Draft Initial Study and Mitigated Negative Declaration Rancho Cielito Residential Development Project

APPENDIX B

Appendix B – Biological Resources Assessment/Tree Survey Reports

Biological Technical Report for the Rancho Cielito Project

San Bernardino County, California

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December 2020 Revised October 2021

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DB	Designated Biologist
ECORP	ECORP Consulting, Inc.
ESA	Endangered Species Act
GPS	Global Positioning System
HCP	Habitat Conservation Plan
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Plan
NPPA	Native Plant Protection Act
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SSAR	Study of Amphibians and Reptiles - also duplicated in ciation in $3.2.1$
SSC	Species of Special Concern
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 INTRODUCTION

ECORP Consulting, Inc. (ECORP) conducted a biological reconnaissance survey in August 2019 for the proposed development of a multi-building apartment complex called Rancho Cielito (Project) in the City of Chino Hills, San Bernardino County. The survey of the Project site was conducted to identify biological resources that could be affected by the proposed Project, pursuant to the terms of the California Environmental Quality Act (CEQA) and for the purposes of identifying any biological constraints that would affect the site plan for the Project. The Project will be subject to county, state, and federal regulations regarding compliance with the federal Endangered Species Act (ESA), California ESA, Migratory Bird Treaty Act (MBTA), and California Fish and Game Code. In support of the CEQA impact analysis, an aquatic resources delineation survey was completed in September 2019 and focused biological surveys for special-status plants, Crotch bumble bee (*Bombus crotchii*), least Bell's vireo (*Vireo bellii pusillus*), and western spadefoot (*Spea hammondii*) were completed in spring/summer 2020. This biological technical report summarizes the results of the various biological studies.

1.1 Location and Setting

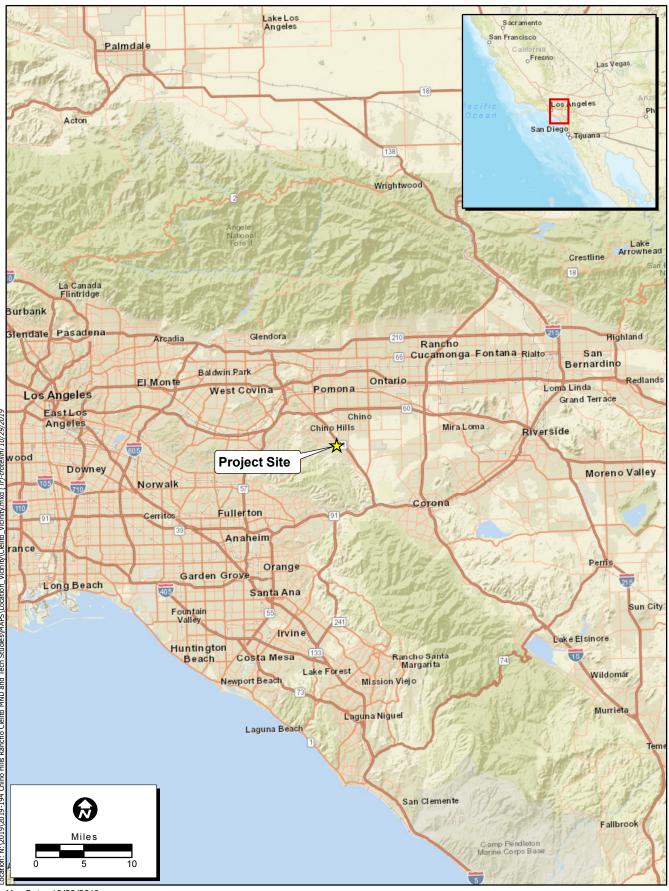
The Project site is located within the City of Chino Hills in San Bernardino County (Figure 1). The Project site is generally located north of Los Serranos Boulevard/Valle Vista Drive, south of the Lake Los Serranos Club, and comprises approximately 48.37 acres (29.50 acres of dry land and 18.87 acres of water surface area that make up Lake Los Serranos). The Project site is located along the northern end of Los Serranos Boulevard/Valle Vista Drive and the southern end of the Lake Los Serranos Club in the City of Chino Hills, California. The Project site, as depicted on the U.S. Geological Survey (USGS) 7.5-minute Prado Dam topographic quadrangle, falls within Sections 22 and 27, Township 2 South and Range 8 West, San Bernardino Baseline Meridian (Figure 2). The property is composed of three legal parcels: Assessor Parcel Numbers 1025-561-04, -05, and -06. The elevation of the Project site is approximately 645 feet above mean sea level.

1.2 Project Description

The Project Applicant proposes to develop a multi-building apartment complex called Rancho Cielito. The Proposed Project would include approximately 354 residential units and associated features and facilities including two clubhouses, a leasing/management office, three active recreation areas, passive open spaces, trails, a maintenance garage, and associated infrastructure.

2.0 SPECIAL-STATUS SPECIES REGULATIONS

This biological reconnaissance survey was conducted to identify potential biological issues and ensure compliance with state and federal regulations regarding listed, protected, and sensitive species and habitats. The regulations are detailed below.

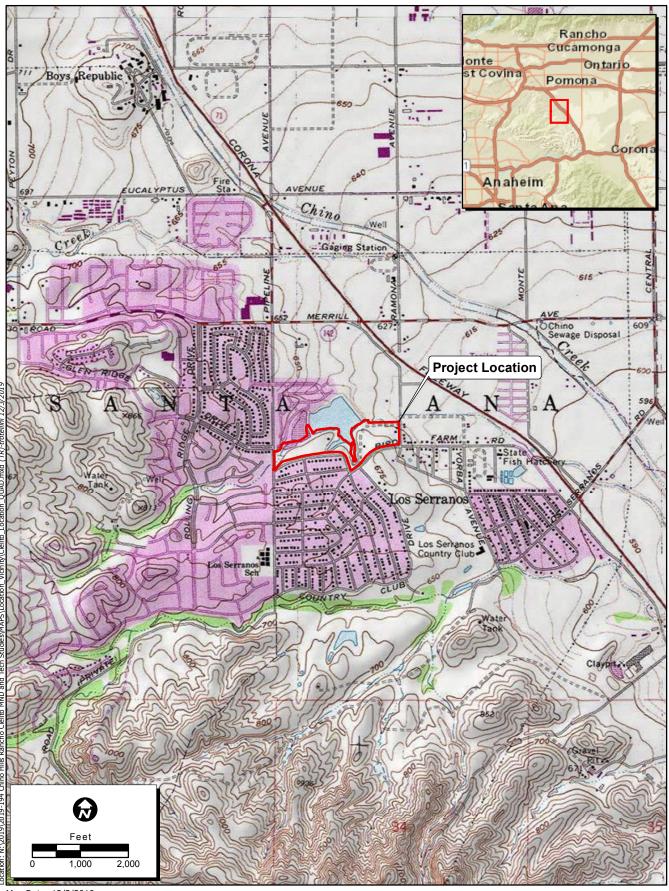


Map Date: 10/29/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Figure 1. Project Vicinity



Map Date: 12/3/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



2.1 Federal Regulations

2.1.1 Clean Water Act

The U.S. Army Corps of Engineers (USACE) regulates discharge of dredged or fill material into waters of the U.S. under Section 404 of the CWA. *Discharges of fill material* is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 Code of Federal Regulations (CFR) § 328.2(f)].

Section 401 of the CWA (33 U.S. Code [USC] 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. Section 401 Certification, "gives states and authorized tribes the authority to grant or waive certification of proposed federal licenses or permits that may discharge into waters of the US" (33 USC 1251).

On April 21, 2020, the U.S. Environmental Protection Agency (USEPA) and the Department of the Army published the Navigable Waters Protection Rule (NWPR) to define waters of the United States in the *Federal Register*. This rule became effective on June 22, 2020.

In August 2021, a judge in the U.S. District Court for the District of Arizona ruled to vacate the NWPR. An appeal is expected; however, the USEPA is likely to begin drafting a new rule to replace the NWPR. In the interim, reversion back to pre-2015 guidance (USEPA CWA regulations [33 CFR 328.3{a}]) is anticipated.

In the USACE/USEPA CWA regulations (33 CFR 328.3[a]), the term "waters of the U.S." is defined as follows:

- 1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- 2. All interstate waters including interstate wetlands;
- 3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
- 4. All impoundments of waters otherwise defined as waters of the U.S. under the definition;
- 5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
- 6. The territorial seas;

7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in 1-6 above

2.1.2 The Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service. Section 9 of the ESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law (16 U.S. Code 1538). Under Section 7 of the ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of the ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan (HCP) is developed.

2.1.3 Migratory Bird Treaty Act

The MBTA implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities including hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR Part 13 General Permit Procedures and 50 CFR Part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

2.2 State and Local Regulations

2.2.1 California Endangered Species Act

The California ESA generally parallels the main provisions of the ESA but, unlike its federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called "candidates" by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with California Department of Fish and Wildlife (CDFW) to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered or threatened species or result in destruction or adverse modification of essential habitat.

2.2.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction, and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under federal and/or California ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species, except for necessary scientific research.

2.2.3 Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code § 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

2.2.4 California Fish and Game Code

2.2.4.1 California Fish and Game Code Section 1600 et seq.

Pursuant to Section 1602 of the California Fish and Game Code, a Streambed Alteration Agreement (SAA) application must be submitted for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" (California Department of Fish and Wildlife [CDFW] 2021). In Title 14 of the California Code of Regulations, Section 1.72, the CDFW defines a *stream* (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

In Chapter 9, Section 2785 of the Fish and Game Code, *riparian habitat* is defined as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source."

The CDFW's jurisdiction includes drainages with a definable bed, bank, or channel and areas associated with a drainage channel that support intermittent, perennial, or subsurface flows; supports fish or other aquatic life; or supports riparian or hydrophytic vegetation. It also includes areas that have a hydrologic source.

The CDFW will determine if the proposed actions will result in diversion, obstruction, or change of the natural flow, bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. If warranted, the CDFW will issue an SAA that includes measures to protect affected fish and wildlife resources; this SAA is the final proposal agreed upon by the CDFW and the applicant.

2.2.4.2 Migratory Birds

The CDFW enforces the protection of nongame native birds in §§ 3503, 3503.5, and 3800 of the California Fish and Game Code. Section 3513 of the California Fish and Game Code prohibits the possession or take of birds listed under the MBTA. These sections mandate the protection of California nongame native birds' nests and also make it unlawful to take these birds. All raptor species are protected from "take" pursuant to California Fish and Game Code § 3503.5 and are also protected at the federal level by the MBTA of 1918.

2.2.5 CEQA Significance Criteria

Section 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if the project would:

- 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 CDFW or USFWS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
- have a substantial adverse effect on state or federally protected wetlands or waters (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
- 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;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and
- conflict with the provisions of an adopted HCP, Natural Community Conservation Plan (NCCP), or other approved local, regional, or state HCP.

An evaluation of whether an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, state, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish, or result in the permanent loss of an important resource on a population-wide or region-wide basis.

3.0 METHODS

3.1 Literature Review

Prior to conducting the biological reconnaissance survey, ECORP biologists performed a literature review using the CDFW's California Natural Diversity Database (CNDDB; CDFW 2019a) and the California Native Plant Society's (CNPS) Electronic Inventory (CNPSEI; CNPS 2019) to determine the special-status plant and wildlife species that have been documented on or near the Project site. The CNDDB and CNPSEI database searches were conducted on October 8, 2019. ECORP searched CNDDB and CNPSEI records within the Project site boundaries as depicted on USGS 7.5-minute Prado Dam topographic quadrangle, plus the surrounding eight topographic quadrangles, including San Dimas, Ontario, Guasti, Yorba Linda, Corona North, Orange, Black Star Canyon, and Corona South. The CNDDB and CNPSEI contain records of reported occurrences of federal or state-listed endangered, threatened, proposed endangered or threatened species, California Species of Special Concern (SSC), and/or other special-status species or habitat that may occur within or near the Project. Additional information was gathered from the following sources and includes, but is not limited to:

- Natural Resources Conservation Service Web Soil Survey (Natural Resources Conservation Service 2019);
- State and Federally Listed Endangered and Threatened Animals of California (CDFW 2019b);
- Special Animals List (CDFW 2019c);
- The Jepson Manual (Hickman 1993);
- The Manual of California Vegetation, 2nd Edition (Sawyer et al. 2009); and
- various online websites (e.g., Calflora 2019).

Using this information and observations in the field, a list of special-status plant and animal species that have potential to occur on or near the Project site was generated. For the purposes of this assessment, special-status species are defined as plants or animals that:

- have been designated as either rare, threatened, or endangered by CDFW, CNPS, or the USFWS, and/or are protected under either the federal or California ESAs;
- are candidate species being considered or proposed for listing under these same acts;
- are fully protected by the California Fish and Game Code, §§ 3511, 4700, 5050, or 5515; and/or
- are of expressed concern to resource and regulatory agencies or local jurisdictions.

Special-status species reported for the region in the literature review or for which suitable habitat occurs on the site were assessed for their potential to occur within the Project site based on the following guidelines:

- **Present:** The species was observed on site during a site visit or focused survey.
- **High:** Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within five miles of the site.

- **Moderate:** Either habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been reported in the database, but not within five miles of the site, or a known occurrence occurs within five miles of the site and marginal or limited amounts of habitat occurs on site.
- **Low:** Limited habitat for the species occurs on the site and a known occurrence has been reported in the database, but not within five miles of the site, or suitable habitat strongly associated with the species occurs on site, but no records were found in the database search.
- Presumed Absent: Focused surveys were conducted, and the species was not found, or species was found in the database search but habitat (including soils and elevation factors) is not present on site, or the known geographic range of the species does not include the survey area.

Note that location information on some special-status species may be of questionable accuracy or unavailable. Therefore, for survey purposes, the environmental factors associated with a species' occurrence requirements may be considered sufficient reason to give a species a positive potential for occurrence. In addition, just because a record of a species does not exist in the databases does not mean it does not occur. In many cases, records may not be present in the databases because an area has not been surveyed for that species.

3.2 Field Surveys

3.2.1 Biological Reconnaissance Survey

The biological reconnaissance survey was conducted by walking the entire Project site to determine the vegetation communities and wildlife habitats on the Project site. The biologist documented the plant and wildlife species present on the Project site, and the location and condition of the Project site were assessed for the potential to provide habitat for special-status plant and wildlife species. Data were recorded on a global positioning system (GPS) unit, field notebooks, and/or maps. Photographs were also taken during the survey to provide visual representation of the various vegetation communities within the Project site. The Project site was also examined to assess its potential to facilitate wildlife movement or function as a movement corridor for wildlife moving throughout the region. In addition, the biologists noted the vegetation communities present on the Project site.

Plant and wildlife species, including any special-status species that were observed during the survey, were recorded. Plant nomenclature follows that of *The Jepson Manual: Vascular Plants of California* (Baldwin et al. 2012). Wildlife nomenclature follows Society for the Study of Amphibians and Reptiles (SSAR; SSAR 2018), *Check-list of North American Birds* (American Ornithologist's Union 2016), and the *Revised Checklist of North American Mammals North of Mexico* (Bradley et al. 2014).

3.2.2 Aquatic Resources Delineation Survey

An aquatic resources delineation survey was conducted on September 1, 2019 by ECORP biologist Scott Taylor. The methods used to conduct the delineation and the associated results are documented under separate cover (ECORP 2021).

3.2.3 Special-Status Plant Surveys

Surveys for special-status plants were conducted in April, May, and August 2020, based on the expected blooming periods of the target plant species. The methods used to conduct the focused rare plant surveys are documented under separate cover (ECORP 2021).

3.2.4 Crotch Bumble Bee Surveys

Surveys for Crotch bumble bee were conducted in accordance with 2019 U.S. Fish and Wildlife Service (USFWS) Survey Guidelines (version 2.2) for the rusty patched bumble bee (*Bombus affinis*), adjusting for species specificity (USFWS 2019), and as approved by CDFW. Detailed methodology of the focused Crotch bumble bee surveys is documented under separate cover (ECORP 2021).

3.2.5 Least Bell's Vireo Surveys

Surveys for least Bell's vireo were conducted in accordance with the 2001 USFWS protocol guidelines (USFWS 2001). Detailed methodology of the focused least Bell's vireo surveys are documented under separate cover (ECORP 2021).

3.2.6 Western Spadefoot Surveys

Two surveys for western spadefoot, each inclusive of a daytime and nighttime component within the same 24-hour period, were conducted during 2020 rain events in order to target a time period where spadefoot are most likely to be encountered (Fisher et al. 2004). The methods used to conduct the western spadefoot surveys are documented under separate cover (ECORP 2021).

4.0 RESULTS

Summarized below are the results of the literature review and field surveys, including site characteristics, vegetation communities, wildlife, special-status species, and special-status habitats (including any potential wildlife corridors).

4.1 Literature Review

The literature review and database searches resulted in records for 49 special-status plant species and 51 special-status wildlife species that could occur on and/or near the Project site.

4.1.1 Special-Status Plants and Wildlife

The literature review and database searched identified 49 special-status plant species and 51 special-status wildlife species that have been documented near the Project site. A list was generated from the results of the literature review and the Project site was evaluated for suitable habitat that could support any of the special-status plant or wildlife species on the list. Potential for special-status plant and wildlife species to occur on or near the Project site is discussed in more detail in Section 4.2.5.

4.1.2 U.S. Fish and Wildlife Service Designated Critical Habitat

The Project site is not located within any USFWS-designated critical habitat and there are no areas of designated critical habitat in proximity to the Project site.

4.2 Biological Field Surveys

The biological reconnaissance survey was conducted on October 23, 2019, by ECORP wildlife biologists Kristen Wasz and Alden Lovaas. The aquatics resources delineation was conducted on September 1, 2019 and focused surveys were conducted during the appropriate timeframes in spring/summer 2020. Summarized below are the results of the biological reconnaissance and focused surveys, including site characteristics, plant communities, wildlife, special-status species, and special-status habitats (including any potential wildlife corridors). Survey dates and personnel for the various field surveys are summarized in Table 1.

able 1. Survey Dates and Personnel					
Survey Type	Date	Personnel			
Biological Reconnaissance	8/23/2019	Kristen Wasz and Alden Lovaas			
Aquatic Resources Delineation	9/1/2019	Scott Taylor			
Special-Status Plants 1	4/2/2020	Greg Hampton and Christina Torres			
Special-Status Plants 2	5/21/2020	Greg Hampton and Caroline Garcia			
Special-Status Plants 3	8/6/2020	Greg Hampton			
Crotch Bumble Bee 1	4/15/2020	Christina Torres			
Crotch Bumble Bee 2	5/13/2020	Christina Torres and Christine Tischer			
Crotch Bumble Bee 3	6/10/2020	Christina Torres and Christine Tischer			
Crotch Bumble Bee 4	7/08/2020	Christina Torres and Christine Tischer			
Least Bell's Vireo 1	4/13/2020	Brian Zitt and Carley Lancaster			
Least Bell's Vireo 2	4/24/2020	Brian Zitt			
Least Bell's Vireo 3	5/11/2020	Brian Zitt			
Least Bell's Vireo 4	5/22/2020	Brian Zitt			
Least Bell's Vireo 5	6/2/2020	Brian Zitt			
Least Bell's Vireo 6	6/12/2020	Brian Zitt			
Least Bell's Vireo 7	6/29/2020	Brian Zitt			
Least Bell's Vireo 8	7/9/2020	Brian Zitt			
Western Spadefoot 1	4/6/2020	Max Murray and Taylor Dee			
Western Spadefoot 2	4/9/2020	Max Murray and Adam Schroeder			

4.2.1 Property Characteristics

The Project site consists of undeveloped land and a portion of the manmade Lake Los Serranos. Various older buildings occupy the site, including three single-family houses, three garages, one office, one pump house, and one shed. There is a temporary storm drain outlet and temporary concrete-bottom channel

located in the central portion of the site between Los Serranos Boulevard and Lake Los Serranos. The site vegetation is primarily composed of disturbed annual grasslands with scattered trees and shrubs interspersed throughout the boundaries of the Project site and cottonwood willow riparian vegetation along the lake edge. The areas vegetated with disturbed annual grasslands show evidence of previous mechanical disturbances, such as mowing or discing. Hickory Creek, a drainage course that drains a natural watershed, enters the property at the southwest corner. An unnamed drainage runs throughout the central portion of the Project site; water was not present in the drainage at the time of the survey. The Project site is surrounded by existing residential developments that have ornamental landscaping. Representative site photographs taken during the survey are included in Appendix A.

4.2.2 Vegetation Communities and Land Cover

Vegetation communities and other land cover types observed within and adjacent to the Project were Fremont Cottonwood Forest and Woodland, California Bulrush Marsh, Wild Oat and Annual Brome Grasslands, Eucalyptus Groves, Ornamental, Disturbed, Developed Areas, and Open Water (Figure 3). An external tree inventory that was prepared for the entire Lake Property (Johnny's Tree Service, 2019) and a separate peer review of that report (Zoll 2020) identifies individual heritage and native trees to be preserved and removed within the Project area. Two vegetation communities present on the Project site, Fremont Cottonwood Forest and Woodland and California Bulrush Marsh, are considered sensitive vegetation communities by CDFW (CDFW 2019d). Descriptions of each vegetation community and land cover type that were mapped are provided below.

4.2.2.1 Fremont Cottonwood Forest and Woodland

Fremont Cottonwood Forest and Woodland occurs in seasonally flooded freshwater habitats or saturated areas, often on gently sloping rocky floodplains, or edges of rivers, streams, and/or meadows. Fremont Cottonwood Forest and Woodland has a sensitivity ranking of S3 in California (CDFW 2019d). On the Project site, this community is located along the edges of Lake Los Serranos and includes areas that are dominant or co-dominant with willow (*Salix* sp.) and Fremont's cottonwood (*Populus fremontii*). Other species present in this community on the Project site include black willow (*Salix gooddingii*), red willow (*S. laevigata*), narrow-leaved willow (*S. exigua*), and a few species of palm trees (*Arecaceae* spp.). Approximately 3.12 acres of Fremont Cottonwood Willow Riparian Woodland was mapped within the survey area, of which 2.20 acres occur within the Project impact area (aka Project area).

4.2.2.2 California Bulrush Marsh

California Bulrush Marsh occurs in seasonally flooded freshwater habitats or saturated areas, often along stream shores, bars, and channels of river mouth estuaries, around ponds and lakes, in sloughs, swamps, and roadside ditches. on gently sloping rocky floodplains, or edges of rivers, streams, and/or meadows. California Bulrush Marsh has a sensitivity ranking of S4 in California (CDFW 2019d). On the Project site, this community is located along the edges of Lake Los Serranos and includes areas that are dominant with California bulrush (*Schoenoplectus californicus*). Approximately 0.57 acre of California Bulrush Marsh was mapped within the survey area, of which 0.17 acre occurs within the Project impact area.

4.2.2.3 Wild Oat and Annual Brome Grasslands

Areas mapped as Disturbed annual grassland are largely devoid of native vegetation due to human disturbance and are dominated by open areas of nonnative grasses. Plants present in this vegetation community on the Project site are dominated by nonnative weedy species such brome (*Bromus* sp.), redstem stork's bill (*Erodium cicutarium*), and wild oats (*Avena* sp.) but also include occurrences of native species such as turkey mullein (*Croton setiger*) and telegraph weed (*Heterotheca grandiflora*). A few species of palm trees are distributed throughout the wild oat and annual brome grassland. This vegetation community was present throughout the majority of the Project site. Evidence of previous and repeated mechanical disturbances such as mowing or discing are prevalent throughout this community on the Project site.. Approximately 21.58 acres of disturbed Wild Oat and Annual Brome Grasslands was mapped within the survey area, of which 21.14 acres occur within the Project impact area.

4.2.2.4 Eucalyptus Grove

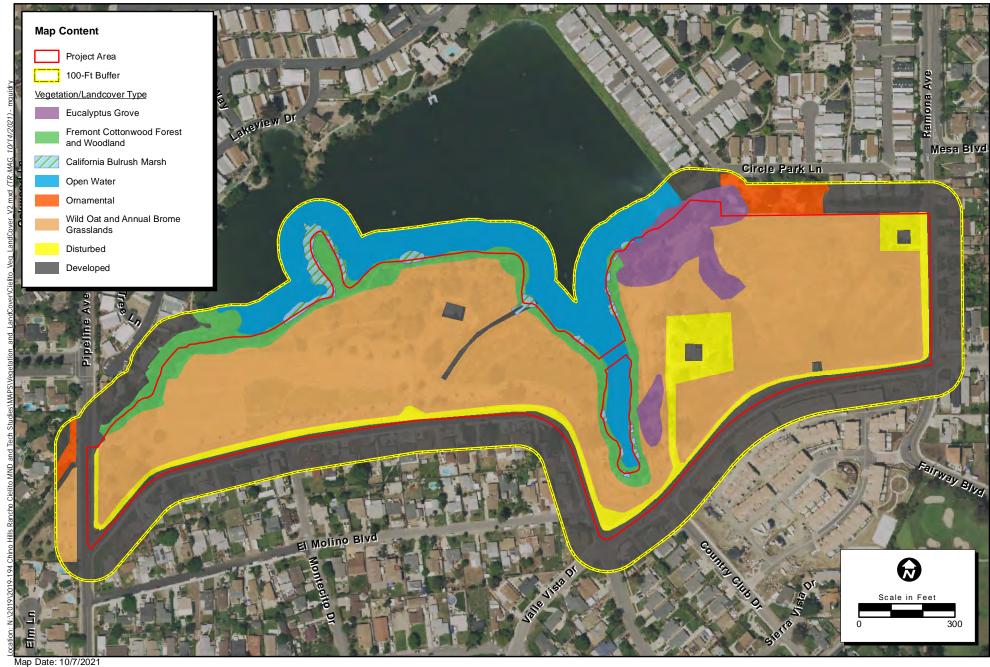
Eucalyptus Grove is a vegetation type characterized by tall trees where Eucalyptus (*Eucalyptus* spp.) species represent more than 80 percent of the relative cover in the tree layer. Eucalyptus species are not native to California and some species are considered invasive. Eucalyptus Groves are present in the northeastern portion of the Project area, along the southeast edge of Lake Los Serranos. Approximately 2.06 acres of Eucalyptus Groves was mapped within the survey area, of which 1.73 acres occur within the Project impact area.

4.2.2.5 Ornamental

Ornamental areas are planted with common landscaping plants not native to the region. The Project site is surrounded by residential neighborhoods that are dominated by ornamental landscaping. Ornamental landscaping immediately adjacent to the Project site within the mobile home community residential housing development. Vegetation in this area consists of unidentified flowering annual species and nonnative tree species such as pepper trees (*Schinus* sp.) and pine trees (*Pinus* sp.). Approximately 0.74 acres of Ornamental was mapped within the survey area. Areas mapped as Ornamental do not occur within the Project impact area.

4.2.2.6 Disturbed

The Disturbed classification includes areas that have been heavily influenced by human actions, such as grading or discing, but lack development. Disturbed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. The disturbed land cover on the Project site surrounds two currently occupied houses within the Project boundary. In areas classified as disturbed land, vegetation is absent or consists primarily of non-native species, such as common Mediterranean grass (*Schismus barbatus*). Approximately 2.96 acres of Disturbed land cover was mapped within the survey area, of which 2.94 acres occur within the Project impact area.



Boundary Date: 8/30/2021 Photo Source: NAIP (2020)



Figure 3. Vegetation Communities and Land Cover Types

4.2.2.7 Developed

Areas designated as developed land have infrastructure present and any vegetation in the immediate surroundings is composed of ornamental landscaping or nonnative plant growth. Developed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. Developed areas are distributed throughout the Project area and include a concrete channel and residences. These developed areas are generally located adjacent to disturbed lands. Approximately 12.68 acres of Developed land cover was mapped within the survey area, of which 1.53 acres occur within the Project impact area.

4.2.2.8 Open Water

Open Water is not a vegetation classification, but rather a land cover type. Open water areas occur in the northern portion of the survey area and are associated with Lake Los Serranos. No vegetation or soils are associated with these areas. Approximately 5.09 acres of Open Water was mapped within the survey area, of which 0.88 acre occurs within the Project impact area.

4.2.3 Plants

Plant species present at the Project site were typical of those found in disturbed annual grassland and riparian habitats in southern California. In the disturbed annual grassland portions of the site, mustard (*Brassica* spp.) and turkey mullein were common. Within the riparian areas of the site, Fremont's cottonwood, black willow, and narrow-leaved willow were common throughout. Stands of eucalyptus were located near the lake shore on the northeastern portion of the site. The land adjacent to the Project site consisted of developed residential neighborhoods. A full list of plant species observed on or immediately adjacent to the Project site is included in Appendix B.

4.2.4 Wildlife

Nearly 125 different wildlife species (vertebrates and invertebrates) were observed or detected during the survey, with the majority of those being bird species. Bird activity throughout the site was high at the time of the reconnaissance survey, which is likely due to the presence of the lake and associated riparian habitat. Common wildlife species that were observed during the surveys included western fence lizard (*Sceloporus occidentalis*), red-tailed hawk (*Buteo jamaicensis*), common raven (*Corvus corax*), house finch (*Haemorhous mexicanus*), mallard (*Anas platyrhynchos*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), and Botta's pocket gopher (*Thomomys bottae*). A complete list of wildlife species observed on or immediately adjacent to the Project site is included in Appendix C.

4.2.5 Potential for Special-Status Plant and Wildlife Species to Occur on the Project Site

The literature review and database searches identified 49 special-status plant species and 51 special-status wildlife species that occur on or near the Project site. However, due to the Project site being disturbed and surrounded by developed areas, many of the species were presumed absent from the Project site. Focused surveys for 14 special-status plant species, Crotch bumble bee, least Bell's vireo, and western spadefoot were conducted in spring/summer 2020 to determine presence/absence of these species that were determined to have potential to occur during the initial reconnaissance survey.

Appendices D and E contain more detailed analyses on the potential for special-status plant and wildlife species to occur.

