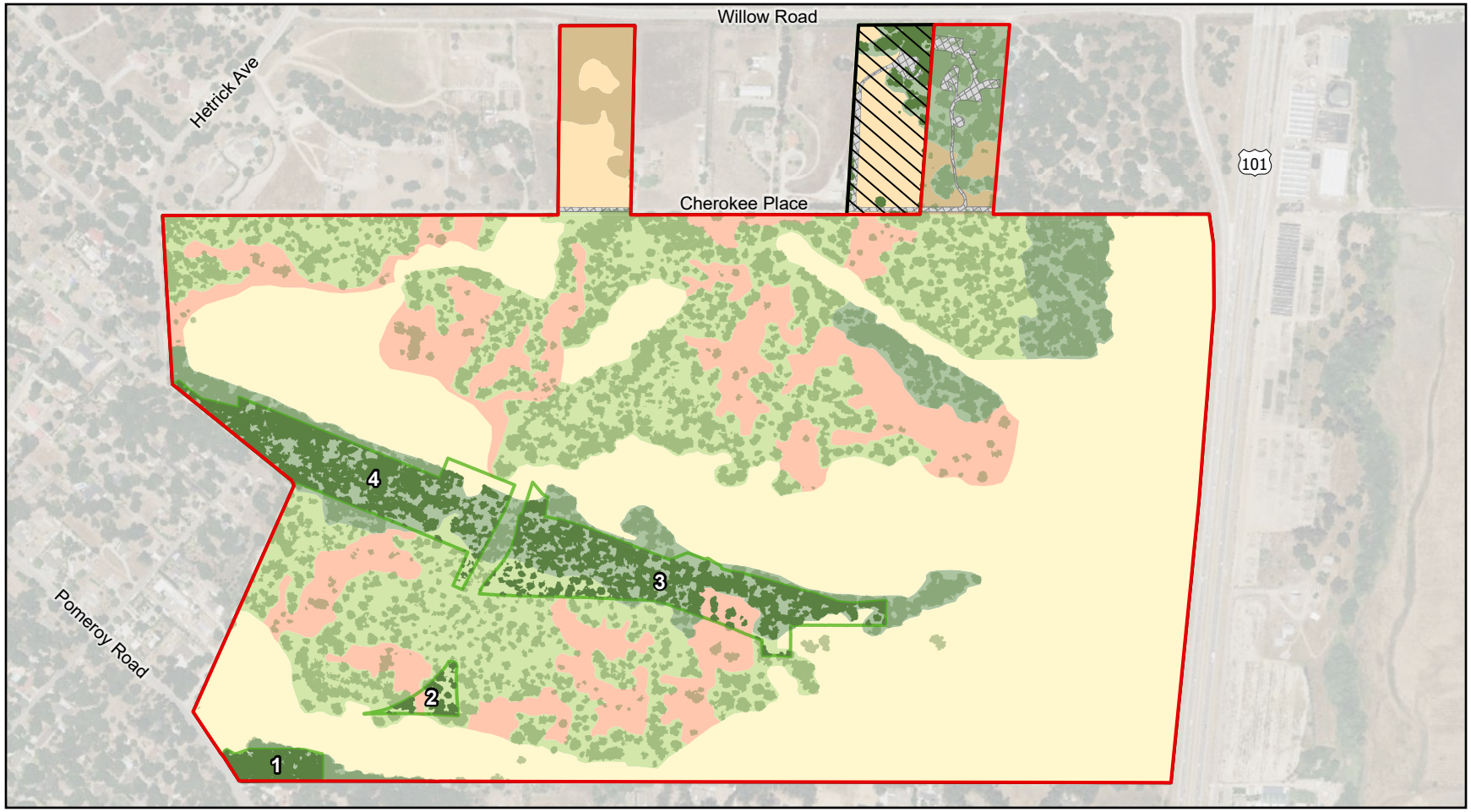
- Plan Boundary
- Not Included
- Impacted Oak Tree
- Not Impacted Oak Tree
- Not Impacted Area
- Basin
- Flex Commercial (DR-FC)
- Open Space (DR-OS)
- Primary Roads
- Recreation (DR-REC)
- Residential Multi-Family (DR-MF)
- Residential Single Family - Traditional (DR-SF1)
- Residential Single Family (DR-SF2)
- Rural Residential - Existing (RR)
- Village Commercial (DR-VC)

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50308°W 35.04692°N
Nipomo, San Luis Obispo County

Imagery Source: USDA NAIP, 05/21/2020

Figure 15. Proposed Plan Oak Tree Canopy in Various Habitats



Legend

- Plan Boundary
- Not Included
- Not Impacted Area
- Not Impacted Oak Canopy
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Coast Live Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Coast Live Oak Woodland* - S3

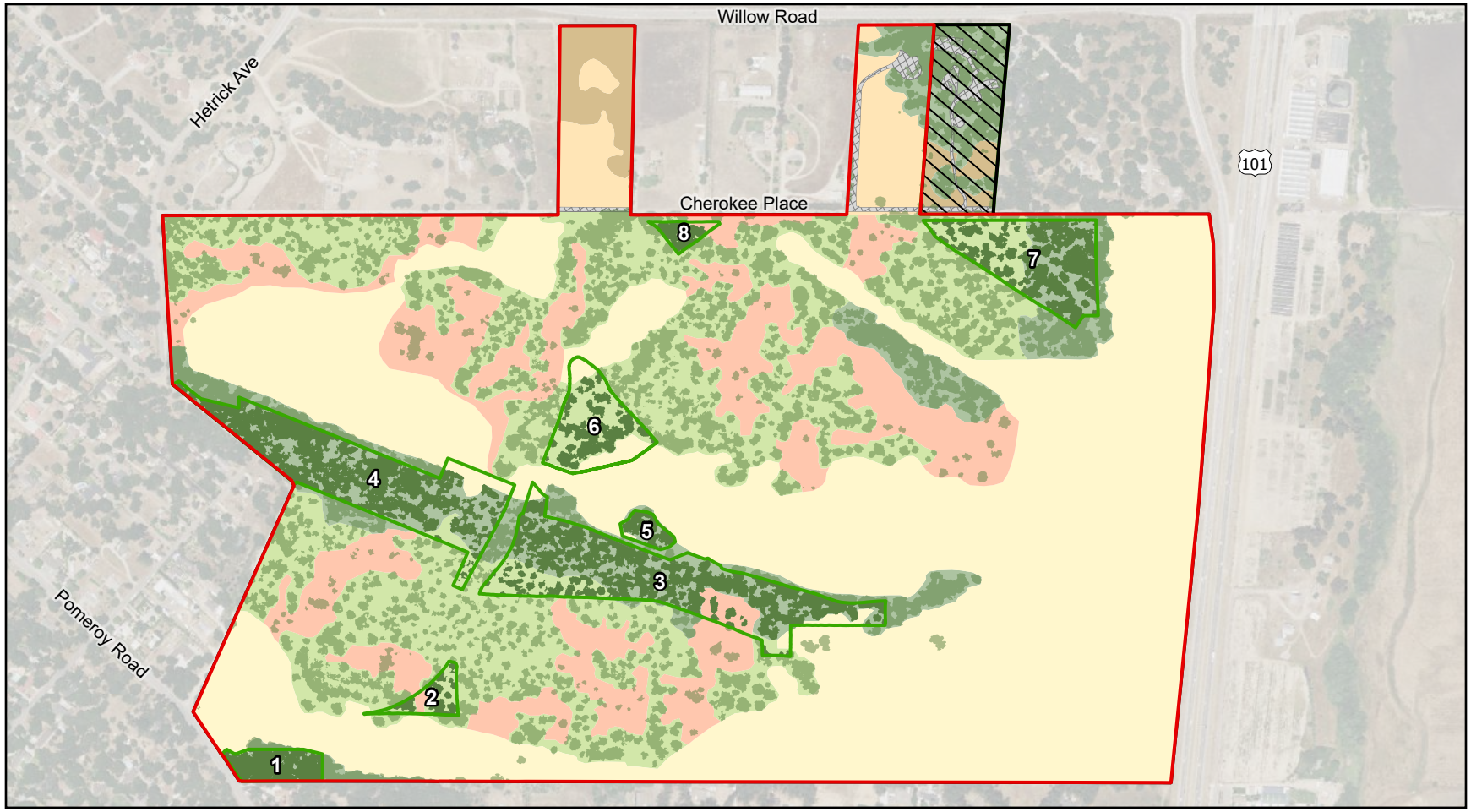
0 500 1,000 Feet

Dana Reserve
Map Center: 120.50308°W 35.04692°N
Nipomo, San Luis Obispo County

*Sensitive Natural Communities with State Rank

Imagery Source: USDA NAIP, 05/21/2020

Figure 16. Alternative Plan Oak Tree Canopy in Various Habitats



Legend

- Plan Boundary
- Not Included
- Not Impacted Area
- Not Impacted Oak Canopy
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Coast Live Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Coast Live Oak Woodland* - S3

N

0 500 1,000 Feet

Dana Reserve
Map Center: 120.50308°W 35.04692°N
Nipomo, San Luis Obispo County

*Sensitive Natural Communities with State Rank

Imagery Source: USDA NAIP, 05/21/2020

4.3 Botanical Resources

4.3.1 Significance Criteria

Botanical field survey results were used to determine potential cumulative environmental effects for the Project on special status plants as required by law (see Sections 1.5 through 1.9). The Conservation and Open Space Element in the County's General Plan states that proposed development avoid significant disturbance to sensitive natural plant communities that contain special-status plants species. When avoidance is not feasible, no net loss is required (Policy BR 2.6, San Luis Obispo County 2010).

All State-listed, CRPR 1, and some CRPR 4 plants may fall under CEQA Guidelines Section 15380 (CNDDB 2021c), which defines Rare, Endangered, and Threatened taxa. Impacts to CRPR 4 plants may warrant consideration under CEQA if cumulative impacts to such plants are significant enough to affect their overall rarity (CDFW 2018). For CRPR 4 plant populations, a significance threshold of direct impacts greater than 10 percent of the population within the Study Area, and effect on the taxon's regional populations were reviewed to assess significance.

4.3.2 Special Status Plants

Eight sensitive taxa observed on the property occur in four of the six habitat types onsite. One Federally Endangered and State Rare plant taxon, Pismo clarkia, was identified during site surveys. Other sensitive plant taxa include two CRPR 1B.1 (Mesa horkelia and Pismo clarkia), two CRPR 1B.2 (sand mesa manzanita, and Nipomo mesa ceanothus), three CRPR 4.2 (Michael's rein orchid, California spineflower, and sand buck brush), and one CRPR 4.3 (sand almond). Impacts to sensitive plant taxa and potential mitigations are summarized in Table 18 and Table 19, discussed separately in the following paragraphs. Discussion begins with Pismo clarkia, a state- and federal-listed taxon, followed by three other plants ranked 1B.1 (seriously threatened in California), and four taxa ranked 4 (limited distribution – watch list) that are moderately threatened in California.

TABLE 18. PROPOSED PLAN IMPACTS TO SENSITIVE PLANT SPECIES

Sensitive Plant Species	Rarity	Impact (approx. count)	Impact acres*	Preserved (approx. count)	Preserved acres	Total (approx. count)	Percent Impact	Proposed Mitigation Ratio**
California spineflower	4.2	varies	42.6	0	0	varies	100%	1:1
Mesa horkelia	1B.1	6907	N/A	556	N/A	7463	93%	2:1
Michael's rein orchid	4.2	0	N/A	7	N/A	7	0%	N/A
Nipomo mesa ceanothus	1B.2	50	N/A	0	N/A	50	100%	2:1
Pismo clarkia	FE/CR - 1B.1	37	0.02	6102	0.2	6139	1%	3:1
Sand almond	4.3	155	N/A	1	N/A	156	99%	1:1
Sand buck brush	4.2	21	N/A	0	N/A	21	100%	1:1
Sand mesa manzanita	1B.2	324	N/A	1	N/A	325	100%	2:1

* Acreage provided for taxa that were mapped using spatial polygons
**Mitigation proposed for impacts to over 10 percent of CRPR 4 population.

Discrepancy in total count between current and alternative plan is due to differing parcels and sensitive species found in each.

TABLE 19. ALTERNATIVE PLAN IMPACTS TO SENSITIVE PLANT SPECIES

Sensitive Plant Species	Rarity	Impact (approx. count)	Impact acres*	Preserved (approx. count)	Preserved acres	Total (approx. count)	Percent Impact	Proposed Mitigation Ratio**
California spineflower	4.2	varies	42.6	75	0	varies	100%	1:1
Mesa horkelia	1B.1	6608	N/A	844	N/A	7452	89%	2:1
Michael's rein orchid	4.2	0	N/A	7	N/A	7	0%	N/A
Nipomo mesa ceanothus	1B.2	8	N/A	25	N/A	33	24%	2:1
Pismo clarkia	FE/CR - 1B.1	37	0.02	6102	0.2	6139	1%	3:1
Sand almond	4.3	127	N/A	22	N/A	149	85%	1:1
Sand buck brush	4.2	2	N/A	2	N/A	4	50%	1:1
Sand mesa manzanita	1B.2	323	N/A	2	N/A	325	99%	2:1

* Acreage provided for taxa that were mapped using spatial polygons
**Mitigation proposed for impacts to over 10 percent of CRPR 4 population.
Discrepancy in total count between current and alternative plan is due to differing parcels and sensitive species found in each.

State-Listed Plants

Pismo clarkia (FE, SR, CRPR 1B.1, G4T1, S1). *Clarkia speciosa* ssp. *speciosa* is a taxon listed as federally endangered, state listed rare, California Rare Plant Rank 1B.1 (seriously threatened in California), with a global rank for the species secure, but the taxon (subspecies) critically imperiled at the global and state rank level. A total of 37 individuals (0.02 acres) counted in May 2020 within Patch 5 will be directly impacted by arterial road 'Collector B' (Figure 11, Figure 12, Figure 17, and Appendix A). No plants were detected in this location during our 2019 investigation, and the road was placed at that location to minimize impacts to Pismo clarkia. The proposed development's open space includes all remaining habitat occupied by Pismo clarkia (0.2 acres, 6,100 individuals). Within the proposed open space, the Pismo clarkia population is located on the northernmost edge of the coast live oak woodland habitat that is proposed for onsite preservation. The immediate adjacency of the remaining population to Project construction and future residential land-use may result in indirect impacts. Potential indirect impacts include an increase of pedestrian use of the area, creation of recreational trails, alteration of hydrology, light availability, dust, disruption of pollinator network, herbicide usage, and non-native plant introduction. This taxon is a Federal and State-Listed plant that is seriously threatened in California. Direct and indirect impacts to Pismo clarkia are considered significant and mitigation is required to reduce Project impacts.

The Project applicant must obtain all necessary approvals and concurrence with CDFW for the take of a State-Listed plant (BIO-7 and BIO-8). Mitigation shall be required to reduce Project impacts through the permanent conservation of habitat occupied by Pismo clarkia and expansion of Pismo clarkia extent to mitigate for direct impacts. Additional onsite avoidance measures for Pismo clarkia include habitat protection, worker training, fencing, biological monitoring, weed

management, and avoidance of mowing/grazing impacts during the annual plant's growing season (February to July).

Although Pismo Clarkia is also federally listed, there is currently no federal nexus for consulting with the USFWS. If the project would impact a federally jurisdictional water, require federal funding, or otherwise require consultation with the USFWS for take of a federally listed wildlife species, a Biological Opinion or Habitat Conservation Plan for take of Pismo Clarkia would likely be required prior to implementation of the project.

No net loss of Pismo Clarkia onsite is proposed unavoidable. Impacts to 0.02 acre of occupied Pismo Clarkia habitat will be mitigated at a 3:1 ratio with onsite restoration and habitat enhancement to expand the extent of Pismo Clarkia present in preserved open space. BIO-6 is consistent with County Policy BR 2.6.2 and BR 2.6.3 (Development Impacts to Listed Species), to use a habitat preservation ratio of a minimum of 2:1 to avoid significant cumulative loss of valuable habitats and obtain easements to protect habitat.

BIO-6 Pismo Clarkia Mitigation

Pismo clarkia patches identified onsite during 2019 and 2020 site surveys shall be protected except for Patch 5 detected in 2020 with 37 individuals. Impacts to Pismo clarkia shall be mitigated by collecting seeds onsite, establishing additional patches of the plant along appropriate boundaries of preserved oak woodland habitat area and by placement of a protective conservation easement over onsite habitats that contain occupied and unoccupied habitat suitable for Pismo Clarkia. Additional surveys shall be conducted in 2021 to determine population size and extent.

Impacts to Pismo Clarkia shall be mitigated at a 3:1 ratio. The population extent and number will equal or exceed 0.26 acre and 6,260 individuals when seasonal climate conditions are similar to 2020 climate conditions. In years less favorable than 2020 (appropriately timed and sufficient rainfall and temperature), the areal extent will remain the approximately the same, but the total population may be less than 6,000 individuals. In more favorable years, the total population may exceed 7000 individuals.

Prior to any ground or vegetation disturbance that would impact Pismo Clarkia (e.g., nearby tree removal or grading), the project applicant shall obtain all necessary approvals from CDFW. Concurrence shall be provided by CDFW that the project would result in take of a State listed species and that an Incidental Take Permit, Conservation Easement, and Habitat Management Plan are required prior to disturbance under Fish and Game Code 2081. A conservation easement over the Pismo Clarkia Habitat will include CDFW as a third-party beneficiary and may also include the County of San Luis Obispo.

Any required mitigation measures shall include, but not be limited to, protection of occupied and unoccupied suitable habitat onsite and seed collection and soil seed bank relocation to expand occupied habitat.

Genetic analysis will be conducted to determine the similarity or difference between the population of Pismo Clarkia on the Dana Reserve with at least two other populations in the Arroyo Grande region. This research and findings will be submitted to a peer reviewed journal and be part of the public record during the mitigation monitoring period.

Figure 17. Impacts - Pismo Clarkia

Legend

- Study Area
- Open Space (Not Impacted)
- Proposed Impacts
- Pismo Clarkia (Clarkia speciosa ssp. immaculata) - FE/SE/1B.1

0 100 200 Feet

Dana Reserve
Map Center: 120.50374°W 35.04443°N
Nipomo, San Luis Obispo County

*Pismo clarkia impacts are identical for both Proposed and Alternative Plans

Imagery Source: Althouse & Meade Inc., 05/19/2020

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Map Updated:
October 06, 2021 12:42 PM by SAF

California Rare Plant Rank 1B

Plant taxa ranked 1B are considered rare, threatened, or endangered in California and elsewhere, although they may not be state- or federal-listed. For consistency with County Policy BR 2.6, CRPR taxa require preservation and/or enhancement of similar habitat at a minimum 2:1 ratio, and habitat placed under a protective easement.

No net loss of Mesa Horkelia, Nipomo Mesa Ceanothus, and Sand Mesa Manzanita, all CRPR 1B taxa, is proposed. Temporal loss of these plants will occur during the mitigation/monitoring period. These three taxa are scattered around and within approximately 150 acres of coast live oak and chaparral habitats in the Study Area of which 129 acres will be permanently impacted.

Mitigation Measure BIO-7 and BIO-8 may include habitat restoration on appropriate conserved property(ies) that includes mitigation for various sensitive plant and animal species on the same parcel (stacked mitigation). For example, a property with suitable habitat for Mesa Horkelia may also provide opportunities to support legless lizards and sand buck brush.

Suitable habitat for mitigation of Burton Mesa chaparral (BIO-5) may also contain sandy habitat suitable for mitigation of constituent plant taxa represented on the Dana Reserve. Mitigation for constituent elements is described below.

Mesa Horkelia (CRPR 1B.1, G4T1, S1). *Horkelia cuneata* var. *puberula* is ranked 1B.1 (seriously threatened) and is endemic to California's central and south coast region. The global rank of the species is secure, but this variety is critically imperiled. CNPS states that "many historical occurrences extirpated; need current information on status of occurrences. Possibly threatened by habitat conversion. Intergrades with other sspp.; populations representing true ssp. *puberula* declining."

Proposed development would directly impact approximately 92 percent of mesa horkelia (approximately 7,000 plants) and preserve the remaining 7 percent located in scattered patches within the 21.9-acre proposed open space easement (approximately 500 plants). In addition, project construction and operation may indirectly impact the remaining 7 percent due to an increase in human use of the open space, alteration of hydrology, light availability, dust, disruption of pollinator network, herbicide usage, and non-native species introduction. Direct and indirect impacts would be considered significant, and mitigation is required to reduce Project impacts.

Nipomo Mesa Ceanothus (CRPR 1B.2, G3T2, S2). *Ceanothus impressus* var. *nipomensis* is ranked 1B.2 (moderately threatened in California) and is endemic to California's central coast. The global rank of the species is vulnerable, but the variety is imperiled. This taxon was added to CRPR 1B.2 in June 2019 (CNDDB 2021a). Proposed development would impact all of the Nipomo mesa ceanothus plants on the Project (approximately 50 individuals). Impacts to Nipomo mesa ceanothus can be mitigated on and/or offsite.

Sand Mesa Manzanita (CRPR 1B.2, G2, S2). *Arctostaphylos rudis* is ranked 1B.2 (moderately threatened in California) and is endemic to California's central coast. The global and state rank of the species is imperiled. CNPS states that this manzanita is "severely reduced on Nipomo Mesa; more widespread on Burton Mesa. Threatened by agriculture, road construction, road maintenance, and oil extraction. Possibly threatened by development."

Proposed development would directly impact all but one sand mesa manzanita on the property (approximately 323 individuals). The single remaining sand mesa manzanita occurs within the proposed open space. Project construction and operation of the Project may result in indirect

impacts to this individual. Indirect impacts may include an increase in human use of the open space, alteration of hydrology, light availability, dust, disruption of pollinator network, herbicide usage, and non-native species introduction. Mitigation for this species can occur off-site.

BIO-7 Mitigation for Plants Ranked 1B (rare or endangered) by CNPS

The mitigation ratio shall be 2:1 for individuals and suitable/occupied habitat for taxa ranked 1B by CNPS. Restore and/or enhance protected habitat suitable for 14,000 mesa horkelia, 100 Nipomo Mesa ceanothus, and 626 sand mesa manzanita. Prior to issuance of the Grading Permit, prepare and begin implementation of a plan to preserve and expand patches of mesa horkelia, Nipomo Mesa ceanothus, and sand mesa manzanita on- and offsite. The plan shall be prepared by a qualified individual acceptable to the Director of Planning and Building. The plan shall conform to CNPS mitigation guidelines (Section 1.8.7). Plan implementation must demonstrate a trajectory toward successful mitigation (i.e., meeting annual performance criteria) prior to occupancy of the last phase. To meet the County's policy of No Net Loss, any enhanced and/or created habitat would need to confirm establishment of individuals and suitable/occupied habitat such that there is no net loss. Maintenance, monitoring and reporting to the County would be required until the enhanced/created habitat has successfully established individuals at the proposed 2:1 ratio.

Measures shall include habitat protection, herbicide avoidance, fencing, and propagation of pollinator plants appropriate to support native bees associated with pollination of these plants. The applicant may fund Public Benefit restoration efforts on conserved land to be implemented and monitored by organizations such as: The Nature Conservancy, San Luis Obispo Land Conservancy, Greenspace, or the Cambria Land Trust. The fee would be used to pay for mitigation planting, maintenance, and long-term monitoring in perpetuity.

Measures to protect and expand mesa horkelia within protected oak woodland shall be incorporated in BIO-3 Onsite Oak Woodland Habitat Protection and Management Plan.

California Rare Plant Rank 4

Plant taxa ranked 4 are on a "watch list" as they have limited distribution. Plants ranked as 4.2 are moderately threatened in California and 4.3 are not very threatened. While CNPS cannot call these plants "rare" from a statewide perspective, they are uncommon enough that their status should be monitored regularly.

Should the degree of endangerment or rarity of a List 4 plant change, the Society will transfer it to a more appropriate list. Very few of the plants constituting List 4 meet the definitions of Sec. 1901, Chapter 10 (NPPA) or Secs. 2062 and 2067 (CESA) of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and CNPS recommends that List 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA. This may be particularly appropriate for the type locality of a List 4 plant, for populations at the periphery of a species' range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or for populations exhibiting unusual morphology or occurring on unusual substrates.

For consistency with County Policy BR 2.6, compensation for significant impacts to List 4 plants requires offsite habitat occupied by the affected taxon and/or habitat that may be restored, preserved and managed in perpetuity at a minimum 1:1 mitigation ratio (at least one plant preserved for each plant affected, and also at least one occupied acre preserved for each occupied

acre affected) up to the significance threshold. The threshold for plants ranked List 4 is 10 percent of the Study Area. When over 10 percent of the onsite population is impacted, a mitigation and monitoring program will be required.

California Spineflower (CRPR 4.2, G3, S3) *Mucronea californica* is ranked 4.2 which is considered to have a limited distribution and is vulnerable to habitat loss. The species' global and state rank is "vulnerable". CNPS states, "Rare in southern California. Many herbarium records old. Threatened by aggregate mining, vehicles, flood control modification, urbanization, and water percolation projects. Possibly threatened by non-native plants. Includes *Chorizanthe californica* var. *suskdorfii*."

Proposed development would permanently impact all California spineflower occurrences on the property (42.6 acres; approximately 807,500 individuals). Impacts to 100 percent of California spineflower onsite exceed the 10 percent threshold described in Section 4.2.1 and would potentially compromise a large portion of the known regional population.

Due to the lack of information about the cultural requirements to successfully propagate this annual plant at a large scale, this impact may not be mitigable.

Sand Buck Brush (CRPR 4.2, G5, T4, S4) *Ceanothus cuneatus* var. *fascicularis* is ranked 4.2, a taxon with limited distribution known only from San Luis Obispo and Santa Barbara Counties. The species' global and state rank is "apparently secure". CNPS states that it is threatened by non-native plants. The proposed development could permanently impact all known sand buck brush plants on the property (20 individuals). Impacts to 100 percent of sand buck brush exceed the 10 percent threshold.

Sand buck brush can be propagated and integrated into the landscape planting plan associated with coast live oak planting onsite.

Sand Almond (CRPR 4.3, G5, T4, S4) *Prunus fasciculata* var. *punctata* is ranked 4.3 which is considered to have a limited distribution known only from San Luis Obispo and Santa Barbara Counties. It is not very threatened in California. Proposed development could permanently impact all sand almond occurrences on the property (141 individuals). Impacts to 100 percent of sand almond exceed the 10 percent threshold.

Sand almond propagation is very difficult per Dave Fross (personal communication October 9, 2019). A concerted effort can be made toward propagation and cultivation of this taxon within appropriate conserved habitat.

Michael's Rein Orchid (CRPR 4.2, G3, S3) *Piperia michaelii* is ranked 4.2, a taxon with limited distribution and moderately threatened in California. The proposed development's open space includes the locations of all Michael's rein orchid plants observed in the Study Area (7 individuals). No direct impacts to this species are proposed in the Project design. All individuals of Michael's rein orchid are located directly south of Pismo Clarkia Patch 3 and within a few feet north of a side road/trail that stems west from Project component 'Collector B' (Figure 11, Figure 12 and Appendix A). Impacts to this taxon are avoidable and plants may be preserved onsite.

Other special status plant species. A total of 10 additional sensitive plant taxa were determined to have potential to occur in the Study Area. Surveys conducted during appropriate bloom times yielded negative results. Therefore, no impacts are proposed, and no species-specific mitigation measures are recommended.

BIO-8 Mitigation for Plants Ranked 4 (limited distribution – watch list) by CNPS

A. Restore and/or enhance 45 acres of conserved sandy habitat suitable for California spineflower, sand buckbrush, and sand almond to mitigate for impacts at a 1:1 ratio above the 10 percent impact threshold. Prior to issuance of the Grading Permit, prepare a plan to conserve and/or restore off-site habitat for California spineflower, sand buck brush, and sand almond. The Plan shall be prepared by a qualified individual acceptable to the Director of Planning and Building and approved prior to implementation. The plan shall include purchase for conservation of land containing impacted species and/or restoration of approximately 40 acres of grassland habitat with high microsite suitability for California spineflower, sand buck brush, and sand almond. Plan shall conform to CNPS guidelines for mitigation (Section 1.8.7). The applicant may fund Public Benefit restoration efforts on conserved land to be implemented and monitored by organizations such as: The Nature Conservancy, San Luis Obispo Land Conservancy, Greenspace, or the Cambria Land Trust. The funds would be used to pay for mitigation planting, maintenance, and long-term monitoring in perpetuity.

Sand buckbrush and sand almond shall be planted at a ratio over 1:1 to achieve a no-net loss after 5 years. California spineflower shall be seeded in grassland habitat managed by mowing or grazing in a manner than supports spineflower reproduction in normal rainfall years. Plant material shall be derived from sources on the Nipomo Mesa.

Habitat protection and long-term maintenance shall be funded by an endowment sufficient to monitor and maintain habitat appropriate for needed to attempt re-establishment or expansion of California spineflower on the restoration site.

B. Measures to avoid and protect Michael's rein orchid in onsite oak woodland proposed for protection shall be incorporated into BIO-3. Since all observed individuals of Michael's rein orchid are located directly south of Pismo clarkia Patch 3, this species shall incidentally benefit from being included in BIO-6. Construction workers and biological monitors shall also be made aware of and instructed to avoid this orchid during monitoring for Pismo Clarkia (BIO-6 and BIO-15).

4.3.3 Summary of Special Status Plant Mitigations

Mitigation Measures BIO-1 to BIO-8 will be implemented to achieve "no net loss of sensitive natural communities and critical habitat areas," Consistent with Policy BR 2.6 of the San Luis Obispo General Plan. Preservation of over 21 acres of coast live oak woodland, chamise-black sage chaparral, and California perennial grassland will protect habitat for over 6,000 Pismo clarkia, 500+ Mesa horkelia, 1 sand mesa manzanita, and 7 Michael's rein orchid. Pismo clarkia (federally listed Endangered and state listed Rare) will be seeded in unoccupied suitable habitat onsite to expand areal extent at a 3:1 ratio onsite to mitigate for plants detected in 2020, but not 2019 that would be impacted by an arterial road. The patches of Pismo Clarkia identified in 2019 and 2020 plus additional 0.06-acre suitable habitat will be protected by placement of a conservation easement with endowment for maintenance and monitoring in perpetuity.

To mitigate at a 2:1 ratio for other plants ranked CRPR 1B, off-site protected habitat will be restored and revegetated to achieve a no-net loss of individuals and suitable/occupied habitat. Off-site restoration and conservation are proposed for Burton Mesa Chaparral (Section 4.2.5) that will contain sand mesa manzanita, Nipomo Mesa ceanothus, sand buck brush, sand almond, and mesa horkelia, and may also support California spineflower a CRPR list 4 taxon. Sand buckbrush and

sand almond (List 4 taxa) mitigation can be achieved by restoration and protection of suitable/occupied habitat at a 1:1 ratio on- and off-site. Achieving a 1:1 performance standard for California spineflower (List 4) may be difficult due to large annual population fluctuations that depend on climate conditions and disturbance levels. For mitigation of this species, a 1:1 ratio of suitable habitat that contains scattered California spineflower at a baseline population of several thousand individuals can be protected and managed with an appropriately timed grazing/mowing regime.

Additional off-site conservation is proposed for over 320 acres of Coast Live Oak Forest, Coast Live Oak Woodland, and Chamise-Black Sage Chaparral, greater than 50 acres of which contains rare La Panza manzanita.

4.4 Wildlife Resources

Nine special status animal species were detected in the Study Area during biological surveys. Nesting and special status birds (Cooper's hawk, oak titmouse, White-tailed kite, and Nuttall's woodpecker) were detected throughout coast live oak woodland during site surveys. Blainville's horned lizard was detected in open canopy coast live oak woodland. American badger dens were found in grassland habitat onsite. Four of seven bat species observed onsite are CDFW species of special concern or Special Animals (pallid bat, silver-haired bat, hoary bat, and Yuma myotis). The Project is likely to adversely affect special status species discussed by taxonomic group (invertebrates, reptiles, birds, mammals) in Sections 4.3.1 to 4.3.5. Construction best practices to protect wildlife are included in Section 4.4. Figure 18 and Figure 19 show locations of impacts to wildlife resources from the Project and the Alternative.

Figure 18. Proposed Plan Impacts - Animals

Legend

- Plan Boundary
- Not Included
- Open Space (Not Impacted)
- Proposed Impacts
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Closed Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Open Oak Woodland* - S3
- Badger Den
- Blainville's Horned Lizard
- Woodrat Midden

Nests

- Acorn Woodpecker
- American Crow
- Blue-Gray Gnatcatcher
- Dark-eyed Junco
- Great Horned Owl
- House Finch
- Nest Cavity
- Raptor Nest
- Red-Tailed Hawk
- Stick Nest

*Sensitive Natural Communities with State Rank

0 250 500 Feet

Dana Reserve
Map Center: 120.50364°W 35.04662°N
Nipomo, San Luis Obispo County

Imagery Sources: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

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Map Updated:
October 06, 2021 12:42 PM by SAF

Figure 19. Alternative Plan Impacts - Animals

Legend

- Plan Boundary
- Not Included
- Open Space (Not Impacted)
- Proposed Impacts
- Annual Brome Grasslands
- Anthropogenic
- Burton Mesa Chaparral* - S1
- California Perennial Grassland Group
- Closed Oak Forest
- Mediterranean California Naturalized Perennial Grassland
- Open Oak Woodland* - S3
- Badger Den
- Blainville's Horned Lizard
- Woodrat Midden

Nests

- Acorn Woodpecker
- American Crow
- Blue-Gray Gnatcatcher
- Dark-eyed Junco
- Great Horned Owl
- House Finch
- Nest Cavity
- Raptor Nest
- Red-Tailed Hawk
- Stick Nest

*Sensitive Natural Communities with State Rank

0 250 500 Feet

Dana Reserve
Map Center: 120.50364°W 35.04662°N
Nipomo, San Luis Obispo County

Imagery Sources: USDA NAIP, 05/21/2020
Althouse & Meade Inc., 05/19/2020

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Map Updated:
October 06, 2021 12:41 PM by SAF

4.4.1 Special Status Invertebrates

A special status invertebrate survey verified species absence for the obscure bumble bee and western bumble bee. Therefore, this Project would not impact these species. No mitigation measures are recommended.

4.4.2 Special Status Reptiles

Blainville's (coast) horned lizard (SSC)

Appropriate habitat was identified on the property and two Blainville's horned lizards were observed during May 2018 and spring 2020 surveys on the edge of Coast Live Oak Woodland habitat. Loss of over 88 percent of suitable habitat would adversely affect this species. In addition, Project activities such as grading and other excavation work would potentially result in direct impacts, habitat loss, and mortality. Indirect impacts related to development and resulting occupancy include pet depredation and introduction of invasive Argentine ants that outcompete native ants, the main food resource for Blainville's horned lizard. Direct and indirect impacts to Blainville's horned lizard would be significant. To reduce direct impacts to Blainville's horned lizard, mitigation measures BIO-9 and BIO-15 are recommended.

Northern California legless lizard (SSC)

The Northern California legless lizard likely occurs in the Project area's sandy soils, particularly in oak woodland habitat. Although surveys during 2020 did not detect legless lizards, their population number may be low. Project activities such as grading and other excavation could result in direct impacts, loss of habitat, and mortality. Direct and indirect impacts to Northern California legless lizard would be significant. To reduce potential impacts to Northern California legless lizards, mitigation measure BIO-4, which protects offsite woodland habitat; BIO-9, which implements an approved relocation plan during construction; and BIO-15, which mandates worker training, are recommended

BIO-9 Special Status Reptiles Protection and Relocation

Prior to issuance of a grading permit, the project applicant shall develop a Special Status Reptile Relocation Plan (Plan) for silvery legless lizard and coast horned lizard. The goal of the relocation plan is to establish guidelines and protocols for relocating special status reptiles out of harm's way. The Plan shall include an overview of prior surveys for the species, figures of known and potential habitat areas, timing of relocation efforts, and details regarding capture and relocation methods. Additionally, the Plan shall identify and characterize suitable onsite relocation sites for each species. The following details shall be specifically incorporated and expanded upon in the Plan:

- Relocation surveys for special status reptiles should be conducted during appropriate times of year when the species are active and can be located. Subject to expert refinement in the Plan, legless lizard coverboard and raking surveys should be conducted between January and July. Because legless lizards are not expected to move back into work areas after relocation, these surveys can be done well in advance of earthwork. Horned lizard surveys should be conducted on warm days from April through August, immediately prior to commencement of earthwork. The Plan shall require a minimum of three surveys conducted during the time of year/day when each species is most likely to be observed.