4.2.5.1 Special-Status Plants

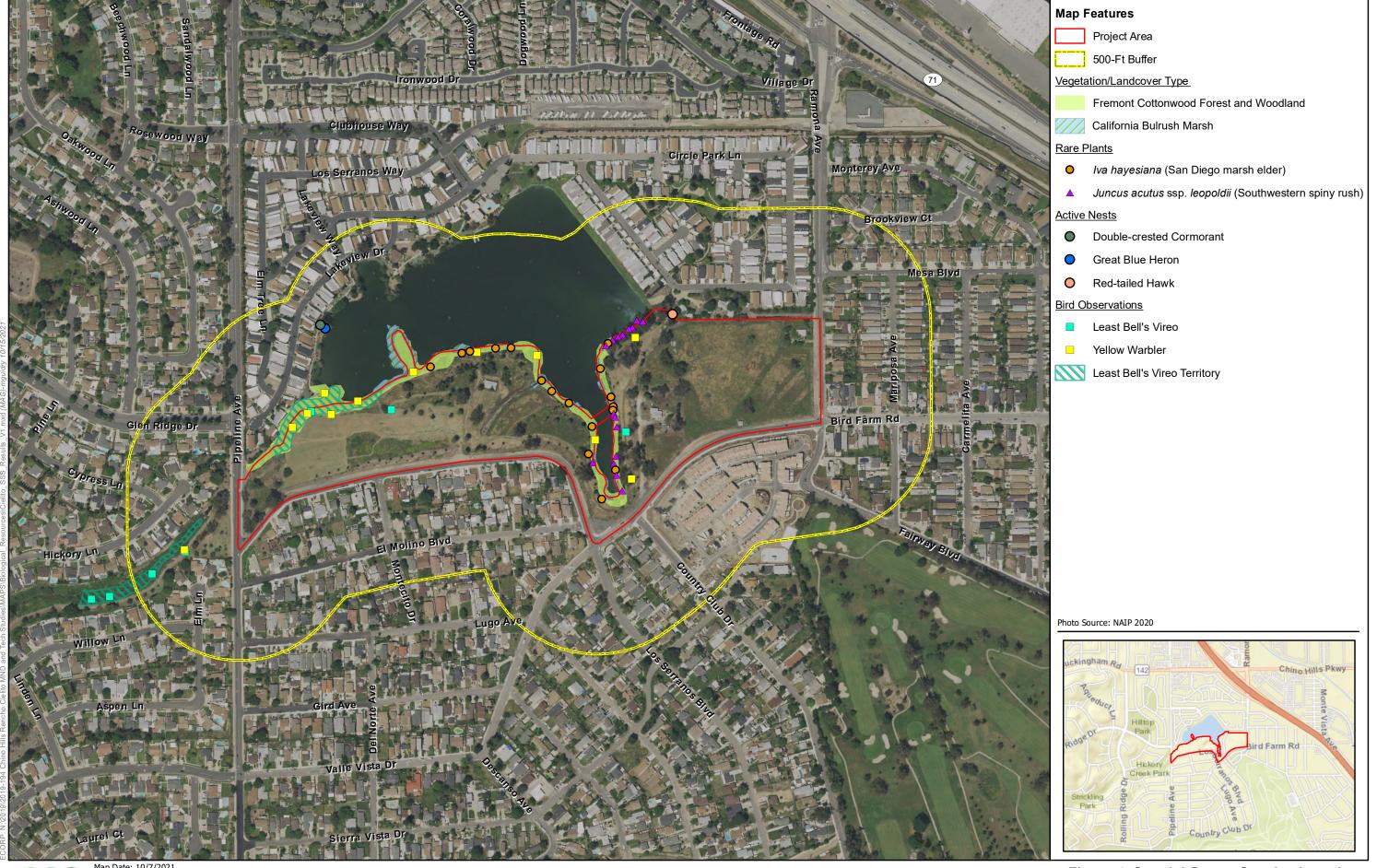
Although 49 special-status plant species appeared in the literature search, due to the Project site's current disturbed condition, and the current lack of suitable habitat for the special-status plant species identified in the literature review and database searches, 35 of the 49 species were presumed absent from the Project site. Focused 2020 surveys for the remaining 14 target species did not detect these species but did identify two non-target special-status plant species (San Diego marsh elder [*Iva hayesiana*] and southwestern spiny rush [*Juncus acutus* ssp. *leopoldii*]) within the Project limits. Special-status plant species found to occur are detailed below and locations are shown in Figure 4. Descriptions of the special-status plant species identified in the literature review, inclusive of the two additional special-status plant species identified during the 2020 rare plant survey, are presented in Appendix D.

4.2.5.2 Plant Species Found to Occur

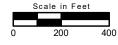
- San Diego marsh elder is a perennial herb in the Asteraceae Family and most commonly occurs in riparian/wetlands habitats. It has a CNPS California Rare Plant Rank (CRPR) of 2B.2, 2B meaning the species is rare or endangered in California and threat rank 0.2 meaning it is moderately threatened in California. Ninety-seven individuals of San Diego marsh elder were observed within the Project site, primarily within a few feet of the lake shoreline. These plants were most likely planted during a restoration effort for Lake Los Serranos and are not naturally occurring.
- Southwestern spiny rush is a perennial grass-like herb belonging to the Juncaceae Family and most commonly occurs in riparian/wetland habitats. It has a CNPS CRPR of 4.2, 4.0 meaning it is of limited distribution and threat rank 0.2 defining it is moderately threatened in California. Twenty-five individuals of southwestern spiny rush were observed within the Project site, primarily within a few feet of the lake shoreline. These plants were most likely planted during a restoration effort for Lake Los Serranos and are not naturally occurring.

4.2.5.3 Special-Status Wildlife

The literature search documented 51 special-status wildlife species in the vicinity of the Project site, 18 of which are federally and/or state listed or candidates for listing. Of the 51 special-status wildlife species identified in the literature review, two were found to occur, six were found to have a moderate potential to occur, and 17 were found to have a low potential to occur; the remaining 26 species are presumed absent from the Project site. The presence of anthropogenic disturbances, proximity to urban development, and relative isolation of the Project site from native habitat blocks likely preclude these species from occurring on or adjacent to the site. A brief natural history and discussion of the two special-status wildlife species found to occur on the Project site and the six special-status wildlife species determined to have a moderate potential to occur are provided below, followed by a list of the 17 special-status species determined to have a low potential to occur. Descriptions of all 51 special-status wildlife species identified in the literature review are presented in Appendix E.









4.2.5.4 Special-Status Wildlife Species Found to Occur

Two special-status wildlife species were found to occur on the Project site during 2020 biological surveys:

- The least Bell's vireo (Vireo bellii pusillus) is a federal and state-listed endangered species. This species typically prefers dense willow-dominated riparian habitat with a well-developed understory for nesting. Some areas within the Fremont Cottonwood Forest and Woodland provide relatively dense willow thickets but, in general, these areas are too open and too small in size to support nesting activities. The literature review identified several observations of this species within five miles of the Project site, with the closest being documented in 2010 approximately two miles away (Occurrence 362; CDFW 2019a). Unbanded male least Bell's vireos (likely two territorial males) were detected in and adjacent to the Project site on May 22, June 2, and July 9, 2020 during focused least Bell's vireo surveys and one incidental detection occurred on July 8 during a Crotch's bumble bee survey. These individuals were observed and heard constantly advertising from various perches extending from the southwestern edge of the survey buffer along Hickory Creek to the southwestern portions of Lake Los Serranos (Figure 4).
- The yellow warbler (Setophaga petechia) is a CDFW SSC. It is typically found in riparian habitat with associations in proximity to water. This species is frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants, including cottonwoods and sycamores. The literature review identified one recent record in 2012 located approximately 3.5 miles west of the Project site (Occurrence 108; CDFW 2019a). This species was detected on several occasions during focused least Bell's vireo and Crotch bumble bee surveys along the south side of Lake Los Serranos (Figure 4).

4.2.5.5 Wildlife Species with Moderate Potential to Occur

Six species were found to have moderate potential to occur on the Project site because either habitat for the species occurs on the site and a known occurrence has been reported in the database, but not within five miles of the site; a historic documented observation (more than 20 years old) was recorded within five miles of the Project site; or a known occurrence within five miles of the site and marginal or limited amounts of habitat occurs on the site:

The western spadefoot (*Spea hammondii*) is a CDFW SSC. A petition for federal listing was submitted for this species in 2012, and as of 2015, the petition is still under review by <u>USFWS</u>. Lake Los Serranos provides suitable open water habitat for this species within the survey buffer however, the Project site generally lacks sandy soils required by this species. In addition, the detection of nonnative predatory American bullfrogs (*Lithobates catesbeianus*) that may consume hatchling turtles and nonnative redeared sliders (*Trachemys scripta elegans*) which compete with native western pond turtles for food, egg-laying sites, and basking sites, may affect the presence or abundance of this western pond turtle in the lake. There have been five historical sightings between 1987 and 1996 recorded within five miles of the Project site and two recent sightings were documented in October 2019 about two miles south of the Project site (Occurrences 1042 and 1043; CDFW 2019a). The presence of suitable habitat in Lake Los Serranos, lack of incidental detections during numerous 2020 biological surveys, and the documented records within five miles resulted in this species having a moderate potential to occur.

- The burrowing owl (*Athene cunicularia*) is a CDFW SSC. The project site contains suitable open habitat throughout the disturbed annual grassland and disturbed areas. No active owl burrows, sign, or burrowing owls were detected during the reconnaissance survey, nor during the various 2020 focused biological surveys conducted during the owl breeding season. The literature review identified multiple recent records between 2003 and 2016 located within five miles of the Project site (CDFW 2019a). Although potential nesting and foraging habitat is present and a documented record occurs within five miles, no evidence of burrowing owls was detected during numerous 2020 biological surveys (inclusive of transect surveys throughout the grassland), resulting in this species having only a moderate potential to occur.
- The white-tailed kite (*Elanus leucurus*) is a CDFW Fully Protected species. It is typically found in open lowland habitat including savanna, open woodlands, marshes, and agricultural fields that have trees near a marsh for nesting. The mature trees surrounding Lake Los Serranos and in proximity to open lowland habitat provide potential nesting and foraging habitat for this species and the riparian habitat along the lake margins provides suitable foraging habitat. The literature review identified three records from 2009, between one and four miles from the project site: one sighting southwest and two sightings southeast of the Project site (Occurrences 139, 140, and 141; CDFW 2019a). Although potential nesting and foraging habitat is present and a documented record occurs within five miles, this highly detectable species was not observed in the area during numerous 2020 biological surveys, resulting in this species having only a moderate potential to occur.
- The yellow-breasted chat (*Icteria virens*) is a CDFW SSC. It is typically found in riparian and upland thickets, and dry overgrown pastures. This species prefers to nest in dense scrub along streams or at the edges of ponds or swamps. The riparian habitat surrounding Lake Los Serranos provides potential nesting habitat for this species. The literature review identified one recent record in 2010 located approximately 2.7 miles west of the Project site (Occurrence 112; CDFW 2019a). Although suitable riparian habitat is present and a documented record occurs within five miles, this highly detectable species was not observed in the area during numerous 2020 biological surveys, resulting in this species having only a moderate potential to occur.
- The pallid bat (*Antrozous pallidus*) is a CDFW SSC. The mature trees and abandoned buildings present on the Project site contain suitable habitat for this species. The Pipeline Avenue bridge crossing Hickory Creek also has potential to provide suitable roosting habitat for this species. Although no records of this species have been documented within five miles of the Project site, the presence of suitable roosting habitat resulted in this species having a moderate potential to occur.
- The western yellow bat (*Lasiurus xanthinus*) is a CDFW SSC. The palm trees scattered throughout the Project site provide suitable roosting and foraging habitat for this species. Although no records of this species have been documented within five miles of the Project site, the presence of suitable roosting and foraging habitat resulted in this species having a moderate potential to occur.

4.2.5.6 Wildlife Species with Low Potential to Occur

Seventeen special-status wildlife species were found to have a low potential to occur on the Project site because limited habitat for the species occurs on the site and a known occurrence has been reported in the database, but not within five miles of the site or a historic documented observation (more than 20

years old) was recorded within five miles of the Project site, or suitable habitat strongly associated with the species occurs on the site, but no records were found in the database search:

- coast range newt (Taricha torosa) CDFW SSC.
- southern California legless lizard (Anniella stebbinsi) CDFW SSC.
- coastal whiptail (Aspidoscelis tigris stejnegeri) CDFW SSC.
- two-striped gartersnake (Thamnophis hammondii) CDFW SSC.
- tricolored blackbird (Agelaius tricolor) state-listed endangered.
- grasshopper sparrow (Ammodramus savannarum) CDFW SSC.
- golden eagle (Aquila chrysaetos) CDFW fully protected.
- long-eared owl (Asio otus) CDFW SSC.
- Swainson's hawk (Buteo swainsoni) state-listed threatened, CDFW SSC.
- southwestern willow flycatcher (*Empidonax traillii extimus*) federally and state-listed endangered.
- bald eagle (Haliaeetus leucocephalus) federally delisted, state-listed endangered, and CDFW fully protected.
- northwestern San Diego pocket mouse (Chaetodipus fallax fallax) CDFW SSC.
- western mastiff bat (Eumops perotis californicus) CDFW SSC.
- pocketed free-tailed bat (Nyctinomops femorosaccus) CDFW SSC.
- big free-tailed bat (Nyctinomops macrotis) CDFW SSC.
- Los Angeles pocket mouse (Perognathus longimembris brevinasus), CDFW SSC.
- American badger (Taxidea taxus), CDFW SSC.

4.2.6 Potentially Jurisdictional Drainages

The Project site includes three primary jurisdictional features: Lake Los Serranos, Hickory Creek, and an unnamed ephemeral drainage. These features are potentially jurisdictional to the USACE, Regional Water Quality Control Board (RWQCB) and CDFW. There is also associated riparian habitat considered to be potentially jurisdictional to the CDFW.

Lake Los Serranos is an artificial lake whose boundaries are set by the elevation of its spillway. Portions of the lake edge consist of wetlands, as defined by the USACE under their criteria for vegetation, soils and hydrology. The lake is surrounded by a mixture of revegetated and natural wetland vegetation that also would be considered to be jurisdictional to the CDFW as wildlife habitat.

Hickory Creek is a perennial stream, supported by a combination of stormwater flows and urban runoff. This creek also is surrounded by riparian habitat that would be considered jurisdictional to the CDFW. Although this creek was historically a dry, ephemeral wash it now flows very regularly due to irrigation and other sources of runoff in the area.

There is a storm drain outlet and associated earthen channel located in the central portion of the site between Los Serranos Boulevard and Lake Los Serranos. that was installed by the City to address flooding issues over the short term south of Los Serranos Boulevard. The channel empties into Lake Los Serranos. Due to exhibition of Ordinary High Water Mark, the feature is considered to be potentially jurisdictional to the USACE, and also would be jurisdictional to the CDFW and RWQCB.

Detailed mapping and a description of all features potentially jurisdictional to USACE, CDFW, and/or RWQCB are included in Appendix F.

4.2.7 Raptors and Migratory Birds

Nesting habitat for migratory birds and raptors protected by the MBTA and the California Fish and Game Code is present on the Project site. Vegetation, trees, and structures suitable for nesting birds (e.g., buildings, utility poles) were observed on the Project site. One active red-tailed hawk nest located in a eucalyptus tree off the southeast corner of Lake Los Serranos successfully fledged two young during the 2020 nesting season. Direct observations of nests or recently fledged young for a number of other native and migratory birds protected by the MBTA including Canada goose (*Branta canadensis*), mallard, acorn woodpecker (*Melanerpes formicivorus*), hooded oriole (*Icterus cucullatus*), bushtit (*Psaltriparus minimus*), black phoebe, and barn swallow (*Hirundo rustica*), were observed over the course of the various 2020 focused biological surveys. In addition, a double-crested cormorant and great blue heron breeding rookery was noted in eucalyptus trees along the northwest lake shoreline within approximately 350 feet of the Project area. Construction of the Project could directly or indirectly affect nesting birds within and adjacent to the Project area if activities occur during the nesting bird season. Raptors typically breed between February and August, and songbirds and other passerines generally nest between March and August.

4.2.8 Wildlife Movement Corridors, Linkages, and Significant Ecological Areas

The concept of habitat corridors addresses the linkage between large blocks of habitat that allow the safe movement of mammals and other wildlife species from one habitat area to another. The definition of a corridor varies, but corridors may include such areas as greenbelts, refuge systems, underpasses, and biogeographic land bridges. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix, which connects two or more large blocks of habitat. Wildlife movement corridors are critical for the survivorship of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for the potential of genetic exchange between wildlife species populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. The nature of corridor usage and wildlife movement patterns vary greatly among species.

The Project site was assessed for its ability to function as a wildlife corridor. The Project site does contain suitable vegetation and/or cover to support wildlife movement, and the open water source (Lake Los Serranos) and associated riparian vegetation likely serve as an attractant for wildlife. However, the Project site is almost completely surrounded by commercial and residential development and wildlife movement opportunities connecting the Project site to large, undeveloped natural areas is extremely limited. There is

potential for some species highly adaptable to urban environments, such as coyote, to utilize nearby golf courses to travel between the Project site and the Santa Ana Mountains to the south, but the presence of anthropogenic influences (e.g., human activity, vehicles, domestic animals) and general lack of native vegetation severely limit these types of travel opportunities for other species. The Project site is not considered, nor is a part of, a wildlife movement corridor or linkage.

5.0 IMPACT ANALYSIS

5.1 Special-Status Species

The Project site contains suitable habitat for special-status species, especially in the areas containing cottonwood willow riparian vegetation. Disturbances were present in the non-riparian areas of the Project site, including those associated with the structures and residences. Residential and commercial developments are located adjacent to the Project site.

Two special-status plant species, San Diego marsh elder and southwestern spiny rush, were found to occur within the Project impact area along the southern shoreline of Lake Los Serranos. Both species were most likely planted during a restoration effort for Lake Los Serranos and are not naturally occurring. Impacts to 97 individuals of San Diego marsh elder and 25 individuals of southwestern spiny rush may occur in the form of loss of individuals and habitat, increased dust, and loss of seedbank from grading or substrate removal. Implementation of Mitigation Measures BIO-1through BIO-4 would reduce impacts to special-status plant species to less than significant. The Mitigation Measures for the Proposed Project are discussed in Section 6.0.

The literature review identified 51 special-status wildlife species that occur near the Project site, but 24 of the 51 special-status wildlife species identified in the literature review were presumed absent from the Project site due to the lack of habitat or the Project occurring outside the known range of these species. Two additional species, western spadefoot and Crotch bumble bee, were presumed absent after these species were not detected during 2020 focused surveys. Construction of the Project will not contribute to the overall decline of any of the special-status wildlife species that have been presumed absent from the site, and no impacts to these species are anticipated to result from this Project.

One state and federal-listed endangered wildlife species, the least Bell's vireo, was found to occur within and adjacent to the Project impact area. Dense willow riparian thickets for nesting is limited within the Fremont Cottonwood Forest and Woodland and nesting was not observed, but territorial males were detected in two locations during 2020 focused least Bell's vireo surveys in addition to one incidental detection during one of four focused Crotch bumble bee surveys conducted in 2020. Potential Project-related direct impacts to these species could be significant and occur in the form of injury, mortality, and loss of active nests and/or young. Indirect impacts could occur in the form of habitat loss (2.20 acres of Fremont Cottonwood Forest and Woodland), increased human and vehicular activity, ground disturbances, noise, and increased dust. Implementation of Mitigation Measures BIO-2, and BIO-4 through BIO-7 would reduce potential impacts to listed least Bell's vireo and their habitat to less than significant.

One special-status wildlife species, yellow warbler, was found to occur within the Project area. Six additional special-status wildlife species were found to have a moderate potential to occur within the

Project boundaries: western pond turtle, burrowing owl, white-tailed kite, yellow-breasted chat, pallid bat, and western yellow bat. Lake Los Serranos provides suitable open water habitat for western pond turtle. A petition for listing under the federal ESA was submitted in 2012 and is currently under review by USFWS. Direct impacts to this species could occur in the form of injury, mortality, and the loss of nests and/or young. Indirect impacts could occur in the form of habitat loss, increased human and vehicular activity, ground vibrations, noise, and increased dust. Implementation of BIO-2, BIO-4, BIO-8, and BIO-9 would reduce potential impacts to western pond turtle to less than significant.

The mature trees surrounding Lake Los Serranos provides potential nesting habitat for white-tailed kite (a CDFW SSC) and open adjacent habitat provides suitable foraging habitat. Riparian habitat along the lake margins provides suitable foraging and nesting habitat for yellow warbler and yellow-breasted chat (also CDFW SSCs). Potential Project-related direct impacts to these species could be significant and occur in the form of injury, mortality, and loss of active nests and/or young. Indirect impacts could occur in the form of habitat loss, increased human and vehicular activity, ground disturbances, noise, and increased dust. Implementation of Mitigation Measures BIO-2, BIO-4, BIO-8, and BIO-9 would reduce potential impacts to special-status bird species to less than significant.

Although no active owl burrows, sign, or burrowing owls were detected during the reconnaissance survey, nor detected during the various 2020 focused biological surveys conducted during the owl breeding season, it is possible that burrowing owl could move in to the site prior to the start of Project activities due to the mobile nature of this species. If burrowing owl are found to be using or nesting on the Project site prior to the start of construction, direct impacts in the form of ground disturbance, vegetation removal, habitat loss, and mortality and indirect impacts from construction noise and vibrations may occur. Implementation of BIO-2, BIO-4, BIO-8, and BIO-11 would reduce potential impacts to burrowing owl to less than significant.

The mature trees, abandoned buildings, and the Pipeline Avenue bridge over Hickory Creek all provide suitable roosting habitat for pallid bat and western yellow bat, both of which have a moderate potential to occur on the Project site. Potential Project-related impacts could occur to these species in the form of injury, mortality, and loss of young if maternity roosts are found in any of the suitable roosting habitats on site. Indirect impacts could occur in the form of roosting habitat loss, increased human activity, noise, and ground vibration. Implementation of BIO-2, BIO-4, BIO-8, and BIO-12 would reduce potential impacts to special-status bats and bat roosts to less than significant.

A total of 17 species were found to have a low potential to occur on the Project site: coast range newt, southern California legless lizard, coastal whiptail, two-striped gartersnake, tricolored blackbird, grasshopper sparrow, golden eagle, long-eared owl, Swainson's hawk, southwestern willow flycatcher, bald eagle, northwestern San Diego pocket mouse, western mastiff bat, pocketed free-tailed bat, big free-tailed bat, Los Angeles pocket mouse, and American badger. The Project site provides marginal to low quality suitable habitat for these species and, in general, these species are not expected to occur. The presence of anthropogenic disturbances, the presence of urban development immediately adjacent to the Project site, and the lack of connectivity of the Project site to native habitat blocks likely preclude these species from occurring on the Project site. If any of these species were to be present on the site, there is potential for direct impacts such as habitat loss, injury, or mortality, and indirect impacts such as increased human activity, ground vibrations, noise, and nighttime lighting to occur. If these impacts were to occur to any of the CDFW SSC species (all species listed above except tricolored blackbird, Swainson's hawk,

southwestern willow flycatcher, and bald eagle), then the impacts would not be considered significant. If these CDFW SSC species were to be present on site, they would likely occur in low numbers due to the limiting factors listed above (anthropogenic disturbances, urban development, and lack of connectivity) and Project-related impacts would not be expected to contribute to the overall decline of populations for these species. Implementation of BIO-2, BIO-4, BIO-8, and BIO-12 would reduce potential impacts to these special-status species to less than significant.

If the Project-related impacts occurred to the federally and/or state-listed avian species with low potential to occur (tricolored blackbird, Swainson's hawk, southwestern willow flycatcher, and bald eagle) in the form of injury, mortality, habitat loss, and loss of nests or young, then there is potential for these impacts to be significant. Implementation of Mitigation Measures BIO-2, BIO-4, BIO-8, and BIO-10 would reduce potential impacts to listed bird species to less than significant.

Suitable habitat for nesting birds and raptors was identified throughout the Project site. The trees, shrubs, utility poles, and structures all provide suitable nesting substrates for raptors and songbirds protected by the MBTA and California Fish and Game Code. An active red-tailed hawk nest that successfully fledged two young in 2020 is located in a eucalyptus tree off the southeast corner of Lake Los Serranos. An active great blue heron and double-crested cormorant rookery was present on the northwest lake shoreline across from the Project impact area. These species are known to utilize the same nests or nest trees year after year. In addition, a variety of passerine species are known to nest in the Project area. If construction of the Project occurs during the bird breeding season (typically February 1 through August 31), direct impacts in the form of nest destruction, nest abandonment, egg loss, and chick mortality could occur. Ground-disturbing construction activities could indirectly affect birds protected by the MBTA and their nests due to increased human/vehicular activity, noise, ground vibration, and increased dust. Implementation of Mitigation Measures BIO-1, BIO-2, BIO-4, BIO-8, and BIO-10 would reduce potential impacts to nesting raptors and MBTA-protected species to less than significant.

5.2 Sensitive Natural Communities

Two sensitive vegetation communities were mapped within the Project site: Fremont Cottonwood Forest and Woodland and California Bulrush Marsh. Both communities are mapped along the edges of Lake Los Serranos. and Fremont Cottonwood Forest and Woodland also occurs along Hickory Creek in the southwestern portion of the Project area. The Fremont Cottonwood Forest and Woodland has a State Rarity Rank of S3 and provides suitable habitat for special-status wildlife species (including federal and state-listed least Bell's vireo), two special-status plants, and nesting birds. California Bulrush Marsh has a State Rarity Rank of S4 and provides suitable habitat for the two special-status plant species that were found to occur on site. Preservation of native and heritage trees identified in the Arborist Report Review (Zoll 2020) will result in protection of sensitive natural communities in select locations. The arborist report provided data on 532 trees, 26 of which are considered protected by the City of Chino Hills Tree Preservation Ordinance Chapter 16.90. Numerous native willows that do not qualify for protection by the City tree ordinance will also be protected in place. Four (4) trees on site are proposed to be removed and are considered protected by the tree preservation ordinance including one native western sycamore (Zoll 2020). Implementation of Mitigation Measures BIO-1, BIO-2, BIO-4, BIO-8, and BIO-10 would reduce overall impacts to sensitive natural communities to less than significant. Coordination and/or consultation

with CDFW during regulatory permitting (see BIO-13) will be required to determine compensatory mitigation to sensitive natural communities.

5.3 State- and/or Federally Protected Wetlands and Waters

A total of 4.217 acres of USACE aquatic resources and 6.343 acres of CDFW jurisdiction have been mapped within the Biological Resources Assessment. The mapped features consist of Lake Los Serranos, Hickory Creek (perennial stream) and an unnamed ephemeral drainage, along with associated wetlands and riparian habitats. To varying degrees, all of these areas are considered to be subject to USACE jurisdiction pursuant to Section 404 of the CWA, CDFW jurisdiction pursuant to the California Fish and Game Code, and RWQCB jurisdiction pursuant to Section 401 of the CWA.

Anticipated impacts would entail 0.698 acre of USACE jurisdiction and 2.584 acres of CDFW jurisdiction, along with 0.698 acre of Waters of the State (Regional Board jurisdiction). The acreage represents a calculated estimation of the extent of aquatic resources within the Delineation Area, and is subject to modification following USACE review and/or the verification process. The placement of dredged or fill material into jurisdictional features would require a permit pursuant to Section 404 of the CWA and certification or waiver in compliance with Section 401 of the CWA. Alteration of Lake Los Serranos and other areas under CDFW jurisdiction would require a Lake and Streambed Alteration Agreement with the CDFW.

5.4 Wildlife Corridors and Nursery Sites

The Project site is located adjacent to areas containing existing disturbances (i.e., paved roads and residential and commercial developments). Although the Project site does contain suitable vegetation and/or cover to support wildlife movement, the Project site is almost completely surrounded by commercial and residential development, and wildlife movement opportunities connecting the Project site to large, undeveloped natural areas is extremely limited. No migratory wildlife corridors or native wildlife nursery sites were identified within the Project site. Therefore, no impacts to wildlife corridors or nursery sites are expected to occur during the development of the Project site.

5.5 Habitat Conservation Plans and Natural Community Conservation Plans

The Project site is not located within a HCP or NCCP. Therefore, development of the Project site will not conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP.

6.0 MITIGATION MEASURES

The following mitigation measures have been developed in accordance with the CEQA impacts analysis for the Project (see Section 5). These actions will need to be implemented in addition to any Project regulatory measures required as a part of the Section 7 ESA take and regulatory permitting process:

BIO-1: Tree Protection, Replacement, and Mitigation Plan

A Tree Protection, Replacement, and Mitigation Plan (Tree Plan) shall be prepared and submitted to the City of Chino Hills in accordance with the City of Chino Hills Tree

Preservation Ordinance Chapter 16.90. The Tree Plan will incorporate all Protection and Mitigation and Replacement Measures specified in the Arborist Report Review (Zoll 2020), in addition to Tree Protection Specifications Measures specified in the Inventory Report (Johnny's Tree Service 2019). Identification and delineation of tree protection areas will include protection of special-status plant (San Diego marsh elder and southwestern spiny rush) individuals that occur under or immediately adjacent to the preserved tree's canopy/dripline and the outermost tree protection area limits shall be clearly fenced prior to clearing or grading. The Tree Plan will include preservation of 183 native tree specimens located throughout the entire property (inclusive of 16 native trees within the Project impact area that qualify as protected by the City of Chino Hills Tree Preservation Ordinance Chapter 16.90) and six non-native heritage trees within the Project impact area. Development of the Rancho Cielito project would involve removal of four (4) protected trees and a total of thirty-three (33) 48" box trees would be required as mitigation as shown in Table 2 below. If a total of five trees (four trees to be removed and one to be preserved) are removed from the site, a total of forty-two (42) 48" box trees will be required.

Tree No¹.	Botanical Name	Common Name	Form	DBH	Total No. of Trees to Preserve/ Remove	Required Mitigation
73	Schinus molle	California Pepper	Multi	80	Removed	Twelve (12) 48" Box Trees
80	Schinus molle	California Pepper		52	Remove	Eight (8) 48" Box Trees
141	Schinus molle	California Pepper		59	(1) Remove	Nine (9) 48" Box Trees
198	Platanus racemosa	Western Sycamore		32	Remove	Four (4) 48" Box Trees
		Thirty-Three (33) 48" Box Trees				
399	Salix lasiolepis	Arroyo Willow	Multi	59	Preserve	Nine (9) 48" Box Trees (if removed)
	•				Total:	Forty-Two (42) 48" Box Trees

¹Source: Arborist Report Review (Zoll 2020)

DBH=diameter at breast height

BIO-2: Worker Education and Environmentally Sensitive Areas:

Limits of Environmentally Sensitive Areas (ESAs) will be established around special-status natural resources that are to remain intact immediately prior to and/or in coordination with the staking of grading limits. The contractor shall install ESA (silt) fencing around ESAs and/or along ESA interface with grading limits under the guidance of a biological monitor to

minimize impacts to sensitive natural resources including special-status plant species and native plant communities outside and immediately adjacent to the grading limits. Construction activities and personnel will be restricted within ESAs and a biological monitor will be present during ESA fence installation and removal. A qualified biologist will conduct worker environmental awareness training to all construction personnel prior to initial clearing and ground-disturbing activities and as necessary throughout construction. A signin sheet signed and dated by each trainee and acknowledging they have been made aware of environmental laws, regulations, non-compliance penalties, and Project specific mitigation measures will be maintained by the Project Biologist.

BIO-3: Special-Status Plants

A biological monitor will be present during staking and fencing of the northern grading limits to prevent impacts to special-status plants that occur immediately adjacent to the Project impact area. San Diego marsh elder and southwestern spiny rush that occur within the Project area and that are not annexed into tree protection areas (see BIO-1) shall have seed harvested and properly stored prior to clearing and grading activities. The seed storage location will be dry, out of direct sunlight, and with a relatively constant temperature that ranges from 65 to 75 degrees Fahrenheit. Harvested seed will be used to enhance riparian and marsh habitat that occurs along the Lake Los Serranos southern shoreline during the restoration phase.

BIO-4: Biological Monitoring

A qualified biologist shall be present to monitor all ground-disturbing and vegetation-clearing activities conducted for the Project. During each monitoring day, the biological monitor shall perform clearance survey "sweeps" at the start of each work day that vegetation clearing takes place to avoid impacts to ESAs and minimize impacts on special-status species with potential to occur (including, but not limited to, western pond turtle, special-status and/or nesting bird species). The monitor will be responsible for ensuring that impacts to special-status species, nesting birds, and active nests will be avoided to the greatest extent possible. Biological monitoring shall take place until the Project site has been completely cleared of any vegetation. The biological monitor will have the authority (and appropriate handling permits if required) to temporarily halt activities to move wildlife out of harm's way by means of hazing or short-distance capture and release. If an active nest is identified, then the biological monitor shall establish an appropriate disturbance limit buffer around the nest using flagging or staking. Construction activities shall not occur within any disturbance limit buffer zones until the nest is deemed no longer active by the biologist.

BIO-5: Pre-Construction Least Bell's Vireo Surveys

If Project activities occur within 500 feet of least Bell's vireo habitat during the least Bell's vireo breeding season (March 15-August 31), preconstruction focused surveys for least Bell's vireo will be conducted by a least Bell's vireo designated biologist (DB). These preconstruction least Bell's vireo surveys will be conducted independently of the preconstruction nesting bird surveys described in BIO-8. Preconstruction focused least Bell's vireo surveys will begin 30 days prior to the start of Project activities. The surveys will

continue weekly with three surveys occurring during the week prior to the initiation of Project activities, and the final survey occurring within 24 hours prior to the start of Project activities. Each survey will be conducted on a separate day and will follow the methods in USFWS' 2001 Least Bell's Vireo Survey Guidelines, which require the surveys be conducted between dawn and 11:00 a.m. when weather conditions are favorable. If a least Bell's vireo individual or an active least Bell's vireo nest is detected, the least Bell's vireo DB will determine the nesting status with a brief observation period at a distance away from the least Bell's vireo. A 500-foot no-work buffer will be established around active least Bell's vireo nest locations. Buffers will remain in place until the young have fledged and/or the nest is no longer active. Periodic monitoring of active nests will occur to ensure the Project does not result in the failure of the nest. If no least Bell's vireos are detected within 500 feet of the Project site, Project activities may begin.

BIO-6: Breeding Season Least Bell's Vireo Surveys and Monitoring

If Project activities within 500 feet of least Bell's vireo habitat are ongoing during the least Bell's vireo breeding season, weekly focused surveys for least Bell's vireo will be conducted by a least Bell's vireo DB simultaneous with the duration of Project activities occurring during the breeding season. Survey methods for the weekly survey and establishment of nest protection buffers will be the same as the methods described for pre-construction least Bell's vireo surveys in BIO-5. In the event that a no-work buffer has been established around a least Bell's vireo nest, only a least Bell's vireo DB will be allowed inside the buffer, All Project personnel will be informed of any no-work buffers affecting the Project. At the discretion of a DB, if a nesting bird appears to be stressed as a result of Project activities and the buffer does not appear to provide adequate protection, additional minimization measures may need to be implemented. The buffer(s) will be maintained around each nest until the nest becomes inactive as determined by the DB. Buffers around least Bell's vireo(s) will be maintained until the least Bell's vireo DB determines the nest is inactive (either success or failure) and the USFWS/CDFW agrees that the buffer can be removed and that work may proceed.

BIO-7: Least Bell's Vireo Regulatory Permitting

An application for a Section 2081 Incidental Take Permit from CDFW will need to be submitted and consultation with USFWS under Section 7 of the federal ESA will need to be initiated to determine appropriate avoidance and mitigation measures for potential impacts to two least Bell's vireo territories, potential direct and indirect impacts to individuals during the breeding season, and loss of up to 2.20 acres of foraging and potential breeding habitat in the form of Fremont Cottonwood Forest and Woodland. Types of mitigation can include restoration, creation, rehabilitation, enhancement or other types of habitat improvement which is typically negotiated during the regulatory permitting process.

BIO-8: Pre-Construction Survey for Special-Status Wildlife Species

A pre-construction survey shall be conducted for special-status wildlife species within all areas of potential permanent and temporary disturbance. The pre-construction survey shall take place no more than 14 days prior to the start of ground-disturbing activities. The pre-

construction surveys shall take place regardless of breeding season timing and shall focus on identifying the presence of special-status wildlife species present on the Project site or that were identified as having a moderate potential to occur. Should any listed species not covered by the consultation process be identified during the pre-construction survey, an update to the Section 2081 Incidental Take Permit application and/or Biological Assessment to develop species specific avoidance and minimization measures with the appropriate agency (USFWS, CDFW) may need to be undertaken.

BIO-9: Pre-Construction Western Pond Turtle Surveys

Pre-construction surveys for western pond turtle shall be conducted within suitable habitat on the Project site within 30 days of ground-disturbing activities. The surveys shall be conducted by a qualified turtle biologist who is experienced in surveying for and identifying the western pond turtle. Surveys shall include both visual and live-trapping surveys and specific survey methods shall be submitted to CDFW for review prior to commencement. If western pond turtle is detected on the Project site during the surveys, then coordination with CDFW and USFWS will need to occur in order to develop a western pond turtle mitigation plan. Mitigation for western pond turtle may include seasonal work restrictions, additional biological monitoring requirements, and implementation of no-disturbance buffers.

BIO-10: Pre-Construction Nesting Bird Survey

If construction or other Project activities are scheduled to occur during the bird breeding season (Typically February 1 through August 31 for raptors and March 15 through August 31 for the majority of migratory bird species), a pre-construction nesting-bird survey shall be conducted by a qualified avian biologist to ensure that active bird nests, including those for yellow warbler, will not be disturbed or destroyed. The survey shall be completed no more than three days prior to initial ground disturbance. The nesting-bird survey shall include the Project site and adjacent areas where Project activities have the potential to affect active nests, either directly or indirectly due to construction activity or noise. If an active nest is identified, the biologist shall establish an appropriately sized disturbance limit buffer (typically 300 feet for passerines and 500 feet for raptors and listed bird species) around the nest using flagging or staking. Construction activities shall not occur within any disturbance limit buffer zones until the nest is deemed inactive by the qualified biologist. If an active nest has been identified within 500 feet of the Project site, nest monitoring will occur as necessary to update the status of nests and confirm active status without affecting nesting birds, as determined by a qualified avian biologist.

BIO-11: Pre-Construction Surveys for Burrowing Owl

Pre-construction surveys for burrowing owl shall be conducted within the Project site and adjacent areas prior to the start of ground-disturbing activities. The surveys shall follow the methods described in the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). Two surveys shall be conducted, with the first survey being conducted between 30 and 14 days before initial ground disturbance (grading, grubbing, and construction), and the second survey being conducted no more than 24 hours prior to initial ground disturbance. If burrowing owls and/or suitable burrowing owl burrows with sign (e.g., whitewash, pellets,

feathers, prey remains) are identified on the Project site during the survey and impacts to those features are unavoidable, consultation with the CDFW shall be conducted and the methods described in the CDFW's *Staff Report on Burrowing Owl Mitigation* (CDFW 2012) for avoidance and/or passive relocation shall be followed.

BIO-12: Pre-Construction Bat Survey

Abandoned building demolition and tree removal should take place outside of the bat maternity season (April 1 through August 31) where possible. A pre-construction bat survey should be completed within the Project site no more than 14 days prior to scheduled building demolition or tree removal (at any time of year) to determine if roosting bats are present within the buildings or trees. If roosting bats are determined to be present during the maternity season, building demolition and tree removal shall be postponed until the maternity season is complete and young are volant. If individual roosting bats are determined to be present within trees outside of the maternity season, the trees shall be removed using a two-step method where the outer limbs (or fronds) are first removed under the observation of a qualified bat biologist. After limb removal, 24 hours shall elapse before the remainder of the tree is removed. If roosting bats are determined to be present within buildings outside of the maternity season, coordination with CDFW shall take place to implement appropriate exclusion measures and installation of alternative roosting habitat that is comparable to habitat features lost from Project activities.

BIO-13: Aquatic Resources Regulatory Permitting

Without avoidance measures, Project-related impacts to 0.698 acre of USACE jurisdiction and 2.584 acres of CDFW jurisdiction would require coordination and permitting with the USACE, CDFW or RWQCB. For coordination with the USACE, based on the impact acreage, permitting is anticipated to require an Individual Permit. Note that an Individual Permit may take up to two years or more to complete, depending on the mitigation requirements, and would require a robust suite of avoidance and minimization measures as well as an Alternative Analysis under 404(1)(b) guidelines and the National Environmental Policy Act. Any unavoidable impacts, after the analysis has been completed, would require compensatory mitigation at a minimum replacement ratio of 2:1 replacement. Mitigation options would be discussed with the City and Project owner at the time of application with the USACE. Mitigation could include contribution to an existing mitigation bank (such as the Riverpark Mitigation Bank near Mystic Lake), permittee-responsible mitigation such as mitigation within the Lake Los Serranos watershed or property, payment of in-lieu fees or other options involving land acquisition for the purpose of mitigation. The permit process would require preparation and submittal of the ENG 4345 application under Section 404 of the federal Clean Water Act. If impacts to USACE jurisdiction are reduced to below ½ acre in size, the Project may qualify under the Nationwide Permit program, which is a more streamlined process. For impacts to RWQCB and CDFW jurisdiction, these impacts would require an Application for Water Quality Certification and/or Notice of Applicability/Waste Discharge Requirements under Section 401 of the federal Clean Water Act and a Notification of Lake or Streambed Alteration under Section 1600 of the California Fish and Game Code.

7.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the Project applicant or the applicant's representative and that I have no financial interest in the Project.

Christine Tischer Senior Wildlife Biologist ECORP Consulting, Inc.

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LIST OF APPENDICES

Appendix A – Representative Project Site Photographs

Appendix B – Plant Species Observed

Appendix C – Wildlife Species Observed

Appendix D – Plant Potential for Occurrence

Appendix E – Wildlife Potential for Occurrence

Appendix F – Aquatic Resource Delineation Figures

APPENDIX A

Representative Project Site Photographs



Photo 1: Lake Los Serranos.



Photo 2: Cottonwood Willow Riparian Woodland Vegetation Community.



Photo 3: Eucalyptus Grove.



Photo 4: Disturbed Annual Grassland on the east side of the Project site.



Photo 5: Disturbed Annual Grassland on the west side of the Project site.



Photo 6: Equipment and materials storage in the disturbed areas of the Project site.



Photo 7: A residence located on the east side of the Project site.



Photo 8: A red-tailed hawk was observed carrying nesting material to this nest location in a Eucalyptus tree on the eastern end of the Project site.



Photo 9: Gopher activity along southern boundary of Project site.



Photo 10: Unnamed drainage running through the central portion of the Project site.

APPENDIX B

Plant Species Observed

SCIENTIFIC NAME	COMMON NAME							
	MNOSPERMS							
PINACEAE	PINE FAMILY							
Pinus sp.	Pine sp.							
ANGIOSPERMS (DICOTYLEDONS)								
ACERACEAE	MAPLE FAMILY							
Acer saccharinum	silver maple							
AMARANTHACEAE	AMARANTH FAMILY							
Amaranthus albus*	pigweed amaranth							
ANACARDIACEAE	SUMAC OR CASHEW FAMILY							
Schinus molle*	Peruvian pepper tree							
Schinus terebinthifolius*	Brazilian pepper tree							
APIACEAE	CARROT FAMILY							
Daucus pusillus	rattlesnake weed							
APOCYNACEAE	DOGBANE FAMILY							
Asclepias californica	California milkweed							
Asclepias fascicularis	narrow leaf milkweed							
ASTERACEAE	SUNFLOWER FAMILY							
Ambrosia psilostachya	western ragweed							
Artemisia douglasiana	Douglas' sagewort							
Artemisia dracunculus	tarragon							
Baccharis pilularis	coyote brush							
Baccharis salicifolia	mulefat							
Centaurea melitensis*	tocalote							
Cirsium vulgare*	bull thistle							
Erigeron bonariensis*	flax-leaved horseweed							
Erigeron canadensis	Canada horseweed							
Helminthotheca echioides*	bristly ox-tongue							
Heterotheca grandiflora	telegraph weed							
Hymenoclea salsola	cheesebush							
Iva hayesiana ^{CRPR 2B.2}	San Diego marsh elder							
Lactuca serriola*	prickly lettuce							
Matricaria discoidea	pineapple weed							
Pluchea sericea	arrow weed							
Pseudognaphalium californicum	ladies' tobacco							
Senecio vulgaris*	common groundsel							
Silybum marianum*	milk thistle							
Sonchus asper*	spiny sowthistle							
Sonchus oleraceus*	common sow thistle							
Sonchus sp.	sow thistle species							
Stephanomeria virgata	twiggy wreath plant							
BORAGINACEAE	BORAGE FAMILY							
Amsinckia tessellata	fiddleneck Chinese pareley							
Heliotropium curassavicum BRASSICACEAE	Chinese parsley MUSTARD FAMILY							
Brassica sp.*	mustard							
Capsella bursa-pastoris*	shepherd's purse							
Hirschfeldia incana*	short-podded mustard							
Sisymbrium altissimum*	tumble mustard							
Sisymbrium orientale*	oriental hedge mustard							
Sisymbrium irio*	London rocket							
วเราทบานทา เกษ	London Tocket							

SCIENTIFIC NAME	COMMON NAME			
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY			
Sambucus nigra	black elderberry			
CARYOPHYLLACEAE	CARNATION FAMILY			
Cerastium glomeratum*	mouse-ear chickweed			
Cerastium fontanum	chickweed			
Spergularia sp.	sand spurry			
CHENOPODIACEAE	GOOSEFOOT FAMILY			
Atriplex semibaccata*	Australian saltbush			
Chenopodium album*	white goosefoot			
Chenopodium murale*	nettle leaf goosefoot			
Salsola tragus*	Russian thistle			
CONVOLVULACEAE	MORNING-GLORY FAMILY			
Convolvulus arvensis*	field bindweed			
Cressa truxillensis	alkali weed			
CUPRESSACEAE	CYPRESS FAMILY			
Cupressus sempervirens*	Italian cypress			
EUPHORBIACEAE	SPURGE FAMILY			
Chamaesyce albomarginata	rattlesnake weed			
Croton setiger	turkey mullein			
Euphorbia peplus*	petty spurge			
Euphorbia prostrata*	prostrate sandmat			
Euphorbia sp.	sandmat			
FABACEAE	LEGUME FAMILY			
Acacia sp.	acacia			
Acmispon glaber	deerweed			
Lupinus sp.	lupine			
Medicago polymorpha*	bur clover			
Melilotus albus*	white sweetclover			
Melilotus indicus*	yellow sweetclover			
Melilotus sp.	clover species			
Parkinsonia aculeata*	Mexican palo verde			
Spartium junceum*	Spanish broom			
FAGACEAE	OAK FAMILY			
Quercus sp.	oak			
Quercus agrifolia	coast live oak			
GERANIACEAE	GERANIUM FAMILY			
Erodium cicutarium*	redstem stork's bill			
Geranium sp.*	geranium			
LAMIACEAE	MINT FAMILY			
Marrubium vulgare*	white horehound			
Trichostema lanceolatum	vinegar weed			
LYTHTACEAE	LOOSESTRIFE FAMILY			
Lythrum hyssopifolia*	hyssop loosestrife			
MALVACEAE	MALLOW FAMILY			
Malva parviflora*	cheeseweed mallow			
MELIACEAE	MAHOGANY FAMILY			
Melia sp.	cedar			
MYRSINACEAE	MYRSINACEAE FAMILY			
Lysimachia arvensis*	scarlet pimpernel			

SCIENTIFIC NAME	COMMON NAME
MYRTACEAE	MYRTLE FAMILY
Eucalyptus sp.*	gum tree
NYMPHAEACEAE	WATER LILY FAMILY
Nymphaea odorata*	white water lily
Nymphaea sp.*	water lily
ONAGRACEAE	EVENING PRIMROSE FAMILY
Epilobium canum	California fuchsia
Oenothera elata	evening primrose
PHRYMACEAE	LOPSEED FAMILY
Erythranthe guttata	seep monkey flower
PLANTAGINACEAE	PLANTAIN FAMILY
Kickxia elatine	sharp leaved fluellin
Plantago major*	common plantain
PLATANACEAE	SYCAMORE FAMILY
Platanus racemosa	western sycamore
POLEMONIACEAE	PHLOX FAMILY
Gilia sp.	gilia
POLYGONACEAE	BUCKWHEAT FAMILY
Polygonum aviculare*	prostrate knotweed
Rumex crispus*	curly dock
Rumex pulcher*	fiddle dock
PORTULACACEAE	PURSLANE FAMILY
Portulaca oleracea*	common purslane
ROSEACEAE	ROSE FAMILY
Heteromeles arbutifolia	toyon
Prunus ilicifolia	hollyleaf cherry
Prunus ilicifolia ssp. lyonii	Catalina cherry
Prunus persica*	peach tree
Rosa californica	California wild rose
RUBIACEAE	BEDSTRAW FAMILY
Galium sp.	bedstraw
SALICACEAE	WILLOW FAMILY
Populus fremontii	Fremont's cottonwood
Salix exigua	narrow-leaved willow
Salix gooddingii	black willow
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
SAPINDACEAEA	SOAPBERRY FAMILY
Acer sp.	maple
Koelreuteria bipinnata*	golden rain tree
SAURURACEAE	RATTAIL FAMILY
Anemopsis californica	yerba mansa
SIMAROUBACEAE	QUASSIA FAMILY
Ailanthus altissima*	tree of heaven
SOLANACEAE	NIGHTSHADE FAMILY
Datura sp.	Jimson weed
Nicotiana glauca*	tree tobacco
Solanum americanum	American black nightshade
Solanum elaeagnifolium*	silverleaf nightshade

SCIENTIFIC NAME	COMMON NAME			
URTICACEAE	NETTLE FAMILY			
Urtica urens*	stinging nettle			
ANGIOSPERMS (N	IONOCOTYLEDONS)			
AGAVACEAE	AGAVE FAMILY			
Agave americana*	American century plant			
ARECACEAE	PALM FAMILY			
Arecaceae ssp.*	palm			
Phoenix canariensis*	Canary Island date palm			
Washingtonia robusta*	Mexican fan palm			
ASPHODELACEAE	ALOE FAMILY			
Asphodelus fistulosus*	onion weed			
CYPERACEAE	SEDGE FAMILY			
Cyperus eragrostis	tall flatsedge			
Cyperus involucratus*	umbrella plant			
Schoenoplectus californicus	California bulrush			
Scirpus sp.	bulrush			
JUNCACEAE	RUSH FAMILY			
Juncus acutus ssp. Leopoldii CRPR 4.2	southwestern spiny rush			
LILIACEAE	LILLY FAMILY			
Yucca sp.	yucca			
POACEAE	GRASS FAMILY			
Avena fatua*	wild oat			
Brachypodium distachyon*	purple false brome			
Bromus diandrus	ripgut brome			
Bromus madritensis ssp. rubens*	red brome			
Cortaderia jubata*	pampas grass			
Cynodon dactylon*	Bermuda grass			
Festuca myuros*	foxtail fescue			
Festuca perennis*	Italian rye grass			
Hordeum murinum*	foxtail barley			
Lamarckia aurea*	goldentop grass			
Pennisetum setaceum*	fountain grass			
Polypogon monspeliensis*	annual beard grass			
Polypogon viridis*	water beard grass			
Stipa miliacea*	smilograss			
PONTEDERIACEAE	HYACINTH FAMILY			
Eichhornia crassipes*	common water hyacinth			
ТҮРНАСЕАЕ	CATTAIL FAMILY			
Typha domingensis	narrowleaf cattail			
*Nonnative species				

^{*}Nonnative species

California Native Plant Society (CNPS) Rare Plant Ranks (CRPR):

2B: Plants rare, threatened, or endangered in California but more common elsewhere

CNPS Threat Rank:

0.2 Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

Sources:

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2021. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: September 23, 2021).

^{4:} Plants of limited distribution; a watch list.

APPENDIX C

Wildlife Species Observed

SCIENTIFIC NAME	COMMON NAME			
INSECTA	INSECTS			
Coleoptera	Beetles			
Coccinellidae sp.	ladybird beetle sp.			
Cotinis mutabilis	green fruit beetle			
Elateridae sp.	click beetle sp.			
Diptera	Flies			
Syrphidae sp.	hoverfly sp.			
Hemiptera	True Bugs, Cicadas, Hoppers, Aphids			
Lygaeus kalmia	small milkweed bug			
Hymenoptera	Ants, Bees, and Wasps			
Apis mellifera*	western honey bee			
Bombus melanopygus	black-tailed bumble bee			
Pepsis chrysothemis	tarantula hawk			
Vespula sp.	yellow jacket sp.			
Xylocopa californica	western carpenter bee			
Lepidoptera	Butterflies and Moths			
Brephidium exilis	western pygmy-blue			
Danaus plexippus	monarch			
Hylephila phyleus	fiery skipper			
Nymphalis antiopa	mourning cloak			
Papilio rutulus	western tiger swallowtail			
Phoebis sennae	cloudless sulphur			
Pieris rapae*	cabbage white			
Pontia protodice	common white			
Strymon melinus	gray hairstreak			
Vanessa atalanta	red admiral			
Vanessa cardui	painted lady			
Zerene eurydice	California dogface			
Odonata	Dragonflies & Damselflies			
Anisoptera sp.	dragonfly sp.			
Zygoptera sp.	damselfly sp.			
MALACOSTRACA	CRUSTACEANS			
Cambaridae	Crayfish and Shrimp			
Procambarus clarkii	red swamp crayfish			
OSTEICTHYES	BONY FISH			
Poecilidae	Livebearers			
Gambusia affinis*	mosquitofish			
AMPHIBIA	AMPHIBIANS			
Ranidae	True frogs			
Lithobates catesbeianus*	American bullfrog			
REPTILIA	REPTILES			
Anguidae	Alligator Lizards			
Elgaria multicarinata	southern alligator lizard			
Emydidae	Box & Water Turtles			
Trachemys scripta elegans	red-eared slider			
Iguanidae	Iguanids			
Sceloporus occidentalis	western fence lizard			
Uta stansburiana	side-blotched lizard			

SCIENTIFIC NAME	COMMON NAME
AVES	BIRDS
Accipitridae	Hawks, Kites, & Eagles
Accipiter striatus	sharp-shinned hawk
Buteo jamaicensis	red-tailed hawk
Buteo lineatus	red-shouldered hawk
Aegithalidae	Bushtits
Psaltriparus minimus	bushtit
Alcedinidae	Kingfishers
Megaceryle alcyon	belted kingfisher
Anatidae	Geese, Ducks, & Swans
Alopochen aegyptiaca*	Egyptian goose
Anas platyrhynchos	mallard
Aythya affinis	lesser scaup
Branta canadensis	Canada goose
Bucephala albeola	bufflehead
Cairina moschata*	Muscovy duck
Chen caerulescens	snow goose
Lophodytes cucullatus	hooded merganser
Oxyura jamaicensis	ruddy duck
Apodidae	Swifts
Aeronautes saxatalis	white-throated swift
Ardeidae	Herons and Egrets
Ardea alba	great egret
Ardea herodias	great blue heron
Bubulcus ibis	cattle egret
Butorides virescens	green heron
Egretta thula	snowy egret
Nycticorax nycticorax	black-crowned night heron
Bombycillidae	Waxwings
Bombycilla cedrorum	cedar waxwing
Cardinalidae	Cardinals and Allies
Piranga ludoviciana	western tanager
Cathartidae	Vultures
Cathartes aura	turkey vulture
Charadriidae	Plovers, Dotterels, and Lapwings
Charadrius vociferus	killdeer
Columbidae	Pigeons and Doves
Columba livia livia	rock pigeon
Patagioenas fasciata	band-tailed pigeon
Streptopelia decaocto*	Eurasian collared dove
Zenaida macroura	mourning dove
Corvidae	Jays and Crows
Aphelocoma californica	western scrub-jay
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Emberizidae	Towhees and Sparrows
Melospiza melodia	song sparrow
Pipilo crissalis	California towhee
Pipilo maculatus	spotted towhee
Zonotrichia atricapilla	golden-crowned sparrow

COMMON NAME
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sandpiper

Strigidae True Owls great horned owl Sturnidae Sturnidae Starlings Sturnus vulgaris* European starling Trochilidae Hummingbirds Anna's hummingbird Selasphorus sasin Allen's hummingbird Selasphorus sasin Allen's hummingbird Wrens Cistothorus palustris Troglodyttiae Wrens Wrens Troglodytea addon house wren Thyromanes bewickii Bewick's wren Bewick's wren Solitaires, Thrushes, and Allies Solitaires, Thrushes, and Allies Sidia mexicana Tyrannidae Tyrant flycatchers Myiarchus cinerascens ash-throated flycatcher Sayomis nigricans Sayomis nigricans Salok phoebe Say's phoebe Sayomis saya Say's phoebe Tyrannus verticalis Western kingbird Wireonidae Vireos Vireos Vireos Least Bell's vireo MAMMALS Canidae Canines Casi latrans Canidae Cats Felis catus* domestic / feral cat Geomyidae Hares & Rabbits Skunks Procyonidae Raccoons Procyon lotor Fraccoon Squirrels California ground squirrel Cotspernophilus beecheyi California ground squirrel California ground squi	SCIENTIFIC NAME	COMMON NAME				
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Sturnus vulgaris* European starling Hummingbirds	Bubo virginianus	great horned owl				
Trochilidae Calypte anna Anna's hummingbird Selasphorus sasin Allen's hummingbird Myens Cistothorus palustris Troglodytes aedon Thyromanes bewickii Bewick's wren Turdidae Solitaires, Thrushes, and Allies Sialia mexicana western bluebird Tyrannidae Tyrant flycatchers Ash-throated flycatcher Sayomis nigricans Sayomis saya Say's phoebe Tyrannus verticalis Tyrannus verticalis Tyrannus veciferans Vireo bellii pusillus*** MAMMALIA AndMALIA Canidae Canis latrans Felidae Cats Felis catus* Geomyidae Thomomys bottae Hares & Rabbits Sylvilagus audubonii Mephitidae Mephitis mephitis Procyonidae Raccoons Procyon lotor Faccoon Sciuridae Raccoons Squirrels	Sturnidae	Starlings				
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Selasphorus sasin	Trochilidae	Hummingbirds				
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ProcyonidaeRaccoonsProcyon lotorraccoonSciuridaeSquirrels	Mephitidae	Skunks				
Procyon lotorraccoonSciuridaeSquirrels		striped skunk				
Sciuridae Squirrels		Raccoons				
		raccoon				
Otospermophilus beecheyi California ground squirrel	Sciuridae	Squirrels				
	Otospermophilus beecheyi					
Sciurus niger* eastern fox squirrel * Nonnative species		eastern fox squirrel				