- Relocation surveys for legless lizards shall utilize a combination of cover boards and soil raking to find lizards in suitable habitat areas prior to commencement of earthwork activities. Relocation surveys for horned lizards shall be completed by pedestrian transects on warm days utilizing narrow spacing to visually search for lizards on the surface of the soil. Special status reptiles would be captured by hand, stored in suitable wildlife relocation bins, and immediately relocated to approved habitat.
- The Plan shall identify suitable legless lizard relocation habitat as any sandy soil area with suitable leaf litter under shrub or oak tree canopy. For horned lizard, suitable relocation habitat shall be identified as that which has friable soils, a detectable prey source, and sandy barrens for burrowing and basking.
- The Special Status Reptile Relocation Plan shall be submitted to the County of San Luis Obispo and CDFW for approval no less than 60 days prior to any ground disturbing activities within potentially occupied habitat.
- A qualified biologist shall be present during ground-disturbing activities immediately adjacent to or within habitat that supports special status reptiles.
- Clearance surveys for special status reptiles shall be conducted by a qualified biologist prior to the initiation of ground disturbing construction each day, especially along the interface between open space and construction areas.
- Results of the surveys and relocation efforts shall be provided to the County of San Luis Obispo and CDFW in the annual mitigation status report. Collection and relocation of animals shall only occur with the necessary scientific collection and handling permits.

4.4.3 Special Status Birds

Special status birds and raptors such as Cooper's hawk, oak titmouse, and Nuttall's woodpecker may be adversely affected by the loss of nesting and foraging habitat in oak and chaparral habitats. Loss of grassland habitat could adversely affect foraging raptors and ground nesting birds. Incremental habitat loss on a regional scale may adversely affect special status birds. These impacts would require mitigation as recommended to protect habitat offsite, see measuresBIO-4, BIO-5, and BIO-10.

4.4.4 Nesting Birds

The proposed development will affect common and special status nesting birds by removing coast live oak woodland, perennial grassland, and chamise-black sage chaparral. Loss of coast live oak woodland particularly affects cavity nesting species, such as woodpeckers, wrens, northern flicker, and oak titmouse, as well as canopy nesting species, such as raptors and Hutton's vireo, and California scrub-jay, chestnut-backed chickadee, western bluebird, and tree swallow. Two USFWS birds of conservation concern (BCC) identified in the Study Area could be adversely affected from oak woodland removal: Nuttall's woodpecker and oak titmouse. The potential for habitat removal to adversely affect nesting birds can be reduced.

Migratory non-game native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (50 C.F.R. Section 10.13) (USFWS 2006). Sections 3503, 3503.5 and 3513 of the California Fish and Game Code prohibit take (as defined therein) of all native birds and their active nests, including raptors and other migratory non-game birds (as

listed under the Federal MBTA). The following recommendations are intended to reduce potential impacts to nesting birds to a less than significant level.

BIO-10 Nesting Bird Preconstruction Survey and Nest Avoidance

Within one week prior to ground disturbance activities, if work occurs between February 1 and August 31, nesting bird surveys shall be conducted. If surveys do not locate nesting birds, construction activities may begin. If nesting birds are located, no construction activities shall occur within 100 feet of nests or within 500 feet of raptors until chicks have fledged. The Project biologist may recommend a buffer decrease depending upon site conditions (such as line-of-sight to the nest) and the birds' level of tolerance for construction activities. The biologist shall collect data on the birds' baseline behavior and their tolerance to disturbance by observing the birds at the nest prior to construction activities. If the birds are incubating, record how long they stay on the nest. If nestlings are present, record how frequently adults deliver food and visit the nest. Biologist shall also record the birds' reaction to the biologist and how close the biologist can get to the nest before the birds' behavior is altered or they show signs of stress or disturbance. Biologist shall set the reduced buffer distance based on these data. Nesting bird buffers may be reduced up to 50 feet, while raptor nest buffers may be reduced up to 250 feet. If nest buffers are reduced, the biologist will monitor any construction activities that take place within 100 feet of nesting birds and 500 feet of raptor nests. If nesting birds show any signs of disturbance, including changes in behavior, significantly reducing frequency of nests visits, or refusal to visit the nest, the biologist will stop work and increase the nest buffer.

4.4.5 Special Status Mammals

Loss of approximately 93 percent of available habitat on the property will adversely affect American badger, woodrat, sensitive bat species, and numerous common species such as coyote, black-tailed jackrabbit, and California ground squirrel through loss of available denning/roosting sites, reduction in prey base, loss of protective cover, predation by domestic animals (dogs and cats), increased vehicle traffic, and increased night light and noise. Direct impacts may be reduced with mitigation.

Bats

Four CDFW-designated SSC/Special Animals, pallid bat, silver-haired bat, hoary bat, and Yuma myotis, and two common species, California myotis and Mexican free-tailed bats, occur in the Study Area. These bats are known to roost in buildings, caves, rock outcrops, tree hollows, tree cavities, and tree canopies. There are a few structures with appropriate day roosting habitat on the northeast 7-acre parcel of the Study Area and suitable trees and snags with cavities are present. Significant impacts to special status bats and maternal bat colonies can be avoided.

Roosting bats and/or maternal bat colonies may be present in trees and snags with appropriate cavities or loose bark. The breeding season for bats is April to October. Project activities including building/structure demolition, tree removal, grading and other excavation work could result in take of bat species or disturbance of bat roosts. To reduce potential impact on bats, we recommend the following measure:

BIO-11 Bat Pre-Construction Survey and Passive Relocation

Within 30 days of construction between April and September, inspect structures, and trees or snags to be removed or pruned that are greater than 20 inches diameter-at-breast-height, for bats. If a bat roost is found, the qualified biologist shall implement passive relocation measures such as installation of one-way valves. Bat maternity colonies may not be disturbed.

American Badger (SSC)

American badger occurs in the Study Area. Project activities including grading and other excavation work could result in impacts to American badger adults or young, or disturbance of natal dens and abandonment by adult badgers. During the winter badgers do not truly hibernate, but are inactive and asleep in their dens for several days at a time. Because they can be torpid during the winter, they are vulnerable to disturbances that may collapse their dens before they rouse and emerge. Therefore, surveys shall be conducted for badger dens throughout the year. To reduce potential impact to badgers, we recommend the following measures:

BIO-12 Badger Den Pre-Construction Survey and Relocation

Conduct pre-construction survey within thirty days of beginning work on the site to identify if badgers are using proposed work areas. Send results to the County of San Luis Obispo with monthly construction update reports.

If suitable American badger dens are identified within the disturbance footprint, monitor den opening with tracking medium or an infrared camera for three consecutive nights to determine current use. If the den is not in use, excavate and collapse the den to ensure that no animals are present during construction. If the den is occupied during the non-maternity period and avoidance is not feasible, badgers may be relocated by first incrementally blocking the den over a three -day period, followed by slowly excavating the den (either by hand or with mechanized equipment under the direct supervision of a qualified biologist, removing no more than 4 inches at a time) before or after the rearing season (15 February through 30 June). Passive relocation of American badgers is conducted under the direction of a qualified biologist.

If the pre-construction survey finds potential badger dens, they shall be inspected by the Project Biologist to determine whether they are occupied. If a potential badger den is too long to completely inspect from the entrance, a fiber optic scope may be used to examine the den to the end. Inactive dens may be excavated by hand with a shovel to prevent re-use of dens during construction. If badgers occupy active dens in proposed work areas between February and July, nursing young may be present.

To avoid disturbance and the possibility of direct impacts to adults and nursing young, and to prevent badgers from becoming trapped in burrows during construction activity, American badger dens determined to be occupied during the breeding season (15 February through 30 June) shall be flagged. Between February and July, no grading or ground disturbing activities shall occur within 100 feet of active badger dens to protect adults and nursing young. Buffers may be modified by the qualified biologist, provided the badgers are protected, and buffers only removed after the qualified biologist determines that the den is no longer in use.

If a potential den is located outside of the disturbance footprint but within 500 feet of ground disturbing activities (including staging areas), dens shall be avoided by installation of highly visible orange construction fencing a minimum of 100 feet from the den, designating the area an

Environmentally Sensitive Area (ESA). Fencing shall be installed in a manner that allows badgers to move through the fencing at-will. No equipment, vehicles, or personnel shall be permitted within ESAs without clear permission from a qualified biologist.

4.5 Construction Best Practices for Biological Resource Protection

The Study Area is a habitat virtually isolated by surrounding development and therefore does not serve the function of habitat connectivity for terrestrial animals. Residential development and infrastructure surrounding the Study Area restrict wildlife movement between habitats. The Study Area lacks significant wildlife movement corridors, such as streams, for animals to move into adjacent habitats. For species that fly such as birds, bats, and insects, the Study Area serves as a wildlife movement corridor between the coast and inland areas, providing both food and cover for animals.

The proposed development will not disrupt known major wildlife movement corridors. However, permanent loss of habitat and increased presence of human activity and increased vehicular traffic may negatively affect wildlife movement. During construction, we recommend measures to minimize impacts to plants and animals, and protect wildlife moving through work areas.

For all Project personnel associated with ground disturbance or any activities that may affect plants or animals, training shall be provided prior to and during onboarding at the Project site. Home construction activities will also require weekly nesting bird inspections from March 15 to August 15 to provided worker training and reduce potential for work interruptions caused by completed nests in empty structures, equipment, or materials.

BIO-13 Cover Excavations

During construction, all trenches, holes, and other excavations with sidewalls steeper than a 1:1 (45 degree) slope and 2 or more feet deep shall be covered when workers or equipment are not actively working in the excavation. If any such excavations remain uncovered, they shall have an escape ramp of earth or a non-slip material with a 1:1 (45 degree) slope or flatter. All excavated areas shall be inspected for wildlife before backfilling.

BIO-14 Biodegradable Erosion Control

During construction, use erosion control products made of natural fiber (biodegradable) to prevent wildlife from getting ensnared or strangled by monofilament, coir rolls, erosion control mats or blankets, straw or fiber wattles, or similar erosion control products.

BIO-15 Worker Environmental Training (WET) Program

Prior to implementation of construction activities (including staging and mobilization), ensure all personnel associated with Project construction attend a training to facilitate worker environmental awareness. The WET shall be conducted by a County-approved qualified biologist to help workers recognize special status plants and animals to be protected in the Project area. The training program shall include:

- Identification of relevant sensitive species and habitats.
    - Description of the regulatory status and general ecological characteristics of sensitive resources, and review of the limits of construction and avoidance measures required to reduce impacts to biological resources within the work area;

  - Consequences for non-compliance;
  - Fact sheet with information covered in training for distribution to all contractors and other personnel involved with construction of the Project.
  - Web-link to maps showing locations of special status taxa onsite, and literature and photographs or illustrations of sensitive plants, animals and habitats.
- Documentation of each employee's participation in trainings and information presented.
- Annual renewal training for the duration of the Project.

The Contractor shall set aside time for the Project Biologist to provide Worker Environmental Training for all Contractor's and Subcontractor's employees that will be onsite regarding resource protection. Topics will include regulatory framework and best practices to avoid and minimize impacts to protected plants, animals, and their habitats. Approximately one-half hour for training shall be allocated. Each group of new personnel or individuals shall be provided with an environmental briefing by the Project Biologist. This training may be virtual. During morning safety briefings, the Project Biologist may provide updates related to environmental conditions affected by scheduled actions.

Contractor's and Subcontractor's employees will be given a pocket-sized booklet by the Project Biologist in digital and/or paper format summarizing environmental training. Booklet prepared by the Project Biologist will include points of contact and protocol regarding emergencies and protected resource matters. Contractor's and Subcontractor's employees shall be familiar with the information in the booklet and shall follow all rules and directions in the booklet while performing work for the project. Contractor's and Subcontractor's employees shall always have a copy of the booklet while on the project site.

BIO-16 Public Education Program

In support of mitigation measures listed above, public education shall be provided to homeowners, commercial facility owners, and investors regarding protected plants, animals, and their habitat. A colorful booklet shall be distributed to homeowners, commercial owners, and occupants. Information in the booklet shall also be made available as an interactive website provided to the County of San Luis Obispo, and to the Owners Association(s). Information shall include descriptions of sensitive plant and animal habitats impacted, protected, and mitigations implemented. Diagnostic information for sensitive plant and animal taxa, and their habitats, shall be provided in a reader-friendly format. Booklet and website text shall be prepared by technical experts and produced in cooperation with professional graphic artists and publication specialists.

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6 APPENDICES

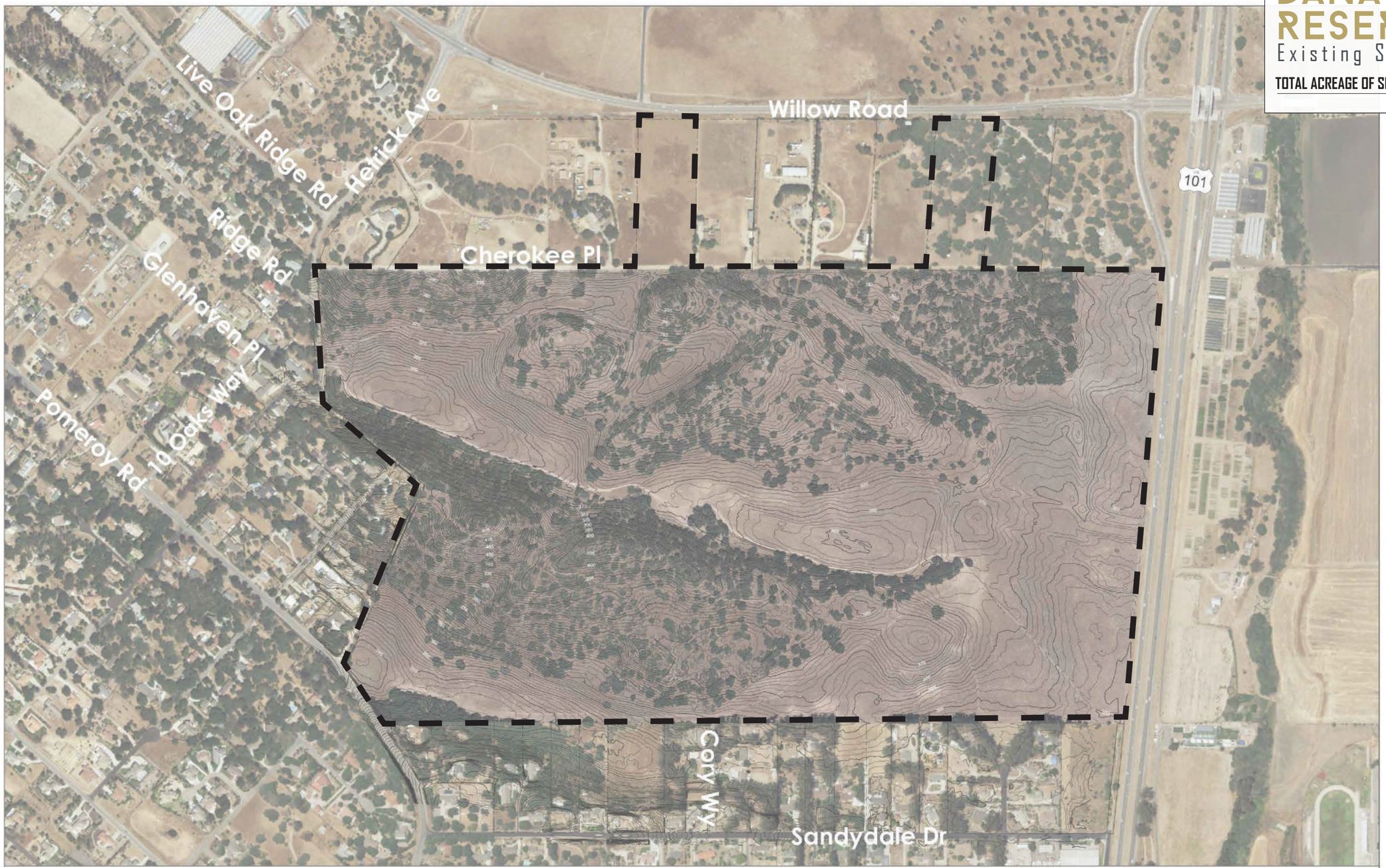
- **Appendix A. Overall Site Plan**
- **Appendix B. USFWS National Wetland Inventory Dana Reserve**
- **Appendix C. Special Status Plants Reported from the Region**
- **Appendix D. Special Status Animals Reported from the Region**
- **Appendix E. USFWS IPAC Resources List**
- **Appendix F. Dana Reserve Historical Aerial Imagery**
- **Appendix G. Habitat Descriptions for Dana Ridge Ranch**
- **Appendix H. Potential Mitigation Sites for Burton Mesa Chaparral**

APPENDIX A. OVERALL SITE PLAN

DANA RESERVE

Existing Site Plan

TOTAL ACREAGE OF SITE = 288 ACRES



LEGEND

- Dana Reserve Boundary
- Surrounding Property Lines
- 1-Foot Contours
- 5-Foot Contours

Notes/Sources: July 15,2019

1) Aerial photo from CCAM - date 2017.
2) Aerial photo from the NAIP - date 2016.
3) Topography data MBS Land Surveys - date 2017.
4) Boundary data from SLO County.

1 : 150 (24X36 SHEET)
0 75 150 300
1:300 (12X18 SHEET)

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rrm design group

V.30 - October 7, 2021

ĐANA RESERVE

LAND USE & PUBLIC ROADS

GROSS LAND USE TOTALS

COLOR	LAND USE	ACRES	%
	RESIDENTIAL MULTI-FAMILY (DR-MF)	23.5	8.2%
	RESIDENTIAL SINGLE FAMILY- TRADITIONAL (DR-SF1)	132.6	46.0%
	RESIDENTIAL SINGLE FAMILY (DR-SF2)	16.9	5.9%
	RECREATION (DR-REC)	11.0	3.8%
	PRIMARY ROADS	21.9	7.6%
	RURAL RESIDENTIAL (RR) - EXISTING	10	3.5%
	RESIDENTIAL SUBTOTAL:	**215.9**	**75%**
	FLEX COMMERCIAL (DR-FC)	17.9	6.2%
	VILLAGE COMMERCIAL (DR-VC)	4.4	1.5%
	COMMERCIAL SUBTOTAL:	**22.3**	**7.7%**
	OPEN SPACE (DR-OS)	49.8	17.3%
	TOTAL:	**288**	**100%**

GROSS TOTAL ACREAGE OF SITE = 288 ACRES

*** ALL STATISTICS ARE APPROXIMATE**

1 : 200 (24x36 sheet)
0 100 200 400
1:400 (12x18 sheet)

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V.30 - October 7, 2021

DANA RESERVE

Conceptual Master Plan

GROSS ACREAGE SUMMARY:

UNDEVELOPED SITE ACRES*=	59.8 ACRES=	20.8%
DEVELOPED SITE ACRES=	228.2 ACRES=	79.2%
GROSS ACREAGE OF SITE =	**288 ACRES**	

* UNDEVELOPED SITE COMPRISE OF 49.8 AC OF OPEN SPACE (OS) & 10 AC OF RESIDENTIAL RURAL (RR)

NET DEVELOPED AREAS

		% OF NET SITE
HOUSING DEVELOPMENT=	173 ACRES =	75.8%
PUBLIC PARKS=	11.0 ACRES =	4.8%
PUBLIC COLLECTORS=	21.9 ACRES =	9.6%
COMMERCIAL=	22.3 ACRES =	9.8%

DEVELOPED ACREAGE OF SITE = 228.2 ACRES

HOUSING DEVELOPMENT NEIGHBORHOOD TOTALS ON GROSS SITE

LAND USE TOTALS

NBD	PRODUCT TYPE	LAND USE	LAND USE ACRES	% OF GROSS SITE	UNIT COUNT
1	MULTI-FAMILY	DR-MF	8.7	3.0%	173
2	MULTI-FAMILY	DR-MF	10.5	3.6%	210
3	CLUSTER	DR-SF2	16.9	5.9%	124
4	4,000.5000 SF LOT	DR-SF1	11.4	4.0%	72
5	4,000-5,000 SF LOT	DR-SF1	17.2	6.0%	104
6	4,000-5,000 SF LOT	DR-SF1	18.6	6.5%	114
7	4,500-8,700 SF LOT	DR-SF1	28.9	10.0%	157
8	5,000-8,600 SF LOT	DR-SF1	16.8	5.8%	62
9	4,500 SF - 10,000 SF LOT	DR-SF1	39.7	13.8%	198
SUBTOTAL:	-		168.7	58.6%	1,214
10	AFFORDABLE (6% MIN. REQ'D)	DR-MF	4.3	1.4%	75 MIN (72.84 REQ'D)
N/A	INTERNAL NEIGHBORHOOD ROADS[1]	-	-	-	-
N/A	POCKET PARKS (PARK)[1]	-	-	-	
N/A	PUBLIC RECREATION	DR-REC	11	3.8%	-
N/A	PRIMARY ROADS	-	21.9	7.6%	-
N/A	PARK AND RIDE[2]	-	-	-	-
N/A	RESIDENTIAL RURAL[3]	RR	10	3.5%	-
	TOTAL:		215.9	75%	1,289

*** ALL STATISTICS ARE APPROXIMATE**

COMMERCIAL TOTALS ON GROSS SITE

LAND USE TOTALS

	LAND USE	LAND USE ACRES	% OF GROSS SITE
FLEX COMMERCIAL	DR-FC	17.9	6.2%
VILLAGE COMMERCIAL	DR-VC	4.4	1.5%
TOTAL:		22.3	7.7%

OPEN SPACE ON GROSS SITE

LAND USE TOTALS

	LAND USE	LAND USE ACRES	% OF GROSS SITE
OPEN SPACE	DR-OS	49.8	17.3%
TOTAL:		49.8	17.3%

GROSS TOTAL ACREAGE OF SITE = 288 ACRES

* ALL STATISTICS ARE APPROXIMATE

MAP FEATURES

- Primary Entry Feature
- Secondary Entry Feature
- 8' deep Storm water Basin
- Shallow 2 foot deep Storm Water Basin
- Bus Pullout / Transit Stop Locations
- Equestrian Trail Head
- Equestrian Trail (3.1 miles)
- Pedestrian Trail (3.8 miles)

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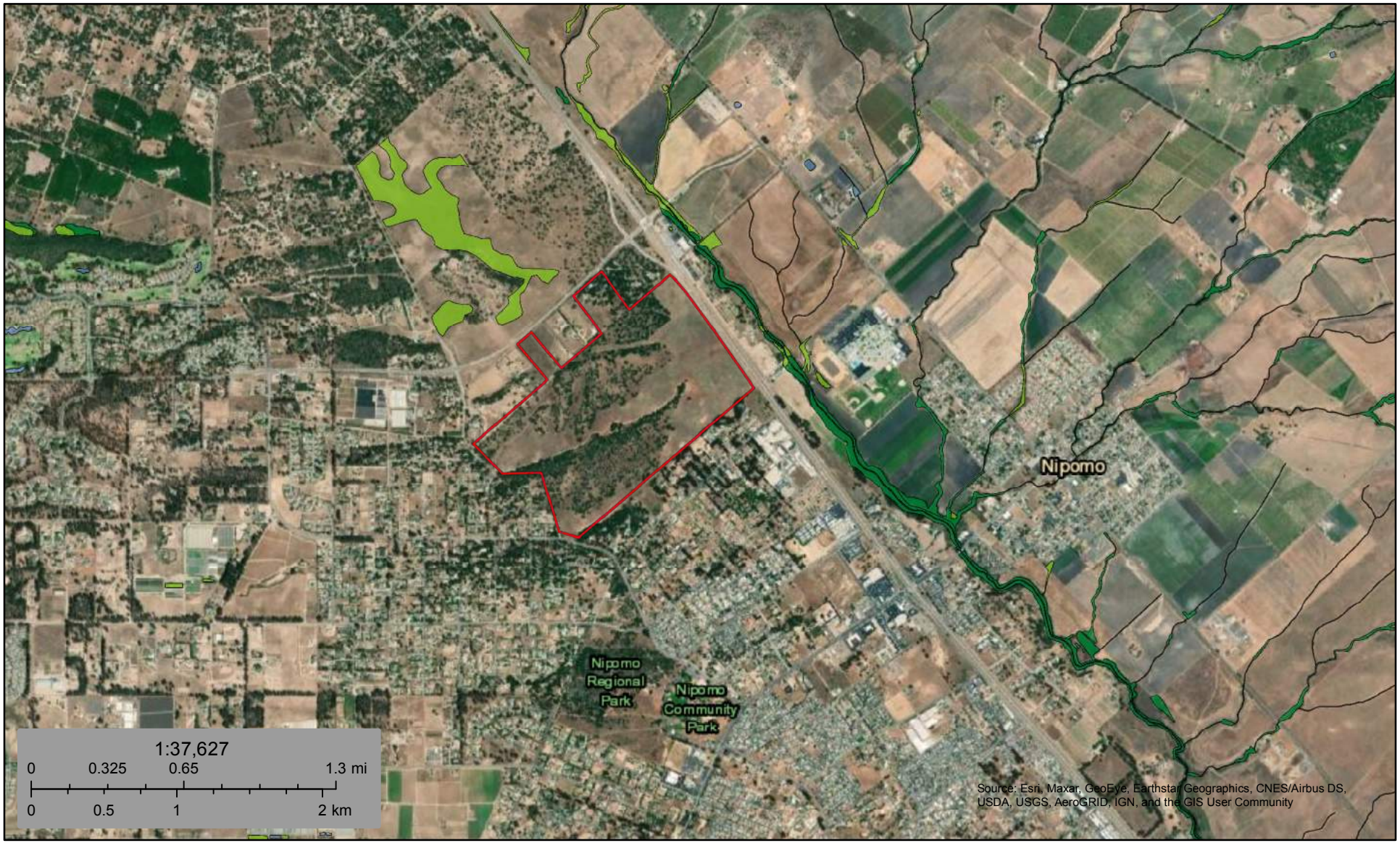
rrm design group