^{*} Nonnative species

**CDFW California Species of Special Concern/CDFW Fully Protected Species/Watch List Species

***Federally endangered or threatened/State endangered or threatened

APPENDIX D

Plant Potential for Occurrence

Scientific Name Common Name	Stat	us	Bloom Period & Elevation (meters)	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Abronia villosa var. aurita Chaparral sand- verbena	Fed: Ca: CNPS:	none none 1B.1	(Jan) Mar- Sept 75-1600	Occurs in chaparral, coastal scrub, and desert habitats. Often found in sandy soil, such as dune habitat.	Presumed Absent: No suitable chaparral, coastal scrub, or desert habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Allium munzii Munz's onion	Fed: Ca: CNPS:	END THR 2B.3	Mar-May 297-1070	Occurs in chaparral, Cismontane woodlands, coastal scrub, pinyon and juniper woodlands, and valley and foothill grassland habitats. Often found in mesic clay soil.	Presumed Absent: Although low quality habitat in the form of disturbed annual grasslands occurs on site, no mesic clay soil is present. The nearest Occurrence for the species (OCC #1) is over 20 miles southeast of the Project area and over 20 years old (1998) and considered possibly extirpated by CNDDB (CDFW 2019a). The Project site is outside the elevation range for the species.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Androsace elongata ssp. acuta California androsace	Fed: Ca: CNPS:	none none 4.2	March-June 150-1305	Occurs in chaparral, Cismontane woodlands, coastal scrub, meadows and seeps, pinyon and juniper woodland, and valley and foothill grassland habitats.	Presumed Absent: Although low quality habitat in the form of disturbed annual grasslands occurs on site, the only herbarium records existing within 20-miles of Project area located around Puddingstone Reservoir, about 8.5 miles northwest of the Project. All of these records are greater than 75-years old, and the isolated nature of Puddingstone Reservoir (surrounded by urbanization) make it unlikely this species migrated to Project area in the past (CNPS 2019). Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. No CNDDB records exist for this species.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Asplenium vespertinum western spleenwort	Fed: Ca: CNPS	none none 4.2	Feb-June 180-1000	Occurs in chaparral, cismontane woodlands, and coastal scrub habitats. Often found in rocky areas.	Presumed Absent: No suitable chaparral, cismontane, or woodland habitat is present on the Project site. Herbariums records are located 10 miles from Project area and are greater than 50 years old (CNPS 2019). The isolated nature of the Project area further reduces probability of occurrence. No CNDDB records exist for species.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	Stat	us	Bloom Period & Elevation (meters)	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Astragalus brauntonii Braunton's milk- vetch	Fed: Ca: CNPS:	END none 1B.1	Jan- Aug 4-640	Occurs in chaparral, coastal scrub, and valley and foothill grassland habitats. Often found in recently burned or disturbed areas. Usually in sandstone soil with carbonate layers.	Low Potential to Occur: No suitable chaparral or scrub is present on the Project site. The disturbed annual grassland area provides marginally suitable habitat for this species; however, evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. The closest documented occurrence is over five miles from the Project site (CDFW 2019a).	Presumed Absent: Not observed during 2020 focused rare plant surveys
Atriplex coulteri Coulter's saltbush	Fed: Ca: CNPS:	none none 1B.2	March-Oct 3-460	Occurs in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland habitats. Often found in clay or alkaline soils. Usually occurs in non-wetlands, occasionally in wetlands.	Low Potential to Occur: Although low quality habitat in the form of disturbed annual grasslands occurs on site, no clay soil or alkaline soil is present. Nearest occurrence (OCC#14) is within one mile; however, it is over 100 years old and considered possibly extirpated by CNDDB (CDFW 2019a). Two Herbarium records exist within 5-miles of Project area, however both are over 100-years old as well. No other Herbarium records exist within 20-miles of Project area. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Atriplex serenana var. davidsonii Davidson's saltscale	Fed: Ca: CNPS:	none none 1B.2	April-Oct 10-200	Occurs in coastal bluff scrub and coastal scrub habitats. Often found in alkaline areas.	Presumed Absent: No suitable coastal scrub habitat is present on the Project site, and no alkaline soil was identified. Nearest occurrence (OCC#192) is greater than 10 miles from Project area and is greater than 50 years old (CDFW 2019a).	Presumed Absent: Not observed during 2020 focused rare plant surveys
Baccharis malibuensis Malibu baccharis	Fed: Ca: CNPS:	none none 1B.1	August 150-305	Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodlands habitat. Found in Conejo volcanic substrates.	Presumed Absent: No suitable chaparral, or scrub habitat is present on the Project site. The riparian woodlands habitat on the Project site does not contain Conejo volcanic substrates, and the nearest documented occurrence is approximately 10 miles away (CDFW 2019a).	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	Stat	us	Bloom Period & Elevation (meters)	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Berberis nevinii Nevin's Barberry	Fed: Ca: CNPS:	END END 1B.1	March-June 290-1575	Occurs in chaparral, Cismontane woodlands, coastal scrub, and riparian scrub habitats. Often found in sandy or gravelly areas.	Presumed Absent: No suitable chaparral, woodlands, or scrub habitat is present on the Project site. Furthermore, the Project site is outside the elevation range for the species. The nearest occurrence (OCC#47) is greater than ten miles from Project site, and is 20 years old (CDGW 2019a). The isolated nature of the Project area further reduces probability of occurrence.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Calandrinia breweri Brewer's calandrinia	Fed: Ca: CNPS:	none none 4.2	(Jan) Mar- June 10-1220	Occurs in chaparral and coastal scrub. Often found in recently burned or disturbed areas. Usually in sandy or loamy soils.	Presumed Absent: No suitable chaparral or coastal scrub habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Calochortus catalinae Catalina mariposa lily	Fed: Ca: CNPS:	none none 4.2	(Feb) March-June 15-700	Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.	Moderate Potential to Occur: Low quality habitat in the form of disturbed annual grasslands occurs on site, and multiple Herbarium records exist within five miles of Project area. However, all but one of these records are older than 75 years old. The most recent record being observed in 2008 (CNPS 2019). Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. No CNDDB records exist for this species.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Calochortus plummerae Plummer's mariposa lily	Fed: Ca: CNPS:	none none 4.2	May-July 100-1700	Occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland in granitic, rocky soils.	Presumed Absent: No suitable chaparral, woodland, scrub, forest, or valley/foothill grassland habitat with granitic or rocky soils is present on the Project site. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	State	us	Bloom Period & Elevation (meters)	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Calochortus weedii var. intermedius intermediate mariposa lily	Fed: Ca: CNPS:	none none 1B.2	May-July 105-855	Occurs in chaparral, coastal scrub, and valley and foothill grasslands, in rocky, calcareous soils.	Presumed Absent: No suitable chaparral, scrub, or valley/foothill grassland habitat with rocky or calcareous soils is present on the Project site. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Calystegia felix lucky morning-glory	Fed: Ca: CNPS:	none none 1B.1	March-Sept 30-215	Historically occurs in wetlands and marshy places but also occurs in meadows and seeps and riparian scrub habitats. Found in areas of silty and alkaline soil.	High Potential to Occur: The riparian habitat on the Project site provides suitable habitat for this species. Multiple occurrences (OCC #1-6) occur within 1-4 miles of the Project area. These records (except for OCC #1) are recent, with dates ranging from 2013-2017. The Project area occurs within the elevation range for the species as well.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Camissoniopsis lewisii Lewis' evening- primrose	Fed: Ca: CNPS:	None None 3	March-May (June) 0-300	Occurs in coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland. Typically found in sandy or clay soils.	Low Potential to Occur: Low quality habitat in the form of disturbed annual grasslands occurs on the Project site. Only two herbarium records are located within 20 miles of Project area, however both are greater than 75 years old. These observations are also isolated within Gypsum Canyon (7 miles south of Project), and it is unlikely they migrated to the Project area in the past. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. No CNDDB records exist for this species.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	Status		Bloom Period & Elevation (meters)	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Centromadia parryi ssp. australis southern tarplant	Fed: Ca: CNPS:	none none 1B.1	May-Nov 0-480	Occurs in marshes and swamps, valley and foothill grassland, and vernal pool habitats.	Presumed Absent: No suitable marsh, swamp, vernal pool, or valley/foothill grassland habitat is present on the Project site. The disturbed annual grassland on the Project site does not provide suitable habitat due to the lack of clay and alkaline soils and vernal pools. Furthermore, evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Centromadia pungens ssp. laevis smooth tarplant	Fed: Ca: CNPS:	END END 1B.2	April-Sept 0-640	Occurs in chenopod scrub, meadows and seeps, playas, riparian woodlands, and valley and foothill grassland habitats. Often found in alkaline soil.	Low Potential to Occur: Although limited habitat occurs on site (disturbed annual grasslands), evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. The only record (OCC #107) of this species occurs 2.5 miles from the Project and is over 100 years old (CDFW 2019a). Only one herbarium record exists approximately five miles from the Project area, and it is also over 100 years old (CNPS 2019).	Presumed Absent: Not observed during 2020 focused rare plant surveys
Chorizanthe leptotheca Peninsular spineflower	Fed: Ca: CNPS:	none none 4.2	May- August 300-1900	Occurs in coastal scrub and valley and foothill grassland habitat. Often occurs in sandy soils.	Presumed Absent: No suitable coastal scrub or valley/foothill habitat with sandy soils is present on the Project site. The Project site is outside the elevation range requirements for this species.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	Fed: Ca: CNPS:	THR END 4.2	April-July 150-1220	Occurs coastal scrub, and valley and foothill grassland habitat.	Presumed Absent: No suitable coastal scrub habitat is present on the Project site. The disturbed annual grassland on the Project site is not considered suitable for this species due to evidence of frequent mechanical disturbance and the isolated nature of the Project area. The only record (OCC #8) of this species is over 10 miles from the Project and is over 100 years old (CDFW 2019a).	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	Common Name Status		Bloom Period & Elevation (meters)	Period & Habitat Requirements (Based on 2019 Literature	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)	
Chorizanthe parryi var. parryi Parry's spineflower	Fed: Ca: CNPS:	none none 1B.1	April-June 275-1220	Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitat. Often found in sandy or rocky openings.	Presumed Absent: No suitable chaparral, woodland, and valley/foothill grassland habitat is present on the Project site. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. The Project site is outside the elevation range for the species.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Chorizanthe polygonoides var. longispina long-spined spineflower	Fed: Ca: CNPS:	none none 1B.2	April-June 30-1530	Occurs in chaparral, coastal scrub, meadows and seeps, valley and foothill grasslands, and vernal pool habitat. Requires clay soil.	Presumed Absent: No suitable chaparral, scrub, meadow, seep, or valley/foothill grassland habitat with clay soils is present on the Project site. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Chorizanthe xanti var. Ieucotheca white-bracted spineflower	Fed: Ca: CNPS:	none none 1B.2	April-June 300-1200	Occurs in coastal scrub, Mojavean desert scrub, and pinyon and juniper woodland habitats. Often found in areas of sandy or gravelly soil.	Presumed Absent: No suitable scrub or woodland habitat is present on the Project site. The Project site is outside the elevation range for this species.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Cladium californicum California sawgrass	Fed: Ca: CNPS:	none none 2B.2	June-Sep 60-1600	Occurs in meadows and seeps, and marshes and swamp habitats. Often found in alkaline or freshwater areas.	Presumed Absent: The closest occurrence (OCC#3) is ten miles from the Project area and is greater than 100 years old. This species is considered extirpated from the area (CDFW 2019a).	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Convolvulus simulans small-flowered morning-glory	Fed: Ca: CNPS:	none none 4.2	March-July 30-740	Occurs in chaparral openings, coastal scrub, and valley and foothill grassland habitat. Often found in clay, serpentinite seeps.	Low Potential to Occur: Although limited habitat occurs on site (disturbed annual grasslands), no clay or serpentinite seeps occur in Project area. Two herbarium records exist within ten miles of Project area, however both are over 50 years old. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys	

Scientific Name Common Name	Common Name Status Elevation (meters) Deinandra Peniculata Fed: none April-Nov (March-		Period & Elevation	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)	
Deinandra paniculata paniculate tarplant			Occurs in coastal scrub, valley and foothill grasslands, and vernal pool habitat. Often found in vernally mesic soils, occasionally found in sandy soil.	Presumed Absent: Although limited habitat occurs on site (disturbed annual grasslands), no vernal pool habitat or vernally mesic soils are present on the Project site. Only one herbarium record exists approximately 12 miles southwest of the Project; however, it is over 75 years old (CNPS 2019).	Presumed Absent: Not observed during 2020 focused rare plant surveys		
Dodecahema leptoceras slender-horned spineflower	Fed: Ca: CNPS:	END END 1B.1	April-June 200-760	Occurs in chaparral, cismontane woodland and coastal scrub habitats. Often found in sandy soil.	Presumed Absent: No suitable chaparral, woodland, or scrub habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Dudleya multicaulis many-stemmed dudleya	Fed: Ca: CNPS:	none none 1B.2	April-July 15-790	Occurs in chaparral, coastal scrub, and valley and foothill grassland habitats. Often found in areas of clay soil.	Moderate Potential to Occur: Limited habitat occurs on site (disturbed annual grasslands) but no clay soil is present on the Project site. Multiple CNDDB occurrences (OCC# 1, 12, 13) are located within five miles of the Project, however all are over 20 years old (CDFW 2019a). One herbarium record (CCH: UC1713541) from over 100 years ago is located within five miles of Project area (CNPS 2019).	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Eriastrum densifolium ssp. sanctorum Santa Ana River woollystar	Fed: Ca: CNPS:	END END 1B.1	April-Sept 91-610	Occurs in chaparral and coastal scrub habitats. Often found in areas of sandy or gravelly soils.	Presumed Absent: No suitable chaparral or scrub habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys	

Scientific Name Common Name Status		Status Bloom Period & Elevation (meters)		Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Harpagonella palmeri Palmer's grapplinghook			March-May 20-955	Occurs in chaparral, coastal scrub, and valley and foothill grassland habitats. Often found in open grassy areas with shrubland and clay soil.	Presumed Absent: Although limited habitat occurs on site (disturbed annual grasslands), no clay soil or shrubland is present on the Project site. The nearest CNDDB record (OCC# 17) is located twenty miles away and is over 20 years old (1986) (CDFW 2019a). The closest herbarium records exist 17 miles from Project (identified in 2010), however they are located in an isolated are near Lake Mathews, southeast of the Project area. High levels of urbanization occur between these occurrences and the Project area, and are highly unlikely to have spread to the Project area (CNPS 2019). Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Hesperocyparis forbesii Tecate cypress	Fed: Ca: CNPS:	none none 1B.1	Perennial evergreen tree 80-1500	Occurs in closed-cone coniferous forest, and chaparral habitat. Often found in areas with clay, gabbroic or metavolcanics soils.	Presumed Absent: No suitable coniferous forest or chaparral habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Hordeum intercedens vernal barley	Fed: Ca: CNPS:	none none 3.2	March-June 5-1000	Occurs in coastal dunes, coastal scrub, valley and foothill grassland, and vernal pool habitats. Often found in areas with saline flats and depressions.	Presumed Absent: Although limited habitat occurs on site (disturbed annual grasslands), no saline flats or vernal pools exist within the Project area. Only one herbarium record is located approximately 13 miles south of the Project area and is over 20 years old (CNPS 2019). This occurrence is separated by high levels of urbanization from the Project site and is unlikely to have spread.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Horkelia cuneata var. puberula mesa horkelia	Fed: Ca: CNPS:	none none 1B.1	Feb-July (Sep) 70-810	Occurs in chaparral (maritime), cismontane woodland, and coastal scrub habitats. Often found in areas with sandy or gravelly soils.	Presumed Absent: No suitable maritime chaparral, woodland, or coastal scrub habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	Stati	Bloom Period & Elevation (meters)		Status Period & Elevation		Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Iva hayesiana San Diego marsh- elder	Fed: Ca: CNPS:	none none 2B.2	Apr-Oct 10 - 500	Occurs in marshes and swamps and playas.	N/A	Present: 97 individuals were observed in the Project site during the 2020 surveys.		
Juglans californica Southern California black walnut	Fed: Ca: CNPS:	none none 4.2	March-Aug 50-900	Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Often found in alluvial areas.	Low Potential to Occur: Although limited habitat occurs on site as riparian scrub/woodland, no alluvial areas are located within the Project site. Multiple herbarium records exist within 5 miles of the Project area, and all are relatively recent (within past ten years) (CNPS 2019). No CNDDB records exist for the species. This species is a long lived tree species, and would have been likely observed if present on site.	Presumed Absent: Not observed during 2020 focused rare plant surveys		
Juncus acutus ssp. leopoldii southwestern spiny rush	Fed: Ca: CNPS:	none none 4.2	May-Jun 3 - 900	Occurs in coastal dunes, meadows and seeps, marshes and swamps.	N/A	Present: 25 individuals were observed in the Project site during the 2020 surveys.		
Lepechinia cardiophylla heart-leaved pitcher sage	Fed: Ca: CNPS:	none none 1B.2	April-June 520-1370	Occurs in closed-cone coniferous forest, chaparral, and cismontane woodland habitats.	Presumed Absent: No suitable coniferous forest, chaparral, or woodland habitat is present on the Project site. The Project site is outside the elevation range for the species.	Presumed Absent: Not observed during 2020 focused rare plant surveys		
Lilium humboldtii ssp. ocellatum ocellated Humboldt lily	Fed: Ca: CNPS:	none none 4.2	March-Aug 30-1800	Occurs in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland habitats. Often found in open areas.	Presumed Absent: Limited habitat occurs on site as riparian scrub/woodland. No CNDDB records exist for the species. Only one herbarium record exists approximately 8 miles south of the Project area and is over 75 years old. All occurrences within twenty miles of the Project area are separated from the Project area by Gypsum Canyon and the 91 freeway (CNPS 2019). No CNDDB records exist for the species. It is unlikely this species would be capable of spreading across these areas into the Project area.	Presumed Absent: Not observed during 2020 focused rare plant surveys		

Scientific Name Common Name Status Bloom Period & Elevation (meters) Monardella australis ssp. jokerstii Jokerst's monardella Status Bloom Period & Elevation (meters) July-Sept 1350-1750 1B.1		Period & Habitat Requirements		Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)	
		Occurs in chaparral and lower montane coniferous forest habitats. Often in areas with steep scree or talus slopes between breccia. Found in areas with alluvial benches along drainages and washes.	Presumed Absent: No suitable chaparral or forest habitat is present on the Project site. The Project site is outside the elevation range for the species.	Presumed Absent: Not observed during 2020 focused rare plant surveys		
Nasturtium gambelii Gambel's Water Cress	Fed: Ca: CNPS:	END THR 1B.1	April-Sep 5-330	Occurs in marshes and swamp habitats. Often in areas of freshwater or brackish water.	Presumed Absent: No suitable marsh or swamp habitat is present on the Project site. There were no documented occurrences of this species within five miles.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Navarretia prostrata Prostrate vernal pool Navarretia	Fed: Ca: CNPS:	none none 1B.1	April-July 3-1210	Occurs in coastal scrub, meadows and seeps, valley and foothill grassland, and vernal pool habitats. Often found in mesic or alkaline areas.	Presumed Absent: Although limited habitat occurs on site in the form of annual grasslands, the closest occurrence (OCC# 15) is 10 miles from the Project area and greater than 100 years old (CDFW 2019a). This species is considered extirpated in the CNDDB.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Nolina cismontana chaparral nolina	Fed: Ca: CNPS:	none none 1B.2	(Mar) May- July 140-1275	Occurs in chaparral and coastal scrub habitats. Often found in areas with sandstone or gabbro.	Presumed Absent: No suitable chaparral or coastal scrub habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Penstemon californicus California beardtongue	Fed: Ca: CNPS:	none none 1B.2	May-June (Aug) 1170-2300	Occurs in chaparral, lower montane coniferous forest, and pinyon and juniper woodland habitats. Often found in sandy areas.	Presumed Absent: No suitable chaparral, forest, or woodland habitat is present on the Project site. The Project site is outside the elevation range for the species.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	State	us	Bloom Period & Elevation (meters)	Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Pentachaeta aurea ssp. allenii Allen's pentachaeta	Fed: Ca: CNPS:	none none 1B.1	March-June 75-520	Occurs in coastal scrub, and valley and foothill grassland habitats.	Low Potential to Occur: Limited habitat occurs on site in the form of annual grasslands. One CNDDB record (OCC# 7) that was documented in 2000 is located approximately 8 miles south of the Project site (CDFW 2019). Two recent (2008) herbarium records exist 13 miles south of the Project area. These occurrences are separated from the Project area by Gypsum Canyon and the 91 freeway (CNPS 2019). It is unlikely this species would be capable of crossing these areas and approach the Project area.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Phacelia cicutaria var. hubbyi Hubby's phacelia	Fed: Ca: CNPS:	none none 4.2	April-July 0-1000	Occurs in chaparral, coastal scrub, and valley and foothill grassland habitats. Often found in gravelly, rocky, talus areas.	Low Potential to Occur: No chaparral or coastal scrub habitat is present on site. Although limited habitat occurs on the site in the disturbed annual grassland area, no gravelly/rocky/talus areas are present on site. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring. The closest herbarium record (CCH: RSA654563) is 8 miles from the Project site and over 20 years old. Herbarium records existing within 20 miles of Project area located around Puddingstone Reservoir, about 8.5 miles northwest of the Project. All of these records are relatively recent (earliest being 2008); however, the isolated nature of Puddingstone Reservoir (surrounded by urbanization) make it unlikely this species migrated to Project. No CNDDB records exist for the species in the vicinity of the Project.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Scientific Name Common Name	Status Period Elevat		Status Bloom Period & Habitat Requirement (meters)		Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)	
Pseudognaphalium leucocephalum white rabbit-tobacco	Fed: Ca: CNPS:	none none 2B.2	July-Dec 0-2100	Occurs in chaparral, cismontane woodland, coastal scrub, and riparian woodland habitats. Often found in sandy and gravelly areas.	Low Potential to Occur: Limited habitat occurs on the site in the disturbed annual grassland area; however, no sandy or gravelly areas occur on the Project site. One historic CNDDB occurrence (OCC# 9), recorded over 75 years ago, is located approximately 6 miles south of Project site (CDFW 2019a). No herbarium records exist within ten miles.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Quercus engelmannii Engelmann oak	Fed: Ca: CNPS:	none none 4.2	Perennial deciduous tree 50-1300	Occurs in chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland habitats.	Low Potential to Occur: Although limited habitat occurs on site in the disturbed annual grassland area, the closest herbarium collection (CCH: SBBG89127) occurs 8 miles from the Project site and is over 50 years old. One other record exists about 12 miles from Project area (identified in 2000); however, it is separated from the Project area by Gypsum Canyon and the 91 freeway (CNPS 2019). No CNDDB records exist for the species in the vicinity of the Project.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Romneya coulteri Coulter's matilija poppy	Fed: Ca: CNPS:	none none 4.2	March-July (Aug) 20-1200	Occurs in chaparral and coastal scrub habitats. Often found in burns.	Presumed Absent: No suitable chaparral or coastal scrub habitat is present on the Project site. No CNDDB records exist for the species in the vicinity of the Project.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Senecio aphanactis chaparral ragwort	Fed: Ca: CNPS:	none none 2B.2	Jan-May 15-800	Occurs in chaparral, cismontane woodland, and coastal scrub habitats. Sometimes found in alkaline areas.	Presumed Absent: No suitable chaparral, woodland, or scrub habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys	
Sidalcea neomexicana salt spring checkerbloom	Fed: Ca: CNPS:	none none 2B.2	March-June 15-1530	Occurs in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas habitats. Often found in alkaline and mesic areas.	Presumed Absent: No suitable chapparal, scrub, forest, or playa habitat is present on the Project site.	Presumed Absent: Not observed during 2020 focused rare plant surveys	

Scientific Name Common Name	State	Status Bloom Period & Elevation (meters)		Habitat Requirements	Potential for Occurrence (Based on 2019 Literature Review and Reconnaissance Survey)	Potential for Occurrence (Based on 2020 Focused Plant Surveys)
Symphyotrichum defoliatum San Bernardino aster	Fed: Ca: CNPS:	none none 1B.2	July-Dec 2-2040	Occurs in cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, and valley and foothill grassland habitats. Often found in areas near ditches, streams, and springs.	Low Potential to Occur: Limited habitat occurs on site in the disturbed annual grassland area, on the Project site. Multiple historic occurrences (OCC# 26, 34, 77) exist within ten miles of Project, all of which are over 75 years old (CDFW 2019a). Two herbarium records occur within 10 miles of the Project area, however both are also over 75 years old. Evidence of frequent mechanical disturbance and the isolated nature of the Project area likely preclude this species from occurring.	Presumed Absent: Not observed during 2020 focused rare plant surveys
Thysanocarpus rigidus rigid fringepod	Fed: Ca: CNPS:	none none 1B.2	Feb-May 600-2200	Occurs in pinyon and juniper woodland habitats. Often found in areas with dry rocky slopes.	Presumed Absent: No suitable pinyon juniper woodland habitat is present on the Project site. The closest CNDDB occurrence (OCC #4) is ten miles from the Project area and is over 90 years old (CDFW 2019a). The Project site is outside the elevation range for the species.	Presumed Absent: Not observed during 2020 focused rare plant surveys

Federal Designations:

(Federal Endangered Species Act, USFWS)

END: federally listed, endangered federally listed, threatened

State designations:

(California Endangered Species Act, CDFW)

END: state-listed, endangered
THR: state-listed, threatened

CNPS Status Designations

- 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
- 3 Plants about which we need more information; a review list
- 4 Plants of limited distribution; a watch list

List 1B, 2, and 4 extension meanings:

- .1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
- .2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
 Source: California Natural Diversity Data Base (CNDDB) California Native Plant Society Electronic Inventory (CNPSEI) Prado Dam, San Dimas, Ontario, Guasti, Yorba Linda, Corona North, Corona

Source: California Natural Diversity Data Base (CNDDB) California Native Plant Society Electronic Inventory (CNPSEI) Prado Dam, San Dimas, Ontario, Guasti, Yorba Linda, Corona North, Corona South, Black Star Canyon, and Orange.7.5-minute topographic quadrangles.

APPENDIX E

Wildlife Potential for Occurrence

Scientific Name Common Name		Status	Habitat	Potential for Occurrence							
INVERTEBRATES											
Bombus crotchii Crotch bumble bee	Fed: Ca:	none CAN	Occurs in open grassland and scrub habitats.	Presumed Absent. Not found during 2020 focused Crotch bumble bee surveys.							
Branchinecta sandiegonensis San Diego fairy shrimp	Fed: Ca:	END none	Found in grassed or mud bottomed pools or basalt flow depression pools in unplowed grasslands within vernal pools and similar ephemeral wetlands.	Presumed Absent. No suitable vernal pool habitat is present on the Project site.							
Euphydryas editha quino Quino checkerspot butterfly	Fed: Ca:	END none	Chaparral and coastal sage scrublands in Riverside and San Diego counties.	Presumed Absent. No suitable chaparral or coastal sage scrub habitat is present on the Project site.							
Rhaphiomidas terminatus abdominalis Delhi sands flower-loving fly	Fed: Ca:	END none	Dune habitat, with fine sandy Delhi soils.	Presumed Absent. No suitable Delhi sands habitat is present on the Project site.							
FISH											
Catostomus santaanae Santa Ana sucker	Fed: Ca:	THR SSC	Endemic to the Los Angeles basin and south coastal streams. Prefers sand-rubble-boulder bottoms with cool and clear water and algae.	Presumed Absent. No suitable habitat is present on the Project site. The permanent water features on the Project site do not provide the appropriate stream habitat for this species to occur.							
Gila orcutti arroyo chub	Fed: Ca:	none SSC	Typically occurs in slow water stream sections with mud or sand bottoms.	Presumed Absent. No suitable habitat is present on the Project site. The permanent water features on the Project site do not provide the appropriate stream habitat for this species to occur.							
Oncorhynchus mykiss irideus pop. 10 steelhead - southern California DPS	Fed: Ca:	END none	Typically occurs in slow water steams or rives.	Presumed Absent. No suitable habitat is present on the Project site. The permanent water features on the Project site do not provide the appropriate stream habitat for this species to occur.							

Scientific Name Common Name	Sta	itus	Habitat	Potential for Occurrence
AMPHIBIANS				
Anaxyrus californicus arroyo toad	Fed: Ca:	END SSC	Typical breeding habitat includes creek and pool and typical nonbreeding (terrestrial) habitat includes cropland/hedgerow, grassland, playa/salt flat, savanna, chaparral, and woodlands.	Presumed Absent. No suitable habitat is present on the Project site. Arroyo toads use extremely specialized habitat including sandy streamsides and quiet waters free of predatory fish, none of which are present on or adjacent to the Project site.
Lithobates pipiens northern leopard frog	Fed: Ca:	none SSC	Typically occurs near permanent or semi-permanent water in a variety of aquatic habitats	Presumed Absent. Northern leopard frogs are typically found in areas of cooler temperatures and at a higher elevation than that which the project resides.
Spea hammondii western spadefoot	Fed: Ca:	none SSC	Typically occurs in rivers with sandy banks, willows, cottonwoods, and sycamores with loose, gravelly areas of streams in drier parts of range.	Presumed Absent. Not found during 2020 focused western spadefoot surveys.
Taricha torosa torosa coast range newt	Fed: Ca:	none SSC	Typically occurs in coastal drainages and breeds in ponds, reservoirs and slow-moving streams.	Low Potential to Occur. Portions of the Project site, namely the disturbed annual grassland and the open water areas associated with Lake Los Serranos and portions of Hickory Creek, provide suitable habitat for this species. However, the level of disturbance present in the disturbed annual grassland areas likely preclude this species from occurring. No records of this species have been documented within five miles.

Scientific Name Common Name	Sta	itus	Habitat	Potential for Occurrence
REPTILES				
Anniella stebbinsi Southern California legless Iizard	Fed: Ca:	none SSC	Typically occurs in moist warm loose soil with plant cover in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	Low Potential to Occur. Suitable habitat is present throughout the Project site, in both the disturbed annual grassland areas and the riparian habitat. One historic occurrence was documented approximately six miles from the Project site in 1938 (Occ #137).
Arizona elegans occidentalis California glossy snake	Fed: Ca:	none SSC	Typically occurs in rocky washes, chaparral, scrub and grassland habitat, often with loose or sandy soils.	Presumed Absent. No suitable rocky wash or chaparral habitat present on the Project site.
Aspidoscelis tigris stejnegeri coastal whiptail	Fed: Ca:	none SSC	Typically occurs in chaparral, woodland, and riparian areas with sparse foliage.	Low Potential to Occur. Suitable habitat is present throughout the Project site, in both the disturbed annual grassland areas and the riparian habitat. This species has not been documented within five miles of the Project site.
Coleonyx variegatus abbotti San Diego banded gecko	Fed: Ca:	none SSC	Occurs in a wide variety of sage scrub and chaparral habitats, where suitable cover exists associated with granitic outcrops and boulder fields where there is also ground debris.	Presumed Absent. No suitable sage scrub or chaparral habitat is present on the Project site.
Crotalus ruber red-diamond rattlesnake	Fed: Ca:	none SSC	Typically occurs in arid scrub, coastal chaparral, oak and pine woodlands, rocky grassland, and cultivated areas. Needs rodent burrows, cracks in rocks or surface cover objects.	Presumed Absent. No suitable rocky scrub, woodland, or grassland habitat is present on the Project site.

Scientific Name Common Name	Sta	tus	Habitat	Potential for Occurrence
Emys marmorata western pond turtle	Fed: Ca:	none SSC	Typically occurs in slow moving permanent or intermittent streams, small ponds, small lakes, reservoirs, and other long-term water deposits, where abundant cover is available.	Moderate Potential to Occur. Lake Los Serranos provides suitable habitat for this species. The assumed presence of nonnative predatory species typically associated with manmade lakes, such as bullfrogs and sport fishes, may affect the presence or abundance of this species in the lake. Five historic sightings have been recorded within five miles of the project site between 1987 and 1996.
Phrynosoma blainvillii coast horned lizard	Fed: Ca:	none SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of native ants and other insects.	Presumed Absent. No suitable habitat in the form of sandy soil is present on the Project site. There has been one historic sighting within 5 miles of the project site, however, it was observed in 1985 (Occ # 334).
Salvadora hexalepis virgultea coast patch-nosed snake	Fed: Ca:	none SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	Presumed Absent. No suitable chaparral or rocky habitat is present on the Project site.
Thamnophis hammondii two-striped gartersnake	Fed: Ca:	none SSC	Typically occurs near permanent or semi-permanent water in a variety of habitats containing rocky or densely vegetated banks.	Low Potential to Occur. Lake Los Serranos provides suitable habitat, but no sightings of this species have been documented within five miles.

Scientific Name Common Name	Sta	ntus	Habitat	Potential for Occurrence
AVES				
Agelaius tricolor tricolored blackbird (nesting colony)	Fed: Ca:	none THR; SSC	Highly colonial species, most numerous in Central Valley & vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey in proximity to the colony. Nests in dense and tall emergent vegetation.	Low Potential to Occur. Limited amounts of emergent vegetation are present along the edges of Lake Los Serranos but are small in size and may not be large enough to support colonies for nesting. One historic sighting was documented in 1952 within one mile of the Project site (Occ # 773), and three recent sightings within five miles of the project site between 2009 and 2014 (Occ # 417, 771, and 772).
Ammodramus savannarum grasshopper sparrow (nesting)	Fed: Ca:	none SSC	Nests on rock ledges, cliffs, and sometimes in large trees.	Low Potential to Occur. Marginally suitable nesting habitat is present on the Project site, but disturbances present may preclude this somewhat secretive species. One recent sighting was documented over five miles from the Project site in 2001 (Occ # 10).
Aquila chrysaetos golden eagle (nesting & wintering)	Fed: Ca:	none FP	Nests on rock ledges, cliffs, and sometimes in large trees.	Low Potential to Occur. No suitable nesting habitat in the form of ledges or cliffs are present on the Project site; however, marginally suitable foraging habitat is present in the disturbed annual grasslands. There have been two previous sightings of this species, one historic sighting in 1998 over one mile from the project site (Occ # 63), and one recent sighting in 2007 within one mile of the Project site (Occ #125).

Scientific Name Common Name	Sta	ntus	Habitat	Potential for Occurrence
Asio otus long-eared owl (nesting)	Fed: Ca:	none SSC	Nests in trees or tree cavities within deciduous and evergreen forests, orchards, wooded parks, farm woodlots, river woods, desert oases. Requires riparian habitat	Low Potential to Occur. The riparian areas and associated mature trees on and adjacent to the Project site provide suitable habitat. One historic occurrence was documented in 1925 within one mile of the Project site (Occ # 16).
Athene cunicularia burrowing owl (burrow sites and some wintering sites)	Fed: Ca:	none SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation.	Moderate Potential to Occur. Suitable habitat is present throughout the disturbed annual grassland and disturbed areas in the Project site; however, potential burrows (suitable size and shape) were not observed during the survey. Furthermore, ground squirrel activity on and adjacent to the Project site was minimal to nonexistent. Multiple observations of this species have been documented within five miles of the Project site (Occ # 646, 950, 1046, 1776, 1778, 1779, 1780, 1781, 1782,1783, 1790, 1791, 1792, 1993). No active owl burrows, sign, or burrowing owls were detected during focused Crotch bumble bee surveys (that focus on burrows) conducted during the owl breeding season.

Scientific Name Common Name	Sta	itus	Habitat	Potential for Occurrence
Buteo swainsoni Swainson's hawk (nesting)	Fed: Ca:	none THR	Typically breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural lands with groves of trees.	Low Potential to Occur. The Project site supports marginally suitable foraging habitat. Swainson's hawk prefers large open habitats in agricultural fields and grasslands. One historical sighting was recorded within five miles of the Project site in 1920 (Occ # 2548). This highly detectable species was not observed during numerous 2020 surveys during the nesting season.
Campylorhynchus brunneicapillus sandiegensis coastal cactus wren	Fed: Ca:	none SSC	Inhabits coastal sage scrub and chaparral communities.	Presumed Absent. No suitable coastal sage scrub or chaparral habitat is present on the Project site.
Coccyzus americanus occidentalis western yellow-billed cuckoo (nesting)	Fed: Ca:	THR END	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Presumed Absent. The riparian habitat on the Project site is too narrow and generally small in size to support this species. Two historic records of this species have been recorded within five miles of the Project site, one in 1931 (Occ #36) and one in 1991 (Occ #37).
Coturnicops noveboracensis yellow rail	Fed: Ca:	none SSC	Typically occurs in freshwater marshlands.	Presumed Absent. The project site is outside the current known range of this species. Furthermore, no suitable marshland habitat is present on the Project site.

Scientific Name Common Name	Sta	tus	Habitat	Potential for Occurrence
Elanus leucurus white-tailed kite (nesting)	Fed: Ca:	none FP	Nests in trees, often near a marsh, usually 6-15 meters above the ground in branches near the top of a tree.	Moderate Potential to Occur. The mature trees throughout the Project site provide suitable habitat and disturbed annual grassland and riparian areas provide suitable foraging habitat. Three observations of this species have been recorded within four miles of the Project site in 2009 (Occ # 141, 139, and 140). This highly detectable species was not observed during numerous 2020 surveys during the nesting season.
Empidonax traillii extimus southwestern willow flycatcher (nesting)	Fed: Ca:	END END	Occurs in riparian woodlands in southern California.	Low Potential to Occur. The cottonwood-willow riparian areas provides marginally suitable habitat for this species; however, the small and narrow size of the riparian vegetation on the Project site is likely not sufficient for breeding purposes. It is possible that the habitat on site could be used for migratory purposes, but nesting is not expected. No records of this species were documented within five miles of the Project site. Not detected during focused least Bell's vireo surveys that focuses on riparian habitat.
Falco peregrinus anatum American peregrine falcon (nesting)	Fed: Ca:	DL DL, FP	Open habitat such as mountain chains (summits), mudflats, coastlines, and lake edges. Nests on a cliff ledge and sometimes manmade structures or abandoned stick nests.	Presumed Absent. No suitable nesting habitat is present on the Project site.

Scientific Name Common Name	Sta	tus	Habitat	Potential for Occurrence
Haliaeetus leucocephalus bald eagle (nesting & wintering)	Fed: Ca:	DL END, FP	Breeding habitat most commonly includes areas close to coastal areas, bays, rivers, lakes, reservoirs, or other bodies of water that reflect the general availability of primary food sources including fish, waterfowl, or seabirds	Low Potential to Occur. Although this species often shies away from heavily developed areas, such as that which the project resides, it is possible for this species to utilize the mature trees and open water on and adjacent to the Project site for foraging and/or migratory purposes. No suitable nesting habitat is present on the Project site. No records of this species were documented within five miles of the Project site.
Icteria virens yellow-breasted chat (nesting)	Fed: Ca:	none SSC	Occurs in second growth, shrubby old pastures, thickets, bushy areas, scrub, woodland undergrowth, and fence rows, including low wet places near streams, pond edges, or swamps; thickets with few tall trees; early successional stages of forest regeneration; commonly in sites close to human habitation.	Moderate Potential to Occur. The riparian areas on the Project site provide suitable habitat for this species, and one observation was recorded in 2010 approximately three miles from the Project site (Occ # 112). Not detected during focused least Bell's vireo surveys that focuses on riparian habitat.
Laterallus jamaicensis coturniculus California black rail (nesting)	Fed: Ca:	none THR, FP	Occurs in salt marshes, freshwater marshes, and wet meadows.	Presumed Absent. The project site is outside the current known range of this species. Furthermore, no suitable marsh or wet meadow habitat is present on the Project site.
Polioptila californica californica coastal California gnatcatcher	Fed: Ca:	THR SSC	Obligate, permanent resident of coastal sage scrub below 2,500 feet in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes; not all areas classified as coastal sage scrub are occupied.	Presumed Absent. No suitable coastal sage scrub habitat is present on the Project site.

Scientific Name Common Name	Sta	tus	Habitat	Potential for Occurrence
Setophaga petechia yellow warbler	Fed: Ca:	none SSC	Riparian plant associations in proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	Present. The riparian areas on the Project site provide suitable habitat for this species, and one observation was recorded in 2012 approximately three miles from the Project site (Occ # 108). This species was incidentally detected during 2020 focused least Bell's vireo and Crotch bumble bee surveys.
Sternula antillarum browni California least tern (nesting colony)	Fed: Ca:	END, FP	Beaches, bays, lagoons, and other open coastal habitats near marine water sources for foraging. Nests on open and flat beaches, often along estuaries and lagoons.	Presumed Absent. No suitable marine coastal habitat is present on the Project site.
Vireo bellii pusillus least Bell's vireo (nesting)	Fed: Ca:	END END	Summer resident of southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, mulefat, mesquite.	Present. Two individual males detected over the course of 2020 focused least Bell's vireo surveys and one incidental detection during 2020 focused Crotch bumble bee surveys.
MAMMALS				
Antrozous pallidus pallid bat	Fed: Ca:	none SSC	Typically found in chaparral, and forages along the edges between shrubs and small open areas. Less commonly found in arid grassland, desert, and coastal scrub habitats. Roosts in bridges, buildings, and in tree cavities.	Moderate Potential to Occur. Suitable habitat is present on the Project site in the mature trees, abandoned buildings, and potentially under the Pipeline Avenue bridge that crosses Hickory Creek. No records of this species have been documented within five miles of the Project site.
Chaetodipus fallax fallax northwestern San Diego pocket mouse	Fed: Ca:	none SSC	Found in coastal scrub, chaparral, grasslands, sagebrush communities in sandy, herbaceous areas. Usually occurs in association with rocks or coarse gravel.	Low Potential to Occur. The disturbed annual grasslands on the Project site provides marginally suitable habitat. No records of this species have been documented within five miles.

Scientific Name Common Name	Sta	tus	Habitat	Potential for Occurrence
Choeronycteris mexicana Mexican long-tongued bat	Fed: Ca:	none SSC	Roosts in caves, rock fissures, old mines, and rarely in buildings. Found in desert shrublands, tropical deciduous forests, deep mountain canyons with riparian vegetation, oakconifer woodlands and forests. Requires suitable concentration of columnar cacti and agave food sources.	Presumed Absent. The project site is outside the current known range of this species. Furthermore, this species requires columnar cacti and agave food sources which are absent from the project site. No records of this species have been documented within five miles of the project site.
Dipodomys merriami parvus San Bernardino kangaroo rat	Fed: Ca:	END CAN, SSC	Occurs in alluvial scrub vegetation on sandy loam substrates characteristic of alluvial fans and flood plains.	Presumed Absent. No suitable alluvial scrub habitat is present on the Project site. No records of this species have been documented within five miles.
Dipodomys stephensi Stephens' kangaroo rat	Fed: Ca:	END THR	Primarily annual & perennial grasslands, but also occurs in coastal scrub & sagebrush with sparse canopy cover. Prefers buckwheat, chamise, brome grass & filaree. Will burrow into firm soil.	Presumed Absent. No suitable habitat is present on the Project site. The Project site is almost completely surrounded by urban development and is isolated from known populations of this species, which are located further east. Although disturbed annual grassland is present, the location of this project site precludes this species from occurring. No records of this species have been documented within five miles.
Eumops perotis californicus western mastiff bat	Fed: Ca:	none SSC	Occurs in many open, semi- arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban. Roosts primarily in cliff faces and rock crevices but occasional roosts in buildings.	Low Potential to Occur. This species may roost in the abandoned buildings on site; however, there is no cliff roosting habitat present. No records of this species have been documented within five miles of the Project site.

Scientific Name Common Name	Sta	atus	Habitat	Potential for Occurrence
Lasiurus xanthinus western yellow bat	Fed: Ca:	none SSC	Found in valley foothill riparian, desert riparian, desert mash, and palm oasis habitats. Roosts in trees, particularly palms. Forages over water and among trees.	Moderate Potential to Occur. Suitable roosting habitat is present in the palm trees scattered throughout the Project site. No records of this species have been documented within five miles of the Project site.
Neotoma lepida intermedia San Diego desert woodrat	Fed: Ca:	none SSC	Coastal scrub of Southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops & rocky cliffs & slopes.	Presumed Absent. No suitable coastal scrub containing rocky habitat is present on the Project site.
Nyctinomops femorosaccus pocketed free-tailed bat	Fed: Ca:	none SSC	Roosts in caves, rock crevices in cliff faces, and occasionally man-made structures.	Low Potential to Occur. No suitable cliff roosting habitat is present on site; however, this species may roost in abandoned buildings No records of this species have been documented within five miles of the Project site.
Nyctinomops macrotis big free-tailed bat	Fed: Ca:	none SSC	Roosts in cliff crevices, and less often in buildings, caves, and tree cavities. Occurs in rocky areas of rugged and hilly country including woodlands, evergreen forests, river floodplain-arroyo habitats, and desert scrub.	Low Potential to Occur. No suitable cliff roosting habitat is present on site; however, this species may roost in abandoned buildings No records of this species have been documented within five miles of the Project site.
Perognathus longimembris brevinasus Los Angeles pocket mouse	Fed: Ca:	none SSC	Habitats with sandy and fine soils, including grasslands, coastal sage scrub, and alluvial sage scrub.	Low Potential to Occur. The disturbed annual grasslands on the Project site provides marginally suitable habitat. No records of this species have been documented within five miles.

Scientific Name Common Name	Sta	tus	Habitat	Potential for Occurrence
Taxidea taxus American badger	Fed: Ca:	none SSC	Open habitats with friable soil such as grasslands, brushlands with sparse ground cover, open chaparral, and sometimes riparian zones.	Low Potential to Occur. The disturbed annual grasslands on the Project site provides suitable habitat; however, the relative isolation of the Project site from larger native habitat areas likely precludes this species from occurring. No records of this species have been documented within five miles.

<u>Federal Designations</u> (Federal Endangered Species Act, USFWS)

END: federally listed, endangered **THR**: federally listed, threatened

DL: federally delisted

<u>State designations</u>: (California Endangered Species Act, CDFW)

END: state-listed, endangeredTHR: state-listed, threatenedFP: Fully Protected species

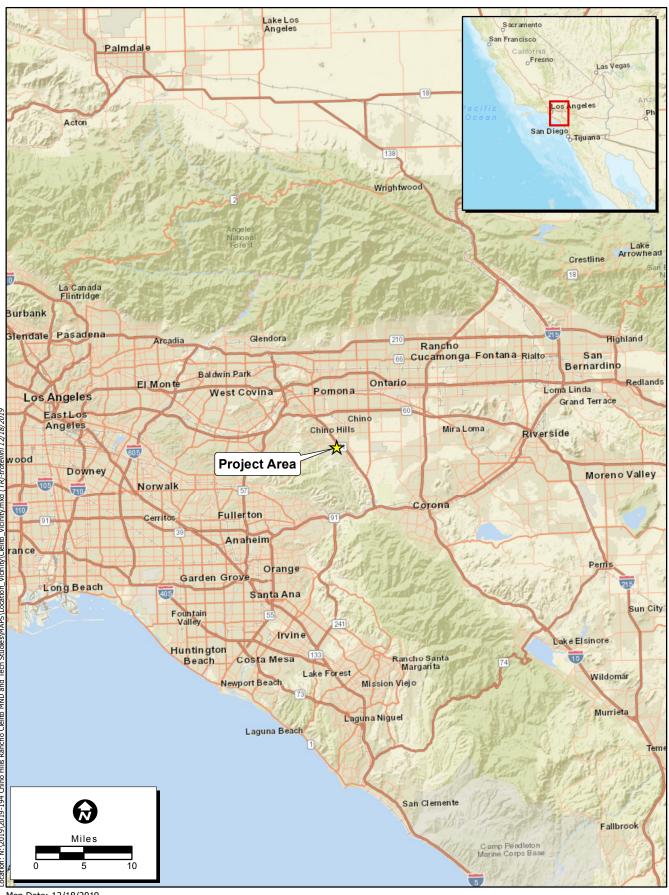
SSC: California Species of Special Concern CAN: Candidate for Listing (Endangered)

Source: California Natural Diversity Data Base (CNDDB) California Native Plant Society Electronic Inventory (CNPSEI) Prado Dam, San Dimas, Ontario, Guasti, Yorba Linda, Corona North, Corona South, Black Star Canyon, and

Orange. 7.5-minute topographic quadrangles.

APPENDIX F

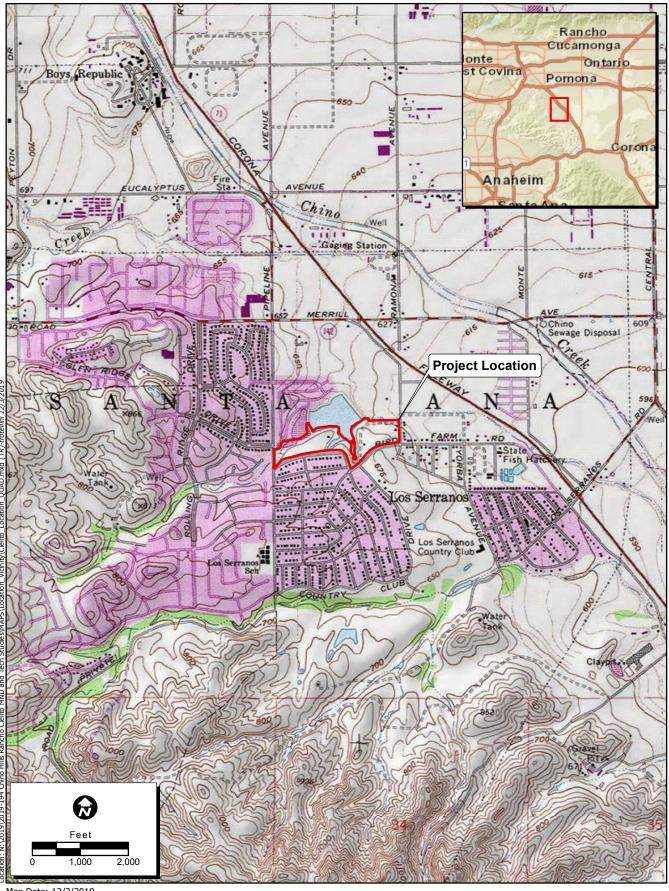
Aquatic Resource Delineation Figures



Map Date: 12/18/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



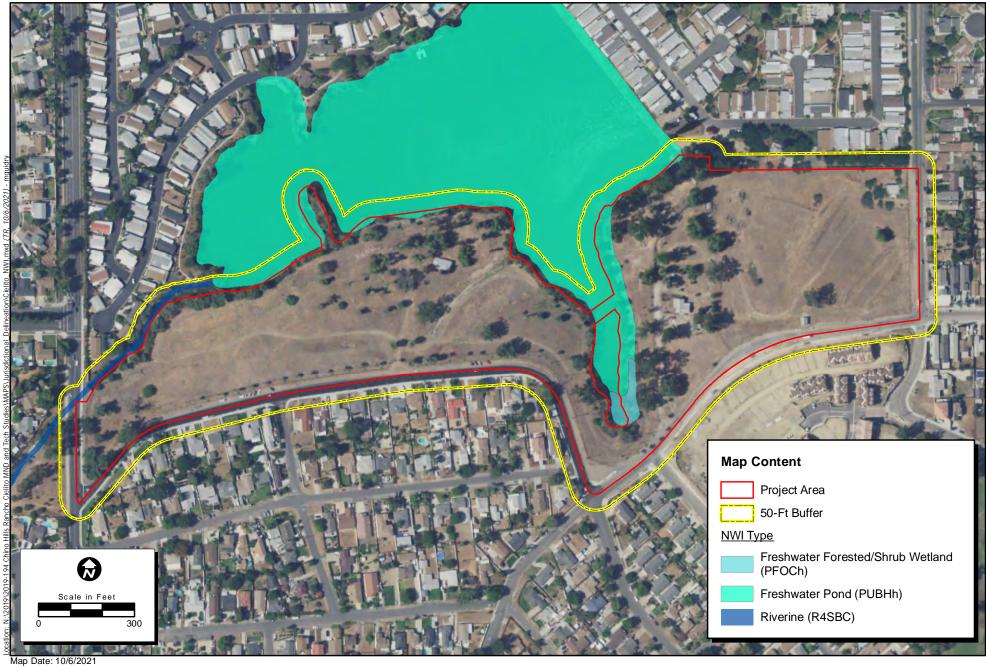


Map Date: 12/3/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



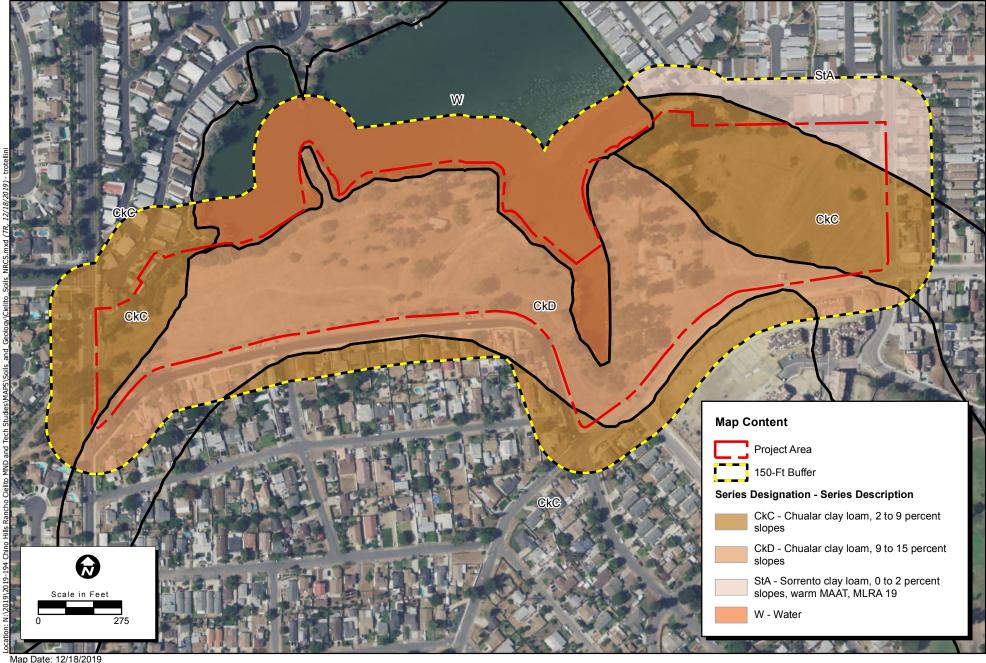
Figure 2. Project Location



Map Date: 10/6/2021 Photo Source: NAIP (2018)



Figure 3. National Wetlands Inventory Features



Map Date: 12/18/2019 Photo Source: NAIP (2018)



Figure 4. Natural Resource Conservation Soil Types



Figure 5. Aquatic Resource **Delineation - USACE Jurisdiction**

Map Features

Project Area

50-Ft Buffer

Reference Point Culvert

Three Criteria Sample Point

OHWM

Wetland point

Wetland Waters of the U.S. (0.568 Acres)

Bulrush Marsh (0.568 Acres)

Non-Wetland Waters of the U.S. (3.650 Acres)

Ephemeral Drainage (0.131 Acres)

Perennial Drainage (0.351 Acres)

Open Water (3.167 Acres)

Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the westeand delineation methods described in the 1987 Corps of Engineers Westeand Delineation Manual. And West Region Manual and the Regional Supplement to the Corps of Engineers Westeand Delineation Manual. And West Region Hersian 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Requietor Program as amended on February 10. 2016, and conforms to Los Angeles District specifications. However, Reduce boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate forcations are required.

reactive vountaines have not ocean regary surveyed and may be subject to minor adjustments in locations are required. *The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Sum values may not equal the total potential Waters of the U.S. acreage reported.

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed





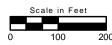




Figure 6 Aquatic Resource Delineation - CDFW Jurisdiction

Map Features

Project Area

50-Ft Buffer

Reference Point

⊕ Culvert

CDFW Jurisdiction (6.342 Acres)

Streambed (0.483 Acres)

Bulrush Marsh (0.568 Acres)

Open Water (3.167 Acres)

Fremont Cottonwood Forest and Woodland (2.125 Acres)

Subject to U.S. Amy Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers. Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Menual: Acid West Region Version 2.0 as well as the <u>Updated Map and Drawing Standards for the South Pacific Division Regions Program</u> as amended on February 10, 2016, and conforms to Los Angeles District specifications. However feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate

teations are required. *The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of thes values may not equal the total potential Waters of the U.S. acreage reported.

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Aquatic Resources Delineation for the Rancho Cielito Project

San Bernardino County, California

Prepared For:

City of Chino Hills 14000 City Center Drive Chino Hills, CA 91709

Prepared By:



October 2021

Aquatic Resources Delineation

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LIST OF ATTACHMENTS

Attachment A – Wetland Determination Data Forms - Arid West

Attachment B - Plant Species Observed Onsite

Attachment C – Representative Site Photographs

LIST OF ACRONYMS AND ABBREVIATIONS

CDFW California Department of Fish and Wildlife CFR Code of Federal Register CWA Clean Water Act DA **Delineation Area** GIS Geographic Information System GPS Global Positioning System Natural Resources Conservation Service NRCS NWI **National Wetlands Inventory** NWPR Navigable Waters Protection Rule

OHWM Ordinary high water mark

PJD Preliminary Jurisdictional Determination

Project Rancho Cielito

RWQCB Regional Water Quality Control Board SAA Streambed Alteration Agreement USACE U.S. Army Corps of Engineers

USC U.S. Code

USEPA U.S. Environmental Protection Agency

USGS U.S. Geological Survey

WDR Waste Discharge Requirement

1.0 INTRODUCTION

ECORP Consulting, Inc. conducted an aquatic resources delineation for the proposed development of a multi-building apartment complex called Rancho Cielito (Project) in the City of Chino Hills, San Bernardino County, California. The Delineation Area (DA) consists of three parcels totaling approximately 29.50 acres of dry land and 18.87 acres of water surface area that makes up Lake Los Serranos, and is situated along the northern end of Los Serranos Boulevard/Valle Vista Drive and the southern end of the Lake Los Serranos Club in the City of Chino Hills, California (Figure 1).

The DA corresponds to a portion of Section(s) 22 and 27, Township 2 South and Range 8 West (San Bernardino Base and Meridian) of the "Prado Dam, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 2018) (Figure 2). The approximate center of the DA is located at 33.97579° latitude and -117.71095° longitude within the Santa Ana Watershed (Hydrologic Unit Code #18070203, Natural Resources Conservation Service [NRCS], et al. 2016).

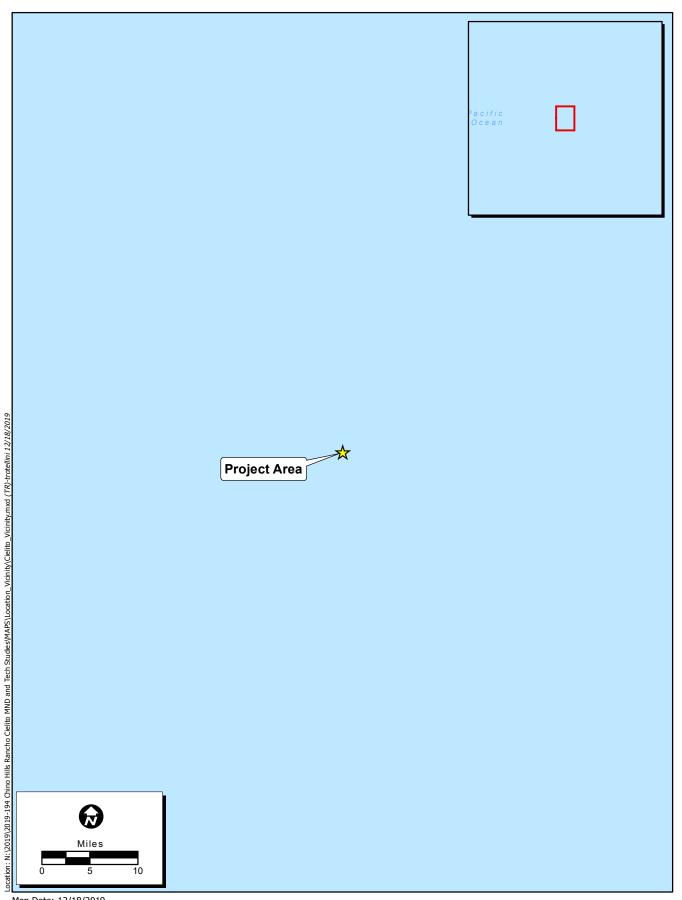
The DA is accessible from Los Angeles from US Highway 101 South for approximately 1.5 miles south to Interstate 10 east. From the interstate, proceed east for 25 miles to CA-71 going south. After another 8 miles on CA-71, exit onto CA-142 West/Chino Hills Parkway (Exit 8). Turn right onto Ramona Avenue, travel for 0.2 mile and turn right onto Valle Vista Drive. The Southernmost part of the DA is on the right.

This report describes aquatic resources identified within the DA that may be regulated by the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the federal Clean Water Act (CWA). The information presented in this report provides data required by the USACE Los Angeles District's Minimum Standards for Acceptance of Aquatic Resources Delineation Reports (USACE 2017). The aquatic resource boundaries depicted in this report represent a calculated estimation of the jurisdictional area within the DA and are subject to modification following the USACE verification process.