V.30 - October 7, 2021

APPENDIX B. USFWS NATIONAL WETLAND INVENTORY DANA RESERVE

U.S. Fish and Wildlife Service
National Wetlands Inventory

Appendix B. Dana Reserve



November 4, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

APPENDIX C. SPECIAL STATUS PLANTS REPORTED FROM THE REGION

APPENDIX C. SPECIAL STATUS PLANTS REPORTED FROM THE REGION

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
1.	*Abronia maritima*	**Red Sand-Verbena**	-/- G4/S3? 4.2	Feb-Nov	Coastal dunes. <100 m.	None. Suitable habitat is not present in the Study Area.
2.	*Agrostis hooveri*	**Hoover's Bent Grass**	-/- G2/S2 1B.2	Apr-Jul	Open chaparral, oak woodland. Dry sandy soils. <600 m.	High. Suitable habitat is present in the Study Area. CNDDB #8 located 3.8 (1988) miles west of Study Area.
3.	*Amsinckia douglasiana*	**Douglas' Fiddleneck**	-/- G4/S4 4.2	Mar-May	Valley and foothill grassland. Dry habitats with unstable shaly sedimentary slopes. 150-1600 m.	None. Suitable habitat (soils) is not present in the Study Area.
4.	*Aphanisma blitoides*	**Aphanisma**	-/- G3G4/S2 1B.2	Feb-Jun	Coastal bluff scrub, coastal dunes. Sandy or clay soils. <300 m.	None. Suitable habitat is not present in the Study Area.
5.	*Arctostaphylos crustacea* ssp. *eastwoodiana*	**Eastwood's Brittle-Leaf Manzanita**	-/- G4T2/S2 1B.1	Mar	Maritime chaparral, closed-cone conifer forest. Sandy soils. <650 m.	None. Suitable habitat (soils) is not present in the Study Area and species (perennial shrub) was not detected during surveys.
6.	*Arctostaphylos luciana*	**Santa Lucia Manzanita**	-/- G2/S2 1B.2	Dec-Mar	Chaparral. On shale outcrops, slopes, near coast. 100-800m	None. Suitable habitat (soils) is not present in the Study Area and species (perennial shrub) was not detected during surveys.
7.	*Arctostaphylos obispoensis*	**Bishop Manzanita**	-/- G3/S3 4.3	Feb-Jun	Chaparral, open closed-cone forest near coast. Rocky, generally serpentine soils. 60-950m.	None. Suitable habitat (soils) is not present in the Study Area and species (perennial shrub) was not detected during surveys.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
8.	*Arctostaphylos pechoensis*	**Pecho Manzanita**	-/- G2/S2 1B.2	Nov-Mar	Chaparral, conifer forest. Shale outcrops. <500 m.	None. Suitable habitat (soils) is not present in the Study Area and species (perennial shrub) was not detected during surveys.
9.	*Arctostaphylos pilosula*	**Santa Margarita Manzanita**	-/- G2?/S2? 1B.2	Dec-May	Chaparral. Shale outcrops, slopes. 30-1250 m.	None. Suitable habitat (soils) is not present in the Study Area and species (perennial shrub) was not detected during surveys.
10.	*Arctostaphylos purissima*	**La Purisima Manzanita**	-/- G2/S2 1B.1	Nov-May	Chaparral. Sandstone outcrops, sandy soils. <300 m.	None. Suitable habitat is present; however, Study Area is outside of species expected range (Kauffman et. al 2015), and species (perennial shrub) was not detected during surveys.
11.	*Arctostaphylos rudis*	**Sand Mesa Manzanita**	-/- G2/S2 1B.2	Nov-Feb	Chaparral. Sandy soils. <380 m.	**Present**. Suitable sandy chaparral habitat is present in the Study Area and species was observed during surveys.
12.	*Arenaria paludicola*	**Marsh Sandwort**	FE/CE G1/S1 1B.1	May-Aug	Wet meadows, marshes, swamps. Sandy soils <300 m.	None. Suitable wetland/mesic habitat is not present in the Study Area. All records in the vicinity are considered extirpated or possibly extirpated.
13.	*Astragalus didymocarpus* var. *milesianus*	**Miles' Milk-Vetch**	-/- G5T2/S2 1B.2	Mar-Jun	Coastal scrub and grassy areas near coast. Clay soils. <400 m.	None. Suitable habitat (soils) is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
14.	*Astragalus nuttallii* var. *nuttallii*	**Ocean Bluff Milk-Vetch**	-/- G4T4/S4 4.2	Jan-Nov	Coastal bluffs, dunes. Sandy soils. <250 m.	None. Suitable habitat is not present and the Study Area is inland of this species' known distribution.
15.	*Atriplex serenana* var. *davidsonii*	**Davidson's Saltscale**	-/- G5T1/S1 1B.2	Apr-Oct	Coastal bluff scrub, coastal scrub. Alkaline soil. <200 m.	None. Suitable habitat is not present in the Study Area.
16.	*Calandrinia breweri*	**Brewer's Calandrinia**	-/- G4/S4 4.2	Mar-Jun	Chaparral, coastal scrub. Disturbed sites, burns. Sandy to loamy soil. <1200 m.	Moderate. Suitable habitat is present in the Study Area. CCH record (SD71144; 1948) located 9.5 miles to the north west.
17.	*Calochortus clavatus* var. *clavatus*	**Club-Haired Mariposa Lily**	-/- G4T3/S3 4.3	Mar-Jun	Chaparral, cismontane woodland, valley and foothill grassland, coastal scrub. Generally serpentine clay, rocky soils. <1300 m.	None. Suitable habitat (soils) is not present in the Study Area.
18.	*Calochortus obispoensis*	**San Luis Mariposa Lily**	-/- G2/S2 1B.2	May-Jul	Open chaparral, cismontane woodland, coastal scrub, grasslands. Dry serpentine substrates. 100-500 m.	None. Suitable habitat (soils) is not present in the Study Area.
19.	*Calochortus simulans*	**La Panza Mariposa Lily**	-/- G2/S2 1B.3	Apr-Jun	Grassland, coniferous woodland, chaparral. Decomposed granitic sand, sometimes serpentine. <1100 m.	None. Study Area is generally outside of the species' known range and suitable habitat (soils) is not present in the Study Area.
20.	*Calystegia subacaulis* ssp. *episcopalis*	**Cambria Morning-Glory**	-/- G3T2?/S2? 4.2	Mar-Jul	Dry woodland, open scrub. Usually clay soil. <500 m.	None. Suitable habitat (soils) is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
21.	*Carex obispoensis*	**San Luis Obispo Sedge**	-/- G3?/S3? 1B.2	Apr-Jun	Seeps and springs within chaparral, coniferous forest, coastal scrub, grassland. Usually in transition zone on sand, clay, serpentine, or gabbro. <800 m.	None. Suitable habitat is not present in the Study Area.
22.	*Castilleja densiflora* ssp. *obispoensis*	**San Luis Obispo Owl's-Clover**	-/- G5T2/S2 1B.2	Mar-May	Coastal grassland. Often serpentine soil. <400 m.	None. Study Area is generally outside of the species' known range and suitable habitat (soils) is not present in the Study Area.
23.	*Ceanothus cuneatus* var. *fascicularis*	**Lompoc Ceanothus**	-/- G5T4/S4 4.2	Feb-Apr	Coastal chaparral. Sandy substrates. <275 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
24.	*Ceanothus gloriosus* var. *gloriosus*	**Point Reyes Ceanothus**	-/- G4T4/S4 4.3	Mar-May	Coastal bluff scrub, dunes, closed-cone-pine forest. Sandy soils. <500 m.	None. Study Area is generally outside of the species' known range and suitable habitat is not present in the Study Area.
25.	*Ceanothus impressus* var. *impressus*	**Santa Barbara Ceanothus**	-/- G3T2/S2 1B.2	Feb-Apr	Chaparral. Canyons, flats. Sandy substrates. <320 m.	None. Study Area is generally outside of the species' known range.
26.	*Ceanothus impressus* var. *nipomensis*	**Nipomo Mesa Ceanothus**	-/- G3T2/S2 1B.2	Feb-Apr	Chaparral. Canyons, flats. Sandy substrates. <200 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
27.	*Centromadia parryi* ssp. *congdonii*	**Congdon's Tarplant**	-/- G3T1T2/S1S2 1B.1	May-Nov	Grassland, disturbed sites. Terraces, swales, floodplains, Alkaline, heavy clay soil <300 m.	None. Suitable habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
28.	*Chenopodium littoreum*	**Coastal Goosefoot**	-/- G1/S1 1B.2	Apr-Aug	Coastal dunes. Sandy soils. <40 m.	None. Study Area is generally outside of the species' known range.
29.	*Chlorogalum pomeridianum* var. *minus*	**Dwarf Soaproot**	-/- G5T3/S3 1B.2	May-Aug	Chaparral. Serpentine outcrops. <750 m.	None. Suitable habitat (soils) is not present in the Study Area.
30.	*Chorizanthe aphanantha*	**Irish Hills Spineflower**	-/- G1/S1 1B.1	Apr-Jun	Chaparral, coastal scrub. Rocky serpentine sites and barren areas. Known from Irish Hills Natural Reserve. 100-370 m.	None. Study Area is generally outside of the species' known range and suitable habitat (soils) is not present.
31.	*Chorizanthe breweri*	**Brewer's Spineflower**	-/- G3/S3 1B.3	Apr-Aug	Chaparral, cismontane woodland, coastal scrub. Rocky serpentine sites; barren areas. 60-800 m.	None. Suitable habitat (soils) is not present in the Study Area.
32.	*Chorizanthe palmeri*	**Palmer's Spineflower**	-/- G4/S4 4.2	Apr-Aug	Chaparral, cismontane woodland, grassland. Clay soils, generally in areas of serpentine or partially serpentinized igneous rock. 60-700 m.	None. Suitable habitat (soils) is not present in the Study Area.
33.	*Chorizanthe rectispina*	**Straight-Awned Spineflower**	-/- G2/S2 1B.3	Apr-Jul	Chaparral, cismontane woodland, coastal scrub. In disintegrating shale, often on granite. 200-600 m.	Low. Marginal suitable habitat is present in the Study Area. CNDDB #20 (2003) located 7.3 miles to the north west.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
34.	*Cirsium fontinale* var. *obispoense*	**San Luis Obispo Fountain Thistle**	FE/CE G2T2/S2 1B.2	Feb-Sep	Grassland, riparian influenced woodland and chaparral, coastal scrub. Serpentine seeps. <350 m.	None. No suitable serpentine seep habitat is present in the Study Area. The nearest record (OBI 60973; 1999) is located 8.4 miles northeast of the Study Area.
35.	*Cirsium occidentale* var. *compactum*	**Compact Cobwebby Thistle**	-/- G3G4T2/S2 1B.2	Apr-Jun	Coastal dune scrub, occassionally grassland. Found near coast On sand or sometimes clay soils. <50 m.	None. Suitable habitat is not present in the Study Area.
36.	*Cirsium rhothophilum*	**Surf Thistle**	-/CT G1/S1 1B.2	Apr-Jun	Coastal bluff scrub and dunes. Open areas, sand. <20 m.	None. No coastal sand dune habitat is present in the Study Area. The nearest record (UCJEPS UC1276309; 1950) is located 6 miles west of the Study Area. Outside of elevation range.
37.	*Cirsium scariosum* var. *loncholepis*	**La Graciosa Thistle**	FE/CT G5T1/S1 1B.1	May-Aug	Coastal scrub and dunes, brackish marshes, riparian woodland and grassland. Water edge, wetlands. Mesic, sandy sites. < 50 m	None. No wetland/mesic suitable habitat present in the Study Area. The nearest presumed extant record (CNDDB#11; 2018) is located 5.6 miles northwest of the Study Area. Outside of known elevation range.
38.	*Cistanthe maritima*	**Seaside Cistanthe**	-/- G3G4/S3 4.2	Feb-Aug	Coastal bluff scrub. Sea bluffs, sand. <300 m.	None. Study Area is generally outside of the species' known range and suitable habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
39.	*Cladium californicum*	**California Sawgrass**	-/- G4/S2 2B.2	Jun-Sep	Meadows and seeps, marshes. Freshwater or alkaline moist habitat. <2150 m.	None. Suitable habitat is not present in the Study Area.
40.	*Clarkia speciosa* ssp. *immaculata*	**Pismo Clarkia**	FE/CR G4T1/S1 1B.1	May-Jul	Woodland edges, chaparral, disturbed grassland. Openings in sandy soil. < 100 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
41.	*Convolvulus simulans*	**Small-Flowered Morning-Glory**	-/- G4/S4 4.2	Mar-Jul	Annual grassland, coastal-sage scrub, chaparral. Clay substrates, occasionally serpentine. 30-875 m.	None. Suitable habitat (soils) is not present in the Study Area.
42.	*Deinandra increscens* ssp. *villosa*	**Gaviota Tarplant**	FE/CE G4G5T2/S2 1B.1	May-Oct	Coastal bluff scrub, grassland. Sandy blowouts amid sandy loam soil. 30-50 m.	None. No suitable coastal bluff scrub or sandy loam soil habitat. Study Area is outside of subspecies' known ranges. No known records within ten miles.
43.	*Deinandra paniculata*	**Paniculate Tarplant**	-/- G4/S4 4.2	May-Nov	Grassland, open chaparral and woodland. Disturbed areas, often in sandy soils in mesic sites. <1320 m.	Low. Marginal suitable habitat is present in the Study Area and CCH record (RSA699628; 1935) is located ~5 miles to the west.
44.	*Delphinium parryi* ssp. *blochmaniae*	**Dune Larkspur**	-/- G4T2/S2 1B.2	Apr-Jun	Coastal chaparral and dunes. Sandy soils. <200 m.	High. Suitable habitat is present in the Study Area. CNDDB # 23 (1936) located 1.5 miles to the east. Multiple CNDDB occurrences within near vicinity.
45.	*Delphinium parryi* ssp. *eastwoodiae*	**Eastwood's Larkspur**	-/- G4T2/S2 1B.2	Feb-Mar	Coastal chaparral, grassland. In openings on serpentine. 100-500 m.	None. Study Area is generally outside of species range and suitable habitat (soils) is not present.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
46.	*Delphinium umbraculorum*	**Umbrella Larkspur**	-/- G3/S3 1B.3	Apr-Jun	Moist oak forest. Mesic sites. 400-1600 m.	None. Study Area is generally outside of species elevation range and suitable habitat is not present.
47.	*Dithyrea maritima*	**Beach Spectaclepod**	-/CT G1/S1 1B.1	Mar-May	Coastal sand dunes, seashore. Sand. <50 m.	None. Study Area does not contain coastal dune/seashore habitat and is inland of species' known range. The closest extant record (CNDDB#25, 2019), occurs 7 miles west of the Study Area. Study Area is outside of species' elevation range.
48.	*Dudleya abramsii* ssp. *bettinae*	**Betty's Dudleya**	-/- G4T2/S2 1B.2	May-Jul	Coastal scrub, grassland, chaparral. Rocky serpentine outcrops. 50-180 m.	None. Suitable habitat is not present in the Study Area.
49.	*Dudleya abramsii* ssp. *murina*	**Mouse-Gray Dudleya**	-/- G4T2/S2 1B.3	May-Jun	Chaparral, woodland, grassland. Serpentine outcrops. 120-300 m.	None. Suitable habitat is not present in the Study Area.
50.	*Dudleya blochmaniae* ssp. *blochmaniae*	**Blochman's Dudleya**	-/- G3T2/S2 1B.1	Apr-Jun	Coastal scrub, chaparral, grassland. Open, rocky slopes, often serpentine or clay-dominated. <450 m.	None. Suitable habitat is not present in the Study Area.
51.	*Erigeron blochmaniae*	**Blochman's Leafy Daisy**	-/- G2/S2 1B.2	Jun-Aug	Coastal scrub. Sand dunes and hills. <70 m.	None. Study Area is inland of species known range and suitable habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
52.	*Eriodictyon altissimum*	**Indian Knob Mountainbalm**	FE/CE G1/S1 1B.1	Mar-Jun	Maritime chaparral, woodland, coastal scrub. Open sandstone ridges, disturbed areas. <270 m.	None. Study Area does not contain open sandstone ridge habitat and is outside of species' elevation range. No records within 10 miles.
53.	*Eryngium aristulatum* var. *hooveri*	**Hoover's Button-Celery**	-/- G5T1/S1 1B.1	Jun-Aug	Vernal pools, seasonal wetlands. Alkaline depressions, wet ditches. <50 m.	None. Suitable habitat is not present in the Study Area. No records within 10 miles.
54.	*Erysimum suffrutescens*	**Suffrutescent Wallflower**	-/- G3/S3 4.2	Jan-Aug	Stabilized coastal sand dunes, coastal scrub. Coastal dunes and bluffs. <150 m.	Low. Study Area is inland of species known range and marginal suitable habitat present in the Study Area. CCH Record (UCSB041306; 1988) located >5 miles to west.
55.	*Horkelia cuneata* var. *puberula*	**Mesa Horkelia**	-/- G4T1/S1 1B.1	Feb-July	Coastal chaparral, woodland. Dry, sandy or gravelly sites. 70-870 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
56.	*Horkelia cuneata* var. *sericea*	**Kellogg's Horkelia**	-/- G4T1?/S1? 1B.1	Apr-Sep	Coastal scrub and dunes, coniferous forest, chaparral. Old dunes, coastal sandhills, openings in sand. <200 m.	High. Suitable habitat is present in the Study Area. CNDDB # 4 (1969) located 1.8 miles to the west.
57.	*Layia jonesii*	**Jones' Layia**	-/- G2/S2 1B.2	Mar-May	Chaparral, grassland. Clay soils, serpentine outcrops and slopes. <300 m.	None. Suitable habitat (soils) is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
58.	*Lomatium parvifolium*	**Small-Leaved Lomatium**	-/- G4/S4 4.2	Jan-Jun	Coniferous woodland, chaparral, coastal scrub. On serpentine outcrops. 70-150 m.	None. Suitable habitat (soils) is not present in the Study Area.
59.	*Lupinus ludovicianus*	**San Luis Obispo County Lupine**	-/- G1/S1 1B.2	Apr-Jul	Chaparral, woodland. Open, grassy areas, on limestone. 50-500 m.	None. Suitable habitat (soils) is not present in the Study Area.
60.	*Lupinus nipomensis*	**Nipomo Mesa Lupine**	FE/CE G1/S1 1B.1	Dec-May	Coastal dunes with dune scrub. Back stable dunes. <25 m.	None. Study Area is outside of species known range and coastal dune habitat is not present in the Study Area. The nearest presumed extant record (CNDDB#1; 2017) is located 3.9 miles west of the Study Area.
61.	*Malacothamnus gracilis*	**Slender Bush-Mallow**	-/- G1Q/S1 1B.1	May-Oct	Chaparral. Dry, rocky slopes. 250-830 m.	None. Suitable habitat (soils) is not present in the Study Area. Species (perennial shrub) was not observed during surveys.
62.	*Malacothamnus jonesii*	**Jones' Bush-Mallow**	-/- G4/S4 4.3	Mar-Oct	Chaparral, foothill woodland. Open areas. 250-830 m.	None. Species (perennial shrub) was not observed during surveys.
63.	*Malacothrix incana*	**Dunedelion**	-/- G3G4/S3S4 4.3	Apr-Oct	Coastal Dunes. Sand. <35 m.	None. Study Area is inland of species known range and suitable habitat is not present in the Study Area.
64.	*Monardella sinuata* ssp. *sinuata*	**Southern Curly-Leaved Monardella**	-/- G3T2/S2 1B.2	Apr-Sep	Chaparral, woodland, coastal sage scrub and dunes. Sandy soils, coastal strand, dune. <300 m	High. Suitable habitat is present in the Study Area. CNDDB #28 (1948) located 2.7 miles to west.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
65.	*Monardella undulata* ssp. *crispa*	**Crisp Monardella**	-/- G3T2/S2 1B.2	Apr-Aug	Coastal scrub, active dunes. Borders of back dune scrub, sand. < 100 m	None. Study Area is inland of species known range and suitable habitat is not present in the Study Area.
66.	*Monardella undulata* ssp. *undulata*	**San Luis Obispo Monardella**	-/- G2/S2 1B.2	May-Sep	Coastal scrub, stabilized dunes. Stabilized sandy soils. <200 m.	High. Suitable habitat (stabilized sandy soil) is present in the Study Area. A portion of CNDDB #37 (1979) occurs within the Study Area to the south. Additional CCH records in the near vicinity.
67.	*Mucronea californica*	**California Spineflower**	-/- G3/S3 4.2	Mar-Aug	Chaparral, woodland, coastal scrub, grassland. Sandy soil. <1000 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
68.	*Muhlenbergia utilis*	**aparejo grass**	-/- G4/S2S3 2B.2	Oct- Mar	Wet sites along streams and ponds.250-1000 m.	None. Suitable streams and ponds are not present in the Study Area. The closest presumed extant record (CNDDB#9; 1979) occurs 10 miles northeast of the Study Area.
69.	*Nasturtium gambelii*	**Gambel's Water Cress**	FE/CT G1/S1 1B.1	Apr-Oct	Marshes, streambanks. Margins, just above water level. <350 m.	None. Suitable wetland/mesic habitat is not present in the Study Area. The closest extant record (CNDDB#1; 2014) occurs 6.1 miles west of the Study Area.
70.	*Nemacaulis denudata* var. *denudata*	**Coast Woolly-Heads**	-/- G3G4T2/S2 1B.2	Apr-Sep	Beaches, coastal dunes. Sand. <100 m.	None. Study Area is inland of species known range and suitable habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
71.	*Nemacladus secundiflorus* var. *robbinsii*	**Robbins' Nemacladus**	-/- G3T2/S2 1B.2	Apr-Jun	Chaparral, grassland. Dry, gravelly slopes in openings. 350-1700 m.	None. Suitable habitat (soils) is not present in the Study Area. Outside of likely range and no known records exist within 10 miles.
72.	*Orobanche parishii* ssp. *brachyloba*	**Short-Lobed Broomrape**	-/- G4?T4/S3 4.2	Apr-Oct	Coastal bluff scrub, dunes. Near ocean, sandy soils, generally parasitizing *Isocoma menziesii*. <300 m.	None. Study Area is inland of species known range and suitable habitat and known host plants are not present in the Study Area.
73.	*Perideridia pringlei*	**Adobe Yampah**	-/- G4/S4 4.3	Apr-Jul	Chaparral, woodland, coastal scrub. Grassland hillsides, seasonally wet sites, serpentine, clay soil. 300-1800 m.	None. Suitable habitat (soils) is not present in the Study Area. Outside of likely range and no known records exist within 10 miles.
74.	*Piperia michaelii*	**Michael's Rein-Orchid**	-/- G3/S3 4.2	Apr-Aug	Coastal scrub, woodland, chaparral. Generally on dry sites. <700 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
75.	*Prunus fasciculata* var. *punctata*	**Sand Almond**	-/- G5T4/S4 4.3	Mar-Apr	Coastal scrub, chaparral, woodland. Sandy flats. <200 m.	**Present**. Suitable habitat is present in the Study Area and species was observed during surveys.
76.	*Sanicula hoffmannii*	**Hoffmann's Sanicle**	-/- G3/S3 4.3	Mar-May	Broadleafed upland forest, lower montane coniferous forest, coastal scrub, chaparral. Slopes with moist, shaded serpentine or clay soils. <500 m.	None. Suitable habitat is not present in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CA Rare Plant Rank	Blooming Period	Habitat Preference	Potential to Occur
77.	*Scrophularia atrata*	**Black-Flowered Figwort**	-/- G2?/S2? 1B.2	Mar-Jul	Coniferous forest, chaparral, coastal scrub, riparian scrub. Sand, calcium-diatom-rich soils, around swales. <400 m.	High. Suitable sandy coastal habitats are present in the Study Area. CNDDB #63 (2005) located 2.75 miles to north west.
78.	*Senecio aphanactis*	**Chaparral Ragwort**	-/- G3/S2 2B.2	Jan-May	Chaparral, woodland, and coastal scrub. Drying alkaline flats, dry open rocky areas. 10-550 m.	None. Suitable habitat (soils) is not present in the Study Area with no nearby records.
79.	*Senecio astephanus*	**San Gabriel Ragwort**	-/- G3/S3 4.3	May-Jul	Chaparral, coastal-sage scrub, oak woodland. Steep rocky slopes. 400-1500 m.	None. Suitable habitat (soils) is not present in the Study Area and outside of likely range.
80.	*Senecio blochmaniae*	**Blochman's Ragwort**	-/- G3/S3 4.2	May-Oct	Coastal sand dunes, sandy floodplains. <150 m.	None. Species (perennial shrub) was not detected during surveys. Study Area is slightly inland of known range.
81.	*Solidago guiradonis*	**Guirado's Goldenrod**	-/- G3/S3 4.3	Sep-Oct	Woodland, grassland. Perennial stream banks and seeps, serpentine. 600-900 m.	None. Suitable habitat is not present in the Study Area. Outside of likely range.
82.	*Symphyotrichum defoliatum*	**San Bernardino Aster**	-/- G2/S2 1B.2	Jul-Nov	Meadows, seeps, coastal scrub, grassland, woodland. Vernally mesic grassland near ditches, streams and springs; disturbed places. <2050 m.	None. Suitable habitat is not present in the Study Area.

California Geographic Subregion Abbreviations:

CCo: Central Coast
SCo: South Coast
SnFrB: San Francisco Bay
TR: Transverse Ranges
SLO: San Luis Obispo
SN: Sierra Nevada
CW: Central West
SW: South West

SCoR: South Coast Ranges
SCoRO: Outer South Coast Ranges
SCoRI: Inner South Coast Ranges
WTR: Western Transverse Ranges
SnJV: San Joaquin Valley
ScV: Sacramento Valley
SnJt: San Jacinto Mtns
SnBr: San Bernardino
Teh: Tehachapi Mtn Area
DMoj: Mojave Desert
PR: Peninsular Range

State/Rank Abbreviations:

FE: Federally Endangered
FT: Federally Threatened
PE: Proposed Federally Endangered
PT: Proposed Federally Threatened
CE: California Endangered
CR: California Rare
CT: California Threatened
CCE: Candidate for California Endangered
CCT: Candidate for California Threatened

California Rare Plant Ranks:

CRPR 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A: Plants presumed extirpated in California, but common elsewhere
CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 4: Plants of limited distribution - a watch list

CRPR Threat Ranks:

0.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2 - Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3 - Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Global/State Ranks

G1/S1 – Critically Imperiled
G2/S2 – Imperiled
G3/S3 – Vulnerable
G4/S4 – Apparently Secure
G5/S5 – Secure

Q – Element is very rare but there are taxonomic questions associated with it.
Range rank – (e.g., S2S3 means rank is somewhere between S2 and S3)
? – (e.g., S2? Means rank is more certain than S2S3 but less certain that S2)

APPENDIX D. SPECIAL STATUS ANIMALS REPORTED FROM THE REGION

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	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
1.	*Ablautus schlingeri*	**Oso Flaco Robber Fly**	-/- G1/S1 SA	Sand dunes.	No. Suitable habitat is not available in the Study Area.
2.	*Accipiter cooperii*	**Cooper's Hawk***	-/- G5/S4 WL	Oak woodland, riparian, open fields, Nests in dense trees, especially coast live oak	Present. This species was observed during 2020 surveys foraging in the coast live oak woodland habitat.
3.	*Accipiter striatus*	**Sharp-Shinned Hawk**	-/- G5/S4 WL	Riparian, coniferous, and deciduous woodlands near water.	Moderate. Suitable prey (passerines) is available in the Study Area.
4.	*Agelaius tricolor*	**Tricolored Blackbird**	-/CT G2G3/S1S2 SSC	Requires open water, protected nesting substrate, & foraging area with insect prey near nesting colony.	No. No suitable nesting habitat in the Study Area, but foraging habitat is present.
5.	*Ambystoma californiense*	**California Tiger Salamander**	FT/CT G2G3/S2S3 WL	Need underground refuges, ground squirrel burrows & vernal pools or other seasonal water for breeding.	No. Suitable habitat is not available in the Study Area.
6.	*Anniella pulchra*	**Northern California Legless Lizard**	-/- G3/S3 SSC	Sandy or loose loamy soils under coastal scrub or oak trees. Soil moisture essential.	High. Suitable habitat is available in the Study Area.
7.	*Areniscythris brachypteris*	**Oso Flaco Flightless Moth**	-/- G1/S1 SA	Open, coastal sand dune slopes in San Luis Obispo County.	No. Suitable habitat is not available in the Study Area.
8.	*Antrozus pallidus*	**Pallid Bat***	-/- G5/S3	Rock crevices, caves, tree hollows, mines, old buildings, and bridges.	Present. Limited roosting habitat (no structures and few tree cavities) in the Study

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
			SSC		Area. Vocalizations detected during 2020 acoutic surveys.
9.	*Athene cunicularia*	**Burrowing Owl**	-/- G4/S3 SSC	Burrows in squirrel holes in open habitats with low vegetation.	Low. Suitable habitat (grazed grassland and squirrel burrows) available in the Study Area.
10.	*Atractelmis wawona*	**Wawona Riffle Beetle**	-/- G1G3/S1S2 SA	Strong preference for inhabiting submerged aquatic mosses	No. Suitable aquatic habitat is not available in the Study Area. Closest records is located 16 miles northwest of the Study Area (CNDDB #60).
11.	*Baeolophus inornatus*	**Oak titmouse***	-/- G4/S4 BCC: WL (nesting)	Nests in cavities in oak woodland habitat. Non-migratory.	Present. Numerous oak titmice were observed during 2017, 2018, and 2020 surveys.
12.	*Bombus caliginosus*	**Obscure Bumble Bee**	-/- G4?/S1S2 SA	Open coastal grasslands and meadows. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Low. Habitat and nectar sources potentially suitable. Sensitive invertebrate surveys provided negeative results for this species.
13.	*Bombus occidentalis*	**Western Bumble Bee**	-/CCE G2G3/S1 SA	Wide variety of natural, agricultural, urban, and rural habitats. Flower-rich meadows of forests and subalpine zones.	Low. Suitable habitat is available in the Study Area. Closest known historical occurrence is located 14 miles northwest (CNDDB #279). Focused sensitive invertebrate surveys provided negative results for this species.
14.	*Branchinecta lynchi*	**Vernal Pool Fairy Shrimp**	FT/- G3/S3 SA	Clear water sandstone depression pools, grassed swale, earth slump, or basalt flow depression pools.	No. Suitable habitat is not available in the Study Area.
15.	*Buteo swainsoni*	**Swainson's Hawk**	-/CT G5/S3 SA	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, agricultural fields.	No. Suitable nesting habitat is available in the Study Area, but breeding population in transverse ranges extirpated.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
16.	*Charadrius alexandrinus nivosus*	**Western Snowy Plover**	FT/- G3T3/S2S3 SSC	Sandy beaches, salt pond levees, & shorelines of large alkali lakes. Needs friable soils for nesting.	No. Suitable habitat is not available in the Study Area.
17.	*Chlosyne leanira elegans*	**Oso Flaco Patch Butterfly**	-/- G4G5T1T2/S1S2 SA	Sand dune habitat around Oso Flaco Lake, SLO County. Larval food plant is Castilleja affinis.	No. Suitable habitat is not available in the Study Area.
18.	*Cicindela hirticollis gravida*	**Sandy Beach Tiger Beetle**	-/- G5T2/S2 SA	Adjacent to non-brackish water near the coast from San Francisco to N. Mexico. Clean, dry, light-colored sand in the upper zone.	No. Suitable habitat is not available in the Study Area.
19.	*Coccyzus americanus occidentalis*	**Western Yellow-Billed Cuckoo**	FT/CE G5T2T3/S1 SA	Nests in riparian jungles of willow, cottonwood, w/ blackberry, nettles, or wild grape understory. Typically found in larger river systems.	No. Suitable habitat is not available in the Study Area.
20.	*Coelus globosus*	**Globose Dune Beetle**	-/- G1G2/S1S2 SA	Coastal sand dune habitat. Inhabits foredunes and sand hummocks.	No. Suitable habitat is not available in the Study Area.
21.	*Corynorhinus townsendii*	**Townsend's Big-Eared Bat**	-/- G3G4/S2 SSC	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	No. Suitable habitat is not available in the Study Area.
22.	*Danaus plexippus pop. 1*	**Monarch - California Overwintering Population**	-/- G4T2T3/S2S3 SA	Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Low. Suitable habitat is not available in the Study Area, eucalyptus adjacent to property may be suitable.
23.	*Elanus leucurus*	**White-Tailed Kite**	-/- G5/S3S4 FP	Nests in dense tree canopy near open foraging areas	Low. Suitable nesting and foraging habitat is available in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
24.	*Emys marmorata*	**Western Pond Turtle**	-/- G3G4/S3 SSC	Permanent or semi-permanent streams, ponds, lakes.	No. Suitable habitat is not available in the Study Area.
25.	*Eucyclogobius newberryi*	**Tidewater Goby**	FE/- G3/S3 SSC	Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	No. Suitable habitat is not available in the Study Area.
26.	*Falco mexicanus*	**Prairie Falcon**	-/- G5/S4 WL	Inhabits dry, open terrain. Nests on cliffs near open areas for hunting.	No. No suitable nesting habitat in the Study Area, but foraging habitat is present.
27.	*Falco peregrinus anatum*	**American Peregrine Falcon**	FD/CD G4T4/S3S4 FP	Nests on cliffs, banks, dunes, mounds, and human-made structures, especially near water.	No. Suitable habitat is not available in the Study Area.
28.	*Gila orcuttii*	**Arroyo Chub**	-/- G2/S2 SSC	Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	No. Suitable habitat is not available in the Study Area.
29.	*Gymnogyps californianus*	**California Condor**	FE/CE G1/S1 FP	Deep canyons containing clefts in the rocky walls provide nesting sites. Forages up to 100 miles from roost/nest.	No. Suitable habitat is not available in the Study Area.
30.	*Lasiurnus noctiyagans*	**Silver-haired Bat***	-/- G3G4/S3S4 SSC	Coastal and montane forests, often feeds over water. Roosts in hollow trees, loose bark, woodpecker cavities, rarely in rocks.	Present. Suitable roosting and foraging habitat is available in the Study Area. Vocalizations detected during 2020 acoustic surveys.
31.	*Lasiurus blossevillii*	**Western Red Bat***	-/- G5/S3 SSC	Roosts primarily in trees, from sea level up through mixed conifer forests.	High. Suitable habitat is available in the Study Area. Not detected during 2020 acoustic surveys.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
32.	*Lasiurus cinereus*	**Hoary Bat***	-/- G5/S5 SA	Forages in open habitats or habitat mosaics with trees. Roosts in dense foliage of medium to large trees. Feeds on moths. Requires water.	Present. Suitable habitat is available in the Study Area. Vocalizations detected during 2020 acoustic surveys.
33.	*Laterallus jamaicensis coturniculus*	**California Black Rail**	-/CT G3G4T1/S1 FP	Occurs in tidal salt marsh heavily grown to pickleweed, also in freshwater and brackish marshes near the coast.	No. Suitable habitat is not available in the Study Area.
34.	*Lichnanthe albipilosa*	**White Sand Bear Scarab Beetle**	-/- G1/S1 SA	Found only in coastal sand dunes of SLO County, near Dune Lake, some distance from the surf.	No. Suitable habitat is not available in the Study Area.
35.	*Myotis yumanensis*	**Yuma Myotis***	-/- G5/S5 SA	Caves, mines, buildings, tree cavities, rock crevices, or under bridges. Feeds near open water	Present. Suitable habitat is available in the Study Area. Vocalizations detected during 2020 acoustic surveys.
36.	*Oncorhynchus mykiss irideus pop. 9*	**Steelhead - South-Central California Coast Dps**	FT/- G5T2Q/S2 SA	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	No. Suitable habitat is not available in the Study Area.
37.	*Phrynosoma blainvillii*	**Coast Horned Lizard**	-/- G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes.	Present. Two observations; suitable habitat is available in the Study Area.
38.	*Picoides nuttallii*	**Nuttall's Woodpecker***	-/- G4G5/ BCC	Oak, riparian woodlands	Present. Nuttall's woodpecker is a year-round resident of oak woodland habitat onsite and was observed during 2017, 2018, 2019, and 2020 surveys.
39.	*Plebejus icarioides moroensis*	**Morro Bay Blue Butterfly**	-/- G5T2/S2 SA	Inhabits stabilized dunes and surrounding areas in coastal SLO County (Morro Bay) and nw SB	No. Suitable habitat is not available in the Study Area.

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
				County. Dependent on dune lupine (Lupinus chamissonis).	
40.	*Rana boylii*	**Foothill Yellow-Legged Frog**	-/CCT G3/S3 SSC	Partly shaded, shallow streams and riffles with rocky substrate. Min. 15 weeks for larval development.	No. Suitable breeding and upland habitat is not available in the Study Area. Closest records is historic, approximately 7 miles north (CNDDB #2422).
41.	*Rana draytonii*	**California Red-Legged Frog**	FT/- G2G3/S2S3 SSC	Lowlands and foothills in or near sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks for larval development.	No. Suitable habitat is not available in the Study Area.
42.	*Spea hammondii*	**Western Spadefoot**	-/- G3/S3 SSC	Vernal pools in grassland and woodland habitats	No. Suitable habitat is not available in the Study Area.
43.	*Spinus lawrencei*	**Lawrence's goldfinch (Nesting)****	-/- G3G4/S3/S4 SA,BCC	Arid and open woodlands within near vicinity of chaparral or other brushy areas; tall annual weed fields; and a water source such as a stream, small lake, or farm pond. Live oaks (Quercus spp.) and blue oaks (Q. douglasii) are predominant trees where this species nests (Linsdale 1950, Coutlee 1968a)	Low. Marginally suitable nesting habitat is present in the oak woodland habitat onsite. This species is absent from Ebird records from nearby Nipomo Regional Park 2018-2020. Ebird range distribution map shows species' range in lower densities in coastal lowland areas. There are CNDDB records for this species, but not within the 8-quad search.
44.	*Sternula antillarum browni*	**California Least Tern**	FE/CE G4T2T3Q/S2 FP	Nests on sand beaches, alkali flats, bare flat ground from San Francisco Bay to N. Baja California. Colonial breeder.	No. Suitable habitat is not available in the Study Area.
45.	*Strix occidentalis occidentalis*	**California Spotted Owl**	-/- G3G4T2T3/S3 SSC	Most often found in deep-shaded canyons, on north-facing slopes, and within 300 meters of water.	No. Habitat unsuitable in the Study Area. Closest record is from 1974 and is located 6 miles northeast (CNDDB #97567).

	Scientific Name	Common Name	Federal/State Status Global/State Rank CDFW Status	Habitat Preference	Potential to Occur
46.	*Taricha torosa*	**Coast Range Newt**	-/- G4/S4 SSC	Lives in terrestrial habitats & will migrate over 1 km to breed in ponds, reservoirs & slow moving streams.	No. Suitable habitat is not available in the Study Area.
47.	*Taxidea taxus*	**American Badger**	-/- G5/S3 SSC	Needs friable soils in open ground with abundant food source such as California ground squirrels.	Present. Several dens observed; suitable grassland habitat and ground squirrels in the Study Area.
48.	*Thamnophis hammondii*	**Two-Striped Gartersnake**	-/- G4/S3S4 SSC	Coastal California from Salinas to Baja, sea level to 7000', aquatic, in or near permanent water, streams with rocky beds and riparian growth	No. Suitable habitat is not available in the Study Area.
49.	*Tryonia imitator*	**Mimic Tryonia (=California Brackishwater Snail)**	-/- G2/S2 SA	Inhabits coastal lagoons, estuaries, salt marshes from Sonoma to San Diego Counties.	No. Suitable habitat is not available in the Study Area.

Habitat characteristics are from the Jepson Manual and CNDDB.
*not listed in CNDDB or for the search area, but possibly for the location.
** not listed in CNDDB for the search area, but listed in IPaC..

Federal and State Status Abbreviations:

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PT: Proposed Federally Threatened
CE: California Endangered
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CCE: Candidate for California Endangered
CCT: Candidate for California Threatened

California Department of Fish and Wildlife Rank:

WL: Watch Lis
SSC: Species of Special Concern
FP: Fully Protected
SA: Special Animal

Global/State Ranks:

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G2/S2 – Imperiled
G3/S3 – Vulnerable
G4/S4 – Apparently Secure
G5/S5 – Secure
Q – Element is very rare but there are taxonomic questions associated with it.
Range rank – (e.g., S2S3 means rank is somewhere between S2 and S3)
? – (e.g., S2? Means rank is more certain than S2S3 but less certain that S2)

APPENDIX E. USFWS IPAC RESOURCES LIST

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

San Luis Obispo County, California

Local office

Ventura Fish And Wildlife Office

(805) 644-1766
(805) 644-3958

2493 Portola Road, Suite B
Ventura, CA 93003-7726

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Giant Kangaroo Rat Dipodomys ingens — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6051

Birds

NAME	STATUS

California Clapper Rail Rallus longirostris obsoletus — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4240

California Condor Gymnogyps californianus — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/8193

California Least Tern Sterna antillarum browni — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8104

Least Bell's Vireo Vireo bellii pusillus — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/5945

Marbled Murrelet Brachyramphus marmoratus — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/4467

Southwestern Willow Flycatcher Empidonax traillii extimus — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6749

Western Snowy Plover Charadrius nivosus nivosus — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/8035

Reptiles

NAME	STATUS

Blunt-nosed Leopard Lizard Gambelia silus — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/625

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Kern Primrose Sphinx Moth Euproserpinus euterpe There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/7881	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
California Jewelflower Caulanthus californicus No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4599	Endangered

Gambel's Watercress Rorippa gambellii — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4201

La Graciosa Thistle Cirsium loncholepis — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6547

Marsh Sandwort Arenaria paludicola — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2229

Nipomo Mesa Lupine Lupinus nipomensis — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5480

Pismo Clarkia Clarkia speciosa ssp. immaculata — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5936

Salt Marsh Bird's-beak Cordylanthus maritimus ssp. maritimus — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6447

Spreading Navarretia Navarretia fossalis — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/1334

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Allen's Hummingbird Selasphorus sasin — Breeds Feb 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9637

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

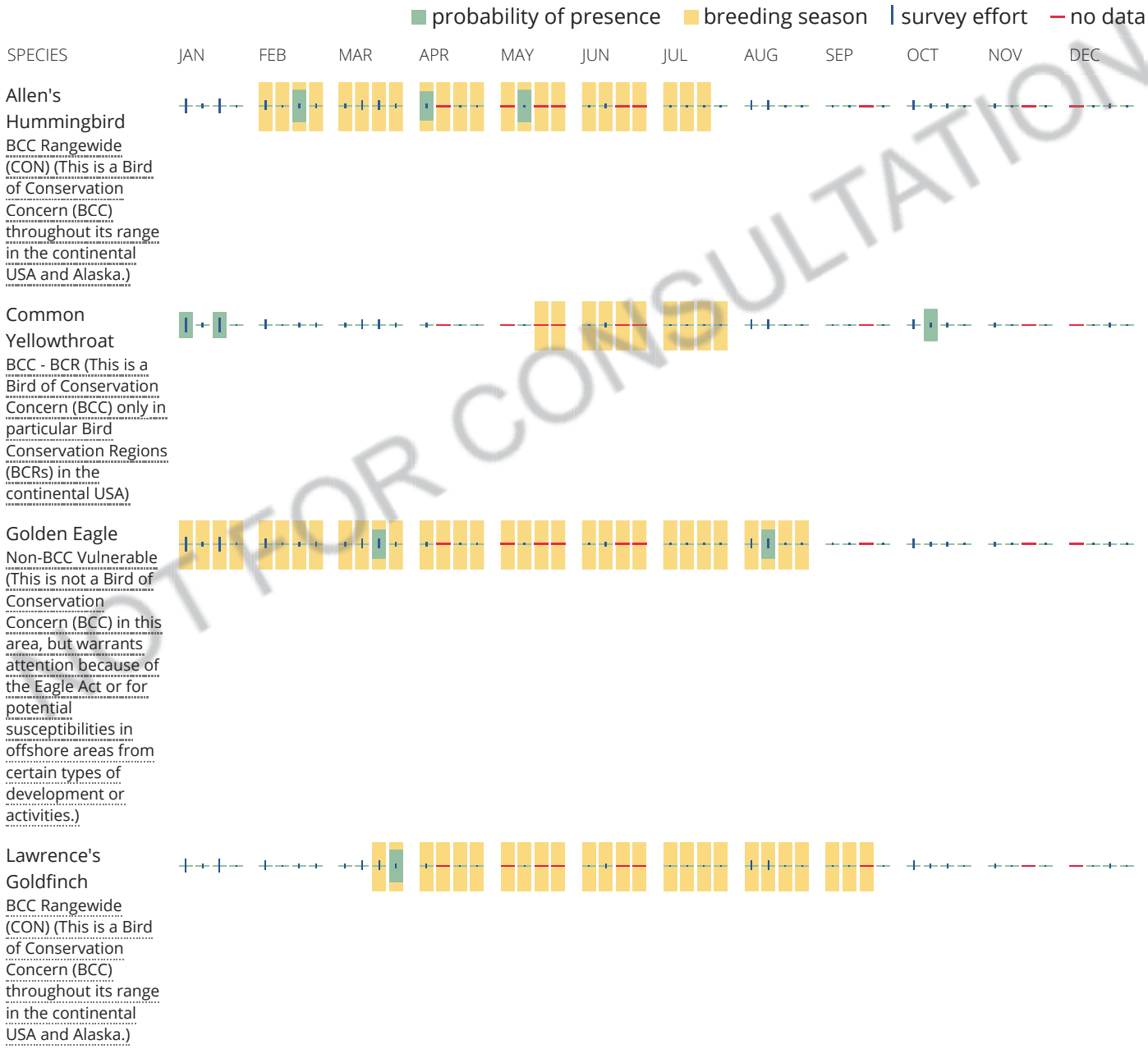
Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

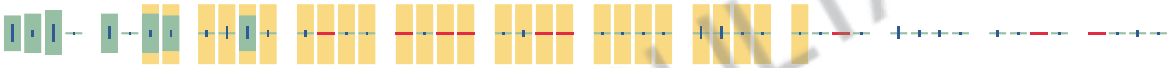


Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

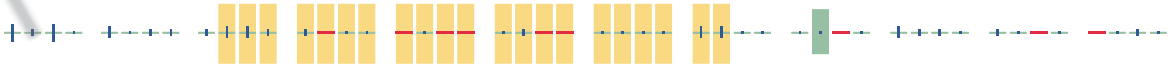
Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Tricolored Blackbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and

avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird

impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX F. DANA RESERVE HISTORICAL AERIAL IMAGERY

Google Earth imagery indicates that the grassland west of Highway 101 was last farmed in about 2002, or possibly 2006. Aerial imagery from UC Santa Barbara's geography library and Google Earth imagery indicates that farming, mowing, and chaparral (brush) removal appears to have been conducted for decades.

The 1939 oldest image shows evidence of brush clearing on rolling topography and farmed fields on flatter terrain. The 1949 image indicates some of the brush cover and associated coast live oaks were starting to grow back. Some brush clearing is evidenced in 1957. The 1969 to 1994 aerials show chaparral cover generally increasing in areas not actively farmed. Between 1994 and 2002, shrub reduction appears to have reduced brush cover while retaining young trees barely visible in the 1994 imagery. The 2002 and subsequent years aerial images show reduced brush cover. Livestock pens are visible in 2011 to 2013 aerial imagery.