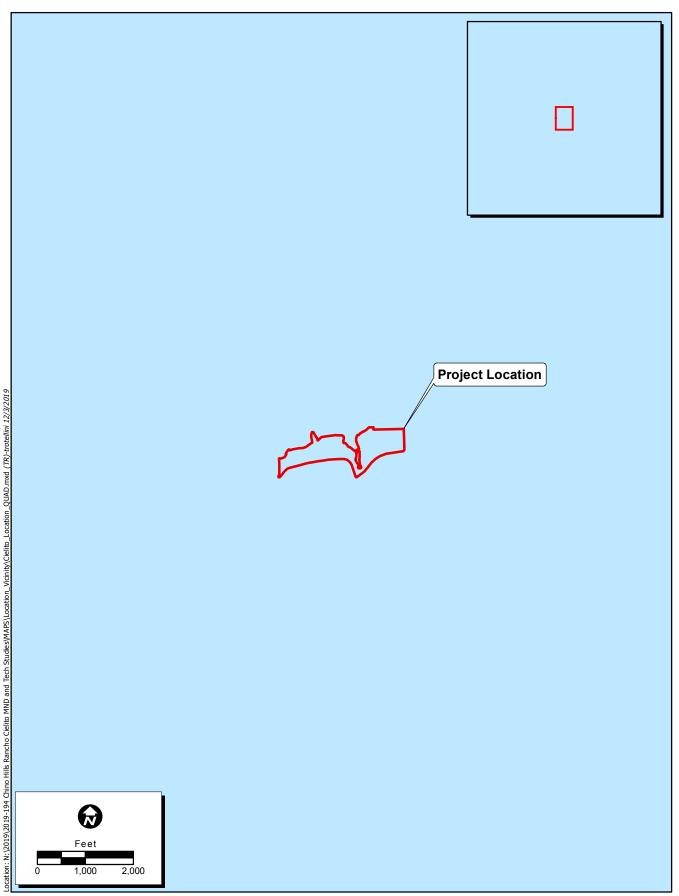
2.0 REGULATORY REQUIREMENTS

2.1 Clean Water Act

The USACE regulates discharge of dredged or fill material into waters of the U.S. under Section 404 of the CWA. *Discharges of fill material* is defined as the addition of fill material into waters of the U.S., including, but not limited to the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines [33 Code of Federal Regulations (CFR) § 328.2(f)].



Map Date: 12/18/2019
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korsa, Esri (Thailand), NGCC, (c) OpenSteeMaple contributors, and the GIS User Community



Map Date: 12/3/2019
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korsa, Esri (Thailand), NGCC, (o) OpenStreetMap contributors, and the GIS User Community

Section 401 of the CWA (33 U.S. Code [USC] 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards. Section 401 Certification, "gives states and authorized tribes the authority to grant or waive certification of proposed federal licenses or permits that may discharge into waters of the US" (33 USC 1251).

On April 21, 2020, the U.S. Environmental Protection Agency (USEPA) and the Department of the Army published the Navigable Waters Protection Rule (NWPR) to define waters of the United States in the *Federal Register*. This rule became effective on June 22, 2020.

In August 2021, a judge in the U.S. District Court for the District of Arizona ruled to vacate the NWPR. An appeal is expected; however, the USEPA is likely to begin drafting a new rule to replace the NWPR. In the interim, reversion back to pre-2015 guidance (USEPA CWA regulations [33 CFR 328.3{a}]) is anticipated.

In the USACE/USEPA CWA regulations (33 CFR 328.3[a]), the term "waters of the U.S." is defined as follows:

- 1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- 2. All interstate waters including interstate wetlands;
- 3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
- 4. All impoundments of waters otherwise defined as waters of the U.S. under the definition;
- 5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
- 6. The territorial seas;
- 7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in 1-6 above

2.2 Porter-Cologne Water Quality Act

The Porter-Cologne Water Quality Act (herein referred to as the Porter-Cologne Act) provides a framework to protect water quality in California. The Porter-Cologne Act was enacted in 1969 as Division 7 of the Water Code and is the primary water quality law in California. The Porter Cologne Act addresses

two primary functions: water quality control planning and waste discharge regulation. The State Legislature, in adopting the Porter-Cologne Act, directed that California's waters "shall be regulated to attain the highest water quality which is reasonable" and charges the Water Boards with protecting all waters of California, defined as "any surface water or groundwater, including saline waters, within the boundaries of the State." This encompasses all waters of the state, including those not under federal jurisdiction (Regional Water Quality Control Board [RWQCB] 2019).

The Porter-Cologne Act regulates discharges that could affect the quality of water of surface or ground waters, wherever those discharges may occur. Also, the Porter Cologne Act defines waters of the state very broadly, with no physical descriptors, and no interstate commerce limitation. The Porter-Cologne Act further requires that anyone who plans to discharge waste where it might affect waters of the state must first notify the Water Boards. The Water Boards identify the sources of pollutants that threaten under the Porter-Cologne Act, regulate waste discharges that could affect water quality by issuing waste discharge requirements (WDR). Discharges of dredged or fill material have historically been treated as discharges of waste by the Water Boards. It is the longstanding interpretation of the State Water Board that the definition of waste set forth in Water Code section 13050(e) includes dredged or fill material. The applicant need not obtain a Section 404 permit or a 401 certification if project impacts do not fall under federal jurisdiction, but instead must receive approval from the Water Boards through the adoption of WDRs.

2.3 Rivers and Harbors Appropriation Act of 1899

The Rivers and Harbors Appropriation Act of 1899, commonly referred to as the Rivers and Harbors Act, requires permits for all structures such as bridges, causeways, riprap and for other activities such as dredging which are placed within navigable waters of the U.S. Navigable waters are defined as those which are subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means to transport interstate or foreign commerce. The USACE grants or denies permits based on the effects to navigation.

2.4 California Fish and Game Code Section 1600 et seq.

Pursuant to Section 1602 of the California Fish and Game Code, a Streambed Alteration Agreement (SAA) application must be submitted for "any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake" (California Department of Fish and Wildlife [CDFW] 2021). In Title 14 of the California Code of Regulations, Section 1.72, the CDFW defines a *stream* (including creeks and rivers) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation."

In Chapter 9, Section 2785 of the Fish and Game Code, *riparian habitat* is defined as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source."

The CDFW's jurisdiction includes drainages with a definable bed, bank, or channel and areas associated with a drainage channel that support intermittent, perennial, or subsurface flows; supports fish or other

aquatic life; or supports riparian or hydrophytic vegetation. It also includes areas that have a hydrologic source.

The CDFW will determine if the proposed actions will result in diversion, obstruction, or change of the natural flow, bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. If warranted, the CDFW will issue an SAA that includes measures to protect affected fish and wildlife resources; this SAA is the final proposal agreed upon by the CDFW and the applicant.

3.0 METHODS

This aquatic resources delineation was conducted in accordance with the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Arid West Region Supplement) (USACE 2008a). The boundaries of aquatic resources were delineated through standard field methods (e.g., paired sample set analyses) and the Web Soil Survey (NRCS 2021a) were used to aid in identifying hydric soils in the field. The Jepson Manual, 2nd Edition (Baldwin et al. 2012) was used for plant nomenclature and identification.

The field survey was conducted on September 1, 2019 by ECORP biologist Scott Taylor. Mr. Taylor walked the entire DA to determine the location and extent of aquatic resources within the DA. Paired locations were sampled to evaluate whether or not the vegetation, hydrology, and soils data supported an aquatic resource determination. At each paired location, one point was located such that it was within the estimated aquatic resource area, and the other point was situated outside the limits of the estimated aquatic resource area. Aquatic resources within the DA were recorded in the field using a post-processing capable global positioning system (GPS) unit with sub-meter accuracy (Trimble GeoXT). Although the field work was conducted in 2019, online information from public databases, regulatory information and conclusions based on the data were updated in 2021.

Where jurisdictional features were present, the extent of potential waters of the U.S. limits were delineated using the OHWM in accordance with *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (OHWM Guide; USACE 2008b). The OHWM Guide is intended for delineating ephemeral/intermittent channels. OHWM indicators commonly found in the Arid West include a clear natural scour line impressed on the bank, recent bank erosion, destruction of native terrestrial vegetation, and the present of litter and debris. Resources needed to delineate OHWM include aerial photography and other imagery, topographic maps and other maps (e.g., geological, soil, vegetation), rainfall data, stream gage data, and existing delineations (if present). Field identification of the OHWM includes noting general impression of the vegetation species and distribution, geomorphic features present, surrounding upland land use, and hydrologic alterations and instream and floodplain structures. In the field, the process of delineating the OHWM includes the identification of a low-flow channel (if present), a transition to an active floodplain, and an active floodplain through the presence of geomorphic features (e.g., presence of an active floodplain, benches, break in bank slope, staining of rocks, litter, or drift) and vegetation indicators (e.g., presence of sparse/low vegetation, annual herbs, hydromesic ruderals, pioneer tree seedlings and saplings, xeroriparian species).

In addition, stream conditions were assessed based on the USACE-recommended protocol (SWQB 2010) to properly classify features as ephemeral, intermittent, or perennial waters. A combination of hydrological, geomorphic and biological indicators was used to determine the hydrologic nature of each drainage. In addition, each drainage was evaluated for the presence or absence of bed and bank, a natural line impressed in the bank, sediment deposits, changes in the character of soil, destruction of terrestrial vegetation, litter/debris (wrack), leaf litter disturbance, water stains, soil shelving, and exposed roots indicating active hydrology within the channel. Feature characteristics and measurements were recorded directly into the data dictionary in the GPS unit. Characteristics of all mapped features were also documented in photographs.

Where wetlands were suspected, paired locations were sampled to evaluate whether or not the vegetation, hydrology, and soils data supported a wetland aquatic resource delineation. At each paired location, one point was located such that it was within the estimated aquatic resource area, and the other point was situated outside the limits of the estimated aquatic resource area. An additional non-paired location was sampled to document a marginal area that was determined to be upland; it lacked hydrophytic vegetation, hydric soils, and/or wetland hydrology. Field data were recorded on Wetland Determination Data Forms - Arid West Region.

Section 401 of the CWA identifies jurisdictional limits as any "surface water or groundwater, including saline waters, within the boundaries of the state." For the purposes of this delineation, the limits of RWQCB jurisdiction generally follow those of the USACE jurisdiction under Section 404. Limits of CDFW-regulated areas include the bank-to-bank width measures for each feature and the extent of associated riparian habitat and riparian tree species based on the canopy of the riparian community or tree, to the limits of the dripline, within or directly adjacent to the streambed. Riparian habitat was defined as plant species that are likely dependent on the hydrology of the streambed.

The observed features were mapped using a post-processing capable Global Positioning System (GPS) unit with sub-meter accuracy (e.g., Juniper Geode™). The location, species, number, and diameter at breast height of riparian trees within the DA were also recorded using a GPS unit.

3.1 Routine Determinations for Wetlands

This section describes the methods used to make a wetland determination on a particular location. To be determined a wetland; the following three criteria must be met:

- A majority of dominant vegetation species are wetland-associated species;
- Hydrologic conditions exist that result in periods of flooding, ponding, or saturation during the growing season; and
- Hydric soils are present.

3.1.1 Vegetation

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present (Environmental Laboratory 1987). The definition of wetlands includes the phrase "a prevalence of vegetation typically adapted for life in saturated soil conditions." Prevalent vegetation is characterized by the dominant plant species comprising the plant community (Environmental Laboratory 1987). The dominance test is the basic hydrophytic vegetation indicator and was applied at each sampling point location. The "50/20 rule" was used to select the dominant plant species from each stratum of the community. The rule states that for each stratum in the plant community, dominant species are the most abundant plant species (when ranked in descending order of coverage and cumulatively totaled) that immediately exceed 50 percent of the total coverage for the stratum, plus any additional species that individually comprise 20 percent or more of the total cover in the stratum (USACE 2008b).

Dominant plant species observed at each sampling point were then classified according to their indicator status (probability of occurrence in wetlands, Table 1), *North American Digital Flora: National Wetland Plant List* (Lichvar et al. 2016). If the majority (more than 50 percent) of the dominant vegetation on a site are classified as obligate (OBL), facultative wetland (FACW), or facultative (FAC), the site was considered to be dominated by hydrophytic vegetation.

Plant Species Classification	Abbreviation	Probability of Occurring in Wetland	
Obligate	OBL	Almost always occur in wetlands	
Facultative Wetland	FACW	Usually occur in wetlands, but may occur in non-wetlands	
Facultative	FAC	Occur in wetlands and non-wetlands	
Facultative Upland FACU		Usually occur in non-wetlands, but may occur in wetlands	
Upland	UPL	Almost never occur in wetlands	
Plants That Are Not Listed (assumed upland species)	N/L	Does not occur in wetlands in any region.	

¹Source: Lichvar et al. 2016

In instances where indicators of hydric soil and wetland hydrology were present, but the plant community failed the dominance test, the vegetation was re-evaluated using the Prevalence Index. The Prevalence Index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code (OBL=1, FACW=2, FAC=3, FACU=4, and UPL=5) and weighting is by abundance (percent cover). If the plant community failed the Prevalence Index, the presence/absence of plant morphological adaptations to prolonged inundation or saturation in the root zone was evaluated.

3.1.2 **Soils**

A hydric soil is defined as a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (NRCS 2003). Indicators that a hydric soil is present include, but are not limited to, histosols, histic epipedon, hydrogen sulfide, depleted below dark surface, sandy redox, loamy gleyed matrix, depleted matrix, redox dark surface, redox depressions, and vernal pools.

At each sampling point a soil pit was excavated to the depth needed to document an indicator, to confirm the absence of indicators, or until refusal at each sampling point. The soil was then examined for hydric soil indicators. Soil colors were determined while the soil was moist using the *Munsell Soil Color Charts* (Kollmorgen Instruments Co. 1990). Hydric soils are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. These processes and the features in the soil that develop can be identified by looking at the color and texture of the soils.

3.1.3 Hydrology

Wetlands, by definition, are seasonally or perennially inundated or saturated at or near (within 12 inches of) the soil surface. Primary indicators of wetland hydrology include, but are not limited to: visual observation of saturated soils, visual observation of inundation, surface soil cracks, inundation visible on aerial imagery, water-stained leaves, oxidized rhizospheres along living roots, aquatic invertebrates, water marks (secondary indicator in riverine environments), drift lines (secondary indicator in riverine environments). The occurrence of one primary indicator is sufficient to conclude that wetland hydrology is present. If no primary indicators are observed, two or more secondary indicators are required to conclude wetland hydrology is present. Secondary indicators include, but are not limited to: drainage patterns, crayfish burrows, FAC-neutral test, and shallow aquitard.

3.2 Limitations of the Survey

There were some properties within the DA containing potential regulated features that were not accessible by foot due to the lacustrine environment. When possible, these features were mapped from canoe but if they were not accessible either way they were mapped using supplemental recent and historic aerial images, recent and historic topographic maps, visual inspection from the property boundaries, and/or by using mapping within accessible portions and extrapolation.

3.3 Post-Processing

The data collected in the field utilized ArcGIS[™] Collector on a device (smartphone or tablet) connected to a submeter external receiver (i.e., Juniper Geode[™]). The submeter receiver applies differential correction instantaneously in the field using the Satellite Based Augmentation System. The data were then viewed and analyzed for verification, edited, and compiled in Geographic Information System (GIS) format at the

time of download. ArcGIS™ software was used to develop the geodatabase and the shapefiles depicted on the figures included in this report.

4.0 RESULTS

4.1 Existing Site Conditions

The DA is located within relatively flat terrain situated at an elevational range of approximately 600 feet to 700 feet above mean sea level in the South Coast Subregion of the Southwestern floristic region of California (Baldwin et. al. 2012). The average winter low temperature in the vicinity of the DA is 53.1°F and the average summer high temperature is 74.6°F. Average annual precipitation is approximately 13.29 inches, which falls as rain (National Oceanic and Atmospheric Administration [NOAA] 2021).

The DA consists of undeveloped land and a portion of the manmade Lake Los Serranos. There is a temporary storm drain outlet and temporary concrete-bottom channel located in the central portion of the DA between Los Serranos Boulevard and Lake Los Serranos. The DA vegetation is primarily composed of disturbed annual grasslands with scattered trees and shrubs interspersed throughout the boundaries and cottonwood willow riparian vegetation along the lake edge. The areas vegetated with disturbed annual grasslands show evidence of previous mechanical disturbances, such as mowing or discing. Hickory Creek, a drainage course that drains a natural watershed, enters the DA at the southwest corner. An unnamed ephemeral drainage also runs throughout the central portion of the DA, which drains the surrounding developed areas and roads.

The surrounding area consists of suburban development with sparse commercial development, mostly concentrated around the CA-71/Chino Hills Parkway Corridor. More specifically, development within this portion of the Project vicinity includes medium density single-family residences, a golf course, and varied commercial businesses (e.g., an auto parts store, restaurants, and a gas station). Lake Los Serrano is located within and north of the DA, and Hickory Creek exits Lake Los Serranos and meanders within the western portion of the DA, exiting to the west. Roadways within the DA include Pipeline Avenue, Los Serranos Boulevard, Valle Vista Drive, and Country Club Drive.

This aquatic resources delineation was conducted in the summer, towards the end of the blooming season for most plant species. The survey was conducted at an acceptable time of the year to observe wetland hydrology, and although few wetland plant species were in bloom at the time of the survey, most plants were identifiable to species based upon vegetative or fruit morphology.

4.1.1 National Wetlands Inventory

The National Wetland Inventory (NWI) is a publicly available national dataset that provides detailed information on the abundance, characteristics, and distribution of U.S. wetlands (USFWS 2021). NWI includes aquatic resource features mapped using a variety of remote sensing and modeling techniques. As such, these aquatic features may or may not exist as represented. In addition, NWI data varies in detail, accuracy, and age, and is meant to be used as a tool to assist with an aquatic resource delineation but not

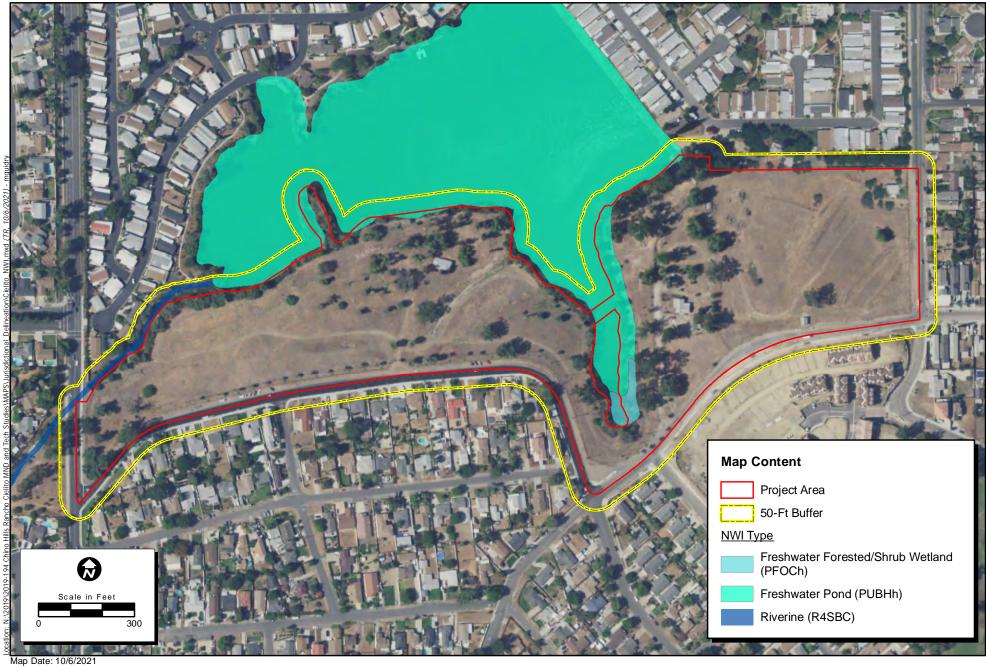
to serve as the only source of information. Data contained within the NWI can be historical in nature at times, having been modified by recent development or by other factors.

According to the NWI, there are aquatic features mapped within the DA (Figure 3), crossing the Project area at various locations. The locations of the mapped features correspond well with most of the findings of this delineation. Features mapped are classified as Freshwater Forested/Shrub Wetland, Freshwater Pond, and Riverine (USFWS 2009). More detail regarding these classifications will be described in the Results section.

4.1.2 **Soils**

According to the Web Soil Survey (NRCS 2021a), three soil units, or types, have been mapped within the DA (Table 2 and Figure 4). The field examination confirmed the soil mapping, where soils were studied in detail, particularly at the two sample points which were taken. None of the mapped soil types are considered to be hydric soils (NRCS 2021b). Note that one of the mapping units in the soil survey, not included in Table 2, is *water* which corresponds to Lake Los Serranos. This designation indicates that the area was inundated and soils were not examined by the NRCS for this area.

Table 2	Table 2. Soils Occurring within the Delineation Area					
Code	Soil Series	Mapping Unit	NRCS Hydric/ Landform	Water Drainage	Material	Available water storage in profile
CkC	Chualar	clay loam, 2 to 9 percent slopes	No	Well drained	Mixed alluvium derived from igneous, metamorphic and sedimentary rock	High (about 9.6 inches)
CkD	Chualar	clay loam, 9 to 15 percent slopes	No	Well drained	Alluvium	High (about 10.3 inches)
StA	Sorrento	clay loam, 0 to 2 percent slopes	No	Well drained	Alluvium derived from sedimentary rock	High (about 11.3 inches)



Map Date: 10/6/2021 Photo Source: NAIP (2018)



Figure 3. National Wetlands Inventory Features

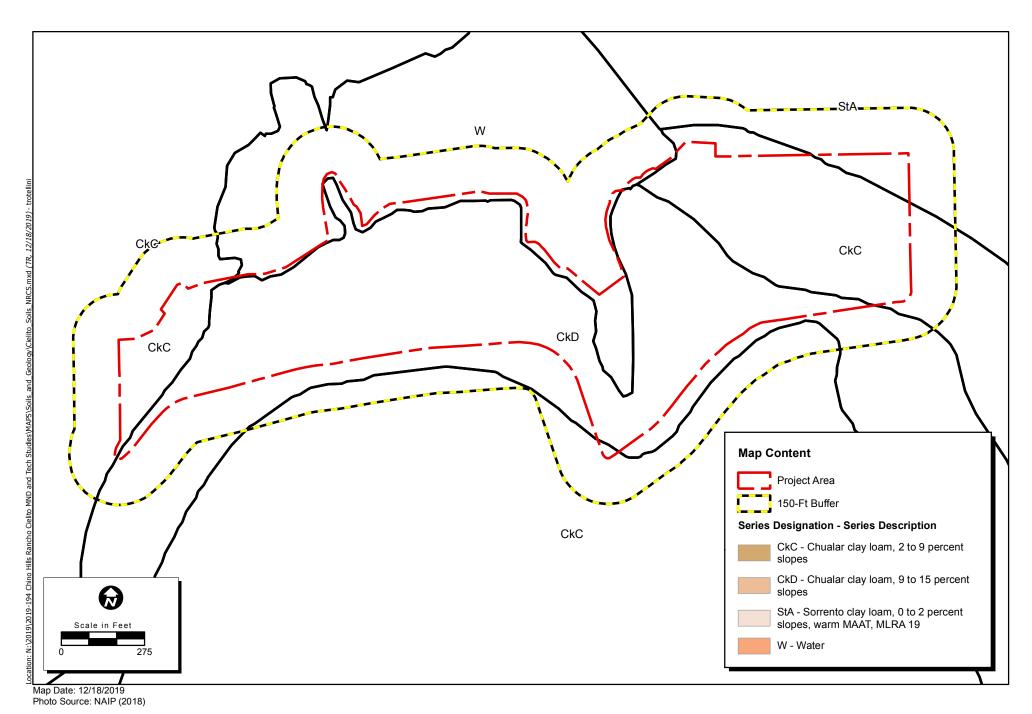


Figure 4. Natural Resource Conservation Soil Types

Aquatic Resources

A total of 4.217 acres of aquatic resources potentially jurisdictional to the USACE have been mapped within the DA (Table 3), associated with Lake Los Serranos and its tributaries. The majority of mapped features consist of open water associated with Lake Los Serranos and wetland areas mapped along the southern shoreline of Lake Los Serranos in the northern portion of the DA. The remainder was associated with a concrete-lined ephemeral drainage within the central portion of the DA and Hickory Creek channel in the western portion of the DA. Areas jurisdictional to the CDFW also include riparian habitats that were mapped, consisting of Fremont Cottonwood Forest and Woodland. These individual features of the respective jurisdictional areas are discussed in more detail below.

Hickory Creek channel flows southwest to northeast and enters the reservoir through a culvert under Pipeline Avenue in the western portion of the property. Hickory Creek channel within the area to be directly impacted contains a mixture of unvegetated streambed and Fremont Cottonwood Forest and Woodland.

The OHWM and wetland determination data forms are included in Attachment A and a list of plant species observed within the DA is included as Attachment B. A discussion of the aquatic resources is presented below, and the aquatic resources delineation map is presented in Figure 5. Representative site photographs are included as Attachment C.

Table 3. Aquatic Resources (USACE)				
Туре	Acreage ¹			
Other Waters (Non-wetland)				
Perennial Drainage (Hickory Creek)	0.351			
Ephemeral Drainage	0.131			
Open Water (Lake Los Serranos)	3.167			
Wetlands				
Bullrush Marsh	0.568			
Total:	4.217			

¹Acreages represent a calculated estimation and are subject to modification following the USACE verification process.

4.1.3 Wetlands

There are 15 features that met the criteria of a wetland under USACE guidelines, having wetland vegetation, soils and hydrology. These areas are mapped as Bullrush Marsh located along the south shoreline of Lake Los Serranos within the northern portion of the Project. The features are described in detail below.



Figure 5. Aquatic Resource **Delineation - USACE Jurisdiction**

Map Features

Project Area

50-Ft Buffer

Reference Point Culvert

Three Criteria Sample Point

OHWM

Wetland point

Wetland Waters of the U.S. (0.568 Acres)

Bulrush Marsh (0.568 Acres)

Non-Wetland Waters of the U.S. (3.650 Acres)

Ephemeral Drainage (0.131 Acres)

Perennial Drainage (0.351 Acres)

Open Water (3.167 Acres)

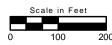
Subject to U.S. Army Corps of Engineers verification. This exhibit depicts information and data produced in accord with the westeand delineation methods described in the 1987 Corps of Engineers Westeand Delineation Manual. And West Region Manual and the Regional Supplement to the Corps of Engineers Westeand Delineation Manual. And West Region Hersian 2.0 as well as the Updated Map and Drawing Standards for the South Pacific Division Requietor Program as amended on February 10. 2016, and conforms to Los Angeles District specifications. However, Reduce boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate forcations are required.

reactive vountaines have not ocean regary surveyed and may be subject to minor adjustments in locations are required. *The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Sum values may not equal the total potential Waters of the U.S. acreage reported.

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4.1.3.1 Bullrush Marsh

Along the edges of Lake Los Serranos, there were several patches of partially or fully inundated freshwater marsh dominated primarily by bullrush (*Schoenoplectus californicus*). Emergent vegetation along the lakeshore also included water lilies (*Nymphaea* sp.), cattails (*Typha domingensis*), umbrella plant (*Cyperus involucratus*) and tall flatsedge (*Cyperus eragrostis*). Soils were completely inundated at these locations, and so were not sampled. Hydric soils were instead assumed due to the presence of obligate wetland species. Hydrologic indicators primarily consisted of inundation visible on aerial imagery. Due to the presence of all three wetland criteria – vegetation, soils and hydrology – the marsh areas were considered to be federal wetlands.

4.1.4 Other Waters

4.1.4.1 Perennial Drainage

Perennial drainages are linear features that typically exhibit an OHWM and flow for most or all of the year. The flows are supported by a constant water source, natural or artificial, originating from either surface water or groundwater. One feature, Hickory Creek, is considered to be a perennial drainage due to its morphology and presence of a mature aquatic system. The creek is fed primarily by urban runoff from developments upstream to the southwest but it also backfills from lake water.

Hickory Creek enter the DA via a box culvert into a partially manufactured channel that runs along the western portion of the DA and enters Lake Los Serranos. Several points along the channel have been armored partially by riprap to prevent erosion of the surrounding properties. The channel bottom consisted of unconsolidated sand and cobble with patches of riparian vegetation scattered along the sides. The riparian vegetation consisted primarily of Fremont cottonwood (*Populus fremontii*) and various willows (*Salix* sp.). The channel is up to 10 feet deep from the top of bank and the width (top of channel) ranges from 30 to 60 feet. At the top of the channel beyond the riparian habitat most of the land is disturbed or developed.

4.1.4.2 Ephemeral Drainage

Ephemeral drainages are linear features that typically exhibit an OHWM and support surface flows for short periods during and immediately following rainfall events. Ephemeral drainages carry water only for a short time during the growing season and are not influenced or supported by groundwater. The ephemeral stream located within the DA consists of a single manufactured ditch that collects stormflows from developed areas to the south and conveys them to the lake.

This feature is unvegetated and exhibits bed and bank topography, along with clear OHWM that is planar and bounded by trapezoidal earthen sides. The OHWM was determined by field study in addition to aerial mapping, topographic mapping and soils mapping. The area had a cracked earth bottom, running along a gradual slope to the north. Indicators of water flows included drift/debris, cracked soils and presence of bed and bank morphology.

Vegetation within the channel consists primarily of non-native grasses and forbs and the channel width at top of bank averages 10 feet with a depth of about four feet.

4.1.4.3 Open Water (Lake Los Serranos)

Lake Los Serranos consists of open water resulting from an artificial reservoir that is maintained at a particular water level as a neighborhood amenity. The vegetation is restricted to the edges of the lake, where marsh and riparian habitats have taken hold. There were no signs of submerged or emergent vegetation within the lake, except for along the boundaries.

4.2 CDFW Jurisdiction

CDFW jurisdiction encompasses all USACE features discussed above in addition to habitat areas mapped within the DA as Fremont Cottonwood Forest and Woodland, for a total of 6.343 acres. The limits of CDFW jurisdiction include the limits of the extent of each stream's larger floodplain where flows are not regular but only occur during larger storm events. This typically consists of the top of the bank for linear features. The breakdown of CDFW jurisdiction, in terms of acreages of habitats present within the DA, is provided below (Table 5), and is depicted in Figure 6.

4.2.1 Open Water

Areas mapped as open water under USACE jurisdiction are also considered to be open water under CDFW jurisdiction, and would be considered as lacustrine, or lake, habitat.