Google Earth Imagery:

2021 February 6
2018 August 11
2018 February 3
2017 June 15
2016 July 13
2015 January 5
2013 April 18
2012 May 18
2011 May 30
2010 April 24
2009 May 24
2007 June 30
2006 June 25
2006 April 27
2004 December 31
2004 June 30
2003 July 29
2002 May 10
1994 September 14

U.C. Santa Barbara's Geography Library:

1978 September 23 (UCSB file name: usda-40-06079_278-81_1978)
1969 June 29 (UCSB file name: axh-1969_2kk-205)
1960 July 12 (UCSB file name: ha-jg_l1)
1957 September 11 (AXH-26R-28 on photo; UCSB file name: axh-1956_26r-28)
1949 March 28 (USCB file name: axh-2949_2f-95)
1939 May 2 (UCSB file name: axh-1939-army_101-4)

2021 February 6 - Google Earth Imagery

2018 August 11 - Google Earth Imagery

2018 February 3 - Google Earth Imagery

2017 June 15 - Google Earth Imagery

2016 July 13 - Google Earth Imagery

2015 January 5 - Google Earth Imagery

2013 April 18 - Google Earth Imagery

2012 May 18 - Google Earth Imagery

2011 May 30 - Google Earth Imagery

2010 April 24 - Google Earth Imagery

2009 May 24 - Google Earth Imagery

2007 June 30 - Google Earth Imagery

2006 June 25 - Google Earth Imagery

2006 April 27 - Google Earth Imagery

2004 December 31 - Google Earth Imagery

2004 June 30 - Google Earth Imagery

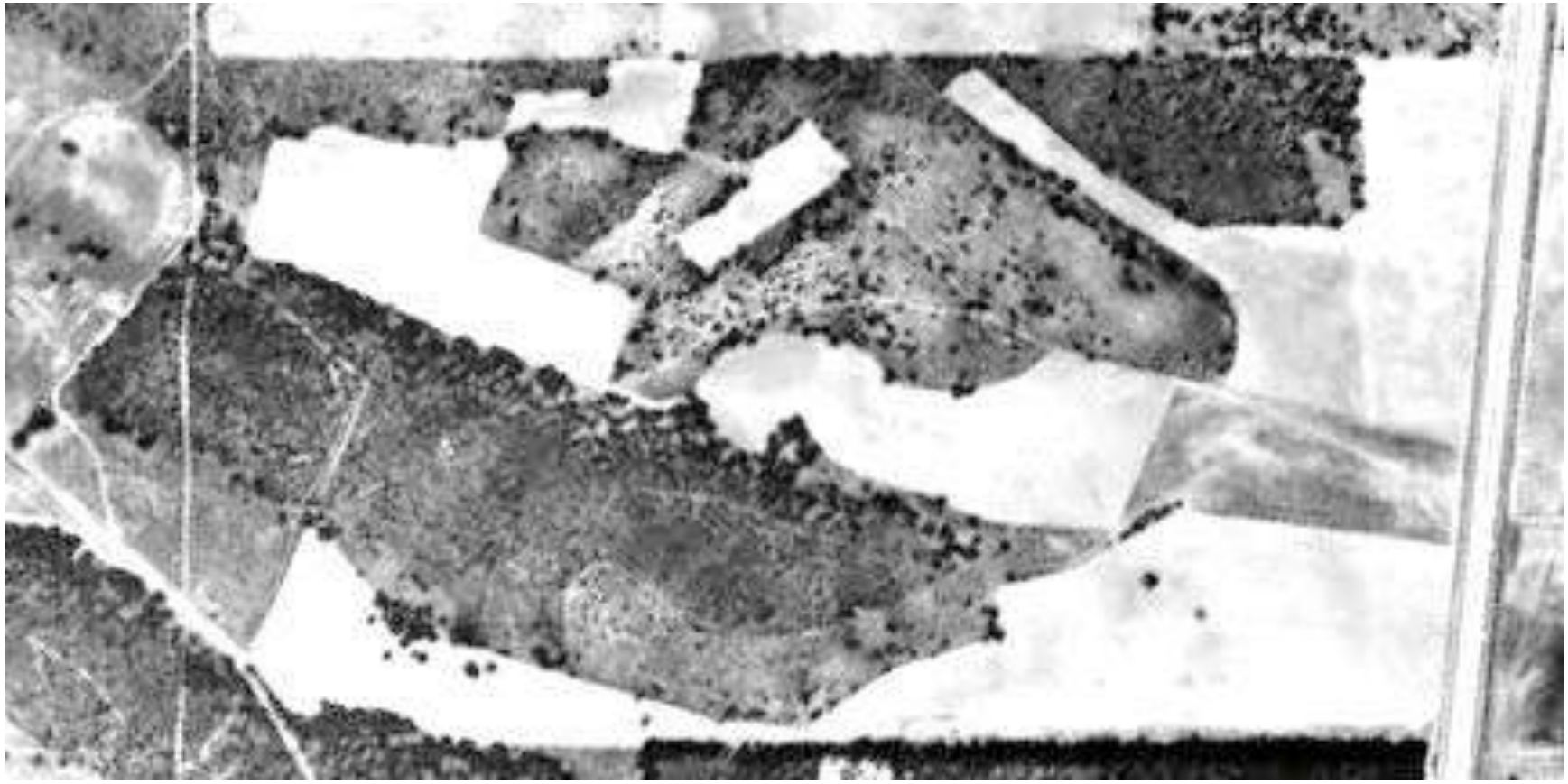
2003 July 29 - Google Earth Imagery

2002 May 10 - Google Earth Imagery

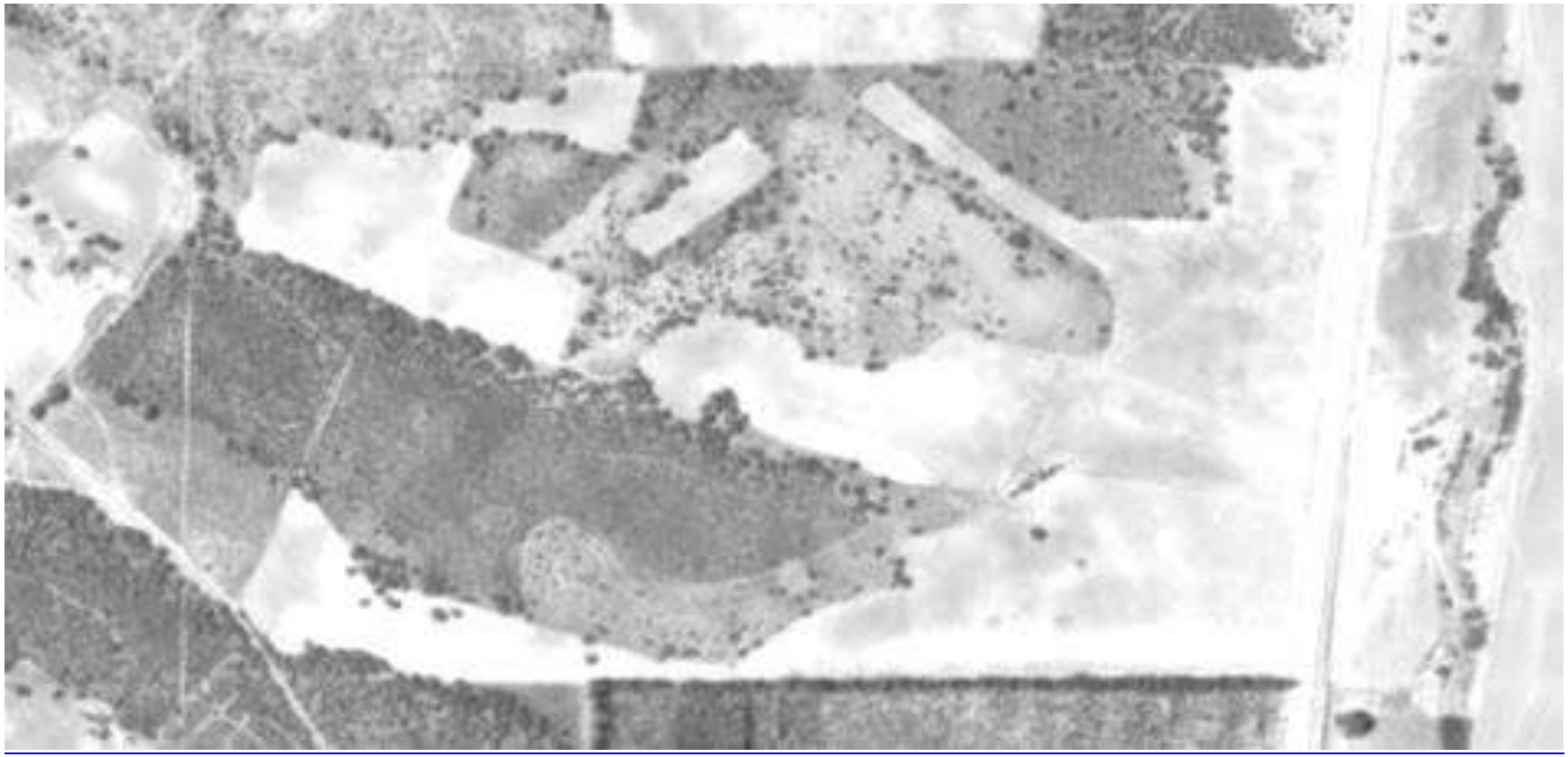
1994 September 14 - Google Earth Imagery

1978 September 23 - UC Santa Barbara Imagery Library
UCSB file name usda-40-06079 278-81 1978

1969 June 29 - UC Santa Barbara Imagery Library
UCSB file name axh-1969 2kk-205



1960 July 12 - UC Santa Barbara Imagery Library
UCSB file name ha-jg 11



1957 September 11 - UC Santa Barbara Imagery Library
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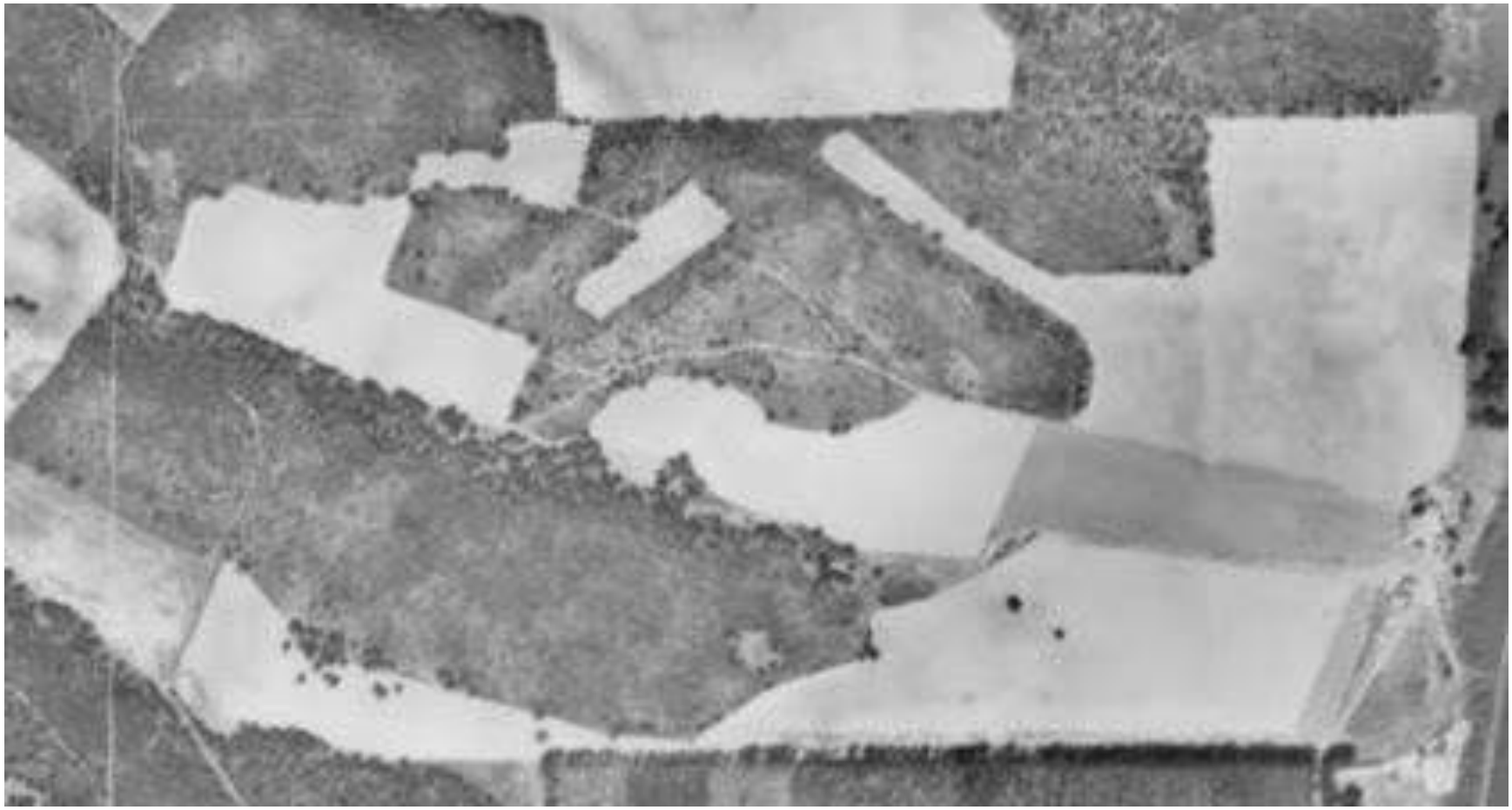

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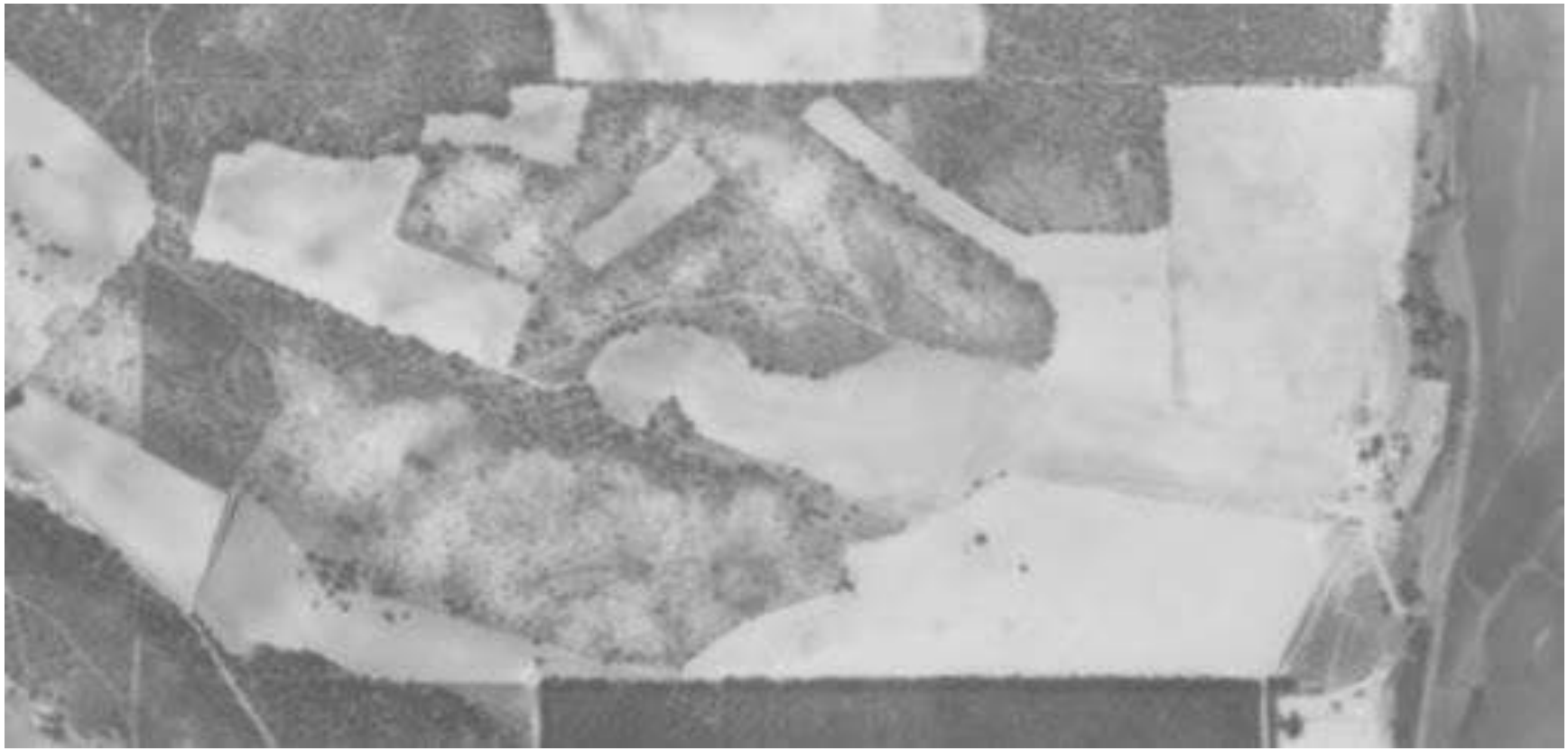
USCB file name axh-2949 2f-95



1939 May 2 - UC Santa Barbara Imagery Library
UCSB file name axh-1939-army 101-4

APPENDIX G. HABITAT DESCRIPTIONS FOR DANA RIDGE RANCH

APPENDIX G. HABITAT DESCRIPTIONS FOR DANA RIDGE RANCH

Dana Ridge Ranch is located 6.25 miles northeast of Dana Reserve (Figure 1, Figure 2). The property contains proposed offsite mitigation for oak habitats and individual trees. The 396-acre parcel contains 187.0 acres of coast live oak woodland, 67.5 acres of coast live oak forest, 95.9 acres of chamise chaparral, 19.2 acres of La Panza manzanita chaparral, and 26.4 acres of annual grassland (Figure 3). Elevations vary from 678 feet above sea level near Upper Los Berros Road to 1490 feet on a peak dominated by a rare manzanita (Figure 4). Plant and animal lists are provided after the figures.

1. Coast Live Oak Woodland

Coast live oak woodland habitat (*Quercus agrifolia* / *Adenostoma fasciculatum – Salvia mellifera* Alliance G3/S3) comprises approximately 187.0 acres and is the most common habitat on the Dana Ridge Ranch. Within the Study Area it occurs on a variety of slope aspects. Tree canopy is a mixture of open to closed and coast live oak comprises between 20-50 percent of tree canopy cover (Sawyer 2009). More open oak woodland areas are dominated by chaparral species in the canopy openings, particularly chamise (*Adenostoma fasciculatum*), but also black sage (*Salvia mellifera*), and, in certain areas, La Panza Manzanita (*Arctostaphylos pilosula*), a rare endemic shrub (Photo 1). While coast live oak woodland habitat on Dana Ridge Ranch does not support many of the rare species associated with Dana Reserve, it does provide undisturbed *Quercus agrifolia* / *Adenostoma fasciculatum – Salvia mellifera* habitat with the dominant species being found in both locations. Coast live oak woodland habitat also provides a contiguous wildlife corridor and suitable nesting habitat is present for many songbirds and raptors. Photo 1 shows open canopy coast live oak woodland habitat with adjacent chamise chaparral.

Photo 1. Open oak woodland habitat with chamise in openings, view north. April 22, 2021.

2. Coast Live Oak Forest

Coast live oak forest habitat (*Quercus agrifolia* / *Toxicodendron diversilobum* Alliance G5/S4) comprises approximately 67.5 acres and is the third most common habitat on the Dana Ridge Ranch. Within the Study Area it occurs on lower north facing slopes and is associated with several ephemeral drainages. Coast live oak tree canopy is generally contiguous (closed canopy) and provides more than 50 percent average cover in the tree canopy (Sawyer 2009; Photo 2). The understory in closed canopy areas is frequently dominated by poison oak (*Toxicodendron diversilobum*), coffeeberry (*Frangula californica*), snowberry (*Symphoricarpos mollis*), and a variety of herbaceous species (Photo 2). Coast live oak forest on Dana Ridge Ranch provides undisturbed oak habitat and shares many of its dominant shrub species with Dana Reserve. Coast live oak woodland provides relatively undisturbed wildlife habitat as well as a contiguous wildlife corridor. Suitable nesting habitat is present on the Dana Ridge Ranch for many songbirds and raptors. Photo 1 shows closed canopy in oak woodland.

Photo 2. Closed canopy oak woodland habitat with poison oak understory, view west. April 22, 2021.

3. Chamise Chaparral

Chamise chaparral habitat (*Adenostoma fasciculatum* Shrubland Alliance) comprises approximately 95.9 acres and is the second most common habitat on the Dana Ridge Ranch. It occurs across variable topography including mild to steep slopes. Chamise (*Adenostoma fasciculatum*) is the dominant shrub, with over 50 percent relative cover (Sawyer 2009, Photo 3). Shrub canopy is intermittent to continuous with scattered coast live oak trees. Associated species include coast live oak, black sage *(Salvia melifera),* La Panza manzanita (*Arctostaphylos pilosula*), toyon, poison oak, holly-leaf cherry (*Prunus ilicifolia*), and sticky monkey flower (*Diplacus aurantiacus*). The understory is frequently dominated by poison oak as well as herbaceous annuals and grasses.

La Panza manzanita is a special status species (California Rare Plant Rank 1B.2) that occurs as a frequent associate in the chamise chaparral of Dana Ridge Ranch, distributed across approximately 54 acres of chaparral habitat (Figure 4). This manzanita is known only from San Luis Obispo County and from one occurrence in southern Monterey County.

Chamise chaparral habitat on Dana Ridge Ranch provides relatively undisturbed high-quality wildlife habitat as well as a contiguous wildlife corridor.

Photo 3. Chamise chaparral habitat, view east. July 16, 2020.

4. La Pan□a Man□anita Chaparral Scrub □Provisional Alliance□

La Panza Manzanita Chaparral Scrub (*Arctostaphylo*s *pilosula* Provisional Shrubland Alliance) comprises approximately 19.2 acres on the Dana Ridge Ranch in south-central portions of the ranch. It occurs on variable topography with mild to moderate slopes. Within this shrubland community type, La Panza Manzanita is the dominant shrub, comprising over 75 percent relative cover with scattered patches of exposed soil or rock (Photo 4). This community type occurs on shale soils with leaf litter comprising most of the understory and generally has low species diversity. The few associate species observed included scattered bush poppy (*Dendromecon rigida*) and chamise. This habitat type does not conform to a described vegetation alliance (Sawyer 2009) and consequently is being suggested as a provisional alliance for the purposes of this habitat description.

The dominant species within this community type, La Panza manzanita, is a special status plant species with a CRPR of 1B.2 and although this habitat is not currently recognized as a CDFW Sensitive community, it may warrant consideration. La Panza manzanita chaparral on the Dana Ridge Ranch provides minimally disturbed high-quality wildlife habitat as well as a contiguous wildlife corridor. La Panza manzanita was beginning to set fruit in early April 2020 (Photo 5).

Photo 4. La Panza Manzanita Chaparral Habitat, view north. July 16, 2020.

Photo 5. La Panza manzanita beginning to set fruit. April 3, 2020

5. Annual Grassland

Annual grassland comprises approximately 26.4 acres within the southeastern (Photo 6) and north-central portions (Photo 7) of the Dana Ridge Ranch. The southeastern grassland is dominated by a mixture of non-native annual grasses (*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance) while the north-central portion contains an assemblage of both non-native annual grasses and a diversity of native herbaceous species. Associates in the annual grassland habitat include wild oats (*Avena barbata*), ripgut brome (*Bromus diandrus*), red brome (*Bromus rubens*), purple needle grass (*Stipa pulchra*), coast tarweed (*Madia sativa*), purple clarkia (*Clarkia purpurea*), fiddleneck species (*Amsinckia retrorsa* and *Amsinckia intermedia*), and cream cups (*Platystemon californicus*). Annual grassland occurs over variable topography with flat to steep slopes within the Study Area. A patch of paniculate tarweed (*Deinandra paniculata*), a CRPR 4.2 plant, occurs on disturbed dirt roadsides in the southern portion. Annual grassland provides nesting and foraging habitat for a variety of wildlife.

Photo 6. Annual grassland habitat on the south side of the property, view northwest. July 16, 2020.

Photo 7. Annual grassland habitat on north side of the property, view northeast. April 3, 2020.

DANA RIDGE RANCH FIGURES

- **Figure 1. Dana Ridge Ranch Vicinity Map**
- **Figure 2. Dana Ridge Ranch Aerial**
- **Figure 3. Dana Ridge Ranch Habitats**
- **Figure 4. La Pan□a Man□anita Extent**

Figure 1. Dana Ridge Ranch Vicinity Map

Dana Reserve

Dana Ridge Ranch

N

0 0.5 1 Mile

Dana Ridge Ranch
Map Center: 120.47069°W 35.05858°N
Nipomo, San Luis Obispo County

Imagery Date: July 2018

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
August 03, 2020 11:48 AM by JBB

Figure 2. Dana Ridge Ranch Aerial

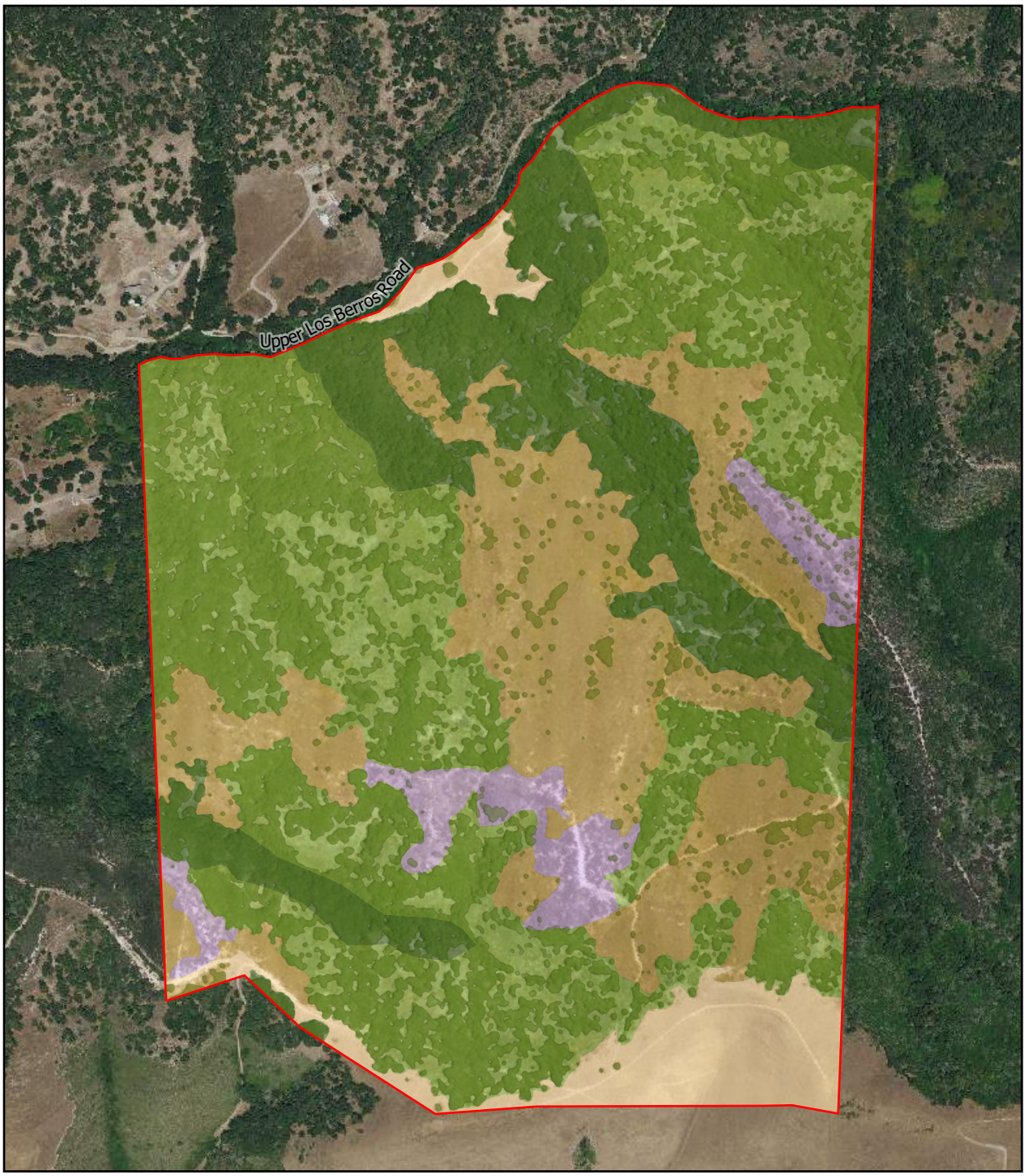
Parcel Boundary

0 500 1,000 Feet

Dana Ridge Ranch
Map Center: 120.43844°W 35.07224°N
Nipomo, San Luis Obispo County

Imagery Date: 07/16/2020

Figure 3. Dana Ridge Ranch Habitats



Legend

- Property Boundary (396.1 ac)
- Coast Live Oak Canopy (176.0 ac)

Habitats

- Coast Live Oak Woodland (187.0 ac)
- Coast Live Oak Forest (67.5 ac)
- La Panza Manzanita Chaparral (19.2 ac)
- Chamise Chaparral (95.9 ac)
- Annual Grassland (26.4 ac)

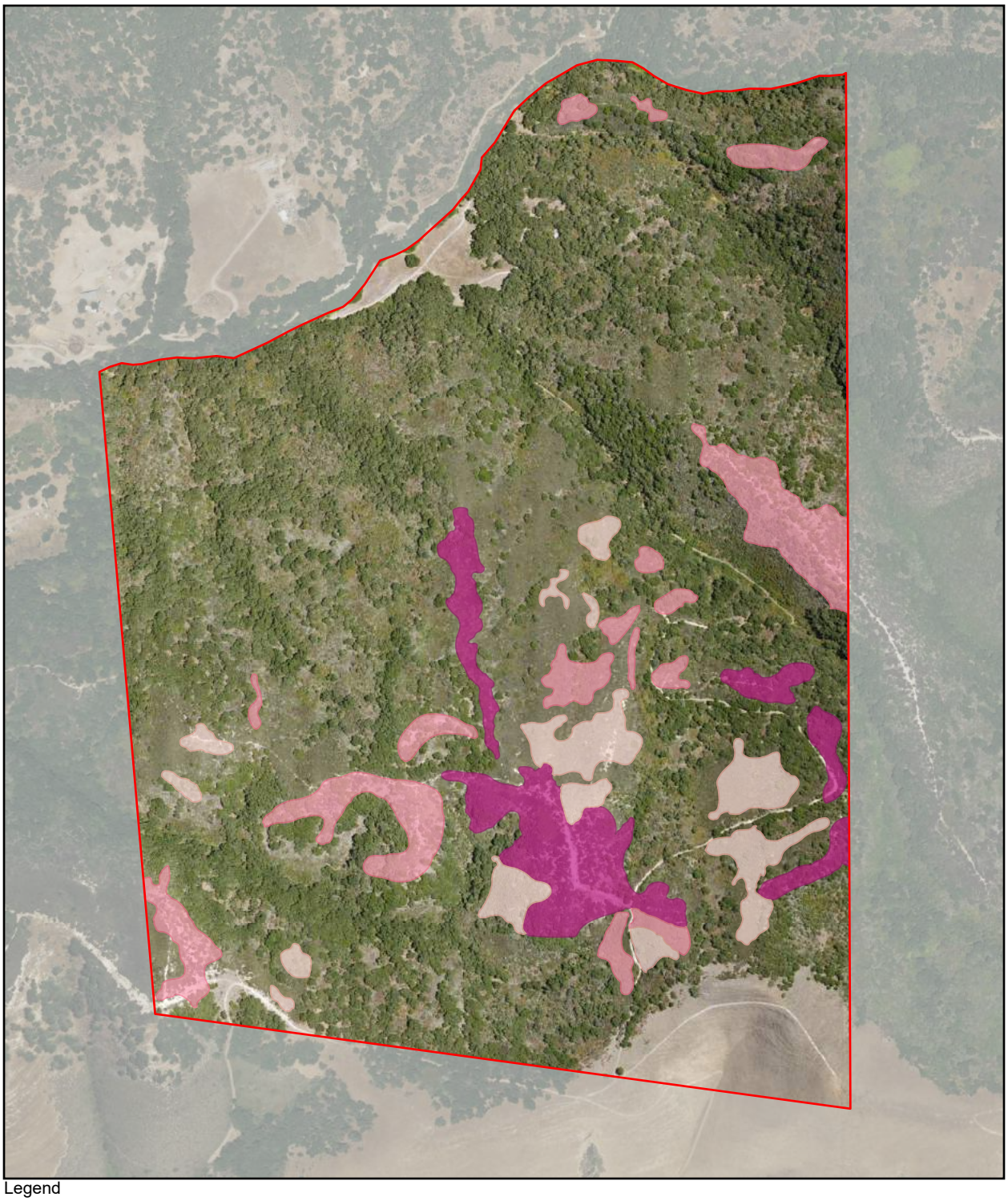
N

0 500 1,000 Feet

Dana Ridge Ranch
Map Center: 120.43865°W 35.07217°N
Nipomo, San Luis Obispo County

Imagery Source: Althouse and Meade, 2020

Figure 4. *Arctostaphylos pilosula* (1B.2) Extent



Legend

Parcel Boundary

Arctostaphylos pilosula Density

- High (17.8 ac)
- Medium (21.9 ac)
- Low (13.9 ac)

0 500 1,000 Feet

Dana Ridge Ranch
Map Center: 120.43859°W 35.072°N
Nipomo, San Luis Obispo County

Imagery Date: 07/16/2020

DANA RIDGE RANCH PRELIMINARY PLANT LIST

This list is compiled from site visits conducted from summer 2020 till Spring 2021. Dave Keil, Adam Searcy, LynneDee Althouse, Kyle Nessen, and Sarah Termondt contributed to this botanical survey. The list includes 215 plant species, of which 172 are native (80%) and 43 are introduced (20%). Three special status species were detected.

Scientific Name	Common Name	Origin	Special Status
Ferns - 5 Species			
Adiantum jordanii	Maidenhair fern	Native	None
Dryopteris arguta	Wood fern	Native	None
Pellaea andromedifolia	Coffee fern	Native	None
Pentagramma triangularis	Gold back fern	Native	None
Polypodium californicum	California polypody	Native	None
Trees – 6 Species			
Notholithocarpus densiflorus	Tanoak	Native	None
Prunus ilicifolia	Holly leaf cherry	Native	None
Quercus agrifolia	Coast live oak	Native	None
Quercus berberidifolia	Scrub oak	Native	None
Quercus lobata	Valley oak	Native	None
Salix lasiolepis	Arroyo willow	Native	None
Shrubs – 32 Species			
Adenostoma fasciculatum var. *fasciculatum*	Chamise	Native	None
Amorpha californica var. *californica*	False indigo	Native	None
Arctostaphylos glandulosa	Eastwood manzanita	Native	None
Arctostaphylos pilosula	La Panza manzanita	Native	CRPR 1B.2
Artemisia californica	Coastal sagebrush	Native	None

Scientific Name	Common Name	Origin	Special Status
Baccharis pilularis subsp. *consanguinea*	Coyote brush	Native	None
Ceanothus cuneatus var. *cuneatus*	Buck brush	Native	None
Ceanothus papillosus	Wartleaf ceanothus	Native	None
Cercocarpus betuloides var. *betuloides*	Mountain mahogany	Native	None
Cornus sericea subsp. *occidentalis*	Western dogwood	Native	None
Dendromecon rigida	Bush poppy	Native	None
Diplacus aurantiacus	Sticky monkeyflower	Native	None
Eriophyllum confertiflorum var. *confertiflorum*	Golden yarrow	Native	None
Frangula californica subsp. *californica*	Coffeeberry	Native	None
Garrya veatchii	Southern silk tassel	Native	None
Hazardia squarrosa var. *squarrosa*	Saw-toothed goldenbush	Native	None
Heteromeles arbutifolia	Toyon	Native	None
Holodiscus discolor var. *discolor*	Ocean spray	Native	None
Keckiella cordifolia	Heart-leaved penstemon	Native	None
Lupinus albifrons	Bush lupine	Native	None
Oemleria cerasiformis	Oso berry	Native	None
Phoradendron leucarpum subsp. *tomentosum*	Mistletoe	Native	None
Rhamnus crocea	Redberry	Native	None
Ribes californicum var. *californicum*	Hillside gooseberry	Native	None
Ribes malvaceum var. *malvaceum*	Chaparral currant	Native	None
Ribes speciosum	Fuschia-flowered gooseberry	Native	None
Rosa californica	California rose	Native	None
Rubus ursinus	California blackberry	Native	None

Scientific Name	Common Name	Origin	Special Status
Salvia mellifera	Black sage	Native	None
Sambucus nigra subsp. *caerulea*	Blue elderberry	Native	None
Symphoricarpos mollis	Creeping snowberry	Native	None
Toxicodendron diversilobum	Poison oak	Native	None
Forbs – 149 Species			
Acmispon americanus var. *americanus*	Spanish clover	Native	None
Acmispon glaber var. *glaber*	Deerweed	Native	None
Acmispon junceus var. *biolettii*	Rush lotus	Native	None
Acmispon maritimus var. *maritimus*	Coastal lotus	Native	None
Acmispon parviflorus	Hill lotus	Native	None
Acmispon strigosus	Bishop lotus	Native	None
Acmispon wrangelianus	California lotus	Native	None
Acourtia microcephala	Perezia	Native	None
Agastache urticifolia	Horse mint	Native	None
Agoseris grandiflora var. *grandiflora*	Giant mountain dandelion	Native	None
Agoseris heterophylla var. *heterophylla*	Annual mountain dandelion	Native	None
Amsinckia intermedia	Common fiddleneck	Native	None
Amsinckia retrorsa	Rigid fiddleneck	Native	None
Amsinckia tessellata var. *tessellata*	Bristly fiddleneck	Native	None
Anthriscus caucalis	Bur-chevil	Introduced	None
Aphanes occidentalis	Lady's-mantle	Native	None
Apiastrum angustifolium	Mock parsley, wild celery	Native	None
Artemisia douglasiana	Mugwort	Native	None

Scientific Name	Common Name	Origin	Special Status
Asclepias eriocarpa	Indian milkweed	Native	None
Asclepias fascicularis	Narrow-leaved milkweed	Native	None
Athysanus pusillus	Common sandweed	Native	None
Bowlesia incana	Bowlesia	Native	None
Brassica nigra	Black mustard	Introduced	None
Calandrinia menziesii	Red maids	Native	CRPR 4.3
Calochortus albus	Fairy lantern	Native	None
Calochortus clavatus var. *clavatus*	Club-haired mariposa lily	Native	None
Calochortus splendens	Splendid mariposa lily	Native	None
Calystegia macrostegia subsp. *cyclostegia*	Morning glory	Native	None
Capsella bursa-pastoris	Shepherd's purse	Introduced	None
Cardamine californica	Milk maids	Native	None
Cardamine oligosperma	Bitter-cress	Native	None
Carduus pycnocephalus subsp. *pycnocephalus*	Italian thistle	Introduced	None
Castilleja affinis subsp. *affinis*	Indian paintbrush	Native	None
Castilleja attenuata	Slender owl's clover	Native	None
Castilleja exserta	Owl's clover	Native	None
Centaurea benedicta	Blessed thistle	Introduced	None
Centaurea melitensis	Tocolote	Introduced	None
Chenopodium californicum	Pigweed	Native	None
Chlorogalum pomeridianum	Amole	Native	None
Clarkia bottae	Punch bowl godetia	Native	None
Clarkia purpurea subsp. *viminea*	Wine cups	Native	None

Scientific Name	Common Name	Origin	Special Status
Clarkia unguiculata	Elegant clarkia	Native	None
Claytonia parviflora subsp. *parviflora*	Miner's lettuce	Native	None
Claytonia perfoliata subsp. *mexicana*	Southern miner's lettuce	Native	None
Claytonia perfoliata subsp. *perfoliata*	Miner's lettuce	Native	None
Clematis lasiantha	Pipestems	Native	None
Clematis ligusticifolia	Virgin's bower	Native	None
Clinopodium douglasii	Yerba buena	Native	None
Collinsia heterophylla	Chinese houses	Native	None
Conium maculatum	Poison hemlock	Introduced	None
Corethrogyne filaginifolia	California aster	Native	None
Crassula connata	Pygmyweed	Native	None
Croton setiger	Doveweed	Native	None
Cryptantha sp.	Cryptantha sp.	Native	None
Cuscuta subinclusa	Canyon dodder	Native	None
Deinandra paniculata	Paniculate tarplant	Native	CRPR 4.2
Drymocallis glandulosa var. *wrangelliana*	Sticky cinquefoil	Native	None
Eleocharis montevidensis	Montevideo spike rush	Native	None
Epilobium canum subsp. *canum*	California fuschia	Native	None
Eriogonum cithariforme	Cithara buckwheat	Native	None
Eriogonum elongatum var. *elongatum*	Elongate buckwheat	Native	None
Erodium cicutarium	Redstem filaree	Introduced	None
Erodium moschatum	Filaree	Introduced	None
Eschscholzia californica	California poppy	Native	None

Scientific Name	Common Name	Origin	Special Status
Eucrypta chrysanthemifolia var. *chrysanthemifolia*	Common eucrypta	Native	None
Euphorbia peplus	Petty spurge	Introduced	None
Foeniculum vulgare	Fennel	Introduced	None
Fritillaria biflora var. *biflora*	Chocolate lily	Native	None
Galium andrewsii	Phlox-leaved bedstraw	Native	None
Galium aparine	Goose grass	Native	None
Galium californicum	California bedstraw	Native	None
Gamochaeta ustulata	Featherweed	Native	None
Geranium molle	Geranium	Introduced	None
Gilia clivorum	Blue-spot gilia	Native	None
Herniaria hirsuta	Rupturewort	Introduced	None
Hesperocnide tenella	Western stinging nettle	Native	None
Hoita orbicularis	Creeping leather root	Native	None
Juncus patens	Spreading rush	Native	None
Lactuca serriola	Prickly lettuce	Introduced	None
Lagophylla ramossissima	Slender hareleaf	Native	None
Lamium amplexicaule	Henbit	Introduced	None
Lathyrus vestitus var. *vestitus*	Common pacific pea	Native	None
Lepidium nitidum	Pepperwort	Native	None
Leptosiphon parviflorus	Variable linanthus	Native	None
Lithophragma cymbalaria	Woodland star	Native	None
Logfia filaginoides	California cottonrose	Native	None
Lomatium utriculatum	Lomatium	Native	None

Scientific Name	Common Name	Origin	Special Status
Lupinus bicolor	Miniature lupine	Native	None
Lupinus nanus	Sky blue lupine	Native	None
Lupinus succulentus	Arroyo lupine	Native	None
Lupinus truncatus	Lupine	Native	None
Madia gracilis	Slender madia	Native	None
Madia sativa	Coast tarweed	Native	None
Malva parviflora	Cheeseweed	Introduced	None
Marah fabacea	California man-root	Native	None
Microsteris gracilis	Slender phlox	Native	None
Monardella villosa subsp. *obispoensis*	Coyote mint	Native	None
Nemophila menziesii var. *menziesii*	Baby blue-eyes	Native	None
Nemophila pedunculata	Meadow nemophila	Native	None
Osmorhiza brachypoda	California sweet cicely	Native	None
Oxalis pes-caprae	Bermuda buttercup	Introduced	None
Paeonia californica	California peony	Native	None
Pedicularis densiflora	Little Indian warrior	Native	None
Phacelia cicutaria var. *hispida*	Caterpillar phacelia	Native	None
Pholistoma auritum var. *auritum*	Fiesta flower	Native	None
Plagiobothrys canescens var. *canescens*	Valley popcornflower	Native	None
Plagiobothrys nothofulvus	Popcorn flower	Native	None
Plantago lanceolata	English plantain	Introduced	None
Platystemon californicus	Cream cups	Native	None
Plectritis macrocera/congesta	Seablush sp.	Native	None

Scientific Name	Common Name	Origin	Special Status
Pseudognaphalium beneolens	Cudweed	Native	None
Pseudognaphalium californicum	California everlasting	Native	None
Pseudognaphalium microcephalum	Wright's cudweed	Native	None
Psilocarphus tenellus	Woolly marbles	Native	None
Rafinesquia californica	California chicory	Native	None
Ranunculus californicus var. *californicus*	California buttercup	Native	None
Ranunculus hebecarpus	Annual buttercup	Native	None
Rumex crispus	Curly dock	Introduced	None
Rupertia physodes	Common rupertia	Native	None
Salvia columbariae	Chia sage	Native	None
Salvia spathacea	Hummingbird sage	Native	None
Sanicula crassicaulis	Sanicle	Native	None
Scrophularia californica subsp. *californica*	California figwort	Native	None
Scutellaria tuberosa	Skullcap	Native	None
Silybum marianum	Milk thistle	Introduced	None
Sisymbrium officinale	Hedge mustard	Introduced	None
Solanum xanti	Nightshade	Native	None
Spergula arvensis	Stickwort	Introduced	None
Spergularia rubra	Red sand spurrey	Introduced	None
Stachys bullata	Hedge nettle	Native	None
Stellaria media	Chickweed	Introduced	None
Stellaria nitens	Chickweed	Native	None
Stellaria pallida	Pale starwort	Introduced	None

Scientific Name	Common Name	Origin	Special Status
Stephanomeria sp.	Wire lettuce	Native	None
Taraxacum officinale	Dandelion	Introduced	None
Tauschia hartwegii	Hartweg's umbrellawort	Native	None
Thysanocarpus laciniatus	Lacepod	Native	None
Toxicoscordion fremontii	Death camas	Native	None
Trifolium bifidum var. *decipiens*	Notch leaf clover	Native	None
Trifolium ciliolatum	Foothill clover	Native	None
Trifolium hirtum	Rose clover	Introduced	None
Trifolium microcephalum	Miniature clover	Native	None
Trifolium variegatum	Variegated clover	Native	None
Trifolium willdenovii	Tomcat clover	Native	None
Tropidocarpum gracile	Dobiepod	Native	None
Uropappus lindleyi	Silver puffs	Native	None
Verbena lasiostachys var. *lasiostachys*	Verbena	Native	None
Vicia hassei	Hasse's vetch	Native	None
Yabea microcarpa	Hedge parsley	Native	None
Grasses – 23 Species			
Aira caryophyllea	Silver European hairgrass	Introduced	None
Avena barbata	Slender wild oat	Introduced	None
Avena fatua	Wild oat	Introduced	None
Bromus diandrus	Ripgut brome	Introduced	None
Bromus hordeaceus	Soft chess brome	Introduced	None
Bromus madritensis	Foxtail chess, foxtail brome	Introduced	None

Scientific Name	Common Name	Origin	Special Status
Bromus rubens	Red top brome	Introduced	None
Bromus sitchensis	Sitka brome	Native	None
Ehrharta calycina	Veldt grass	Introduced	None
Elymus condensatus	Giant wild rye	Native	None
Elymus glaucus subsp. *glaucus*	Blue wildrye	Native	None
Elymus multisetus	Big squirreltail grass	Native	None
Festuca bromoides	Brome fescue	Introduced	None
Festuca microstachys	Annual fescue	Native	None
Festuca myuros	Rattail sixweeks grass	Introduced	None
Festuca perennis	Italian rye grass	Introduced	None
Hordeum murinum subsp. *leporinum*	Foxtail barley	Introduced	None
Hordeum vulgare	Barley	Introduced	None
Melica imperfecta	Melic	Native	None
Phalaris aquatica	Harding grass	Introduced	None
Poa infirma	Weak blue grass	Introduced	None
Stipa miliacea var. *miliacea*	Smilo grass	Introduced	None
Stipa pulchra	Purple needlegrass	Native	None

DANA RIDGE RANCH PRELIMINARY ANIMAL LIST

This list is compiled from site visits conducted from summer 2020 till Spring 2021. Adam Searcy, LynneDee Althouse, Kyle Nessen, and Sarah Termondt contributed to this animal survey. This list includes 72 native species (84%) and 14 introduced species (16%). Seven special status species were detected.

Scientific Name	Common Name	Origin	Special Status
Amphibians - 1 Species			
Batrachoseps nigriventris	Black-bellied Slender Salamander	Native	None
Reptiles – 1 Species			
Pituophis catenifer	Gopher Snake	Native	None
Sceloporus occidentalis bocourtii	Coast Range Fence Lizard	Native	None
Mammals – 10 Species			
Lynx rufus	Bobcat	Native	None
Neotamias merriami	Merriam's Chipmunk	Native	None
Neotoma sp.	Woodrat sp.	Native	None
Odocoileus hemionus	Mule Deer	Native	None
Sciurus griseus	Western Gray Squirrel	Native	None
Sus scrofa	Wild Boar	Introduced	None
Thomomys bottae	Valley Pocket Gopher	Native	None
Birds – 73 Species			
Aeronautes saxatilis	White-throated Swift	Native	None
Ammodramus savannarum	Grasshopper Sparrow	Native	SSC (nesting)
Aphelocoma californica	California Scrub-jay	Native	None
Baeolophus inornatus	Oak Titmouse	Native	None
Bubo virginianus	Great Horned Owl	Native	None

Scientific Name	Common Name	Origin	Special Status
Buteo jamaicensis	Red-tailed Hawk	Native	None
Buteo lineatus	Red-shouldered Hawk	Native	None
Buteo swainsoni	Swainson's Hawk	Native	ST
Callipepla californica	California Quail	Native	None
Calypte anna	Anna’s Hummingbird	Native	None
Cathartes aura	Turkey Vulture	Native	None
Catharus guttatus	Hermit Thrush	Native	None
Catharus ustulatus	Swainson's Thrush	Native	None
Chaetura vauxi	Vaux's Swift	Native	SSC (nesting)
Chamaea fasciata	Wrentit	Native	None
Chondestes grammacus	Lark Sparrow	Native	None
Colaptes auratus	Northern Flicker	Native	None
Contopus sordidulus	Western Wood Pewee	Native	None
Corvus brachyrhynchos	American Crow	Native	None
Corvus corax	Common Raven	Native	None
Cyanocitta stelleri	Steller's Jay	Native	None
Empidonax difficilis	Pacific-slope Flycatcher	Native	None
Eremophila alpestris actia	California Horned Lark	Native	Special Animal (nesting)
Falco sparverius	American Kestrel	Native	None
Haemorhous mexicanus	House Finch	Native	None
Haemorhous purpureus	Purple Finch	Native	None
Icterus bullockii	Bullock's Oriole	Native	None
Junco hyemalis	Dark-eyed Junco	Native	None

Scientific Name	Common Name	Origin	Special Status
Melanerpes formicivorus	Acorn Woodpecker	Native	None
Meleagris gallopavo	Wild Turkey	Native	None
Melospiza lincolnii	Lincoln's Sparrow	Native	None
Melospiza melodia	Song Sparrow	Native	None
Melozone crissalis	California Towhee	Native	None
Myiarchus cinerascens	Ash-throated Flycatcher	Native	None
Oreothlypis celata	Orange-crowned warbler	Native	None
Passerina amoena	Lazuli Bunting	Native	None
Passerina caerulea	Blue Grosbeak	Native	None
Patagioenas fasciata	Band-tailed Pigeon	Native	None
Petrochelidon pyrrhonota	Cliff Swallow	Native	None
Phainopepla nitens	Phainopepla	Native	None
Pheucticus melanocephalus	Black-headed Grosbeak	Native	None
Pica nuttalli	Yellow-billed Magpie	Native	Special Animal (nesting and communal roosts)
Picoides nuttallii	Nuttall's Woodpecker	Native	None
Picoides pubescens	Downy Woodpecker	Native	None
Picoides villosus	Hairy Woodpecker	Native	None
Pipilo maculatus	Spotted Towhee	Native	None
Polioptila caerulea	Blue-gray gnatcatcher	Native	None
Psaltriparus minimus	Bushtit	Native	None
Regulus calendula	Ruby-crowned Kinglet	Native	None
Sayornis nigricans	Black Phoebe	Native	None
Selasphorus sasin	Allen's hummingbird	Native	None

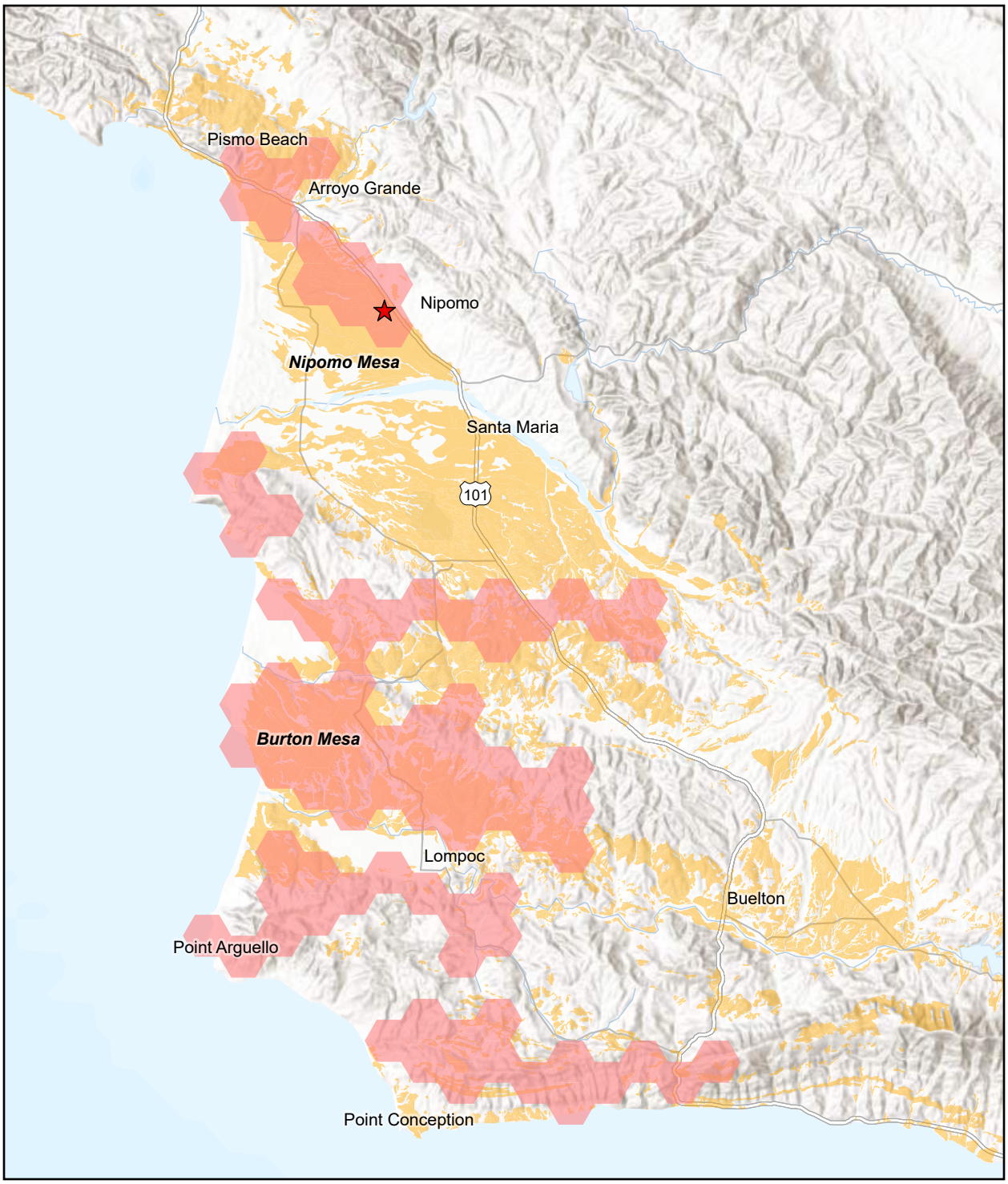
Scientific Name	Common Name	Origin	Special Status
Setophaga coronata	Yellow-rumped Warbler	Native	None
Setophaga nigrescens	Black-throated Gray Warbler	Native	None
Setophaga petechia	Yellow Warbler	Native	SSC (nesting)
Setophaga townsendii	Townsend's Warbler	Native	None
Sitta carolinensis	White-breasted Nuthatch	Native	None
Spinus lawrencei	Lawrence's Goldfinch	Native	Special Animal (nesting)
Spinus pinus	Pine Siskin	Native	None
Spinus psaltria	Lesser Goldfinch	Native	None
Streptopelia decaocto	Eurasian Collared Dove	Native	None
Tachycineta bicolor	Tree Swallow	Native	None
Tachycineta thalassina	Violet-green Swallow	Native	None
Thryomanes bewickii	Bewick’s Wren	Native	None
Toxostoma redivivum	California Thrasher	Native	None
Troglodytes aedon	House Wren	Native	None
Turdus migratorius	American Robin	Native	None
Vireo gilvus	Warbling Vireo	Native	None
Vireo huttonii	Hutton's Vireo	Native	None
Wilsonia pusilla	Wilson's Warbler	Native	None
Wilsonia pusilla	Wilson's Warbler	Native	None
Zenaida macroura	Mourning Dove	Native	None
Zonotrichia albicollis	White-throated Sparrow	Native	None
Zonotrichia atricapilla	Golden-crowned Sparrow	Native	None

APPENDIX H. POTENTIAL MITIGATION SITES FOR BURTON MESA CHAPARRAL

To estimate extent of Burton Mesa chaparral (BMC), we generated a 10 square kilometer hexagonal grid over southern San Luis Obispo County and western Santa Barbara County. We gathered occurrence records of *Arctostaphylos rudis* and *Arctostaphylos purissima*, the diagnostic species that determine BMC, from the California Natural Diversity Database (CNDDB 2021b) and the California Consortium of Herbaria (CCH 2021). If an occurrence record fell within a hexagonal grid, we considered that area part of Burton Mesa chaparral extent. We removed some hexagons based on old or poorly georeferenced occurrences.

We then assessed potential to support BMC in parcels greater than 10-acres in size that at least partially fell within the mapped extent. We used soil conditions, proximity to known occurrences, presence of oak woodland or chaparral in current imagery, and level of anthropogenic disturbance to determine BMC potential. Our map is intended to be a preliminary exploration of potential mitigation for BMC. We have not contacted any parcel owners or conducted any botanical surveys to verify BMC presence or quality.

Observed Extent of Burton Mesa Chaparral Indicator Species



Legend

- Dana Reserve
- Observed Extent (Hex Cell - 10 sq km)
- Sandy Soils

N

0 2.5 5 10 Miles

Dana Reserve
Map Center: 120.39061°W 34.84269°N
Nipomo, San Luis Obispo County

Data Sources: CNDDB, CCH, SSURGO

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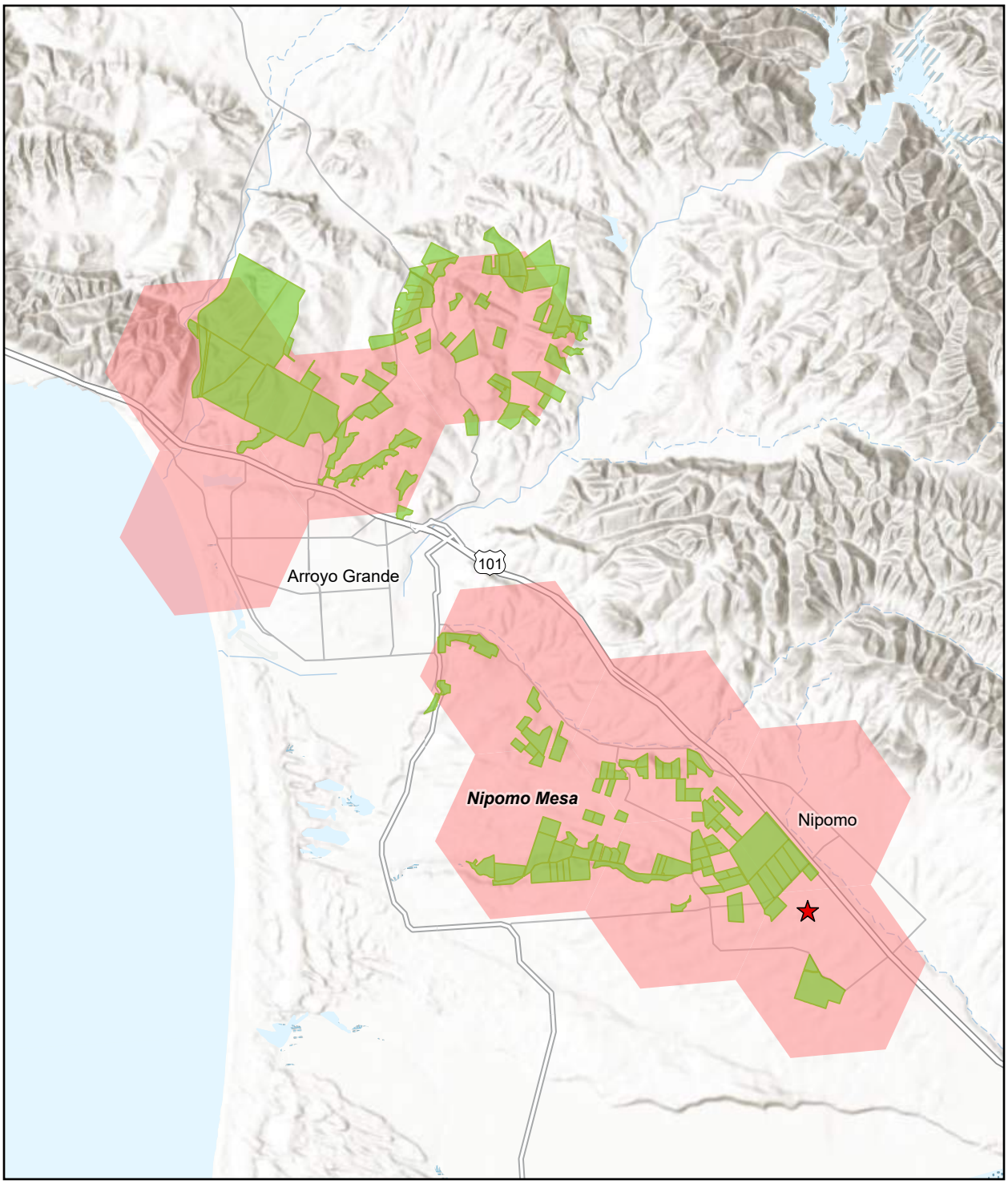
Map Created:
October 12, 2021 12:52 PM by KRN

Potential Mitigation Parcels - SLO County



Legend

- Dana Reserve
- Potential Mitigation Parcel
- Observed Burton Mesa Chaparral Extent

N

0 0.5 1 2 Miles

Dana Reserve
Map Center: 120.56597°W 35.10847°N
Nipomo, San Luis Obispo County

Data Sources: CNDDB, CCH, SSURGO

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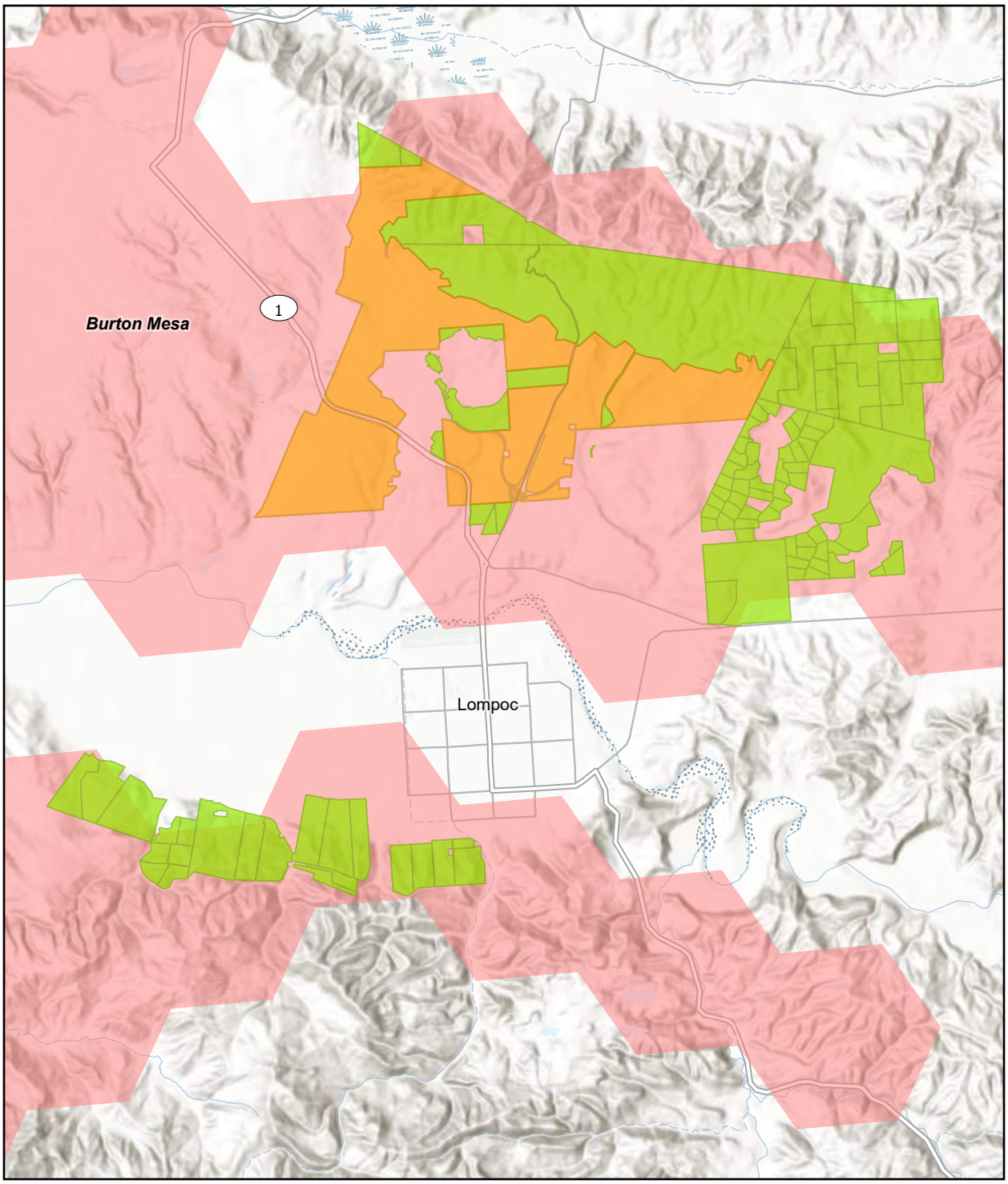
Map Created:
October 22, 2021 04:18 PM by KRN

Potential Mitigation Parcels - Santa Barbara County



Legend

- Dana Reserve
- Potential Mitigation Parcel
- Observed Burton Mesa Chaparral Extent
- Burton Mesa Ecological Reserve

N

0 0.5 1 2 Miles

Dana Reserve
Map Center: 120.45263°W 34.67315°N
Lompoc, Santa Barbara County

Data Sources: CNDDB, CCH, SSURGO

ALTHOUSE AND MEADE, INC.
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Map Created:
October 22, 2021 04:18 PM by KRN

N. Frontage Road Extension
Addendum to Biological Report for
Dana Reserve Specific Plan

N. Frontage Road Extension
Addendum to Biological Report

for

Dana Reserve Specific Plan

Master Vesting Tentative Tract Map 3159
Nipomo, San Luis Obispo County

Prepared for

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By

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February 2022

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Cover Photo: North Frontage Road, view east. January 20, 2022.

EXECUTIVE SUMMARY

- A Public Works improvement plan is proposed to extend North Frontage Road from Sandydale Lane to the southeastern corner of Dana Reserve. The extension is part of the County of San Luis Obispo's Capital Improvement Plans and was a condition of approval for a development plan for the Assessor's Parcel Number (APN) 091-325-022.
- The proposed road extension will impact the eastern 1.5 acres of an existing 4.91 acre parcel (APN 091-325-022). Improvements include widening North Frontage Road to 60-feet, implementing a 10-foot public utility easement, and extending a culvert to a Caltrans' culvert under Highway 101.
- Coyote brush scrub, nonnative perennial grassland habitat (dominated by veldt grass), eucalyptus saplings, a patch of arroyo willow, and scattered eucalyptus saplings will be impacted by proposed work
- No special status botanical or wildlife species were detected within the Study Area during January 20, 2022, field survey. Rare plant occurrences are unlikely in this disturbed habitat dominated by dense veldt grass. Spring follow-up surveys will be conducted in 2022.
- No jurisdictional wetlands were observed onsite, though deep compaction on the current access road may contribute to occasional ponding and eventual runoff to the adjacent Highway 101 stormwater swale and culvert.

1 INTRODUCTION

1.1 Project Location, Description, and Purpose

The Study Area includes North Frontage Road extension located on the east side of Assessor's Parcel Number (APN) 091-325-022 and a small portion of Cal Trans Right of Way. The Study Area is in Nipomo, California, immediately west of U.S. Highway 101 at the northern terminus of existing N. Frontage Road and Sandydale Drive. Approximate coordinates for the center of the Study Area are 35.04608° N, 120.49382° W (WGS84) in the Nipomo United States Geological Survey (USGS) 7.5-minute topographic quadrangles (Figure 1). A public work improvement plan delineates the extension of N. Frontage Road from Sandydale Drive to the southeastern corner of Dana Reserve (EDA 2005). The road widening and extension is part of the County of San Luis Obispo's Capital Improvement Plans and was a condition of approval for a previously planned, but now terminated, development on the property. he Study Area presently contains an unpaved access road for public utilities, such as a high-pressure gas line that runs along the eastern perimeter. The proposed extension of N. Frontage Road in the Study Area will follow the general path of the current unpaved road and extend its width (Figure 2). An environmental survey was conducted to evaluate the temporary and permanent impacts of the proposed improvements.

1.2 Site History and Existing Conditions

Historically, the Study Area was open grassland with eucalyptus trees bordering the north, east, and west boundaries, likely planted as wind barriers (Photo 1). However, by 2005 these trees were removed, along with most vegetation in the Study Area (Photo 2). An unpaved access road was established during this time, which remains in use today. The access road appears to have been created from public works' projects, including routing a high-pressure gas pipeline and a stormwater culvert between the Study Area and Highway 101 (Photo 3). The land appears to have last been heavily disturbed in 2005. Subsequently, a small patch of willows developed in a swale next to the access road. Evidence of wetlands was not observed in the soil or associated understory vegetation.

Dominant plants are disturbance followers. There is evidence of fire suppression clearing near the neighboring houses on the western boundary and maintenance of an access road along the eastern border. Additionally, we observed an unhoused person's encampment under willow canopy near the storm culvert outlet (Photo 4).

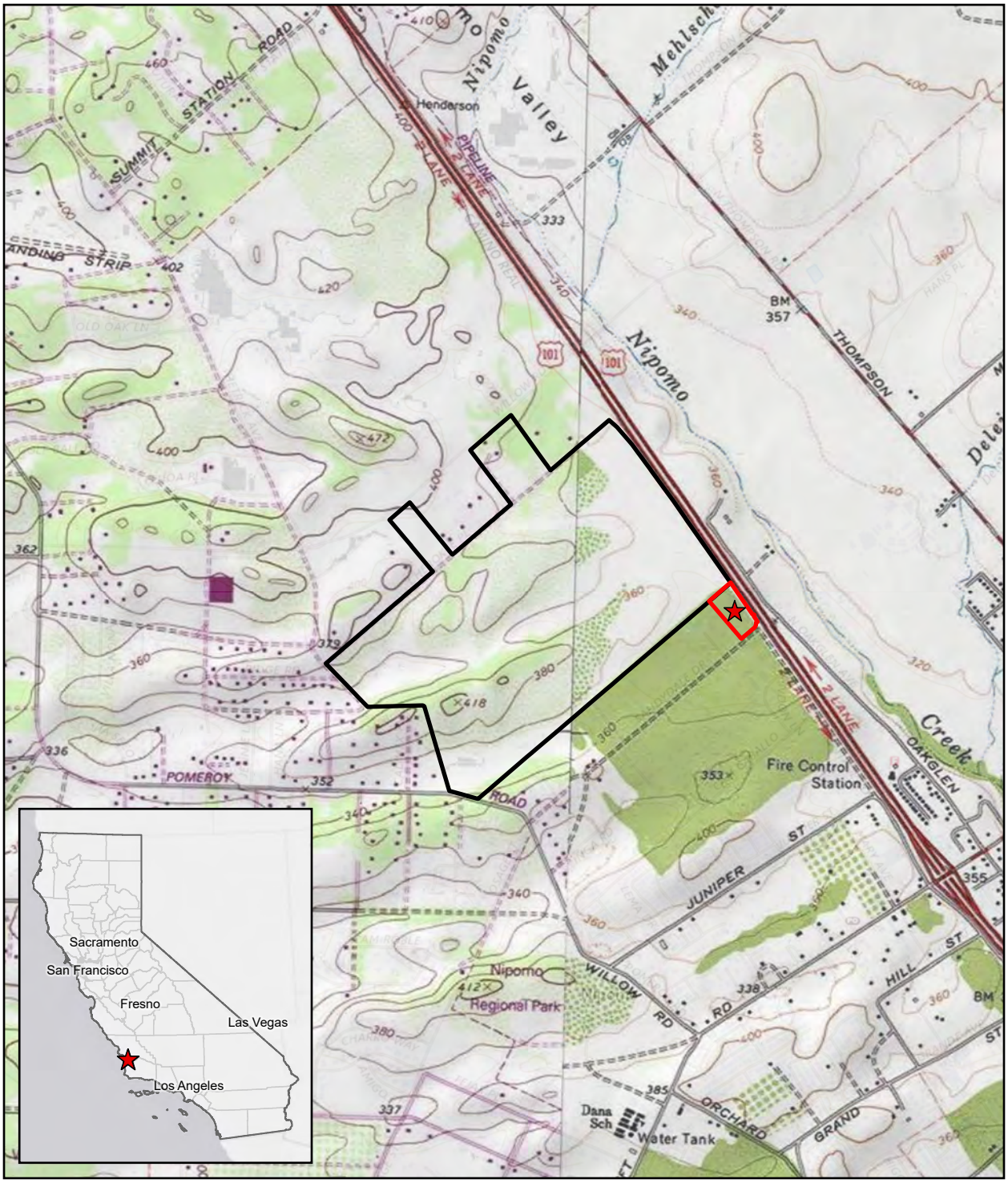
Photo 1. Aerial view of study area (yellow). September 1994.

Photo 2. Aerial view of study area (yellow). August 2005.