4.2.2 Streambed

Areas mapped as perennial and ephemeral stream are considered to be streambed habitat under the California Fish and Game Code. Streambeds consist of the flowing parts of a riverine feature, minus the riparian habitat growing along the sides.

4.2.3 Riparian Habitats

Riparian areas often occur within seasonally inundated floodplains and are seasonally inundated by flood waters. Two areas of riparian habitat are located in the DA – along Hickory Creek and along the edges of Lake Los Serranos where they overlap somewhat with Bullrush Marsh areas. These habitats are considered to be subject to CDFW jurisdiction pursuant to the California Fish and Game Code as riparian habitats associated with streambeds.



Figure 6 Aquatic Resource Delineation - CDFW Jurisdiction

Map Features

Project Area

50-Ft Buffer

Reference Point

⊕ Culvert

CDFW Jurisdiction (6.342 Acres)

Streambed (0.483 Acres)

Bulrush Marsh (0.568 Acres)

Open Water (3.167 Acres)

Fremont Cottonwood Forest and Woodland (2.125 Acres)

Subject to U.S. Amy Corps of Engineers verification. This exhibit depicts information and data produced in accord with the wetland delineation methods described in the 1987 Corps of Engineers. Wetland Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Menual: And West Region Version 2.0 as well as the <u>Updated Map and Drawing Standards for the South Pacific Division Regions Program</u> as amended on February 10, 2016, and conforms to Los Angeles District specifications. However, feature boundaries have not been legally surveyed and may be subject to minor adjustments if more accurate

teations are required. *The acreage value for each feature has been rounded to the nearest 1/1000 decimal. Summation of thes values may not equal the total potential Waters of the U.S. acreage reported.

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Table 4. Aquatic Resources (CDFW Jurisdiction)					
Type Acreage ¹					
Open Water	3.167				
Streambed	0.483				
Bullrush Marsh	0.568				
Fremont Cottonwood Forest and Woodland	2.125				
Total	6.343				

5.0 IMPACTS

Direct impacts to aquatic resources would entail 0.698 acre of USACE jurisdiction (Table 5), including and 2.584 acres of CDFW jurisdiction (Table 6).

Table 5. Impacts to USACE Jurisdiction					
Туре	Acreage ¹				
Other Waters (Non-wetland)					
Perennial Drainage (Hickory Creek)	0.116				
Ephemeral Drainage	0.131				
Open Water (Lake Los Serranos)	0.284				
Wetlands					
Bullrush Marsh	0.167				
Total:	0.698				

Table 6. Impacts to CDFW Jurisdiction				
Туре	Acreage ¹			
Open Water	0.284			
Streambed	0.247			
Bullrush Marsh	0.167			
Fremont Cottonwood Forest and Woodland	1.886			
Total	2.584			

6.0 JURISDICTIONAL ASSESSMENT

A total of 4.217 acres of USACE aquatic resources and 6.343 acres of CDFW jurisdiction have been mapped within the DA. The mapped features consist of Lake Los Serranos, Hickory Creek (perennial stream) and an unnamed ephemeral drainage, along with associated wetlands and riparian habitats. To varying degrees, all of these areas are considered to be subject to USACE jurisdiction pursuant to Section 404 of the CWA, CDFW jurisdiction pursuant to the California Fish and Game Code, and RWQCB jurisdiction pursuant to Section 401 of the CWA.

Impacts would entail 0.698 acre of USACE jurisdiction and 2.584 acres of CDFW jurisdiction, along with 0.698 acre of waters of the State (Regional Board jurisdiction). The acreage represents a calculated estimation of the extent of aquatic resources within the DA, and is subject to modification following USACE review and/or the verification process. The placement of dredged or fill material into jurisdictional features would require a permit pursuant to Section 404 of the CWA and certification or waiver in compliance with Section 401 of the CWA. Alteration of Lake Los Serranos and other areas under CDFW jurisdiction would require a Lake and Streambed Alteration Agreement with the CDFW.

As per Regulatory Guidance Letter 16-01, an applicant may request a Preliminary Jurisdictional Determination (PJD) "in order to move ahead expeditiously to obtain a Corps permit authorization where the requestor determines: that it is in his or her best interest to do so ... even where initial indications are that the aquatic resources on a parcel may not be jurisdictional" (USACE 2016). A significant nexus evaluation is not necessary to obtain a PJD. The following information on connectivity of wetlands and other waters in the DA to Traditional Navigable Waters is provided should an Approved Jurisdictional Determination be necessary.

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LIST OF ATTACHMENTS

Attachment A – Wetland Determination Data Forms - Arid West

Attachment B – Plant Species Observed Onsite

Attachment C – Representative Site Photographs

ATTACHMENT A

Wetland Determination Data Forms - Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Rancho Cielito		City/County	y: <u>Chino Hi</u>	lls	_ Sampling Date:	10/23/19	
Applicant/Owner: City of Chino Hills				State: CA	_ Sampling Point:	SP1	
Investigator(s): S. Taylor Section, Township, R.							
Landform (hillslope, terrace, etc.): <u>Lakeshore</u>							
Subregion (LRR): LRR-C							
Soil Map Unit Name: Water							
Are climatic / hydrologic conditions on the site typical for the							
Are Vegetation, Soil, or Hydrology						No. ✓	
Are Vegetation, Soil, or Hydrology						110	
SUMMARY OF FINDINGS – Attach site map						eatures, etc.	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes ✓ Yes ✓ Yes ✓ Remarks:	No		he Sampled hin a Wetlar		/ No	-	
Artificial lake with rock-around shoreline,		ous clum	nps of ma	arsh			
VEGETATION – Use scientific names of pla							
Tree Stratum (Plot size:)			t Indicator Status	Dominance Test work Number of Dominant S			
1. Populus fremontii				That Are OBL, FACW,		(A)	
2				Total Number of Domii	nant		
3				Species Across All Stra		<u>1</u> (B)	
4				Percent of Dominant S	Species		
Sapling/Shrub Stratum (Plot size:)		= Total Co	over	That Are OBL, FACW,		5 (A/B)	
Schoenoplectus californicus	50%	Υ	OBL	Prevalence Index wo	rksheet:		
2. Salix exigua				Total % Cover of:	Multipl	y by:	
3				OBL species 50	x 1 =	50	
4				FACW species 15	x 2 =	30	
5				FAC species 10			
Harb Charture (Diet size)		= Total Co	over	FACU species			
Herb Stratum (Plot size:) 1. Rumex salicifolius	5%	Υ	FACW	UPL species 5			
Hazardia squarrosa			UPL	Column Totals:8	<u>30</u> (A)	135 (B)	
3				Prevalence Index	x = B/A =1.	.69	
4.				Hydrophytic Vegetati	on Indicators:		
5.				✓ Dominance Test is	s >50%		
6.				✓ Prevalence Index	is ≤3.0 ¹		
7				Morphological Ada			
8				Problematic Hydro	ks or on a separate	,	
Woody Vine Stratum (Diet size)		= Total Co	over	i iobiematic riyurc	priyiic vegetation	(Explain)	
Woody Vine Stratum (Plot size:) 1. N/A				¹ Indicators of hydric so be present, unless dist			
2				Hydrophytic	·		
% Bare Ground in Herb Stratum10% % Cov		= Total Corust0	9%	Vegetation	es_√_No_		
Remarks:				1			

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SOIL Sampling Point: SP1

Depth	Matrix		oth needed to docu Red	ox Feature		• •		· · · · · · ·
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
							-	
	-		-					
¹ Type: C=C	oncentration, D=D	epletion, RM	=Reduced Matrix, C	S=Covere	d or Coate	d Sand Gr	rains. ² Loca	tion: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appl	icable to all	LRRs, unless other	erwise not	ed.)		Indicators f	or Problematic Hydric Soils ³ :
Histosol	l (A1)		Sandy Red	dox (S5)			1 cm Mu	uck (A9) (LRR C)
	pipedon (A2)		Stripped M					uck (A10) (LRR B)
Black H			Loamy Mu		ıl (F1)			d Vertic (F18)
	en Sulfide (A4)		Loamy Gle	-				rent Material (TF2)
	d Layers (A5) (LRF	R C)	Depleted N	-	,			Explain in Remarks)
	uck (A9) (LRR D)	,	Redox Da	, ,	(F6)			,
	d Below Dark Surfa	ace (A11)		Dark Surfac	. ,			
	ark Surface (A12)	, ,	Redox De				³ Indicators o	f hydrophytic vegetation and
	Mucky Mineral (S1)		Vernal Poo		,			ydrology must be present,
	Gleyed Matrix (S4)			- (-)				sturbed or problematic.
	Layer (if present):							· · · · · · · · · · · · · · · · · · ·
	iches):						Hydric Soil F	Present? Yes <u>√</u> No
Remarks:							Tryunc com r	1030Ht. 103 <u>v</u> 110
HYDROLO)GV							
		•						
	drology Indicator							
	•	one require	d; check all that app					lary Indicators (2 or more required)
Surface	Water (A1)		Salt Crus	t (B11)				ater Marks (B1) (Riverine)
High Wa	ater Table (A2)		Biotic Cru	ust (B12)			Se	diment Deposits (B2) (Riverine)
Saturati	on (A3)		Aquatic I	nvertebrate	es (B13)		Dri	ft Deposits (B3) (Riverine)
Water M	Marks (B1) (Nonriv	erine)	Hydroger	n Sulfide O	dor (C1)		Dra	ainage Patterns (B10)
Sedime	nt Deposits (B2) (N	onriverine)	Oxidized	Rhizosphe	res along	Living Roc	ots (C3) Dry	y-Season Water Table (C2)
Drift De	posits (B3) (Nonriv	verine)	Presence	of Reduce	ed Iron (C4	1)	Cra	ayfish Burrows (C8)
	Soil Cracks (B6)	,	Recent Ir		•	*		turation Visible on Aerial Imagery (C9)
	ion Visible on Aeria	l Imagery (B				,	·	allow Aquitard (D3)
	Stained Leaves (B9		Other (E)		` ′			C-Neutral Test (D5)
Field Obser	,	,	01101 (2)	tpiaiii iii itt				- 110dildi 1001 (20)
		Vaa	No Donth (
Surface Wat			No Depth (i			l l		
Water Table	Present?		No Depth (i					
Saturation P		Yes	No Depth (i	nches):		_ Wetl	and Hydrology	Present? Yes No
	pillary fringe)	m dalide m	onitoring well, aeria	nhotos nr	evioue ine	nections)	if available:	
Describe Ne	corded Data (Stree	iii gaage, iii	ormorning well, aeria	priotos, pr	CVIOUS IIIS	pections),	ii avallabic.	
Remarks:								
Maintain	ed reservoir							

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ATTACHMENT B

Plant Species Observed Onsite

SCIENTIFIC NAME COMMON NAME					
GYMN	OSPERMS				
PINACEAE PINE FAMILY					
Pinus sp.	Pine sp.				
ANGIOSPERMS	(DICOTYLEDONS)				
ACERACEAE	MAPLE FAMILY				
Acer saccharinum	silver maple				
AMARANTHACEAE	AMARANTH FAMILY				
Amaranthus albus*	pigweed amaranth				
ANACARDIACEAE	SUMAC OR CASHEW FAMILY				
Schinus molle*	Peruvian pepper tree				
Schinus terebinthifolius*	Brazilian pepper tree				
APIACEAE	CARROT FAMILY				
Daucus pusillus	rattlesnake weed				
APOCYNACEAE	DOGBANE FAMILY				
Asclepias californica	California milkweed				
Asclepias fascicularis	narrow leaf milkweed				
ASTERACEAE	SUNFLOWER FAMILY				
Ambrosia psilostachya	western ragweed				
Artemisia douglasiana	Douglas' sagewort				
Artemisia dracunculus	tarragon				
Baccharis pilularis	coyote brush				
Baccharis salicifolia	mulefat				
Centaurea melitensis*	tocalote				
Cirsium vulgare*	bull thistle				
Erigeron bonariensis*	flax-leaved horseweed				
Erigeron canadensis	Canada horseweed				
Helminthotheca echioides*	bristly ox-tongue				
Heterotheca grandiflora	telegraph weed				
Hymenoclea salsola	cheesebush				
Iva hayesiana ^{CRPR 2B.2}	San Diego marsh elder				
Lactuca serriola*	prickly lettuce				
Matricaria discoidea	pineapple weed				
Pluchea sericea	arrow weed				
Pseudognaphalium californicum	ladies' tobacco				
Senecio vulgaris*	common groundsel				
Silybum marianum*	milk thistle				
Sonchus asper*	spiny sowthistle				
Sonchus oleraceus*	common sow thistle				
Sonchus sp.	sow thistle species				
Stephanomeria virgata	twiggy wreath plant				
BORAGINACEAE	BORAGE FAMILY				
Amsinckia tessellata	fiddleneck				
Heliotropium curassavicum	Chinese parsley				

SCIENTIFIC NAME	COMMON NAME
BRASSICACEAE	MUSTARD FAMILY
Brassica sp.*	mustard
Capsella bursa-pastoris*	shepherd's purse
Hirschfeldia incana*	short-podded mustard
Sisymbrium altissimum*	tumble mustard
Sisymbrium orientale*	oriental hedge mustard
Sisymbrium irio*	London rocket
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY
Sambucus nigra	black elderberry
CARYOPHYLLACEAE	CARNATION FAMILY
Cerastium glomeratum*	mouse-ear chickweed
Cerastium fontanum	chickweed
Spergularia sp.	sand spurry
CHENOPODIACEAE	GOOSEFOOT FAMILY
Atriplex semibaccata*	Australian saltbush
Chenopodium album*	white goosefoot
Chenopodium murale*	nettle leaf goosefoot
Salsola tragus*	Russian thistle
CONVOLVULACEAE	MORNING-GLORY FAMILY
Convolvulus arvensis*	field bindweed
Cressa truxillensis	alkali weed
CUPRESSACEAE	CYPRESS FAMILY
Cupressus sempervirens*	Italian cypress
EUPHORBIACEAE	SPURGE FAMILY
Chamaesyce albomarginata	rattlesnake weed
Croton setiger	turkey mullein
Euphorbia peplus*	petty spurge
Euphorbia prostrata*	prostrate sandmat
Euphorbia sp.	sandmat
FABACEAE	LEGUME FAMILY
Acacia sp.	acacia
Acmispon glaber	deerweed
Lupinus sp.	lupine
Medicago polymorpha*	bur clover
Melilotus albus*	white sweetclover
Melilotus indicus*	yellow sweetclover
Melilotus sp.	clover species
Parkinsonia aculeata*	Mexican palo verde
Spartium junceum*	Spanish broom
FAGACEAE	OAK FAMILY
Quercus sp.	oak
Quercus agrifolia	coast live oak
GERANIACEAE	GERANIUM FAMILY
Erodium cicutarium*	redstem stork's bill
Geranium sp.*	geranium

SCIENTIFIC NAME	COMMON NAME
LAMIACEAE	MINT FAMILY
Marrubium vulgare*	white horehound
Trichostema lanceolatum	vinegar weed
LYTHTACEAE	LOOSESTRIFE FAMILY
Lythrum hyssopifolia*	hyssop loosestrife
MALVACEAE	MALLOW FAMILY
Malva parviflora*	cheeseweed mallow
MELIACEAE	MAHOGANY FAMILY
Melia sp.	cedar
MYRSINACEAE	MYRSINACEAE FAMILY
Lysimachia arvensis*	scarlet pimpernel
MYRTACEAE	MYRTLE FAMILY
Eucalyptus sp.*	gum tree
NYMPHAEACEAE	WATER LILY FAMILY
Nymphaea odorata*	white water lily
Nymphaea sp.*	water lily
ONAGRACEAE	EVENING PRIMROSE FAMILY
Epilobium canum	California fuchsia
Oenothera elata	evening primrose
PHRYMACEAE	LOPSEED FAMILY
Erythranthe guttata	seep monkey flower
PLANTAGINACEAE	PLANTAIN FAMILY
Kickxia elatine	sharp leaved fluellin
Plantago major*	common plantain
PLATANACEAE	SYCAMORE FAMILY
Platanus racemosa	western sycamore
POLEMONIACEAE	PHLOX FAMILY
Gilia sp.	gilia
POLYGONACEAE	BUCKWHEAT FAMILY
Polygonum aviculare*	prostrate knotweed
Rumex crispus*	curly dock
Rumex pulcher*	fiddle dock
PORTULACACEAE	PURSLANE FAMILY
Portulaca oleracea*	common purslane
ROSEACEAE	ROSE FAMILY
Heteromeles arbutifolia	toyon
Prunus ilicifolia	hollyleaf cherry
Prunus ilicifolia ssp. lyonii	Catalina cherry
Prunus persica*	peach tree
Rosa californica	California wild rose
RUBIACEAE	BEDSTRAW FAMILY
Galium sp.	bedstraw
SALICACEAE	WILLOW FAMILY
Populus fremontii	Fremont's cottonwood
Salix exigua	narrow-leaved willow

SCIENTIFIC NAME	COMMON NAME
Salix gooddingii	black willow
Salix laevigata	red willow
Salix lasiolepis	arroyo willow
SAPINDACEAEA	SOAPBERRY FAMILY
Acer sp.	maple
Koelreuteria bipinnata*	golden rain tree
SAURURACEAE	RATTAIL FAMILY
Anemopsis californica	yerba mansa
SIMAROUBACEAE	QUASSIA FAMILY
Ailanthus altissima*	tree of heaven
SOLANACEAE	NIGHTSHADE FAMILY
Datura sp.	Jimson weed
Nicotiana glauca*	tree tobacco
Solanum americanum	American black nightshade
Solanum elaeagnifolium*	silverleaf nightshade
URTICACEAE	NETTLE FAMILY
Urtica urens*	stinging nettle
ANGIOSPERMS (MO	ONOCOTYLEDONS)
AGAVACEAE	AGAVE FAMILY
Agave americana*	American century plant
ARECACEAE	PALM FAMILY
Arecaceae ssp.*	palm
Phoenix canariensis*	Canary Island date palm
Washingtonia robusta*	Mexican fan palm
ASPHODELACEAE	ALOE FAMILY
Asphodelus fistulosus*	onion weed
CYPERACEAE	SEDGE FAMILY
Cyperus eragrostis	tall flatsedge
Cyperus involucratus*	umbrella plant
Schoenoplectus californicus	California bulrush
Scirpus sp.	bulrush
JUNCACEAE	RUSH FAMILY
Juncus acutus ssp. Leopoldii ^{CRPR 4.2}	southwestern spiny rush
LILIACEAE	LILLY FAMILY
Yucca sp.	yucca
POACEAE	GRASS FAMILY
Avena fatua*	wild oat
Brachypodium distachyon*	purple false brome
Bromus diandrus	ripgut brome
Bromus madritensis ssp. rubens*	red brome
Cortaderia jubata*	pampas grass
Cynodon dactylon*	Bermuda grass
Festuca myuros*	foxtail fescue
Festuca perennis*	Italian rye grass

SCIENTIFIC NAME	COMMON NAME
Hordeum murinum*	foxtail barley
Lamarckia aurea*	goldentop grass
Pennisetum setaceum*	fountain grass
Polypogon monspeliensis*	annual beard grass
Polypogon viridis*	water beard grass
Stipa miliacea*	smilograss
PONTEDERIACEAE	HYACINTH FAMILY
Eichhornia crassipes*	common water hyacinth
ТҮРНАСЕАЕ	CATTAIL FAMILY
Typha domingensis	narrowleaf cattail

^{*}Non-native species

California Native Plant Society (CNPS) Rare Plant Ranks (CRPR):

2B: Plants rare, threatened, or endangered in California but more common elsewhere

4: Plants of limited distribution; a watch list.

CNPS Threat Rank:

0.2 Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

Sources:

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2021. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: September 23, 2021).

ATTACHMENT C

Representative Site Photographs



Photo 1 Description: Lake Los Serranos and Bullrush Marsh



Photo 3 Description: Sample Point 1 Location



Photo 2 Description: Lake Los Serranos and Water Lilies



Photo 4 Description: Lake Los Serranos and Riparian Habitat



Photo 5 Description: Ephemeral Stream inlet



Photo 7 Description: Perennial Drainage (Hickory Creek) inlet



Photo 6 Description: Ephemeral Stream



Photo 8 Description: Perennial Drainage (Hickory Creek)

Crotch Bumble Bee Focused Survey

Rancho Cielito

San Bernardino County, California

Prepared by ECORP Consulting, Inc. for:

City of Chino Hills Community Development Department 14000 City Center Drive Chino Hills, California 91709

Surveys conducted:

April 15, 2020 May 13, 2020 June 10, 2020 July 08, 2020

Report Prepared:

September 04, 2020



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LIST OF ACRONYMS AND ABBREVIATIONS

CDFW California Department of Fish and Wildlife

CNDDB California Natural Diversity Database

GPS Global Positioning System

mm Millimeter

Project Proposed Rancho Cielito Development

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

1.0 INTRODUCTION

1.1 Project Location and Description

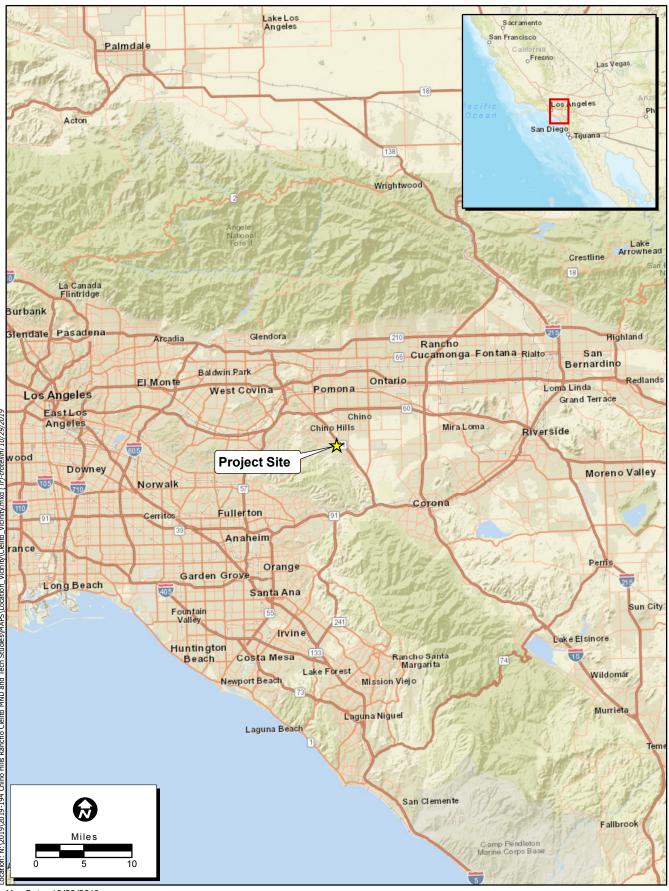
The Project Applicant proposes to develop a multi-building apartment complex called Rancho Cielito (Project). The Proposed Project would include approximately 354 residential units and associated features and facilities including two clubhouses, a leasing/management office, three active recreation areas, passive open spaces, trails, a maintenance garage, and associated infrastructure.

The Project site is located within the city of Chino Hills in San Bernardino County (Figure 1. *Project Vicinity*). The Project site is generally located north of Los Serranos Boulevard/Valle Vista Drive, south of the Lake Los Serranos Club, and comprises approximately 48.37 acres (29.50 acres of dry land and 18.87 acres of water surface area that make up Lake Los Serranos). The Project site is located along the northern end of Los Serranos Boulevard/Valle Vista Drive and the southern end of the Lake Los Serranos Club in the city of Chino Hills. The Project site, as depicted on the U.S. Geological Survey (USGS) 7.5-minute Prado Dam topographic quadrangle, falls within Sections 22 and 27, Township 2 South and Range 8 West, San Bernardino Baseline Meridian (USGS 1960). The property is composed of three legal parcels: Assessor Parcel Numbers 1025-561-04, -05, and -06 (Figure 2. *Project Location*). The elevation of the Project site is approximately 645 feet above mean sea level.

1.2 Crotch Bumble Bee Status and Natural History

The Crotch bumble bee (*Bombus crotchii*) is a candidate for listing as an endangered species as defined by Section 2068 of the Fish and Game Code. Crotch bumble bee inhabits open grassland and scrub habitats and occurs primarily in California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California (Williams et al. 2014). It also occurs in Mexico (Williams et al. 2014) and has been documented near the Nevada-California border in southwest Nevada (Hatfield et al. 2018). In California, the flight period for Crotch bumble bee queens occurs from late February to late October, with its peak in early April and a second pulse in July. The flight period for workers and males occurs from late March through September with a peak in early July (Thorp et al. 1983). Crotch bumble bee primarily nests underground, though colony sizes have not been well documented (Williams et al. 2014).

Similar to other bumble bee species, Crotch bumble bee is a generalist forager and reportedly visits a variety of flowering plants. It is a short-tongued bumble bee and is therefore best suited to forage on open flowers with short corollas (Hatfield et al. 2018). Plant families most commonly associated with Crotch bumble bee records in California include (in descending order): Fabaceae, Apocynaceae, Asteraceae, Lamiaceae, and Boraginaceae (Richardson 2017). Other reports associate Crotch bumble bee with plants in the genera *Asclepias, Chaenactis, Lupinus, Medicago, Phacelia*, and *Salvia* as example food plants (Williams et al. 2014). Crotch bumble bee is typically distinguished from other bumble bee species based on hair coloration; coloration and body size often vary between queens, workers, and males. Queens are 22 to 25 millimeters (mm) in length, workers are 12 to 20 mm in length, and males are 14 to 19 mm in length. Queens and workers have identical color patterns: the hair on the face is black with yellow on top of the head (vertex). The hair on the front portion of the thorax (scutum) is yellow and

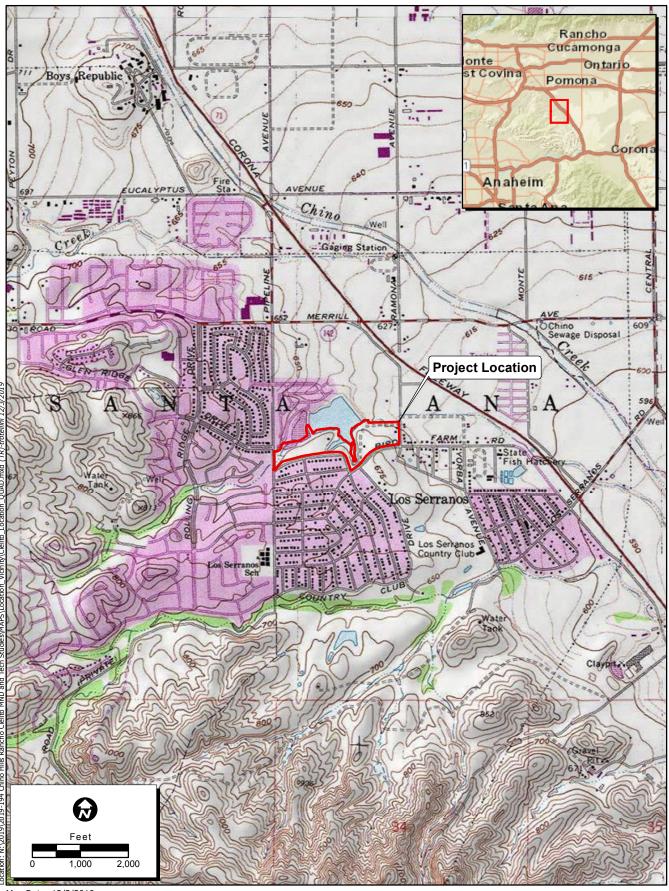


Map Date: 10/29/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Figure 1. Project Vicinity



Map Date: 12/3/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



typically has black hairs between and below the wings, as well as the back portion of the thorax (scutellum). The first tergal (T-dorsal plate, T1) segment on the abdomen is black medially. T2 is yellow, with occasional black medially and anteriorly. T3 is black anteriorly and occasionally red posteriorly. T4 and T5 are either entirely black or red (Hatfield et al. 2018). Males typically have an enlarged or bulbous body shape, with yellow hair on the head and face. Both the scutum and scutellum are yellow, and there is a black band between the wings. T1 and T2 are occasionally yellow, with T3 being yellow laterally and posteriorly. T4 to T7 are either entirely black or entirely red (Hatfield et al. 2018).

Historically, Crotch bumble bee was common throughout the southern two-thirds of California, but now appears to be absent from most of its historic range, especially the center regions (Hatfield et al. 2014; Richardson et al. 2014). Factors that have been identified as a substantial threat to the survival and reproduction of Crotch bumble bee include: loss of habitat due to human landscape modifications (agricultural intensification, livestock grazing, urban development), increased use of herbicides and pesticides, competition, climate change, genetic factors, and disease and pathogen spillover (Hatfield et al. 2018).

2.0 SURVEY METHODOLOGY

2.1 Literature Review and Habitat Assessment

A review of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB) was performed at the Prado Dam and the eight surrounding USGS 7.5-minute topographic quadrangles before surveys were conducted to determine the nearest recorded locations of Crotch bumble bee to the Project site.

A habitat assessment was then conducted to determine if suitable Crotch bumble bee habitat occurs on site. The habitat assessment involved conducting a general field survey of the site and mapping vegetation communities. Prior to the 2020 focused Crotch bumble bee surveys, data from an April 2020 rare plant survey was utilized to prioritize survey locations. Habitats were identified and ranked based on habitat (e.g., native landscape, diversity and abundance of foraging plants, nesting and overwintering features, land management and pesticide usage) and potential dispersal movements from previously documented sites. Emphasis was placed on high-quality habitat containing preferred plant foraging species and areas containing potential nest sites, including abandoned entrances to small mammal burrows. Additionally, special attention was paid to natural areas serving as flight corridors between urban areas, including rights-of-way, roadsides, and parks.