Photo 3. Stormwater culvert between Study Area and Highway 101 southbound, view east. January 20, 2022.

Photo 4. Debris from unhoused person's encampment along access road, view southwest. January 20, 2022.

Figure 1. United States Geological Survey Topographic Map



Legend

- Study Area Location
- N. Frontage Extension Property (APN 091-325-022)
- Dana Reserve (APNs 091-301-029, -030, -031 and -073)

N

0 1,000 2,000 Feet

North Frontage Road Extension
Map Center: 120.504°W 35.04656°N
Nipomo, San Luis Obispo County

USGS Quadrangle: Oceano and Nipomo

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Map Updated:
January 31, 2022 02:09 PM by ZAR

Figure 2. Aerial Map Photograph

Legend

- Study Area (4.91 acres)
- Impact Area (1.50 acres)
- Existing ROW
- Proposed ROW

N

0 50 100 Feet

North Frontage Road Extension
Map Center: 120.49382°W 35.04608°N
Nipomo, San Luis Obispo County

Imagery Source(s):
Althouse and Meade, Inc., 01/20/2022
ESRI World Imagery, 05/19/2021

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Map Updated:
February 09, 2022 06:28 PM by ZAR

2 METHODS

Biologists Kyle Nessen and Zach Raposo surveyed the Study Area for biological and wetland resources on January 20, 2022 (Table 1). A meandering transect survey was conducted on foot to inventory existing species, special status plants and animals, and habitat types, as well as collect photographic documentation of the Study Area.

TABLE 1. BIOLOGICAL SURVEY

Survey Date	Biologist(s)	Weather Observations	Activities
1/20/2022	Kyle Nessen, Zach Raposo	56 °F, 0-5 mph, clear	Initial survey and drone flight

Data were overlaid onto drone-derived photographs of the Study Area acquired on January 20, 2022, by 14 CFR Part 107 certified pilot Kyle Nessen. A georeferenced composite image of the Study Area was generated from the acquired aerial images for baseline review and image analysis. All flight operations were conducted within visual line of sight and below a maximum altitude of 400 feet aboveground level. The Study Area occurs within Class G airspace, and flight operations were conducted with prior permission from the property owner.

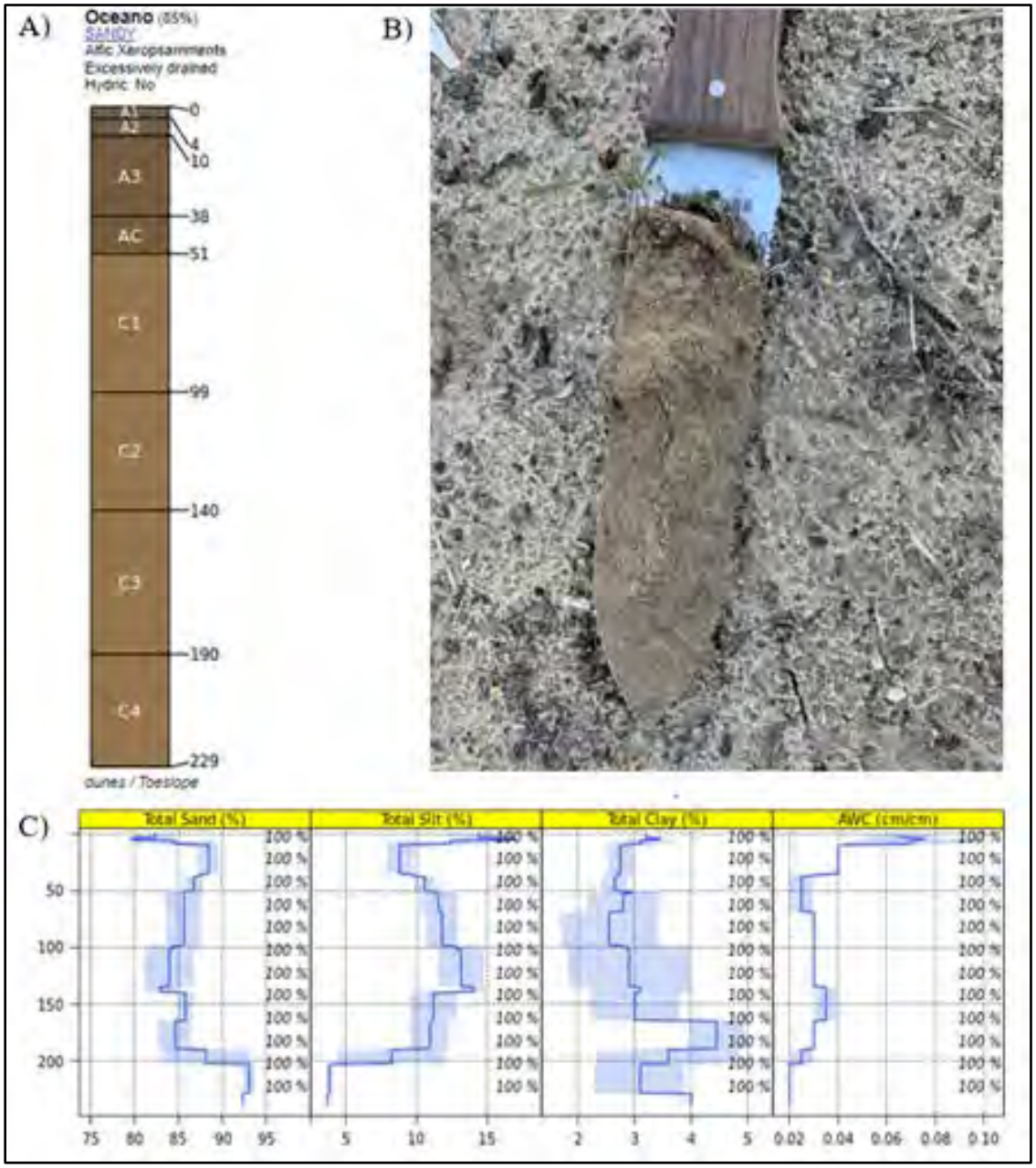
2.1 Soils

The Study Area's soil type closely matches the Oceano series found throughout Dana Reserve, with deep, excessively drained, sandy profiles (Graphic 1). This soil formed from accumulated windblown sand with traces of silt and is currently stabilized by small herbs and forbs while maintaining a dune-like texture on the landscape.

Photo 5. Stormwater swale between Highway 101 southbound (right) and Study Area (left). Vew northwest. January 20, 2022.

Photo 6. Ditch between access road and culvert, view west. January 20, 2022.

The site's undisturbed soil contained permeable, single-grained sand with many fine roots dissipating at depth, and no hydric soil indicators were observed throughout the Study Area. However, the current access road endured deep compaction from past disturbance and potentially led to occasional ponding and eventual runoff to the adjacent Highway 101 stormwater swale and culvert (Photos 5 and 6).



Graphic 1. A) Typical Oceano soil series profile, B). Photo shows 6-inch soil sample from January 20, 2021, field visit, C) Aggregate lab data of Oceano Soil Series samples collected nearby the study area providing insight on sand, silt and clay percentages and available water capacity by depth (NCSS 2001).

3 BIOLOGICAL RESOURCES

3.1 Habitats

The Study Area is comprised of two habitat types: coyote brush scrub and nonnative perennial grassland. Each habitat accounts for approximately half the Study Area, with coyote brush scrub occupying 55% and nonnative perennial grassland occupying 45%. Neither is considered a sensitive community by California Department of Fish and Wildlife (CDFW 2022), and no special status species were observed.

TABLE 2. HABITATS

Habitat Name	CNPS MCV Alliance	Acres
Coyote Brush Scrub	*Baccharis pilularis* shrubland alliance	2.68
Nonnative Perennial Grassland	Mediterranean California naturalized annual and perennial grassland group	2.23

3.1.1 Coyote Brush Scrub (Baccharis pilularis shrubland alliance)

Coyote brush scrub occupies the eastern half of the Study Area where shrub or tree species are conspicuously present (Figure 3). Coyote brush (*Baccharis pilularis*) accounts for over 70% of the relative shrub canopy, with bush lupine (*Lupinus arboreus*) and deerweed (*Acmispon glaber*) appearing in low numbers. We map coyote brush scrub as *Baccharis pilularis* shrubland alliance in the CNPS Manual of California Vegetation (MCV) because of the strong presence of coyote brush (CNPS 2022). In addition, isolated individuals of mature bluegum trees (*Eucalyptus globulus*) are found throughout this habitat type. The understory is dominated by nonnative grasses and forbs, such as ripgut brome (*Bromus diandrus*) and filaree species *(Erodium* spp.). Telegraph weed (*Heterotheca grandiflora*), a native forb that co-occurs with other weedy species, is also common.

Several individuals of arroyo willow (*Salix lasiolepis*) occur within coyote brush scrub. Willow trees primarily occur as isolated trees, but a semi-continuous canopy forms along the study area's eastern edge (Figure 3). When considered in the context of the habitat, willow cover did not exceed 5% absolute cover, thus not meeting the minimum relative or absolute cover criteria to be included in *Salix lasiolepis* Shrubland Alliance (CNPS 2022). Willows are phreatophytes, meaning they have a deep root system that taps into the underground water table (Robinson 1958). It is likely willows on site are supported by occasional moist conditions associated with a swale and nearby storm culvert. No other wetland indicator species were present in the understory or vicinity of willow canopy.

Photo 7. Coyote brush scrub habitat with isolated willow and mature blue gums in background, view north. January 20, 2022.

3.1.2 Nonnative Perennial Grassland (Mediterranean California naturalized annual and perennial grassland group)

Nonnative perennial grassland is found throughout the western half of the Study Area and is characterized by a near monoculture of veldt grass (*Ehrharta calycina*). Over 90% of the vegetative cover within this habitat type is veldt grass, with only the occasional coyote brush or bush lupine occurring within the shrub layer. A row of blue gum trees lines the boundary between the Study Area and Dana Reserve, and no willows occur within nonnative perennial grassland. Telegraph weed is the only other prominent herbaceous species within this habitat type. Nonnative perennial grassland is considered a semi-natural stand and has not been formally described in the CNPS MCV. Therefore, we map this habitat type as Mediterranean California naturalized annual and perennial grassland group according to the U.S. National Vegetation Classification (USNVC 2021). No special status plants or animals were detected in nonnative perennial grassland during the January 2022 botanical survey.

Photo 8. Nonnative perennial grassland habitat with veldt grass dominating the foreground, view south. January 20, 2022.

Figure 3. Biological Resources

Legend

- Study Area (4.91 acres)
- Impact Area (1.50 acres)
- Existing ROW
- Proposed ROW
- Willow Canopy (0.14 acres)

Habitats

- Coyote Brush Scrub (2.68 acres)
- Nonnative Perennial Grassland (2.23 acres)

N

0 50 100 Feet

North Frontage Road Extension
Map Center: 120.49382°W 35.04608°N
Nipomo, San Luis Obispo County

Contour Interval: 1-foot

Imagery Source(s):
Althouse and Meade, Inc., 01/20/2022
ESRI World Imagery, 05/19/2021

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Map Updated:
February 09, 2022 06:29 PM by ZAR

3.2 Botanical Survey Results

Table 3 lists twenty-seven species of vascular plants that were identified in the Study Area on January 20, 2022. Fifteen species were native (56%), and twelve were introduced (44%). The vascular plant list is separated into general life form categories, within which the taxa are listed alphabetically by scientific name. No special status botanical species were identified during the field survey.

TABLE 3. VASCULAR PLANT LIST

Scientific Name	Common Name	Origin
Trees - 6 Species		
Eucalyptus globulus	Blue-gum	Introduced
Populus trichocarpa	Black cottonwood	Native
Salix lasiolepis	Arroyo willow	Native
Shrubs - 3 Species		
Baccharis pilularis	Coyote brush	Native
Lupinus arboreus	Bush lupine	Native
Toxicodendron diversilobum	Poison oak	Native
Forbs - 18 Species		
Acmispon glaber	Deerweed	Native
Brassica nigra	Black mustard	Introduced
Chenopodium californicum	Pigweed	Native
Crassula connata	Pygmyweed	Native
Croton californicus	California croton	Native
Erodium cicutarium	Redstem filaree	Introduced
Erodium texanum	Desert heron's bill	Native
Gazania linearis	Gazania	Introduced
Helianthus annuus	Common sunflower	Native
Heterotheca grandiflora	Telegraph weed	Native
Lupinus nanus	Sky blue lupine	Native
Lupinus truncates	Lupine	Native
Medicago polymorpha	California burclover	Introduced
Oenothera elata	Evening primrose	Native
Oxalis pes-caprae	Bermuda buttercup	Introduced
Plantago lanceolata	English plantain	Introduced
Pseudognaphalium luteoalbum	Jersey cudweed	Introduced
Salsola tragus	Russian thistle	Introduced
Graminoids – 3 Species		
Bromus diandrus	Ripgut brome	Introduced
Cortaderia selloana	Pampas grass	Introduced
Ehrharta calycina	Veldt grass	Introduced

3.3 Wildlife Survey Results

Table 4 lists twelve species of animals, including one invertebrate, one reptile, and ten bird species detected during January 20, 2022, survey. No special status animals were observed on site.

TABLE 4. WILDLIFE LIST

Scientific Name	Common Name	Habitat Type
Invertebrates – 1 Species		
Danaus plexippus	Monarch Butterfly	Open, sunny habitats. (Clustering was not observed within Study Area)
Reptiles – 1 Species		
Sceloporus occidentalis bocourtii	Coast Range Fence Lizard	Wide range; variety of habitats
Birds – 10 Species		
Aphelocoma californica	California Scrub-jay	Oak, riparian woodlands
Buteo jamaicensis	Red-tailed Hawk	Open, semi-open country
Calypte anna	Anna's Hummingbird	Many habitats
Cathartes aura	Turkey Vulture	Open country
Melozone crissalis	California Towhee	Chaparral scrub, shrubby urban areas
Psaltriparus minimus	Bushtit	Woodlands, chaparral
Setophaga coronata	Yellow-rumped Warbler	Coniferous and mixed woodland (breeding); shrubby areas and parks (winter)
Sialia mexicana	Western Bluebird	Woodland near open areas
Streptopelia decaocto	Eurasian Collared Dove	Urban and suburban areas
Zonotrichia leucophrys	White-crowned Sparrow	Open or shrubby habitats

3.4 Potential for Special Status Species

Particular attention during the January 20, 2022 site visit was given to identify special status species which were detected on adjacent Dana Reserve throughout 2017-2020 surveys. Those species included eight special status plant taxa: sand mesa manzanita (*Arctostaphylos rudis*), Nipomo mesa ceanothus (*Ceanothus impressus* var. *nipomensis*), sand buck brush (*Ceanothus cuneatus* var. *fascicularis*), sand almond (*Prunus fasciculata* var. *punctata*), Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*), mesa horkelia (*Horkelia cuneata* var. *puberula*), and California spineflower (*Mucronea californica*). None of these species were detected within the Study Area. Spring botanical surveys are needed to confirm the absence of two annual species, California spineflower and Pismo clarkia. The dense veldt grass and lack of coast live oak trees make it highly unlikely that Pismo clarkia will be present on site. California spineflower was not detected as standing dead from previous years, but could occcur in sandy disturbed areas.

In addition, surveys for signs of nesting birds or badger dens were conducted on January 20, 2022. No indicators of special status animals were present within the Study Area. Please refer to section 3.6.1 and 3.7.1 of the Biological Report for Dana Reserve Specific Plan (A&M 2021) for a full discussion of potential special status species. No new species were added to the California Natural Diversity Database in this area since the original Biological Report was submitted (CNDDB 2022).

4 ENVIRONMENTAL IMPACT ANALYSIS

All temporary and permanent impacts of the proposed improvements will occur on the eastern edge of the Study Area within APN 091-325-022 and Cal Trans Right of Way. Permanent impacts include a 0.86-acre area, which accounts for an expanded width of the access road and the extended culvert to existing Highway 101 southbound culvert (Figure 4). There will be an additional 0.64-acre of land temporarily impacted – including an approximate 0.18-acre temporary retention basin. Table 5 displays the temporary and permanent impacts by habitat type. Within coyote brush scrub, 0.14-acre of willow canopy exists, of which 0.12-acre will be permanently impacted.

TABLE 5. HABITAT IMPACTS FROM PROJECT

Habitat Type	Permanent Impact (Ac.)	Temporary Impact (Ac.)	Total (Ac.)
Coyote brush scrub	0.81	0.59	1.40
Nonnative perennial grassland	0.05	0.05	0.10
Total	**0.86**	**0.64**	**1.50**

4.1 Recommendations

Project activities and impacts described in this Addendum should follow best construction practices for biological resource protection. Please refer to Section 4.5 of the Biological Report for Dana Reserve Specific Plan to review "Construction Best Practices for Biological Resource Protection" (A&M 2021).

No sensitive species or habitats will be impacted by the proposed project, therefore no mitigation is required.

To augment pollinator and nesting bird habitat, we suggest planting willows or other deep-rooted shrubs and trees in the vicinity of stormwater facilities to enhance habitat for wildlife. Added benefits includes use of discharge from stormwater discharge facilities to support wildlife habitat suitable for birds and butterflies (Table 6).

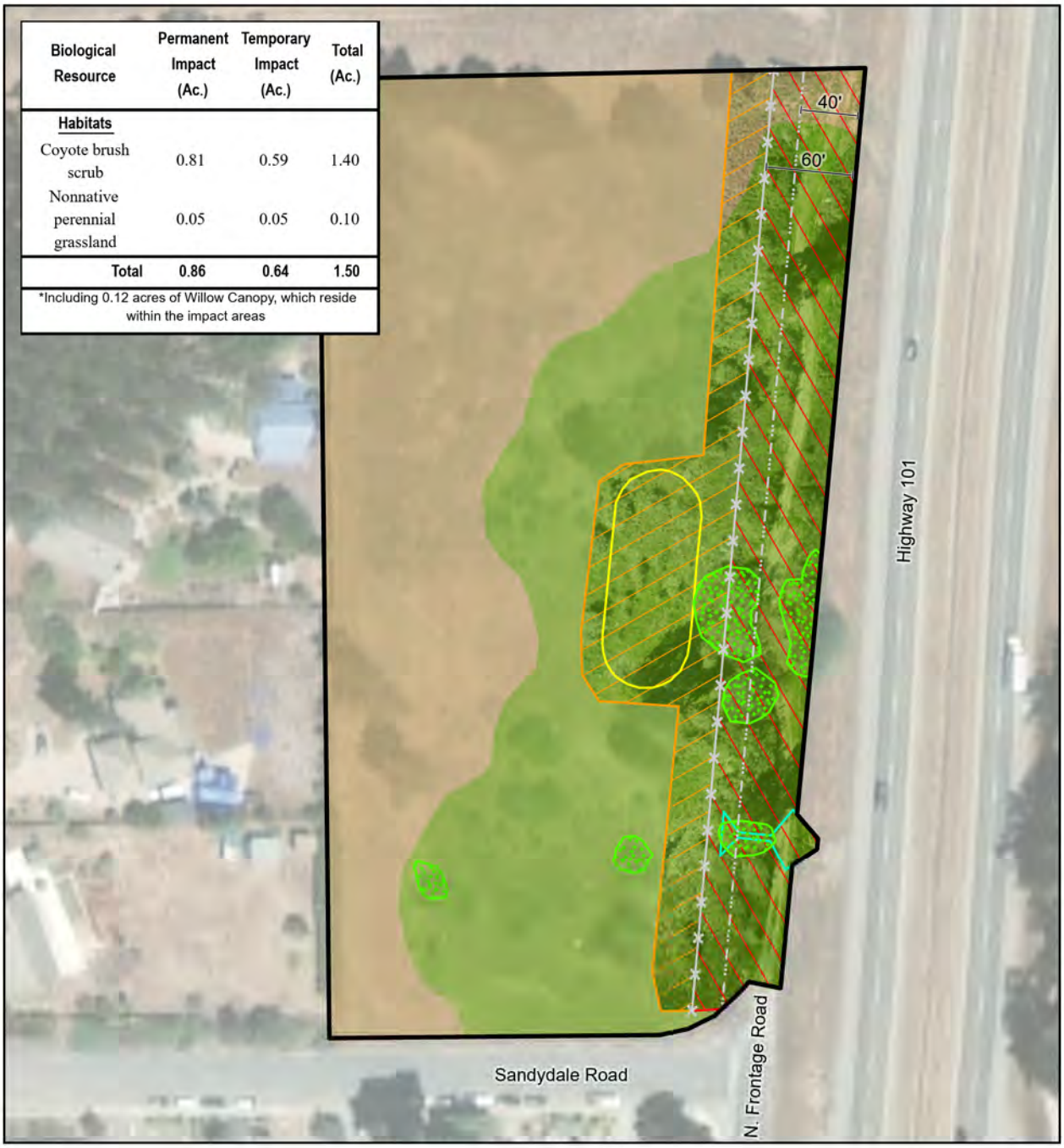
TABLE 6. IMPACT AND RECOMMENDATION SUMMARY

Impact	Potential Effect from Proposed Project	Recommendation	Benefit
Willow Tree and Canopy Loss	Reduction of habitat, soil stabilization, and water quality.	Onsite willow replanting by stormwater facilities, including the extended culvert and temporary retention basin.	Will improve wildlife habitat, soil stabilization for banks and increase water quality for nearby stormwater swale.

Figure 4. Biological Resource Impacts

Biological Resource	Permanent Impact (Ac.)	Temporary Impact (Ac.)	Total (Ac.)
Habitats			
Coyote brush scrub	0.81	0.59	1.40
Nonnative perennial grassland	0.05	0.05	0.10
Total	**0.86**	**0.64**	**1.50**

*Including 0.12 acres of Willow Canopy, which reside within the impact areas



Legend

- Study Area (4.91 acres)
- Permanent Impacts (0.86 acres)
- Temporary Impact (0.64 acres)
- Culvert Improvements (1000 square feet)
- Temporary Rentention Basin (0.18 acres)
- Existing ROW
- Proposed ROW
- Willow Canopy

Habitats

- Coyote Brush Scrub
- Nonnative Perennial Grassland

N

0 50 100 Feet

North Frontage Road Extension
Map Center: 120.49399°W 35.04597°N
Nipomo, San Luis Obispo County

Imagery Source(s):
Althouse and Meade, Inc., 01/20/2022
ESRI World Imagery, 05/19/2021

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
February 09, 2022 06:31 PM by ZAR

5 REFERENCES

[A&M] Althouse and Meade Inc. 2021. Biological Report for Dana Reserve Specific Plan. Prepared for Dana Reserve, LLC, San Luis Obispo, CA.

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6 APPENDICES

- **Appendix A. Public Improvement Plans for CO 03-0301 Community of Nipomo, County of San Luis Obispo, California (EDA 2005; Sheets 1, 3, 4, 11)**

43234

PUBLIC IMPROVEMENT PLANS FOR

CO 03-0301

COMMUNITY OF NIPOMO, COUNTY OF SAN LUIS OBISPO, CALIFORNIA

GENERAL NOTES

GENERAL CONSTRUCTION NOTES:

1. NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY THE COUNTY DEPARTMENT OF PUBLIC WORKS AND THE NIPOMO COMMUNITY SERVICES DISTRICT (NCSD). THE DEPARTMENT OF PUBLIC WORKS AND NCSD SHALL BE NOTIFIED AT LEAST 24 HOURS PRIOR TO STARTING CONSTRUCTION AND OF THE TIME LOCATION OF THE PRECONSTRUCTION CONFERENCE. ANY CONSTRUCTION DONE WITHOUT APPROVED PLANS OR PRIOR NOTIFICATION TO THE DEPARTMENT OF PUBLIC WORKS AND NCSD WILL BE REJECTED AND WILL BE AT THE CONTRACTOR'S AND/OR OWNER'S RISK.

2. ALL CONSTRUCTION WORK AND INSTALLATIONS SHALL CONFORM TO THE COUNTY OF SAN LUIS OBISPO STANDARDS AND SPECIFICATIONS, AND THE UNIFORM BUILDING CODE. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE DEPARTMENT OF PUBLIC WORKS AND THE ENGINEER OF RECORD.

3. SOILS TESTS SHALL BE DONE IN ACCORDANCE WITH THE COUNTY STANDARDS AND SPECIFICATIONS SECTION 11-351.1403 AND 11-351.1404. ALL TESTS MUST BE MADE WITHIN 15 DAYS PRIOR TO THE PLACING MATERIAL. THE TEST RESULTS SHALL CLEARLY INDICATE THE LOCATION AND SOURCE OF THE MATERIAL.

4. COMPACTION TESTS SHALL BE MADE ON SUBGRADE MATERIAL AND MATERIAL AS SPECIFIED BY THE ENGINEER. SAID TESTS SHALL BE MADE PRIOR TO PLACING OF THE NEXT MATERIAL.

5. SUBGRADE MATERIAL SHALL BE COMPACTED TO A RELATIVE COMPACTION OF 95 % IN THE ZONE BETWEEN FINISHED SUBGRADE ELEVATION AND ONE FOOT BELOW. ALL MATERIAL IN FILL SECTIONS BELOW THE ZONE MENTIONED ABOVE SHALL BE COMPACTED TO 90 % RELATIVE COMPACTION.

6. A REGISTERED CIVIL ENGINEER MUST CERTIFY THAT THE IMPROVEMENTS WHEN COMPLETED ARE IN ACCORDANCE WITH THE PLANS PRIOR TO THE REQUEST FOR A FINAL INSPECTION. RECORD DRAWINGS SHALL BE PREPARED AFTER CONSTRUCTION IS COMPLETED. THE CIVIL ENGINEER CERTIFYING THE IMPROVEMENTS AND PREPARING RECORD DRAWINGS WILL BE PRESENT WHEN THE FINAL INSPECTION IS MADE.

7. AN INSPECTION AGREEMENT IS REQUIRED PRIOR TO THE START OF CONSTRUCTION.

8. ALL UTILITY COMPANIES MUST BE NOTIFIED PRIOR TO THE START OF CONSTRUCTION.

9. A COUNTY ENCHROACHMENT PERMIT IS REQUIRED AND SHALL BE OBTAINED BY THE CONTRACTOR FOR ALL WORK DONE WITHIN THE COUNTY RIGHT-OF-WAY. THE ENCROACHMENT PERMIT MAY ESTABLISH ADDITIONAL TRAFFIC CONTROL REQUIREMENTS.

10. THE COUNTY INSPECTOR ACTING ON BEHALF OF THE COUNTY DEPARTMENT OF PUBLIC WORKS MAY REQUIRE REVISIONS IN THE PLANS TO SOLVE UNFORSEEN PROBLEMS THAT MAY ARISE IN THE FIELD. ALL REVISIONS SHALL BE SUBJECT TO THE APPROVAL OF THE DEVELOPER'S ENGINEER.

11. THE STRUCTURAL SECTION SHALL BE BASED ON SOILS TESTS MADE AT THE TIME OF CONSTRUCTION AND ON A TRAFFIC INDEX AS SHOWN ON THE TYPICAL ROAD SECTION(S) DETAILED HEREIN.

12. FOR ANY PUBLIC IMPROVEMENTS TO BE MAINTAINED BY THE COUNTY, IF ENVIRONMENTAL PERMITS FROM U.S. ARMY CORPS OF ENGINEERS, THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD/STATE WATER RESOURCES CONTROL BOARD, OR THE CALIFORNIA DEPARTMENT OF FISH & GAME ARE REQUIRED, THE DEVELOPER SHALL:

A. SUBMIT A COPY OF ALL SUCH COMPLETED PERMITS TO THE COUNTY DEPARTMENT OF PUBLIC WORKS, OR;

B. DOCUMENT THAT THE REGULATORY AGENCIES DETERMINED THAT SAID PERMIT IS NOT REQUIRED; PRIOR TO ACCEPTANCE OF THE COMPLETED IMPROVEMENTS FOR COUNTY MAINTENANCE AND RELEASE OF IMPROVEMENT SECURITY. ANY MITIGATION MONITORING REQUIRED BY SAID PERMITS WILL REMAIN THE RESPONSIBILITY OF THE DEVELOPER.

13. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES. IF REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING AND SUBMITTING TO THE COUNTY OF SAN LUIS OBISPO A TRAFFIC CONTROL PLAN TO BE PREPARED IN ACCORDANCE WITH THE CURRENT CALTRANS MANUAL FOR TRAFFIC CONTROL AND WORK AREA TRAFFIC CONTROL HANDBOOK. NO STREET CLOSURE SHALL BE PERMITTED UNLESS PREVIOUSLY ARRANGED FOR AND GRANTED BY THE COUNTY ENGINEERING DEPARTMENT.

14. ALL PUBLIC IMPROVEMENTS (ROADS, DRAINAGE AND UTILITIES) SHALL BE COMPLETED PRIOR TO THE OCCUPANCY OF BUILDINGS.

15. THE ENGINEER OF WORK SHALL BE RESPONSIBLE TO ASSURE THAT THE APPROPRIATE EXISTING TRAFFIC CONTROLS REMAIN IN PLACE AND FUNCTIONAL DURING ALL CONSTRUCTION PHASES. CONTRACTOR SHALL COVER ANY CONFLICTING SIGNS THAT EXIST ALONG THE ROADWAY.

16. NO WORK SHALL COMMENCE WITHOUT THE CONSTRUCTION SIGNS INSTALLED AND OTHER NECESSARY TRAFFIC CONTROL DEVICES ON SITE.

17. NO CONSTRUCTION EQUIPMENT OR MATERIALS SHALL BE PARKED OR STORED WITHIN SIX FEET OF THE TRAVELED WAY. WHEN CONSTRUCTION EQUIPMENT OR MATERIALS STORED WITHIN THE RIGHT-OF-WAY ARE FURTHER THAN SIX FEET OFF THE TRAVELED WAY, THE SHOULDER AREA SHALL BE SIGNED AS CLOSED AND PORTABLE DELINEATORS USED TO MARK A TAPER IN ADVANCE OF THE MATERIAL OR EQUIPMENT. STORAGE OF EQUIPMENT OR MATERIALS SHALL NOT BLOCK OR DIVERT ANY DRAINAGE WAY OR CHANNEL.

18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS SHOWN ON ALL SHEETS OF THE PLANS. ANY DEVIATION FROM THESE PLANS WITHOUT PRIOR APPROVAL FROM THE DESIGN ENGINEER SHALL BE DONE AT THE CONTRACTOR'S OWN RISK AND EXPENSE.

19. EXISTING PAVEMENT SHALL BE SAW CUT IN ACCORDANCE WITH THE COUNTY STANDARDS AND SPECIFICATIONS TO REVEAL A SATISFACTORY STRUCTURAL SECTION AND NEW PAVING SHALL BE JOINED AT THIS POINT. APPLY A PAINT BINDER OF ASPHALTIC EMULSION TO ALL VERTICAL SURFACES OF THE EXISTING PAVEMENT AGAINST WHICH NEW MATERIAL IS TO BE PLACED. THE EXISTING STRUCTURAL SECTION SHALL BE INSPECTED BY THE COUNTY PUBLIC WORKS DEPARTMENT PRIOR TO THE CONSTRUCTION OF THE NEW SECTION.

20. THESE PLANS DO NOT AUTHORIZE SITE DISTURBANCE BEYOND THE LIMITS OF GRADING OR IMPROVEMENTS SHOWN HEREON. THE CONTRACTOR SHALL OBTAIN PERMISSION TO ENTER UPON ADJOINING PROPERTY TO CONSTRUCT IMPROVEMENTS OR TO GRADE ELSEWHERE PRIOR TO COMMENCING WORK. THE COUNTY ENGINEER DOES NOT AUTHORIZE ENTRY PER THESE APPROVED PLANS.

21. AGGREGATE BASE MATERIAL SHALL CONFORM TO THE REQUIREMENTS FOR AGGREGATE BASE AS SPECIFIED IN SECTION 26 OF THE STATE STANDARD SPECIFICATIONS. ANY WORK DONE THAT DOES NOT MEET OR EXCEED THE MINIMUM SPECIFICATION WILL BE REJECTED.

22. ASPHALT CONCRETE PAVING SHALL CONFORM TO THE REQUIREMENTS FOR ASPHALT CONCRETE AS SPECIFIED IN SECTION 39 OF THE STATE STANDARD SPECIFICATIONS. ANY WORK DONE THAT DOES NOT MEET OR EXCEED THE MINIMUM SPECIFICATION WILL BE REJECTED.

23. THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A CURRENT, COMPLETE AND ACCURATE RECORD OF ALL CHANGES WHICH DEVIATE FROM THE CONSTRUCTION AS PROPOSED IN THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING THE ENGINEER WITH A BASIS FOR RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE COUNTY ENGINEERING DEPARTMENT AND THE DESIGN ENGINEER.

24. THE CONTRACTOR SHALL FOLLOW ALL APPLICABLE INDUSTRIAL SAFETY REGULATIONS. THE COUNTY OF SAN LUIS OBISPO AND ITS OFFICIALS, THE ENGINEER OF RECORD, AND THE OWNER SHALL NOT BE RESPONSIBLE FOR ENFORCING SAFETY REGULATIONS.

25. THE CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES THE CONTRACTOR SHALL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE CONDITION OF THE JOB SITE DURING THE COURSE OF CONSTRUCTION FOR THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY, AND THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD HARMLESS THE COUNTY OF SAN LUIS OBISPO AND THE DESIGN PROFESSIONAL FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPTING LIABILITY ARISING FROM NEGLIGENCE OF THE DESIGN PROFESSIONAL.

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UNDERGROUND SERVICE ALERT OF CALIFORNIA

26. CONSTRUCTION GRADE STAKES SHALL BE SET BY A REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR REGISTERED IN THE STATE OF CALIFORNIA.

27. IN THE EVENT THAT THE CONTRACTOR OR SUBCONTRACTOR NOTICES IRREGULARITIES IN THE LINE OR GRADE HE SHALL BRING IT TO THE IMMEDIATE ATTENTION OF THE DESIGN ENGINEER AND THE COUNTY PUBLIC WORKS DEPARTMENT. IF HE FAILS TO DO SO, THE CONTRACTOR OR SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ANY ERROR IN THE GRADE AND NECESSARY RECONSTRUCTION TO CORRECT SUCH ERROR.

28. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OR PROPER RESETTING OF ALL SURVEY MARKERS. ANY SURVEY MONUMENTS DESTROYED BY THE CONTRACTOR SHALL BE REPLACED IN ACCORDANCE WITH THE STATE LAND SURVEYORS ACT AT THE CONTRACTOR'S OWN EXPENSE.

29. THE OWNER SHALL CONTRACT WITH A SOILS ENGINEER TO SUPERVISE THE GRADING AND CERTIFY THAT ALL GRADING HAS BEEN DONE IN CONFORMANCE WITH THESE PLANS, CHAPTER 33 OF THE UNIFORM BUILDING CODE, AND THE RECOMMENDATIONS OF THE PROJECT SOILS REPORT.

30. HYDROSEEDING SHALL BE PLACED ON ALL DISTURBED SURFACES OTHER THAN PAVED OR GRAVEL SURFACES, PRIOR TO FINAL INSPECTION.

31. ALL PROJECTS INVOLVING SITE DISTURBANCE OF ONE ACRE OR GREATER SHALL COMPLY WITH REQUIREMENTS OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES). THE DEVELOPER SHALL SUBMIT A NOTICE OF INTENT (NOI) TO COMPLY WITH THE GENERAL PERMIT FOR CONSTRUCTION ACTIVITY WITH THE REGIONAL WATER QUALITY CONTROL BOARD (RWQCB). THE DEVELOPER SHALL PROVIDE THE COUNTY WITH THE WASTE DISCHARGE IDENTIFICATION NUMBER (WDIID #) OR WITH VERIFICATIONTHAT AN EXEMPTION HAS BEEN GRANTED BY THE RWQCB.

WDID # 340C333702

32. PRIOR TO OCCUPANCY OF ANY STRUCTURE ASSOCIATED WITH THIS APPROVAL, THE APPLICANT SHALL CONTACT THE DEPARTMENT OF PLANNING AND BUILDING TO HAVE THE SITE INSPECTED FOR COMPLIANCE WITH THE CONDITIONS OF APPROVAL.

33. A CALTRANS ENCROACHMENT PERMIT SHALL BE REQUIRED AND SHALL BE OBTAINED BY THE CONTRACTOR FOR ALL WORK DONE WITHIN THE CALTRANS RIGHT-OF-WAY.

DUST CONTROL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PLACEMENT AND MAINTENANCE OF ALL EROSION CONTROL DEVICES AS SPECIFIED BY THE ENGINEER OF WORK OR THE COUNTY OF SAN LUIS OBISPO UNTIL SUCH TIME THAT THE PROJECT ACCEPTED AS COMPLETED BY THE GOVERNING JURISDICTION. THESE DEVICES SHALL BE IN PLACE OR BE READY TO PLACE FROM OCTOBER 15 TO APRIL 15. IN THE EVENT THAT THE DEVICES ARE NOT PERMANENTLY IN PLACE, THEY SHALL BE PLACED IN THE EVENT A FORECAST FOR RAIN EXCEEDS 30 %. AN EMERGENCY CREW SHALL BE AVAILABLE 24 HOURS PER DAY IN THE EVENT AN EROSION PROBLEM SHOULD OCCUR. A RESPONSIBLE PERSON AND THEIR PHONE NUMBER SHALL BE NAMED HERE UPON:

NAME: BOB ROBINSON
PHONE: (805) 961-830[illegible]

2. THE CONTRACTOR SHALL PROVIDE DUST CONTROL DURING ALL PHASES OF THE WORK.

3. THE GRADING PERMIT HOLDER AND THE OWNER SHALL COMPLY WITH DUST CONTROL MEASURES REQUIRED BY THE COUNTY OF SAN LUIS OBISPO. THE STANDARD DUST CONTROL MEASURES INCLUDE BUT MAY NOT BE LIMITED TO:

A. DUST CONTROL MEASURES CAPABLE OF PREVENTING THE MIGRATION OF DIRT AND DUST OFF SITE, IN A MANNER ACCEPTABLE TO THE COUNTY OF SAN LUIS OBISPO SHALL BE IMPLEMENTED AND MAINTAINED DURING ALL CONSTRUCTION, EARTH MOVING, AND GRADING PHASES OF THE PROJECT. FAILURE TO DO SO WILL RESULT IN THE ISSUANCE OF A "STOP WORK" ORDER WHICH WILL NOT BE RELEASED UNTIL SUCH TIME AS AN ADEQUATE PROGRAM IS IMPLEMENTED.

B. REDUCE THE AMOUNT OF THE DISTURBED AREA WHERE POSSIBLE.

C. USE OF WATER TRUCKS OR SPRINKLER SYSTEMS IN SUFFICIENT QUANTITIES TO PREVENT AIRBORNE DUST FROM LEAVING THE SITE. INCREASED WATERING FREQUENCY WOULD BE REQUIRED WHENEVER WIND SPEEDS EXCEED 15 MPH. RECLAIMED (NONPOTABLE) WATER SHOULD BE USED WHENEVER POSSIBLE.

D. ALL DIRT STOCK-PILE AREAS SHOULD BE SPRAYED DAILY AS NEEDED.

E. PERMANENT DUST CONTROL MEASURES IDENTIFIED IN THE APPROVED PROJECT REVEGETATION AND LANDSCAPE PLANS SHOULD BE IMPLEMENTED AS SOON AS POSSIBLE FOLLOWING COMPLETION OF ANY SOIL DISTURBING ACTIVITIES.

F. EXPOSED GROUND AREAS THAT ARE PLANNED TO BE REWORKED AT DATES GREATER THAN ONE MONTH AFTER INITIAL GRADING SHOULD BE SOWN WITH A FAST-GERMINATING NATIVE GRASS SEED AND WATERED UNTIL VEGETATION IS ESTABLISHED.

G. ALL DISTURBED SOIL AREAS NO SUBJECT TO REVEGETATION SHOULD BE STABILIZED USING APPROVED CHEMICAL SOIL BINDERS, JUTE NETTING, OR OTHER METHODS APPROVED IN ADVANCE BY THE THE APCD.

H. ALL ROADWAYS, DRIVEWAYS, SIDEWALKS ETC. TO BE PAVED SHOULD BE COMPLETED AS SOON AS POSSIBLE. IN ADDITION, BUILDING PADS SHOULD BE LAID AS SOON AS POSSIBLE AFTER GRADING UNLESS SEEDING OR SOIL BINDERS ARE USED.

I. VEHICLE SPEED FOR ALL CONSTRUCTION VEHICLES SHALL NOT EXCEED 15 MILES PER HOUR ON ANY UNPAVED SURFACE AT THE CONSTRUCTION SITE.

J. ALL TRUCKS HAULING DIRT, SAND, OR OTHER LOOSE MATERIALS ARE TO BE COVERED OR SHOULD MAINTAIN AT LEAST TWO FEET OF FREE BOARD (MINIMUM VERTICAL DISTANCE BETWEEN TOP OF LOAD AND TOP OF TRAILER) IN ACCORDANCE WITH CVC SECTION 23114.

K. INSTALL WHEEL WASHERS WHERE VEHICLES ENTER AND EXIT UNPAVED ROADS ONTO STREETS, OR WASH OFF TRUCKS AND EQUIPMENT LEAVING THE SITE.

L. SWEEP STREETS AT THE END OF EACH DAY IF VISIBLE SOIL MATERIAL IS CARRIED ONTO ADJACENT PAVED ROADS. WATER SWEEPERS WITH RECLAIMED WATER SHOULD BE USED WHERE FEASIBLE.

M. THE CONTRACTOR OR BUILDER SHALL DESIGNATE A PERSON OR PERSONS TO MONITOR THE DUST CONTROL PROGRAM AND TO ORDER INCREASED WATERING AS NECESSARY TO PREVENT TRANSPORT OF DUST OFF SITE. THEIR DUTIES SHALL INCLUDE HOLIDAYS AND WEEKEND PERIODS WHEN WORK MAY NOT BE IN PROGRESS. THE NAME AND TELEPHONE NUMBER OF SUCH PERSONS SHALL BE PROVIDED TO THE APCD PRIOR TO LAND USE CLEARANCE FOR FINISH GRADING OF STRUCTURES.

N. THE REQUIRED DUST CONTROL BOND WILL NOT BE RELEASED UNTIL THE SITE GRADING HAS BEEN SEEDED OR A SOIL BINDER APPLIED TO THE SATISFACTION OF THE COUNTY.

AIR QUALITY CONTROL NOTES:

1. PRIOR TO DEVELOPMENTAL BURNING OF VEGETATIVE MATERIAL, THE APPLICANT SHALL APPLY FOR AND OBTAIN A BURN PERMIT FROM THE APCD AND COUNTY FIRE/CALIFORNIA DEPARTMENT OF FORESTRY. THE APPLICATION REQUIRES THE SUBMITTAL OF A TECHNICAL FEASIBILITY STUDY.

UTILITY GENERAL NOTES:

1. ALL UTILITIES SHOWN ARE ACCURATE TO THE EXTENT OF AVAILABLE RECORDS AND KNOWLEDGE. THE CONTRACTOR HAS THE TOTAL RESPONSIBILITY TO VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND TO NOTIFY UTILITY COMPANIES WHEN WORKING IN THEIR PROXIMITY. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE TO VERIFY ALL EXISTING UTILITY POINTS OF CONNECTION AND ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IF DISCREPANCIES EXIST BETWEEN THE PLANS AND FIELD CONDITIONS PERTAINING TO MATERIALS, ELEVATIONS, LOCATIONS, ETC. PRIOR TO CONTINUING WORK.

2. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY "UNDERGROUND SERVICE ALERT" (USA) AT 1-800-227-2600 FOR LOCATION OF POWER, GAS, OIL, AND TELECOMMUNICATION UNDERGROUND FACILITIES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE UTILITY AGENCIES FOR THE LOCATION OF ALL UNDERGROUND FACILITIES.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WIRE AND GAS UTILITY TRENCHING AND CONDUIT PLACEMENT IN ACCORDANCE WITH HANDOUT PACKAGES PROVIDED BY THE RESPECTIVE UTILITY COMPANIES.

4. THE WATER DISTRIBUTION SYSTEM AND SEWAGE COLLECTION SYSTEM SHALL BE CONSTRUCTED PER LATEST STANDARDS AND SPECIFICATIONS OF THE COUNTY OF SAN LUIS OBISPO AND NCSD.

5. ELECTRIC UTILITIES SHOWN ON THESE PLANS ARE SCHEMATIC AND SUBJECT TO CHANGE BASED UPON FINAL PLAN ISSUANCE FROM THE INDIVIDUAL UTILITY COMPANY. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING PG&E, AND OBTAINING FINAL PLANS PRIOR TO CONSTRUCTION. ADDITIONAL EASEMENTS MAY BE REQUIRED.

CULTURAL RESOURCES:

1. PRIOR TO ISSUANCE OF CONSTRUCTION PERMIT, THE APPLICANT SHALL SUBMIT A MITIGATION/MONITORING PLAN, PREPARED BY A SUBSURFACE-QUALIFIED ARCHAEOLOGIST, FOR THE REVIEW AND APPROVAL BY THE ENVIRONMENTAL COORDINATOR. THE PLAN SHALL INCLUDE CONSIDERATION OF THE PREVIOUS ARCHAEOLOGICAL WORK CONDUCTED FOR THE SITE.

2. DURING ALL GROUND CONSTRUCTION ACTIVITIES, THE APPLICANT SHALL RETAIN A QUALIFIED ARCHAEOLOGIST (APPROVED BY THE ENVIRONMENTAL COORDINATOR) TO IMPLEMENT THE APPROVED MITIGATION/MONITORING PLAN.

3. UPON COMPLETION OF ALL MONITORING/MITIGATION ACTIVITIES, AND PRIOR TO OCCUPANCY OF FINAL INSPECTION (WHICHEVER COMES FIRST), THE CONSULTING ARCHAEOLOGIST SHALL SUBMIT A REPORT TO THE ENVIRONMENTAL COORDINATOR SUMMARIZING ALL MONITORING/MITIGATION ACTIVITIES AND CONFIRMING THAT ALL RECOMMENDED MITIGATION MEASURES HAVE BEEN MET.

4. IN THE EVENT ARCHAEOLOGICAL RESOURCES ARE UNEARTHED OR DISCOVERED DURING ANY CONSTRUCTION ACTIVITIES, THE FOLLOWING STANDARDS APPLY:

A. CONSTRUCTION ACTIVITIES SHALL CEASE, AND THE ENVIRONMENTAL COORDINATOR AND PLANNING DEPARTMENT SHALL BE NOTIFIED SO THAT THE EXTENT AND LOCATION OF DISCOVERED MATERIALS MAY BE RECORDED BY A QUALIFIED ARCHAEOLOGIST, AND DISPOSITION OF ARTIFACTS MAY BE ACCOMPLISHED IN ACCORDANCE WITH STATE AND FEDERAL LAW.

B. IN THE EVENT ARCHAEOLOGICAL RESOURCES ARE FOUND TO INCLUDE HUMAN REMAINS, OR IN ANY OTHER CASE WHERE HUMAN REMAINS ARE DISCOVERED DURING CONSTRUCTION, THE COUNTY CORONER IS TO BE NOTIFIED IN ADDITION TO THE PLANNING DEPARTMENT AND ENVIRONMENTAL COORDINATOR SO THAT PROPER DISPOSITION MAY BE ACCOMPLISHED.

EARTHWORK:

1. EARTHWORK: CUT: 146 CY FILL: 901 CY NET: 755 CY IMPORT
CUT AND FILL QUANTITIES ARE TO BE USED FOR DETERMINING PERMIT FEES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ACTUAL EARTHWORK QUANTITIES FOR BIDDING PURPOSES. EDA DOES NOT, EXPRESSLY OR BY IMPLICATION, EXTEND ANY WARRANTY FOR EARTHWORK QUANTITIES.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING THE GROUND ELEVATIONS AND OVERALL TOPOGRAPHY OF THE SITE PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY EDA IMMEDIATELY, AND IN WRITING, OF ANY DIFFERENCES IN TOPOGRAPHY FROM THAT SHOWN ON THIS PLAN, WHICH MAY REQUIRE CHANGES IN DESIGN AND/OR AFFECT THE EARTHWORK QUANTITIES.

3. EARTHWORK QUANTITIES AS SHOWN HAVE BEEN CALCULATED FROM EXISTING GROUND, BASED ON THE TOPOGRAPHY SHOWN, TO DESIGN FINISHED GRADE. THE ACTUAL AMOUNT OF EARTH MOVED WILL VARY DEPENDING ON COMPACTION, CONSOLIDATION, STRIPPING AND THE CONTRACTOR'S METHOD OF SITE PREPARATION.

4. THE CONTRACTOR SHALL CALCULATE THE EARTHWORK QUANTITIES TO THEIR SATISFACTION PRIOR TO THE START OF CONSTRUCTION, INCLUDING ALLOWANCE FOR SHRINKAGE, TRENCH SPOILS, STRIPPING, PRE-COMPACTION, AND CONSOLIDATION. NO ADDITIONAL COMPENSATION WILL BE MADE FOR ANY EXPORT OR IMPORT REQUIRED.

5. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNMENT ORDINANCES AND REGULATIONS RELATING TO THE WORK SHOWN ON THIS PLAN.

6. THE PROJECT SOILS REPORT PREPARED BY GEOSOLUTIONS, INC (No. SLO 04813-1) DATED APRIL 25, 2005 AND ALL SUBSEQUENT ADDENDUMS SHALL BE CONSIDERED A PART OF THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONSTRUCTION WITHIN THE CONSTRAINTS AS DEFINED BY THESE ITEMS.

7. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER UNLESS OTHERWISE NOTED ON THE PLANS.

8. ALL GRADING SHALL CONFORM TO THE REGULATING AGENCIES GRADING ORDINANCE, STANDARDS, AND SPECIFICATIONS; AND TO THE LATEST EDITION OF THE UNIFORM BUILDING CODE (CHAPTER 33); AND TO THE RECOMMENDATIONS OF THE PROJECT SOILS REPORT.

9. MATERIAL TO BE USED AS BACKFILL OR EMBANKMENT SHALL BE APPROVED BY THE SOILS ENGINEER AND BE FREE OF OBJECTIONABLE MATERIAL SUCH AS TREES, STUMPS, ROOTS, LOGS, OR OTHER DELETERIOUS MATERIAL. THE CONTRACTOR SHALL FOLLOW THE SITE DEVELOPMENT RECOMMENDATIONS OF THE SOILS REPORT.

10. NO GRADING SHALL OCCUR WITHIN TWO (2) FEET OF THE PROPERTY LINES UNLESS NOTED OTHERWISE ON THESE PLANS.

NCSD GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ITEMS SHOWN ON ALL SHEETS OF THE PLANS.

2. ALL CONSTRUCTION WORK AND INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST VERSION OF THE SAN LUIS OBISPO COUNTY ENGINEERING DEPARTMENT AND NIPOMO COMMUNITY SERVICES DISTRICT STANDARD SPECIFICATIONS AND DRAWINGS. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE NIPOMO COMMUNITY SERVICES DISTRICT, AND THE ENGINEER OF RECORD.

3. NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED BY NIPOMO COMMUNITY SERVICES DISTRICT.

4. A COUNTY ENCROACHMENT PERMIT IS REQUIRED FOR ALL WORK DONE WITHIN THE COUNTY RIGHT-OF-WAY AND SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN.

5. AN INSPECTION AGREEMENT WITH THE NIPOMO COMMUNITY SERVICES DISTRICT IS REQUIRED PRIOR TO THE START OF CONSTRUCTION.

6. NIPOMO COMMUNITY SERVICES DISTRICT HAS CONSTRUCTION APPROVAL AUTHORITY REGARDING WATER AND SEWER IMPROVEMENTS SHOWN HEREIN.

7. ALL WATERLINE SHUTDOWNS SHALL BE PERFORMED BY NIPOMO COMMUNITY SERVICES DISTRICT (NCSD) PERSONNEL. THE CONTRACTOR SHALL PROVIDE A MINIMUM OF FORTY-EIGHT (48) HOUR NOTICE TO NCSD.

8. THE CONTRACTOR SHALL PROVIDE DUST CONTROL DURING ALL PHASES OF THE WORK.

9. THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A CURRENT, COMPLETE AND ACCURATE RECORD OF ALL CHANGES WHICH DEVIATE FROM THE CONSTRUCTION AS PROPOSED IN THESE PLANS AND SPECIFICATIONS FOR THE PURPOSE OF PROVIDING THE ENGINEER WITH A BASIS FOR RECORD DRAWINGS. NO CHANGES SHALL BE MADE WITHOUT PRIOR APPROVAL OF THE NIPOMO COMMUNITY SERVICES DISTRICT AND THE DESIGN ENGINEER.

10. PEDESTRIAN ACCESS SHALL BE AFFORDED THROUGH THE WORK AREA EITHER BY PROVIDING NECESSARY FACILITIES FOR SAFE AND VIABLE ACCESS, OR BY PROVIDING APPROPRIATE ADVANCE WARNING TO PEDESTRIANS TO UTILIZE ALTERNATE ROUTES. FOR BOTH PEDESTRIANS AND BICYCLES, SURFACES SHALL BE MAINTAINED FREE OF LOOSE DEBRIS OR GRAVEL.

TREE REMOVAL NOTE:

1. PRIOR TO COMMENCEMENT OF TREE REMOVAL ASSOCIATED WITH THIS DEVELOPMENT, TO AVOID CONFLICTS WITH NESTING RAPTORS, CONSTRUCTION ACTIVITIES SHALL NOT BE ALLOWED DURING THE NESTING SEASON (MARCH TO JULY), UNLESS A COUNTY-APPROVED, QUALIFIED BIOLOGIST HAS SURVEYED THE IMPACT ZONE AND DETERMINED THAT NO NESTING ACTIVITIES WILL BE ADVERSELY IMPACTED. AT SUCH TIME, IF ANY EVIDENCE OF NESTING ACTIVITIES ARE FOUND, THE BIOLOGIST WILL DETERMINE IF ANY CONSTRUCTION ACTIVITIES CAN OCCUR DURING THE NESTING PERIOD AND TO WHAT EXTEND. THE RESULTS OF THE SURVEYS WILL BE PASSED IMMEDIATELY TO THE COUNTY (ENVIRONMENTAL DIVISION), POSSIBLY WITH RECOMMENDATIONS FOR VARIABLE BUFFER ZONES, AS NEEDED, AROUND INDIVIDUAL NESTS.

SURVEY DATA

BENCHMARK:
1/2 REBAR WITH CAP, LS 4819, LOCATED AT THE SOUTHERLY PROPERTY CORNER. ELEVATION 355.07' TIED TO BENCHMARK AT HIGHWAY 101 AND TEFFT STREET NEAR VONS SHOPPING CENTER, SINCE DESTROYED.

BASIS OF BEARING:
BEARINGS FOR THIS MAP ARE BASED ON THE RELATIONSHIP OF FOUND MONUMENTS ON THE CENTERLINE OF SANDYDALE DRIVE, SAID BEARING BEING N 48°06'37" E PER R1.

REGISTERED PROFESSIONAL ENGINEER JEFFREY P. WAGNER No. 26431 Exp. 3/31/06 CIVIL STATE OF CALIFORNIA

NCSD CONSTRUCTION NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST VERSION OF THE NIPOMO COMMUNITY SERVICES DISTRICT (NCSD) STANDARDS AND SPECIFICATIONS, AND ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE NCSD MANAGER.

2. NO CONSTRUCTION SHALL BE STARTED WITHOUT PLANS APPROVED AND SIGNED BY NCSD.

3. A CHECKING AND INSPECTION AGREEMENT WITH NCSD IS REQUIRED PRIOR TO THE COMMENCEMENT OF WORK.

4. NCSD HAS CONSTRUCTION APPROVAL AUTHORITY OVER WATER AND SEWER IMPROVEMENTS SHOWN HEREIN.

5. ALL WATERLINE SHUT DOWNS SHALL BE PERFORMED BY NCSD PERSONNEL. A MINIMUM OF 48 HOURS WRITTEN NOTICE SHALL BE GIVEN TO NCSD PRIOR TO ANY SHUTDOWN.

6. THE CONTRACTOR'S ATTENTION IS DIRECTED TO NCSD STANDARD 2.04J, WHICH REQUIRES THE PREPARATION OF ACCURATE AS-BUILT DRAWINGS PRIOR TO WORK ACCEPTANCE.

7. IT IS UNLAWFUL TO OPEN OR DRAW WATER FROM A FIRE HYDRANT WITHOUT PERMISSION FROM NIPOMO COMMUNITY SERVICES DISTRICT.

ABBREVIATIONS

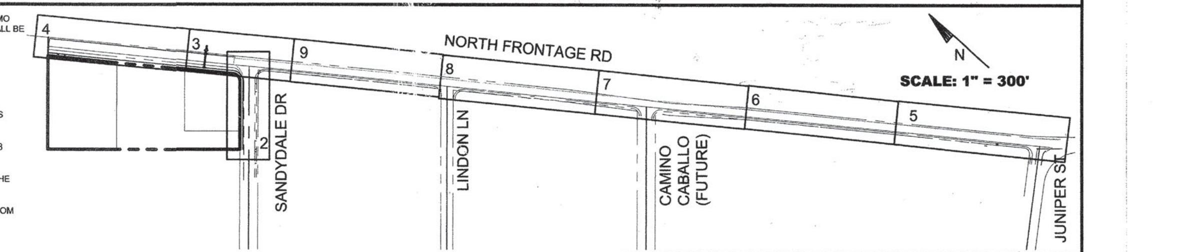
AB - AGGREGATE BASE
ABN - ABANDON
AC - ASPHALT CONCRETE
ADJ - ADJUST
ANG - ANGLE
ASSY - ASSEMBLY
AV - AIR VACUUM
BM - BENCHMARK
BVC - BEGIN VERTICAL CURVE
BW - BACK OF WALK (GRADE)
CA - CALTRANS SIGN NUMBER
CATV - CABLE TELEVISION (LINE)
CB - CATCH BASIN
CL - CENTERLINE
CLF - CHAIN LINK FENCE
CMU - CONCRETE MASONRY UNIT
CO - CLEAN OUT
COM - COMMUNICATIONS
CONC - CONCRETE
CONST - CONSTRUCT
CSP - CORRUGATED STEEL PIPE
DG - DECOMPOSED GRANITE
D/W - DRIVEWAY
DDCV - DOUBLE DETECTOR CHECK VALVE
(E) - EXISTING
ELEC - ELECTRICAL
ELEV - ELEVATION
EP - EDGE OF PAVEMENT
ESMT - EASEMENT
ETW - EDGE OF TRAVELED WAY
EVC - END VERTICAL CURVE
EXIST - EXISTING
FDC - FIRE DEPARTMENT CONNECTION
FG - FINISHED GRADE
FH - FIRE HYDRANT
FL - FLOW LINE
FLE - FLOW LINE EAST
FLN - FLOW LINE NORTH
FLS - FLOW LINE SOUTH
FLW - FLOW LINE WEST
FNC - FENCE
FS - FINISHED SURFACE (PAVEMENT)
FUT - FUTURE
G - GAS (LINE)
GB - GRADE BREAK
GM - GAS METER
GP - GRADING PLAN
GR - GRATE
GTR - GUTTER
HORZ - HORIZONTAL
HP - HIGH POINT
HW - HEADWALL
JB - JUNCTION BOX
JP - JOINT POLE
LAT - LATERAL
LF - LINEAR FEET
LP - LOW POINT
LT - LEFT
MAX - MAXIMUM
MH - MANHOLE
MIN - MINIMUM
MON - MONUMENT
OG - ORIGINAL GROUND
OHW - OVERHEAD WIRE
OS - ORIGINAL SURFACE
SHT - SHEET
TBA - TO BE ABANDONED
TBR - TO BE REMOVED
TBP - TO BE PROTECTED
TC - TOP OF CURB
TEL - TELEPHONE
TEMP - TEMPORARY
TF - TOP OF FOOTING
TG - TOP OF GRATE
TYP - TYPICAL
TW - TOP OF WALL
UD - UNDER DRAIN
UG - UNDERGROUND
UP - UTILITY POLE
VERT - VERTICAL
VC - VERTICAL CURVE
VCP - VITRIFIED CLAY PIPE
VLT - VAULT
VLV - VALVE
WL - WATER LINE
WM - WATER METER BOX
WS - WATER SERVICE
WSL - WATER SERVICE LINE
WV - WATER VALVE
WW - WING WALL
WWM - WELDED WIRE MESH
± - APPROXIMATE
Ø - DIAMETER

LEGEND

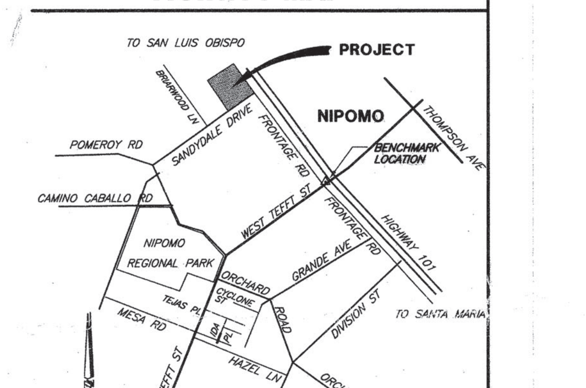
PROPOSED | EXISTING

DROP INLET
CURB & GUTTER
ASPHALT DIKE
EDGE OF PAVEMENT
MAJOR CONTOUR (100 / (100))
MINOR CONTOUR (101 / (101))
WATER VALVE
FIRE HYDRANT
WATER METER
MANHOLE
JUNCTION POLE
UTILITY GUY
STREET LIGHT
STREET SIGN
TRANSFORMER
TREE
SAWCUT LINE
PROJECT BOUNDARY & ROW
ADJACENT BOUNDARY & ROW
LOT LINE & ROW
EASEMENT
CENTERLINE
NEW FENCE CHAIN
EXISTING FENCE CHAIN
NEW FENCE WIRE
EXISTING FENCE WIRE
EXISTING WALL
NEW WALL
NEW RETAINING WALL
NEW WATERLINE
EXISTING WATERLINE
NEW SEWER LINE
EXISTING SEWER LINE
NEW STORM DRAIN
EXISTING STORM DRAIN
NEW GAS LINE
EXISTING GAS LINE
EXISTING OH WIRE
NEW WIRE UTILITY
EXISTING WIRE UTILITY
FUTURE IMPROVEMENTS (LABELED PER PLAN)
PATH OF TRAVEL
TRAIL

SHEET INDEX MAP



VICINITY MAP



SHEET INDEX

SHEET	SHEET TITLE
1	TITLE SHEET
2	STREET IMPROVEMENTS FOR SANDYDALE DRIVE FROM STA 46+80.01 TO 49+71.57
3	STREET IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 143+50 TO 147+25
4	STREET IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 147+25 TO END
5	STREET IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 118+50 TO 123+50
6	SEWER IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 123+50 TO 128+50
7	SEWER IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 128+50 TO 133+50
8	SEWER IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 133+50 TO 138+50
9	SEWER IMPROVEMENTS FOR N. FRONTAGE ROAD FROM STA 138+50 TO 143+50
10	COMPOSITE UTILITY PLAN
11	EROSION CONTROL & BASIN PLAN
12	TRAFFIC CONTROL PLAN
13	SIGNING AND STRIPING PLAN
14	DETAIL SHEET 1
15	DETAIL SHEET 2
16	DETAIL SHEET 3
17	DETAIL SHEET 4
18	SANDYDALE DRIVE - ROAD SECTIONS
19	N. FRONTAGE ROAD - ROAD SECTIONS

REGISTERED PROFESSIONAL ENGINEER RICHARD E. MARSHALL No. 47574 Exp. 12/31/05 CIVIL STATE OF CALIFORNIA

RECEIVED NOV 29

APPROVED
THIS IS NOT A PERMIT
CDF/SAN LUIS OBISPO COUNTY FIRE DEPARTMENT
8/1/05
The approval of these plans shall not be construed to permit violation of any county ordinance or State Law, and shall not prevent the County of San Luis Obispo from requiring correction of errors or ommissions in plans, specification, or construction. A set of these approved plans shall be kept on the job site at all times.

Reviewer	Date
REVIEWED BY NIPOMO COMMUNITY SERVICES DISTRICT: Michael LeBrun	9-8-05
REVIEWED BY P.G.& E.	8-9-05
REVIEWED BY SBC	7/26/05
REVIEWED BY CHARTER COMMUNICATION	7-27-05
REVIEWED BY THE GAS COMPANY: Clark Falbert	08-04-05
	DATE
	DATE
	DATE

REVISIONS

DATE	DESCRIPTION	APPRVD

PROJECT DATA:
EDA JOB No: 2.2934.100
CONTACT: MIKE BERTACCINI

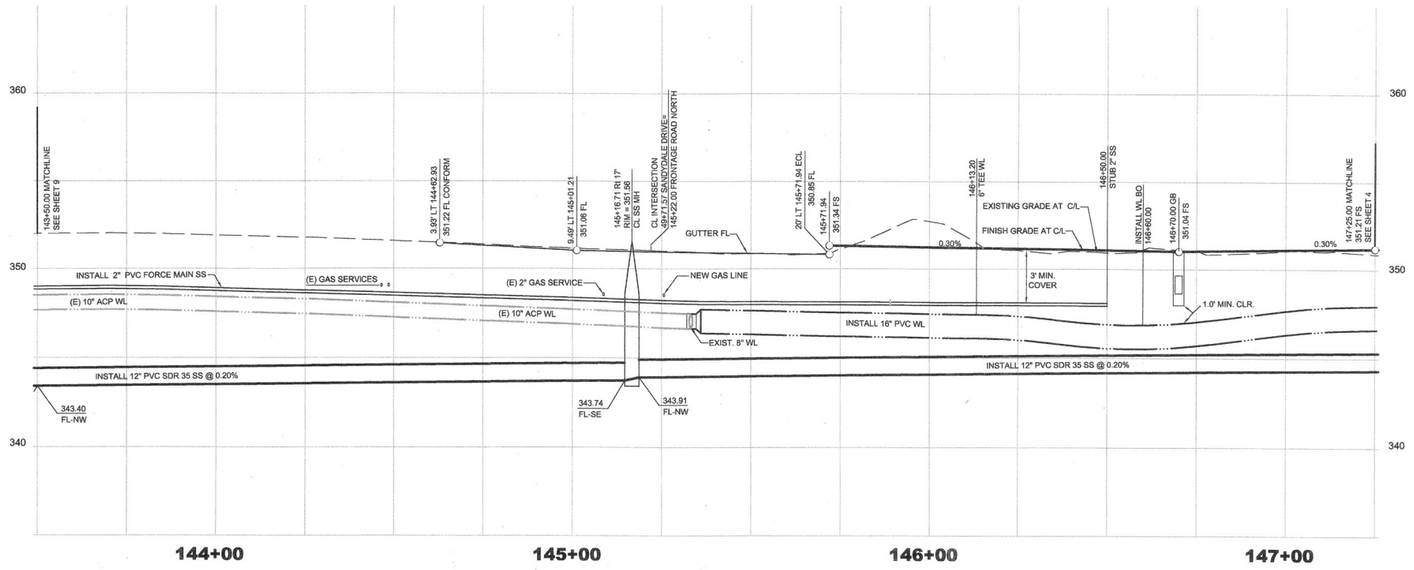
eda
civil engineers • land surveyors • land planners
1998 santa barbara st • san luis obispo, ca 93401
ph: 805/549-8658 • email: eda@edainc.com

PUBLIC IMPROVEMENT PLANS FOR
CO - 03-0301
TITLE SHEET

Design/Drawn	County Plan Check	APPROVED FOR COUNTY REQUIREMENTS	
	GDM 10.14.05	Development Services Engineer	Date 11/1/05
Job No. 2.2934.100	County W.O. No. 201 RII-E396	Principal Engineer	Date 10.3.05
California Coordinates N 570	E 1252		Sheet 1 Of 19

K:\2293410013-Con Docs\public\22934100PP01 - TITLE SHEET.dwg 7/25/05 01:31 PM BretR

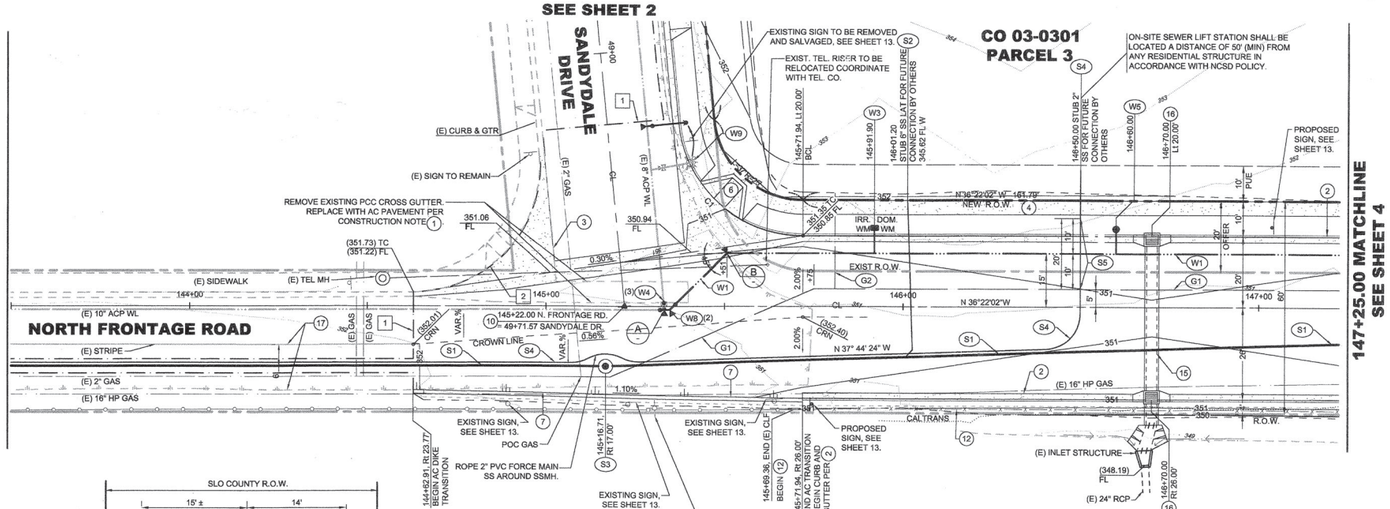
9-15-05 10-12-05



PROFILE

SCALE: 1"=20' HORIZONTAL
1"=4' VERTICAL

SEE SHEET 2

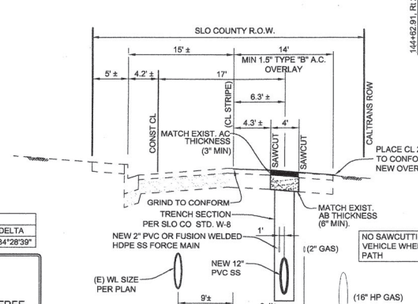


PLAN

SCALE: 1"=20' HORIZONTAL

NOTE:
REMOVE EXISTING TREE ROOTBALLS WITHIN AREA OF CONSTRUCTION. A BURIED 16" GAS LINE IS PRESENT WITHIN THE NORTH FRONTAGE ROAD RIGHT OF WAY. THE GAS LINE LIES UNDER THE PROPOSED ROADWAY STRUCTURAL SECTION AND WILL PASS UNDER DRAINAGE CULVERT AS SHOWN ON THE IMPROVEMENT PLANS. AN AUTHORIZED GAS COMPAINY REPRESENTATIVE SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY CONSTRUCTION OR GRADING OPERATIONS WITHIN 10' LEFT AND RIGHT (20' TOTAL WIDTH) OF THE GAS LINE AS LOCATED IN THE FIELD. AUTHORIZED GAS CO. PERSONNEL SHALL BE ONSITE TO OBSERVE ALL OPERATIONS WITHIN THE ABOVE STATED TOLERANCE ZONE.

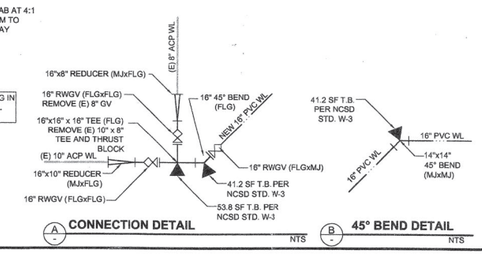
NOTE TO CONTRACTOR:
A CALTRANS ENCROACHMENT PERMIT IS REQUIRED PRIOR TO WORKING ON/WITHIN THE CALTRANS ROW.



TYPICAL EXIST. STREET SECTION: NORTH FRONTAGE RD
STA 131+67.59 TO STA 144+62.91
SCALE: 1"=10' HORZ
NTS VERT

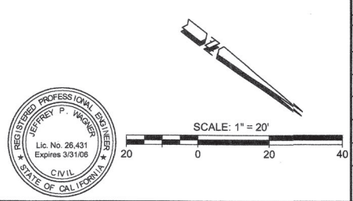
NO SAWCUTTING IN VEHICLE WHEEL PATH

CURVE TABLE				
CURVE	LENGTH	RADIUS	TANGENT	DELTA
C1	51.60	35.00	31.78	84°28'39"



A CONNECTION DETAIL — NTS

B 45° BEND DETAIL — NTS



DEMOLITION NOTES:

1. SAWCUT AND REMOVE EXISTING AC PAVEMENT (SEE GENERAL CONSTRUCTION NOTE NUMBER 19, SHEET 1).
2. SAWCUT AND REMOVE EXISTING CONCRETE IMPROVEMENTS.
3. REMOVE EXISTING SIGN.

ROAD CONSTRUCTION NOTES:

1. CONSTRUCT 3" AC OVER 6" CLII AB PAVEMENT SECTION OR MATCH EXISTING SECTION, WHICHEVER IS GREATER.
2. CONSTRUCT TYPE 'A' CURB AND GUTTER PER SLO COUNTY STD. C-1.
3. CONSTRUCT NEW 3" X 12" RECTANGULAR CAST IRON PIPE SIDEWALK UNDER DRAIN PER DETAIL "A", SHEET 16.
4. CONSTRUCT CONCRETE SIDEWALK PER SLO COUNTY STD. B-5.
5. CONSTRUCT CONCRETE DRIVEWAY PER SLO COUNTY STD. B-3, SHEET 14, MODIFIED TO 8" THICK CONCRETE PLUS STEEL.
6. CONSTRUCT ACCESS RAMP PER CALTRANS STD. RSP A-88A, CASE "E".
7. CONSTRUCT AC DIKE PER SLO COUNTY STD. C-1 WITH AR16000 BINDER.
8. INSTALL REDWOOD HEADER PER DETAIL "D", SHEET 16.
9. CONSTRUCT WOOD BEAM BARRICADE PER SLO COUNTY STD. M-5.
10. CONSTRUCT STANDARD STREET MONUMENT PER SLO COUNTY STD. M-1.
11. BACK FILL AND REPLACE PAVEMENT PER NCSD STD W-8 AND SLO CO TYPICAL UTILITY TRENCH DETAIL.
12. REMOVE EXISTING BARBED WIRE FENCE AND CONSTRUCT 6' CHAIN LINK FENCE PER CALTRANS STANDARD PLAN A85.
13. CONSTRUCT TEMPORARY AC CURB RAMP AT 12:1 MAX SLOPE TO CONFORM EDGE OF SIDEWALK TO EXISTING GRADE.
14. CONSTRUCT TEMPORARY WOOD RETAINING WALL PER DETAILL "C", SHEET 16.
15. CONSTRUCT STORM DRAIN SYSTEM PER DETAIL "C", SHEET 17.
16. CONSTRUCT STORM DRAIN INLET PER SLO COUNTY STD. C-3.
17. GRIND TO CONFORM AND INSTALL 1.5" MIN TYPE "B" A.C. OVERLAY.

S1. CONSTRUCT 12" PVC SDR35 SANITARY SEWER PER NCSD STD W-8.
S2. CONSTRUCT 6" PVC SDR35 SANITARY SEWER LATERAL PER NCSD STD. S-5 AND NCSD STD W-8.
S3. CONSTRUCT SANITARY SEWER MANHOLE PER NCSD STD. S-2.
S4. CONSTRUCT 2" SCHEDULE 80 PVC OR FUSION WELDED HDPE FORCE MAIN SANITARY SEWER PER NCSD STD W-8.
S5. INSTALL 20' OF CONTINUOUS PIPE CENTERED OVER WATERLINE WITH 4" C900 PVC SLEEVE.

W1. CONSTRUCT 16" PVC C905 WATER LINE (CLASS 150) PER NCSD STD W-8
W2. INSTALL FIRE HYDRANT PER NCSD W-1.
W3. CONSTRUCT 2" WATER SERVICE & TEE FOR 1" WATER METERS PER NCSD W-4.
W4. INSTALL 16" BUTTERFLY GATE VALVE AND ANCHOR (PRATT GROUNDHOG VALVE OR APPROVED EQUAL TO BE SUBMITTED TO NCSD PRIOR TO INSTALLATION).
W5. INSTALL 4" BLOW OFF ASSEMBLY PER NCSD STD W-7(A).
W6. INSTALL 6" PVC C900 (CLASS 150) WATERLINE, CAP 3' BEYOND ROW.
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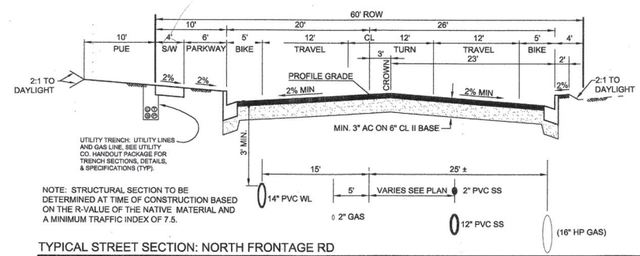
W10. CONSTRUCT 1" WATER SERVICE PER NCSD STD. W-4.
W11. INSTALL 1" AIR AND VACUUM RELIEF ASSEMBLY PER NCSD STD W-5.

G1. INSTALL GAS LINE PER UTILITY COMPANY'S PLANS.
G2. INSTALL GAS SERVICE PER UTILITY COMPANY'S PLANS.

SEWER CONSTRUCTION NOTES:

1. UPON COMPLETION OF SEWER LINE CONSTRUCTION THE ENTIRE TRAVEL LANE SHALL BE OVERLAID (0.13' MIN AC). CONTRACTOR SHALL GRIND ALL CONFORMS, NO PAVEMENT FEATHERING SHALL BE ALLOWED.
2. NO WORK ALONG NORTH FRONTAGE RD SHALL COMMENCE PRIOR TO 8:30 AM.
3. ALL REMOVED OR DAMAGED STRIPING SHALL BE REPLACED IN KIND PER MUTCD AND CALIFORNIA SUPPLEMENT.



NOTE: STRUCTURAL SECTION TO BE DETERMINED AT TIME OF CONSTRUCTION BASED ON THE R-VALUE OF THE NATIVE MATERIAL AND A MINIMUM TRAFFIC INDEX OF 7.5.

TYPICAL STREET SECTION: NORTH FRONTAGE RD
STA 145+71.94 TO STA 151+84.66
SCALE: 1"=10'

BENCHMARK:
1/2 REBAR WITH CAP, LS 4819, LOCATED AT THE SOUTHERLY PROPERTY CORNER. ELEVATION 355.07' TIED TO BENCHMARK AT HIGHWAY 101 AND TEFFT STREET NEAR VONS SHOPPING CENTER, SINCE DESTROYED.

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF CALIFORNIA

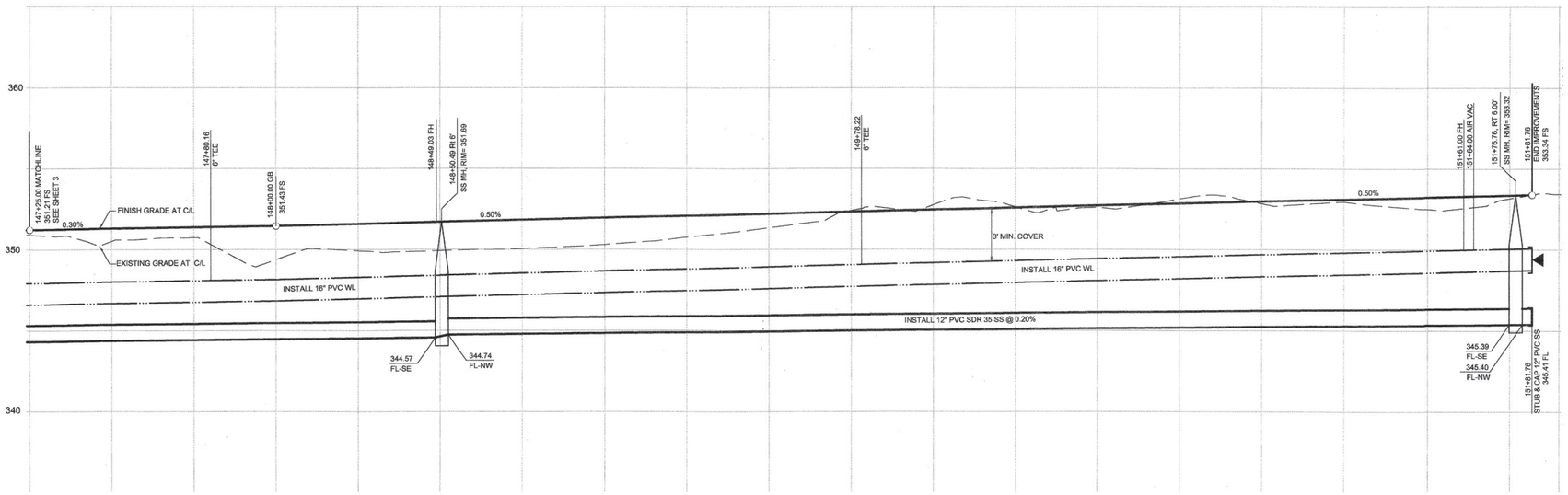
REVISIONS		
DATE	DESCRIPTION	APPRVD

eda
civil engineers • land surveyors • land planners
1998 santa barbara st • san luis obispo, ca 93401
ph: 805/549-8658 • email: eda@edainc.com

PUBLIC IMPROVEMENT PLANS FOR
CO - 03-0301
STREET AND SEWER IMPROVEMENTS FOR N. FRONTAGE ROAD
STA 143+50 TO STA 147+25

Design/Drawn	County Plan Check GDM 10-14-05	APPROVED FOR COUNTY REQUIREMENTS
		Development Services Engineer — Date
Job No. 2.2934.100	County W.O. No. 201 RII-E396	Principal Engineer — Date 10-3-05
PROJECT DATA: DATE: OCTOBER 3, 2005 EDA JOB No: 2.2934.100 CONTACT: MIKE BERTACCINI	California Coordinates N 570 E 1252	Sheet 3 of 19

K:\2293410\03-Con Docs\public\2293410PP03 - FRONTAGE IMPS.dwg 10/03/05 10:19 AM EricE



PROFILE

SCALE: 1"=20' HORIZONTAL
1"=4' VERTICAL

DEMOLITION NOTES:

1. SAWCUT AND REMOVE EXISTING AC PAVEMENT (SEE GENERAL CONSTRUCTION NOTE NUMBER 19, SHEET 1).
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12. REMOVE EXISTING BARBED WIRE FENCE AND CONSTRUCT 6' CHAIN LINK FENCE PER CALTRANS STANDARD PLAN A85.
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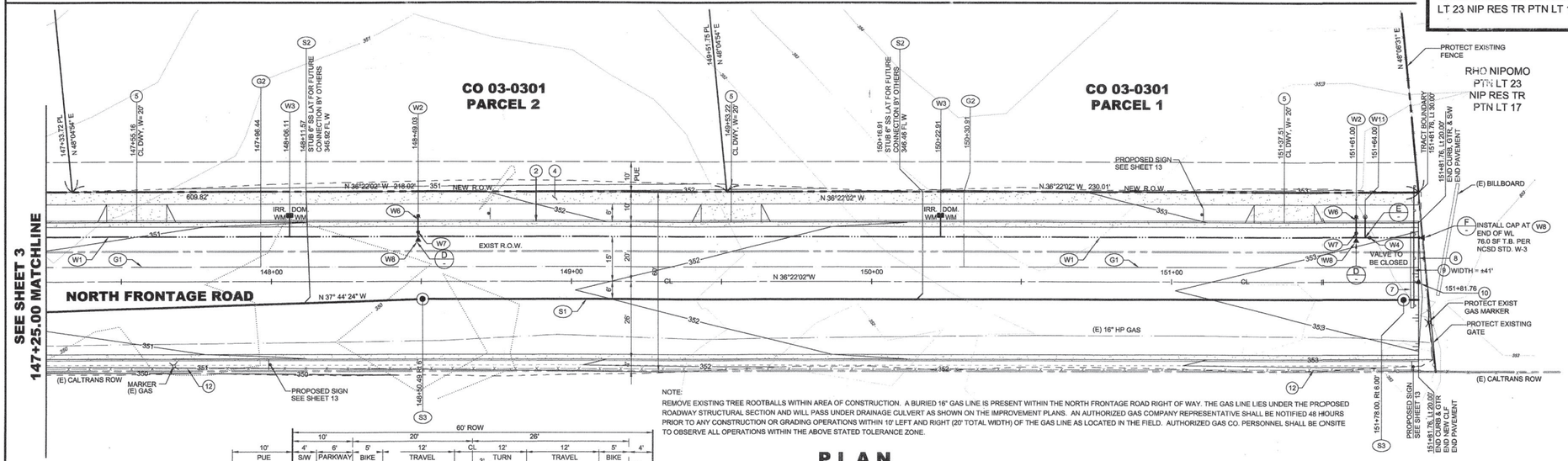
W1. CONSTRUCT 16" PVC C905 WATER LINE (CLASS 150) PER NCSD STD W-8
W2. INSTALL FIRE HYDRANT PER NCSD W-1.
W3. CONSTRUCT 2" WATER SERVICE & TEE FOR 1" WATER METERS PER NCSD W-4.
W4. INSTALL 16" BUTTERFLY GATE VALVE AND ANCHOR (PRATT GROUNDHOG VALVE OR APPROVED EQUAL TO BE SUBMITTED TO NCSD PRIOR TO INSTALLATION).
W5. INSTALL 4" BLOW OFF ASSEMBLY PER NCSD STD W-7(A).
W6. INSTALL 6" PVC C900 (CLASS 150) WATERLINE, CAP 3' BEYOND ROW.
W7. INSTALL 6" GATE VALVE AND ANCHOR PER NCSD STD. W-2.
W8. INSTALL THRUST BLOCK PER NCSD STD. W-3.
W9. RELOCATE EXISTING FIRE HYDRANT. INSTALL PER NCSD STD. W-1.
W10. CONSTRUCT 1" WATER SERVICE PER NCSD STD. W-4.
W11. INSTALL 1" AIR AND VACUUM RELIEF ASSEMBLY PER NCSD STD W-5.

G1. INSTALL GAS LINE PER UTILITY COMPANY'S PLANS.
G2. INSTALL GAS SERVICE PER UTILITY COMPANY'S PLANS.

NOTE TO CONTRACTOR:
THE CONTRACTOR SHALL SECURE WRITTEN APPROVAL TO WORK IN RHO NIPOMO PTN LT 23 NIP RES TR PTN LT 17.

SEWER CONSTRUCTION NOTES:

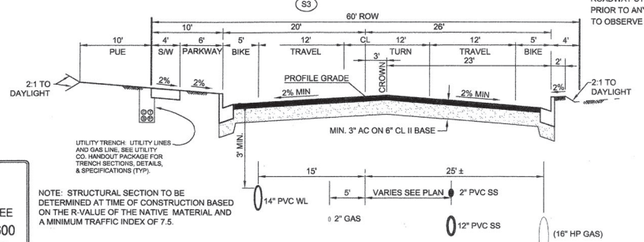
1. UPON COMPLETION OF SEWER LINE CONSTRUCTION THE ENTIRE TRAVEL LANE SHALL BE OVERLAID (0.13' MIN AC). CONTRACTOR SHALL GRIND ALL CONFORMS, NO PAVEMENT FEATHERING SHALL BE ALLOWED.
2. NO WORK ALONG NORTH FRONTAGE RD SHALL COMMENCE PRIOR TO 8:30 AM.
3. ALL REMOVED OR DAMAGED STRIPING SHALL BE REPLACED IN KIND PER MUTCD AND CALIFORNIA SUPPLEMENT.



NOTE:
REMOVE EXISTING TREE ROOTBALLS WITHIN AREA OF CONSTRUCTION. A BURIED 16" GAS LINE IS PRESENT WITHIN THE NORTH FRONTAGE ROAD RIGHT OF WAY. THE GAS LINE LIES UNDER THE PROPOSED ROADWAY STRUCTURAL SECTION AND WILL PASS UNDER DRAINAGE CULVERT AS SHOWN ON THE IMPROVEMENT PLANS. AN AUTHORIZED GAS COMPANY REPRESENTATIVE SHALL BE NOTIFIED 48 HOURS PRIOR TO ANY CONSTRUCTION OR GRADING OPERATIONS WITHIN 10' LEFT AND RIGHT (20' TOTAL WIDTH) OF THE GAS LINE AS LOCATED IN THE FIELD. AUTHORIZED GAS CO. PERSONNEL SHALL BE ONSITE TO OBSERVE ALL OPERATIONS WITHIN THE ABOVE STATED TOLERANCE ZONE.

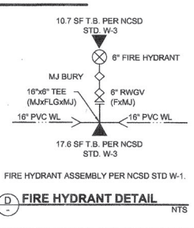
PLAN

SCALE: 1"=20' HORIZONTAL



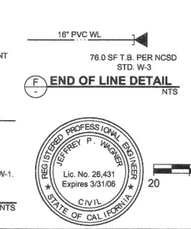
NOTE: STRUCTURAL SECTION TO BE DETERMINED AT TIME OF CONSTRUCTION BASED ON THE R-VALUE OF THE NATIVE MATERIAL AND A MINIMUM TRAFFIC INDEX OF 7.5.

TYPICAL STREET SECTION: NORTH FRONTAGE RD
STA 145+71.94 TO STA 151+84.66
SCALE: 1"=10'



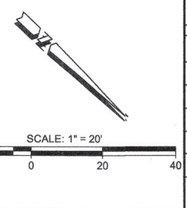
FIRE HYDRANT ASSEMBLY PER NCSD STD W-1.

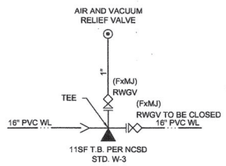
D - FIRE HYDRANT DETAIL NTS



F - END OF LINE DETAIL NTS

REGISTERED PROFESSIONAL ENGINEER
JEFFREY P. WALKER
Lic. No. 26,431
Expires 3/31/08
CIVIL
STATE OF CALIFORNIA





E - AIR AND VACUUM RELIEF ASSEMBLY NTS

BENCHMARK:
1/2 REBAR WITH CAP, LS 4819, LOCATED AT THE SOUTHERLY PROPERTY CORNER. ELEVATION 355.07' TIED TO BENCHMARK AT HIGHWAY 101 AND TEFFT STREET NEAR VONS SHOPPING CENTER, SINCE DESTROYED.

DIGALERT
DIAL TOLL FREE
1-800-227-2600
AT LEAST TWO DAYS BEFORE YOU DIG
UNDERGROUND SERVICE ALERT OF CALIFORNIA

REVISIONS		
DATE	DESCRIPTION	APPRVD

PROJECT DATA:
DATE: OCTOBER 3, 2005
EDA JOB No: 2.2934.100
CONTACT: MIKE BERTACCHINI

eda
civil engineers • land surveyors • land planners
1998 santa barbara st • san luis obispo, ca 93401
ph: 805/549-8500 • email: eda@edainc.com

PUBLIC IMPROVEMENT PLANS FOR
CO - 03-0301
STREET AND SEWER IMPROVEMENTS FOR N FRONTAGE ROAD
STA 147+25 TO END

Design/Drawn	County Plan Check	APPROVED FOR COUNTY REQUIREMENTS
	GDM 10-14-05	Development Services Engineer — Date
Job No. 2.2934.100	County W.O. No. 201 RII-E396	Principal Engineer — 10.3.05 Date
California Coordinates N 570 E 1252		Sheet 4 of 19

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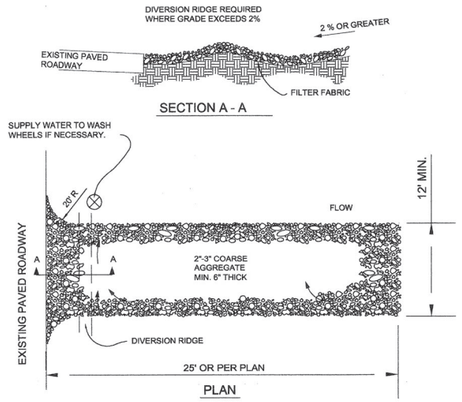
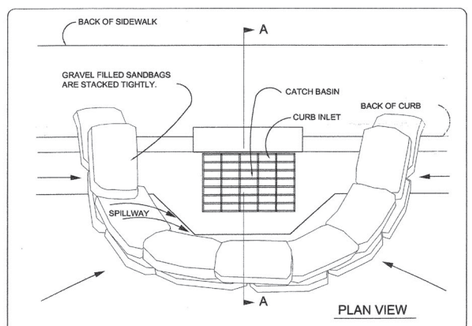


NOTES:
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

A GRAVEL CONSTRUCTION ENTRANCE & EXIT DETAIL

NTS



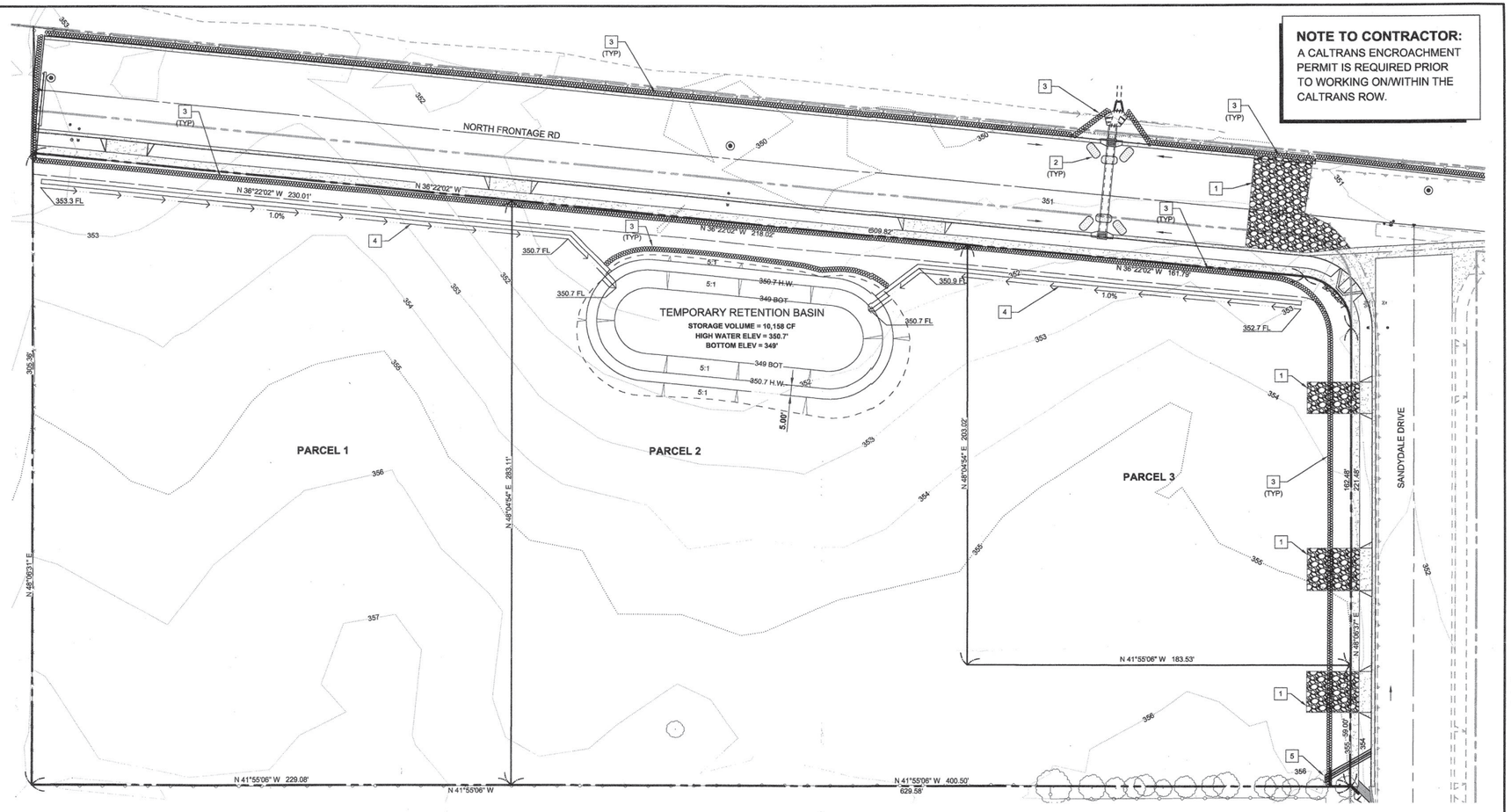
NOTES:
1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. SANDBAGS, OF EITHER BURLAP OR WOVEN GEOTEXTILE FABRIC, ARE FILLED WITH GRAVEL, LAYERED AND PACKED TIGHTLY.
3. LEAVE ONE SANDBAG GAP IN THE TOP ROW TO PROVIDE A SPILLWAY FOR OVERFLOW.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

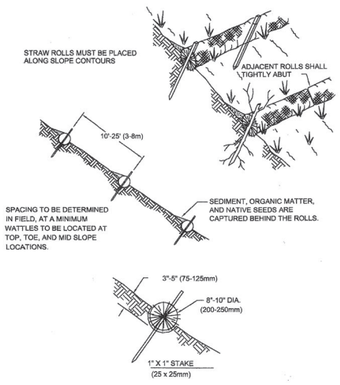
CURB INLET SEDIMENT BARRIER

FILE: SEDIM10

B GRAVEL BAG DROP INLET SEDIMENT BARRIER

SCALE: NTS

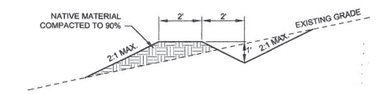




NOTE:
1. STRAW ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE STAKING OF THE ROLL IN A TRENCH, 3"-5" (75-125mm) DEEP, DUG ON CONTOUR. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND ROLL.

C STRAW ROLL (WATTLE) DETAIL

NTS



D TEMPORARY BERM DETAIL

NTS

CONSTRUCTION NOTES:

1. CONSTRUCT GRAVEL CONSTRUCTION ENTRANCE/ EXIT PER DETAIL "A", THIS SHT.
2. CONSTRUCT GRAVEL FILLED SANDBAG SEDIMENT BARRIER PER DETAIL "B", THIS SHT.
3. INSTALL STRAW WATTLE PER DETAIL "C", THIS SHT.
→ FINISHED SURFACE FLOW DIRECTION.
4. CONSTRUCT TEMPORARY BERM AND SWALE PER DETAIL "D" THIS SHEET
5. BLOCK ENDS OF PIPES WITH PLYWOOD AND SANDBAGS

SCALE: 1" = 30'

30 0 30 60

REVISIONS			
DATE	DESCRIPTION	APPRVD	

PROJECT DATA:
DATE: OCTOBER 3, 2005
EDA JOB No: 2.2934.100
CONTACT: MIKE BERTACCINI

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PUBLIC IMPROVEMENT PLANS FOR
CO - 03-0301

EROSION CONTROL & BASIN PLAN

Design/Drawn	County Plan Check	APPROVED FOR COUNTY REQUIREMENTS
	GDM 10-14-05	Development Services Engineer — Date
Job No.	County W.O. No.	
2.2934.100	201 RII-E396	Principal Engineer — Date 10-3-05
California Coordinates		Sheet 11
N 570	E 1252	of 19

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Pismo Clarkia (*Clarkia speciosa* ssp. *immaculata*)
2023 Census Survey Report

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES
1650 Ramada Drive, Suite 180, Paso Robles, CA 93446
(805) 237-9626 • Fax (805) 237-9181 • www.althouseandmeade.com

Pismo Clarkia (*Clarkia speciosa ssp. immaculata*) 2023 Census Survey Report Dana Reserve San Luis Obispo County Nipomo, California

This report describes results of a 2023 focused rare plant survey focusing on the federally endangered Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*) on the Dana Reserve, San Luis Obispo County, Nipomo, California. The survey was completed on June 15, 2023 and serves as supplemental information to results from previous Pismo clarkia surveys between 2019-2022. The botanical survey was conducted on the approximate 10.9-acre area (Study Area). This Study Area includes all previous locations of existing Pismo clarkia on the Dana Reserve as well as its potentially suitable habitat where it may occur in any given year.

Methods

On June 15, 2023 Althouse and Meade biologists Daniel Elting and Annie Zell conducted the survey across the 10.9-acre Study Area. The survey was conducted on foot and focused on censusing all the extant Pismo clarkia on site. All areas of the site were reviewed and suitable habitat for Pismo clarkia was visually examined. There are eight distinct patches that have been the location of Pismo clarkia on all past surveys since 2019. These eight patches were once again the location of all extant plants and served as the focus for the census. Census data was done for each patch individually to be consistent with previous years' efforts and draw comparisons.

The Dana Reserve Pismo clarkia population is unique in its petal morphology variation with some of the flowers showing "spots" on the inner corolla tube. This trait has never been recorded in any other known populations of this species. Every above ground individual was counted and categorized as "spotted," "unspotted," or "vegetative." Percentages for each of these categories were calculated for each patch. General habitat notes and the presence of other clarkia species (e.g. *Clarkia purpurea* ssp. *quadrivulnera*) were recorded. The 2023 survey is the first in which petal morphology data were collected.

Photo 1. Dense Pismo clarkia cluster (Patch 4). Most plants in this photo without "spotted" corolla. June 15, 2023

Photo 2. Pismo clarkia with "spotted" corolla morphology. June 1, 2023

Results

The total Pismo clarkia individuals recorded within the Study Area was 569 plants. This total represents a record low total census from all surveys conducted between 2019 and 2023 (Table 1). Previously, 2022 represented the lowest number of plants recorded. This season represents a 28.4% decline from the 2022 survey. The maximum count occurred in the 2020 census with 6129 plants. Since that high count there has been a 90.8% total drop in individuals at the Dana Reserve. The most precipitous decline in individuals occurred on Patch 1, which had shown the highest density of plants each year (6.7 clarkia/ sq-ft on max count in 2020). In 2023, only 23 plants were counted in Patch 1, the lowest previous total for this patch came in 2019 at 250 plants. Patch 7 produced the most individuals in 2023 at 203 plants and represents the lowest total for this patch.

The "spotted" Pismo clarkia represented approximately 10.8% of the total individuals on site. However, 7.6% of the individuals recorded were not in flower and petal morphology could not be determined. Of particular interest was the distribution of spotted plants that were most dense in Patches 7 and 8 with 33% and 23% "spotted" individuals in each of these patches respectively (Table 2).

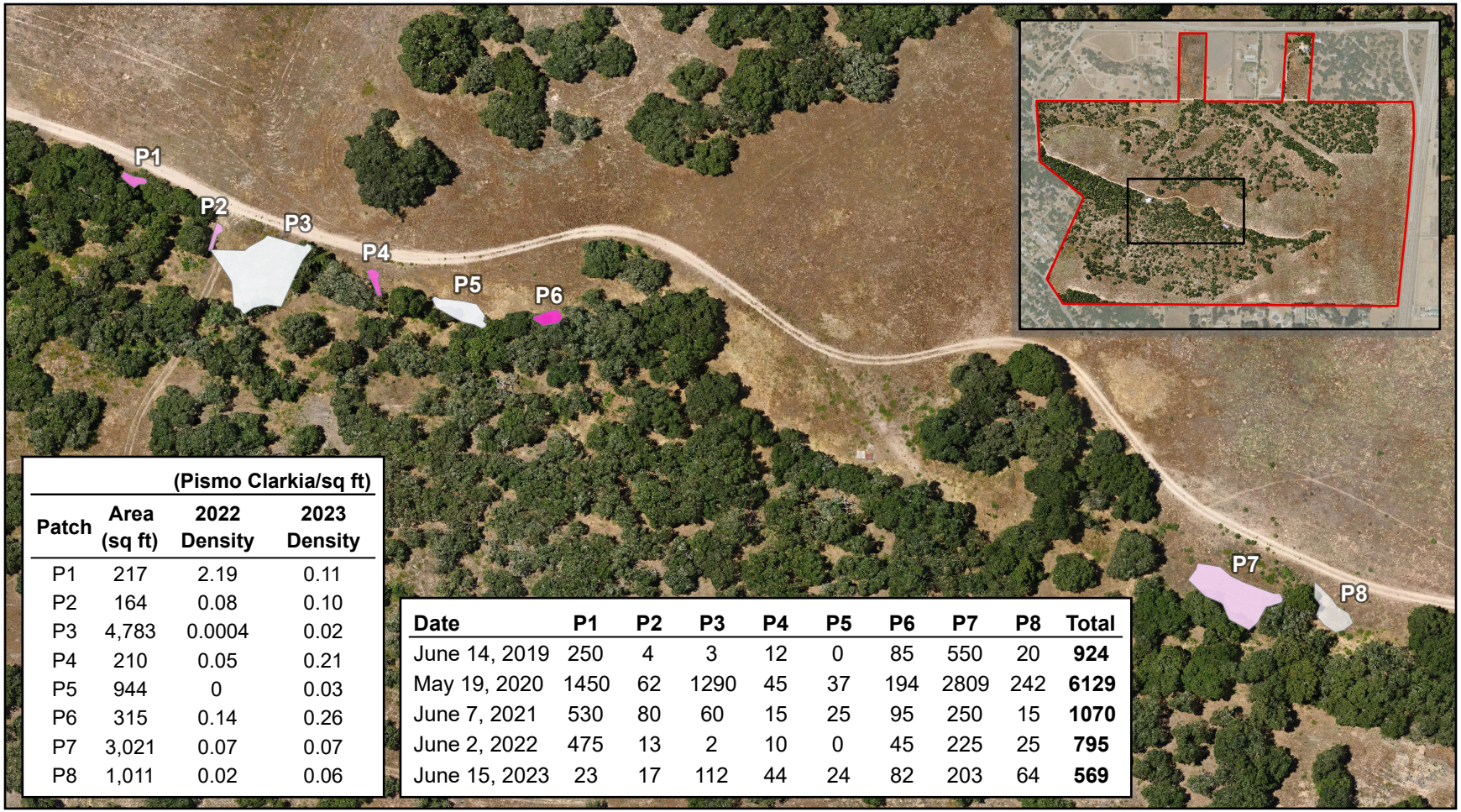
TABLE 1. PISMO CLARKIA CENSUS DATA 2019-2023

	Patch 1	Patch 2	Patch 3	Patch 4	Patch 5	Patch 6	Patch 7	Patch 8	Total
June 14, 2019	250	4	3	12	--	85	550	20	**924**
May 19, 2020	1450	62	1290	45	37	194	2809	242	**6129**
June 7, 2021	530	80	60	15	25	95	250	15	**1070**
June 2, 2022	475	13	2	10	0	45	225	25	**795**
June 15, 2023	23	17	112	44	24	82	203	64	**569**

TABLE 2. PISMO CLARKIA PETAL MORPHOLOGY AT DANA RESERVE. "NO SPOTS" IS THE NORMAL TRAIT, "SPOTTED" PETALS HAVE ONLY BEEN OBSERVED AT DANA RESERVE.

	% No Spots	% "Spotted"	% Vegetative
Patch 1	78	9	13
Patch 2	94	0	6
Patch 3	90	5	5
Patch 4	86	6	8
Patch 5	92	4	4
Patch 6	87	6	7
Patch 7	57	33	10
Patch 8	68	23	8
Total	81.5	10.8	7.6

Figure 1. Pismo Clarkia at the Dana Reserve (2023)



Patch	Area (sq ft)	(Pismo Clarkia/sq ft) 2022 Density	2023 Density
P1	217	2.19	0.11
P2	164	0.08	0.10
P3	4,783	0.0004	0.02
P4	210	0.05	0.21
P5	944	0	0.03
P6	315	0.14	0.26
P7	3,021	0.07	0.07
P8	1,011	0.02	0.06

Date	P1	P2	P3	P4	P5	P6	P7	P8	Total
June 14, 2019	250	4	3	12	0	85	550	20	**924**
May 19, 2020	1450	62	1290	45	37	194	2809	242	**6129**
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June 15, 2023	23	17	112	44	24	82	203	64	**569**

Legend

Development Study Area

2023 Patch Density (Number of individuals per sqft)

0.26

0.02

0 100 200 Feet

Dana Reserve
Map Center: 120.50369°W 35.0445°N
Nipomo, San Luis Obispo County

Imagery Sources:
Outside Study Area: USDA NAIP, 05/13/2022
Within Study Area: Althouse and Meade, Inc., 05/19/2020

ALTHOUSE AND MEADE, INC.
BIOLOGICAL AND ENVIRONMENTAL SERVICES

Map Updated:
July 25, 2023 02:16 PM by SAF

Extant Patch Information

TABLE 1. HABITAT CONDITIONS OF EACH OF THE EIGHT EXTANT PISMO CLARKIA PATCHES AT DANA RESERVE.

Patch #	Habitat Notes
Patch 1	Open with low forbs. Some *Clarkia purpurea* ssp. *quadrivulnera* present.
Patch 2	Open with Mediterranean grasses and forbs. Limited available space in suitable habitat between trees and dirt road.
Patch 3	Open with low Mediterranean grasses and forbs, some shrubs present. Sparse *Clarkia purpurea* ssp. *quadrivulnera* present.
Patch 4	Open with low Mediterranean grasses and forbs Pismo clarkia in a dense cluster.
Patch 5	Open with low Mediterranean grasses and forbs. One small cluster with three isolated individuals closer to canopy edge.
Patch 6	Open with low Mediterranean grasses and forbs. Pismo clarkia concentrated closer to canopy edge.
Patch 7	Open with low Mediterranean grasses and forbs Heavy mix of unspotted and spotted Pismo clarkia with abundant *Clarkia purpurea* ssp. *quadrivulnera* present.
Patch 8	Open with low Mediterranean grasses and shrubs. Pismo clarkia growing with *Horkelia cuneata* ssp. *sericia.*

PATCH 1

PATCH 2

PATCH 3

PATCH 4

PATCH 5

PATCH 6

PATCH 7

PATCH 8