2.2 Crotch Bumble Bee Focused Surveys

Crotch bumble bee surveys were conducted during the 2020 season by qualified biologist(s) experienced and skilled in the identification and ecology of the Crotch bumble bee and other California and nonnative bumble bees. The surveys were conducted in accordance with 2019 U.S. Fish and Wildlife Service (USFWS) Survey Guidelines (version 2.2) for the rusty patched bumble bee (*B. affinis*), adjusting for species specificity (USFWS 2019), and as approved by CDFW. Pedestrian transect surveys were conducted throughout the survey area. For purposes of this report, the survey area is defined as all non-excluded habitat within the Project boundary limits and a 100-foot buffer. Consistent with the survey guidelines,

four equally spaced pedestrian surveys were conducted between April and July (weather permitting) for the highest detection probability of Crotch bumble bee. All surveys were conducted at the recommended time of day during weather conditions conducive to detection of Crotch bumble bee.

Each survey consisted of one-person hour of active search time per three acres of suitable habitat or until at least 150 bumble bees were sighted, whichever came first. Surveyors used close focusing binoculars to search, identify, and count (or estimate) bumble bees. Digital photographs were used to document and identify bumble bees. To the extent possible, photographs of bees were taken from the top (dorsal view) showing the entire bee, including the top of thorax and abdomen, along with a photograph of the face from the front and top, and side view of thorax and abdomen. In addition, representative photographs were taken of each bumble bee's location and their specific floral use. Private property and inaccessible areas within the survey area were surveyed utilizing binoculars.

General weather conditions, date of survey, and start and end times were recorded on Crotch bumble bee specific field data sheets. The start and end locations and times of each transect, track, or path surveyed were recorded using a Global Positioning System (GPS) unit. In addition, each Crotch bumble bee location was recorded using GPS-enabled devices along with polygons of foraging plant usage. All bumble bees observed were noted on standardized data sheets. Estimates were made of the numbers of each species observed and notes on how each species was counted/approximated on the data sheets, to ensure that numbers are not misinterpreted. Incidental wildlife species with emphasis on identification of other pollinators in flight and plants in flower at the time of each survey were noted on the data sheets. The field survey data sheets are included in Appendix A. Plant and wildlife lists of species observed during the surveys can be found in Appendices B and C, respectively.

3.0 RESULTS

3.1 Literature Review and Habitat Assessment

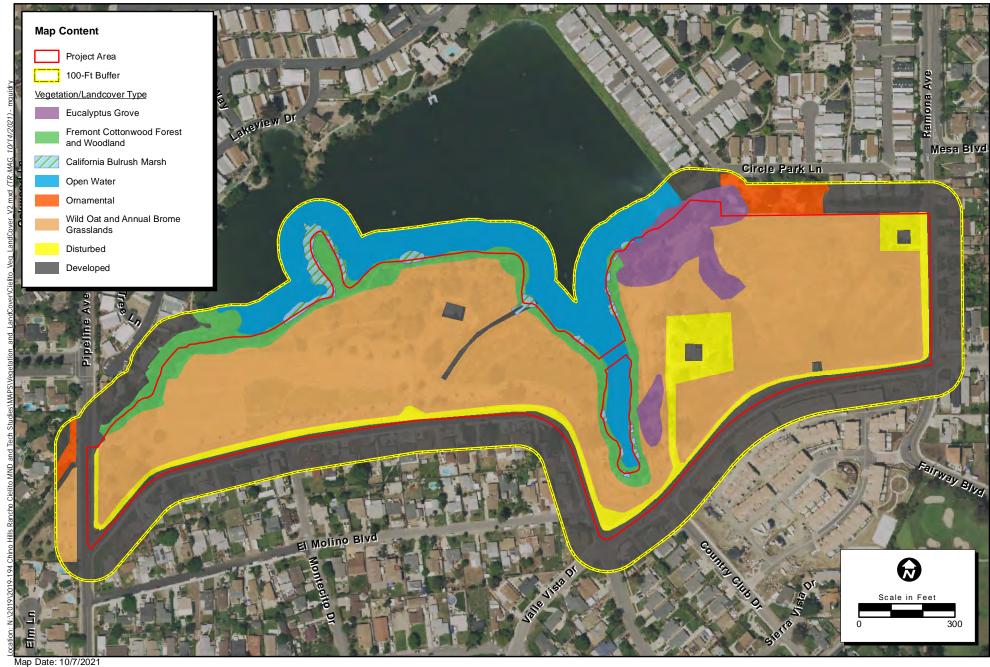
A search of the CNDDB determined that no observations of Crotch bumble bee have been recorded within five miles of the Project site (CDFW 2020). A habitat assessment survey was conducted on October 23, 2019 by ECORP wildlife biologists Kristen Wasz and Alden Lovaas, and the first rare plant survey was conducted by ECORP wildlife biologists Greg Hampton and Christina Torres on April 2, 2020.

3.1.1 Plant Communities and Habitat

Vegetation communities and other land cover types observed within and adjacent to the Project site included cottonwood willow riparian woodland, disturbed annual grassland, eucalyptus grove, ornamental, disturbed, and developed areas (ECORP 2019). Descriptions of each vegetation community and land cover type that were mapped are provided below (Figure 3. *Vegetation Communities and Land Cover Types*).

Cottonwood Willow Riparian Woodland

Cottonwood willow riparian woodland occurs in seasonally flooded freshwater habitats or saturated areas, often on gently sloping rocky floodplains, or edges of rivers, streams, and/or meadows. Cottonwood



Boundary Date: 8/30/2021 Photo Source: NAIP (2020)



Figure 3. Vegetation Communities and Land Cover Types

willow riparian woodland has a sensitivity ranking of S3 in California (CDFW 2019). On the Project site, this community is located along the edges of Lake Los Serranos and includes areas that are dominant or codominant with willow (*Salix* sp.) and Fremont's cottonwood (*Populus fremonti*). Other species present in this community on the Project site include eucalyptus (*Eucalyptus* sp.), scrub oak (*Quercus berberidifolia*), black willow (*Salix gooddingii*), red willow (*S. laevigata*), narrow-leaved willow (*S. exigua*), and a few species of palm trees (*Arecaceae* spp.). Approximately 3.12 acres of the survey area was mapped as cottonwood willow riparian woodland and ranked as low-quality suitable habitat for Crotch bumble bee.

California Bulrush Marsh

California Bulrush Marsh occurs in seasonally flooded freshwater habitats or saturated areas, often along stream shores, bars, and channels of river mouth estuaries, around ponds and lakes, in sloughs, swamps, and roadside ditches. on gently sloping rocky floodplains, or edges of rivers, streams, and/or meadows. California Bulrush Marsh has a sensitivity ranking of S4 in California (CDFW 2019). On the Project site, this community is located along the edges of Lake Los Serranos and includes areas that are dominant with California bulrush (*Schoenoplectus californicus*). Approximately 0.57 acre of the survey area was mapped as California Bulrush Marsh and ranked as unsuitable habitat for Crotch bumble bee.

Disturbed Annual Grassland

Areas mapped as disturbed annual grassland are largely devoid of native vegetation due to human disturbance and are dominated by open areas of nonnative grasses. Plants present in this vegetation community on the Project site are dominated by nonnative weedy species such mustards (*Brassica* sp.), Russian thistle (*Salsola tragus*), and Bermuda grass (*Cynodon dactylon*), but also include occurrences of native species such as turkey mullein (*Croton setigerus*) and spiny rush (*Juncus acutus* ssp. *leopoldii*). A few species of palm trees are distributed throughout the disturbed annual grasslands. Disturbed annual grassland account for the largest vegetation community present and is located throughout the entire Project site. Evidence of previous and repeated mechanical disturbances, such as mowing or discing, are prevalent throughout this community on the Project site. Approximately 21.58 acres were mapped as disturbed annual grassland. The disturbed annual grasslands likely contained annual forbs for nectaring and was therefore ranked as low-quality suitable habitat for Crotch bumble bee.

Eucalyptus Grove

Eucalyptus grove is a vegetation type characterized by tall trees where Eucalyptus species represent more than 80 percent of the relative cover in the tree layer. Eucalyptus species are not native to California and some species are considered invasive. Eucalyptus groves are present in the northeastern portion of the Project site, along the southeast edge of Lake Los Serranos. Approximately 2.06 acres were mapped as eucalyptus grove and were ranked as low-quality suitable habitat for Crotch bumble bee.

Ornamental

Ornamental areas are planted with common landscaping plants not native to the region. The Project site is surrounded by residential neighborhoods that are dominated by ornamental landscaping. Ornamental landscaping is present within the Project site adjacent to the mobile home community residential housing

landscaping is present within the Project site adjacent to the mobile home community residential housing development. Vegetation in this area consists of unidentified flowering annual species and nonnative tree species such as pepper trees (*Schinus* sp.) and pine trees (*Pinus* sp.). Approximately 0.74 acre was mapped as ornamental. The ornamental area likely contained flowering annual species for nectaring and was therefore ranked as low-quality suitable habitat for Crotch bumble bee.

Disturbed

The disturbed classification includes areas that have been heavily influenced by human actions, such as grading or discing, but lack development. Disturbed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. The disturbed land cover on the Project site surrounds two currently occupied houses within the Project boundary. In areas classified as disturbed land, vegetation is absent or consists primarily of nonnative species, such as common Mediterranean grass (*Schismus barbatus*). Approximately 2.96 acres were mapped as disturbed. Because the disturbed areas are heavily influenced by human actions such as grading or discing, it was ranked as unsuitable habitat for Crotch bumble bee.

Developed

Areas designated as developed land have infrastructure present and any vegetation in the immediate surroundings is composed of ornamental landscaping or nonnative plant growth. Developed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. Developed areas are distributed throughout the Project site and include a concrete channel and residences. These developed areas are generally located adjacent to disturbed lands. Approximately 12.68 acres was mapped as developed and ranked as unsuitable habitat for Crotch bumble bee.

Open Water

Open Water is not a vegetation classification, but rather a land cover type. Open water areas occur in the northern portion of the survey area and are associated with Lake Los Serranos. No vegetation or soils are associated with these areas. Approximately 5.09 acres of Open Water occurs within the survey area and ranked as unsuitable habitat for Crotch bumble bee.

3.1.2 Nectar and Nesting Sources

At the time of the 2019 habitat assessment, it was determined that the disturbed annual grasslands onsite could provide low-quality suitable habitat for Crotch bumble bee, as the grassland habitat contained annual forbs for nectaring. During the 2020 rare plant surveys few nectar sources were observed throughout the survey area, the most abundant being lupine sp. (*Lupinus* sp.), Catalina cherry (*Prunus ilicifolia* ssp. *lyonia*), short-podded mustard (*Hirschfeldia incana*), oriental hedge mustard (*Sisymbrium orientale*), and London rocket (*Sisymbrium irio*). Small mammal burrows that could serve as potential nesting habitat were present throughout the survey area.

3.2 2020 Crotch Bumble Bee Surveys

3.2.1 Survey Initiation and Timing

A total of four equally spaced Crotch bumble bee surveys were conducted by ECORP biologists Christine Tischer and Christina Torres from April through July 2020. Weather conditions for all surveys were conducive to detection of Crotch bumble bee as specified in the survey guidelines, with the exception of the third survey in June. Intermittent cloud coverage occurred during the third survey, resulting in surveyors occasionally being unable to see their shadow. Survey timing and weather conditions are summarized in Table 1.

Table 1. Weather Conditions During 2020 Crotch Bumble Bee Focused Survey													
			Time		Temperature (°F)		Cloud Cover %		Wind Speed (mph)				
Survey	Date	Surveyor	Start	End	Start	End	Start	End	Start	End			
1	4/15/20	СТ	0840	1610	62	82	0	0	0-1	3-5			
2	5/13/20	CLT, CT	1035	1415	66	71	70	80	1-3	2-4			
3	6/10/20	CLT, CT	0710	1145	69	91	0	0	0-1	0-1			
4	7/08/20	CLT, CT	0750	1135	76	87	0	0	0-1	0-1			

CLT = Christine Tischer CT = Christina Torres

3.2.2 Crotch Bumble Bee Conditions and Observations

The majority of flowering annuals had developed flowering heads by the time of the first Crotch bumble bee survey, and 11 species were in bloom: red-stemmed filaree (*Erodium cicutarium*), spiny sow thistle (*Sonchus asper*), London rocket, Oriental hedge mustard, short-podded mustard, Catalina cherry, white sweetclover (*Melilotus albus*), yellow sweetclover (*Melilotus officinalis*), annual sweetclover (*Melilotus indicus*), field bindweed (*Convolvulus arvensis*), onion plant (*Allium* sp.), and lupine sp. Similar plant conditions were observed during Survey 2. However, the disturbed annual grasslands area had been mowed prior to the start of Survey 2, decreasing the amount of available nectaring sources. Blooming Mexican palo verde (*Parkinsonia aculeata*) proved to be a viable nectar source for western carpenter bees (*Xylocopa californica*) during Surveys 2 through 4. Plants in bloom at the time of the 2020 bumble bee surveys and that could serve as potential nectar sources are identified in Appendix C.

Although abandoned small mammal burrows were present throughout the site, no active bumble bee nests were observed. There were, however, two honeybee (*Apis mellifera*) colonies observed in abandoned burrows during the focused surveys. Bees detected during each survey are summarized in Table 2.

Table 2. Bees Observed During Focused Surveys									
Bees Observed	Survey 1 (4-15-20)	Survey 2 (5-13-20)	Survey 3 (6-10-20)	Survey 4 (7-08-20)					
Bumble Bees									
Black-tailed bumble bee (Bombus melanopygus)	2								
Bombus sp.	1								
Carpenter Bees									
Western carpenter bee (Xylocopa californica)		5	18	3					
Honey Bees									
Western honey bee (Apis mellifera)*	50+	10,000+ (2 hives)	20+	20+					

^{*=} nonnative species

A total of two native bee species were detected within the Project's survey area; no Crotch bumble bee individuals were detected (Figure 4a-4b). Other pollinators observed during the focused surveys included painted lady (*Vanessa cardui*), red admiral (*Vanessa atalanta*), monarch butterfly (*Danaus plexippus*), Anna's hummingbird (*Calypte anna*), and Allen's hummingbird (*Selasphorus sasin*). A single least Bell's vireo (*Vireo bellii pusillus*), a Federal- and State-listed endangered species, was incidentally observed during Survey 4 along the southern-central edge of Lake Serrano in the mowed grassland habitat (Figure 4a-4b). A complete list of wildlife observed, including other pollinators, is included in Appendix C. Representative photographs of site conditions are included in Appendix D.

4.0 CONCLUSION AND DISCUSSION

Crotch bumble bee primarily nests underground and occasionally uses abandoned small mammal burrows. It is a generalist forager and therefore visits a variety of flowering plants. Because it is short-tongued, this species is typically best suited to forage on flowers with short corollas (Hatfield et al. 2018). There were abandoned small mammal burrows present throughout the survey area; however, no active bumble bee nests were detected. The mowed annual grasslands and ornamental vegetation within the survey area provide low-quality nectaring habitat for Crotch bumble bee.

The 2020 protocol surveys were negative for the presence of Crotch bumble bee. The literature review did not yield historic detections of Crotch bumble bee within five miles of the Project site. Due to the negative surveys, low-quality nectaring habitat, surrounding development and distance from known populations, Crotch bumble bee was determined absent from the Project site at this time.

5.0 CERTIFICATION

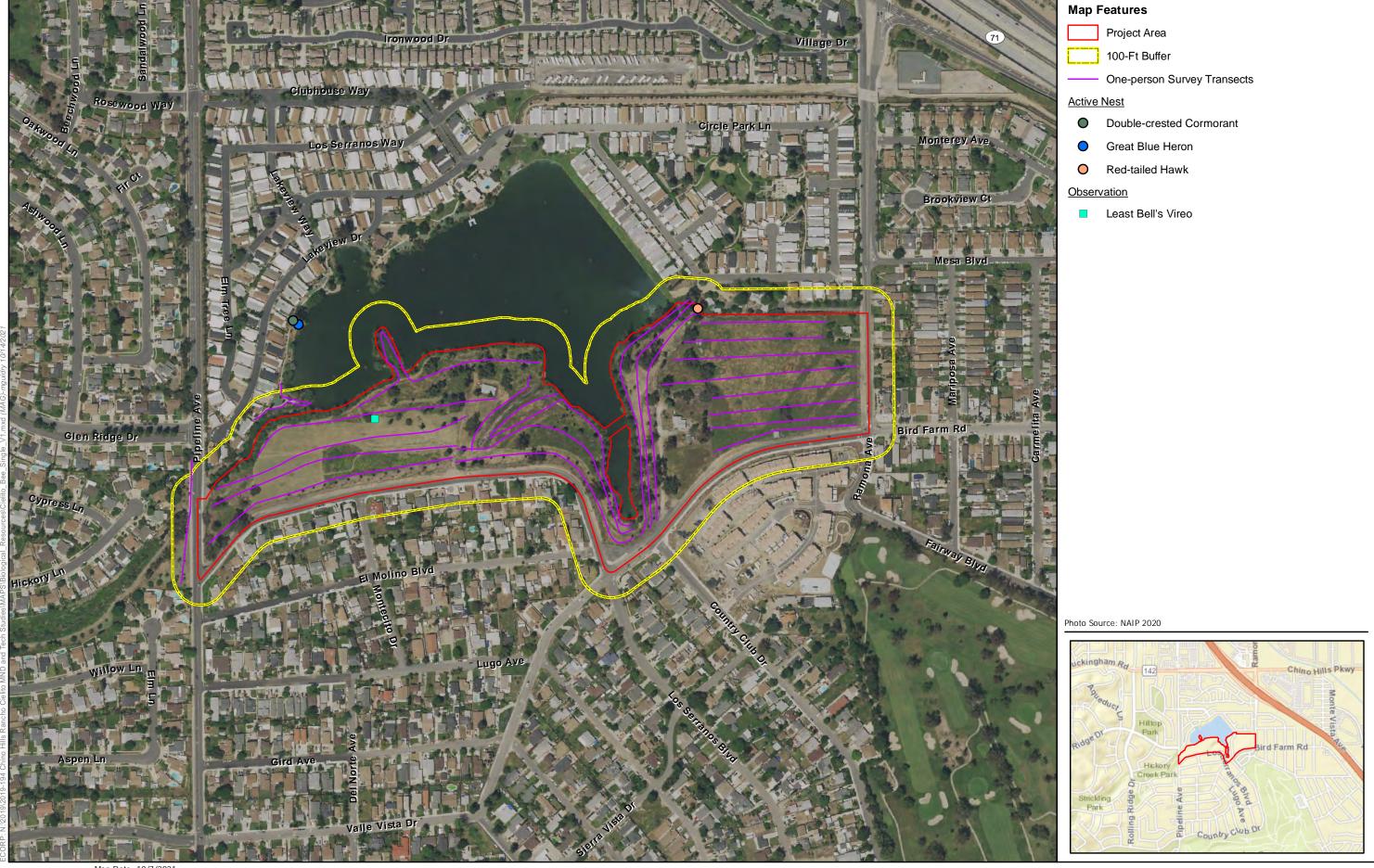
I hereby certify that the statements furnished above present the data and information required for this biological survey results report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Christina Torres Assistant Biologist September 4, 2020

Date

Christine L. Tischer Senior Biologist September 4, 2020

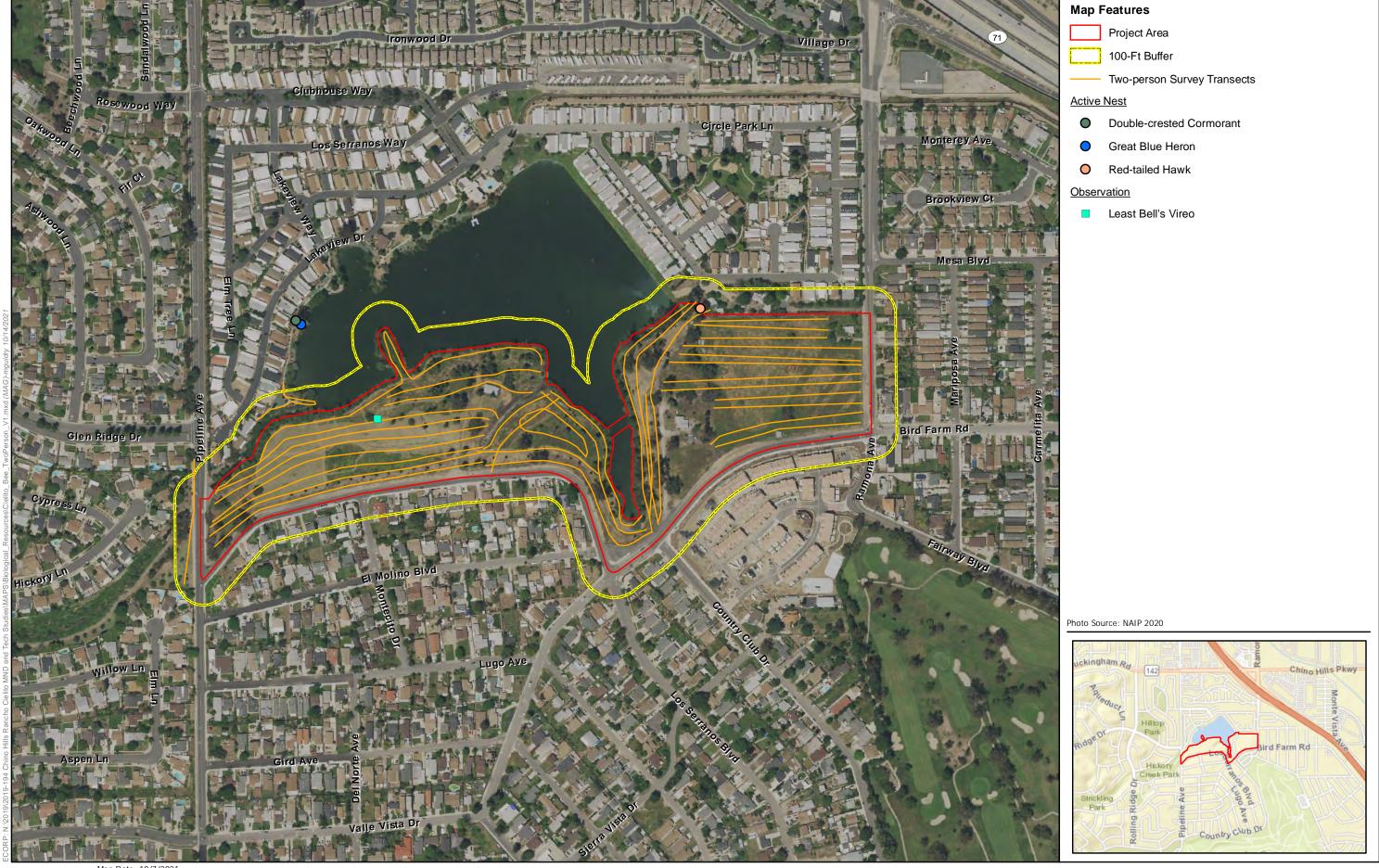
Date

















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LIST OF APPENDICES:

Appendix A: Field Data Sheets

Appendix B: Plant and Nectar Sources

Appendix C: Wildlife Species Observed

Appendix D: Representative Photographs

APPENDIX A

Field Data Sheets

Bumble Bee Survey Field Data Sheet	Unique Survey ID: Survey
Page 1 of 4	Federal Recovery Permit Number:

Permittee/Surveyor Name(s)		En	Email Address			Project Name				Site Name				
Christing Torves				ecorp ring co	m Ranc		cho cielito		ito	Pancho Cielito		elito		
Day Month			Year		Temper	ature (F)		Est. (mp	Wind Spe	ed	Est. Cloud Cover (%)			
15	04		2020		2020 620-5					-stav 5 -eno	1		- Start - Start	
Protocol Name (from FWS survey doc)	Transect Length (m) (if applicable)	Trans Widt (if app	h (m)	Transect ID (if applic.)	Total combin time sp survey (min) All survey	ent	Sui Sta Tin		Survey End Time	Total Survey (m^2)	Area	Total Site Area (m^2) (including area not surveyed)		
	***			se-e attached			082	10	1610					

	roid of Survey Area (Decimal Degrees)		Survey Area Bour	daries (Decimal Degre	es)	
LAT	LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary	

(Circle all From National Lar each classification is	at Type that apply) nd Cover Database, further defined here gov/nlcd11_leg.php	% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water	Mixed Forest	<10%	0 species	weeding,	(150 05 100) 218
DevelopedPark	Ever.Forest	10-24%		wearing,	use of mowers
,	Shrubland	10 24/0	1-4 species	landscaping	
Developed-	Grassland	25-49%		lanascapi g	
Low/Med/High	Pasture/Hay	50-75%	5-9 species		
	Cultivated Crop	30=7370			
Barren Land	Woody wetland	(>75%	10- 14 spp		
Decid. Forest	Herb. wetland				
	Other		15+ spp		
File/folder name	s of representative	e survey area p	hotograph(s)	Supporting map file	e/folder name(s)
					7
				1	
				<u> </u>	

Bumble Bee Survey Field Data Sheet Page 2 of 4	Unique Survey ID: Date: 4/15/2020	Transect ID (if applicable)
Were Bombus present?	Are Honey Bees (Apis) present?	Bombus to Apis Ratio (circle closest
YorN	YorN	estimate 20:1, 10:1, 1:1, 1:10, o(1:20+)

Species (1/3) (1/3)		No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only	Trans:
B. melanopygus B. melanopygus Bombus SP.	1			Prunus illicifolio	I.A	90		1
B. melanopy gus	l .			11 11	A	95		1
Bombus Sp.	NA			FHing overnead	E	NA		9
						,		
				-				
				٠.				
			,					
	-							
					· .			

^{*}Self evaluation of your confidence in your identification of each species (95-100% confident, 75-94%, 50-74%, 5-49%, <5%).

1 (13			Data for <i>B</i> . eture point as	<i>crotchii</i> separate row)	B. Po	Distance Sampling only	
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B. affinis	None						
B. affinis	İ						
B. affinis							
B. affinis							
B. affinis	1						

Y V	,			Pg. 3/4
Transect #	= Sto	0.105	End Tim-	e Gips
	084		0910	-117.709318
2	091	0 33.974383	0940	-117.708620
3	094	0 33.976692,	0950	-117.709099
4	095	22 0742.85	1008	33,975099,
5	1008	22 02 6 2 43	1022	33.974371,
6	1024	33.974439,	1040	33.975357,
7	1042	33.975391,	1048	33.975831,
8	1055	33.97 5153,	1124	33.974233 -117.714897 33.975277,
9	1127	33.974638,	1147	-117.711690 33.97482S,
10	1150	33.975599	1213	-117.714797
11	1219	33.975167,	1245	33.975793
12	1250	33,976176	1310	33.975696
13	1315	33.976022	1327	33,975232
14	1425	33.97659 <i>S</i> , -117.708516	1433	33.976610 -117.706911
15	1433	33.976443	1441 A-3	33.976396 -117.708732

Transect:	# Start Start Time GIPS	Find End Time BIPS
16	1443 33.976201 -117.708885	
17	1450 33.976136 -117.706503	1500 33.975932, -117.709024
18	1501 33.975783	1.510 33.975980 -117.706807
19	1510 33,975766	1520 33,975606
20	1520 33.97549	1527 33,975610
21	1527 33.975494	1535 33.975217, -117.708342
22	1545 33.975957	1600 33.975566
23 Notes	1605 -117.713969 33.975138 -117.715125	16 10 -117, 714315 33, 973797 -117, 715261

Blooming: red filaree, black mustavd, Pricky sow thistle, rosa sp., London rocket, holl-tleaf cherry, annual sweet-clover, short-pud mustavd, onron plant, cupinus sp.

other pollinators: Painted lady, tellow jacket, cabbage white, vanessa sp., a Apis

Bumble Bee Survey Field Data Sheet	Unique Survey ID: SUVV () 2
Page <u>Of S</u>	Federal Recovery Permit Number:

Permittee/Surveyor Name(s)			Email Ad	dress	Projec	t Na	me		Site Name			
-	e Tische 1a Towe		Ctorres ecorpcon	@ rsulting) Com	Rani	cho	Cî	elito	Pancho Cielito		elito
Day	Month				Temperature (F)				eed	Est. (%)	Cloud Cover	
13	05				66° - °	start end		0-1	-St(-er	5		-Start - end
Protocol Name (from FWS survey doc)	Transect Length (m) (if applicable)	Wi	ansect idth (m) applic.)	Transect ID (if applic.)	ansect Total combined		Su Sta Tir		Survey End Time	Total Survey (m^2)	Area	Total Site Area (m^2) (including area not surveyed)
	varying	,		see attache	,		103	35	1415			

	Survey Area Degrees)		Survey Area Bour	daries (Decimal Degre	es)
LAT	LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary
		,			(

(Circle all From National Lar each classification is	at Type that apply) nd Cover Database, further defined here gov/nlcd11_leg.php	% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water	Mixed Forest	<10%	0 species	weeding,	Grasslands have
DevelopedPark	Ever.Forest Shru <u>bl</u> and	10-24%	1-4 species	landscaping	been mowed since April survey
Developed-	Grassland	25-49%		ranasca, · J	Since April
Low/Med/High	Pasture/Hay Cultivated Crop	50-75%	5-9 species		Survet
Barren Land Decid. Forest	Woody wetland Herb. wetland	(>75%)	10- 14 spp		
·	Other		15+ spp		
File/folder name	s of representative	e survey area p	hotograph(s)	Supporting map file	/folder name(s)

Bumble Bee Survey Field Data Sheet Page $\underline{\mathcal{L}}$ of $\underline{\mathcal{S}}$	Unique Survey ID: 2 Date: 5/13/20	Transect ID (if applicable)
Were Bombus present?	V-3	Bombus to Apis Ratio (circle closest
YoN	(Y)or N	estimate 20:1, 10:1, 1:1, 1:10, or 1:20+)

Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only
No bombus detected							
		:					
						· · · · · · · · · · · · · · · · · · ·	
		***		***************************************	1		
				·			
			AND THE RESERVE OF THE PERSON				
							Anny Control
the LC							

^{*}Self evaluation of your confidence in your identification of each species (95-100% confident, 75-94%, 50-74%, 5-49%, <5%).

Individual Bee Data for <i>B. crotchii</i> (Enter each <i>B. crotchii</i> capture point as separate row)						<i>crotchii</i> Capture nt (Decimal degrees)	Distance Sampling only
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B. crotchii	NA					The contract of the contract o)
B. crotchii	1			A-4-0			
B. crotchii							
B. crotchii							
B. crotchii	1						<u> </u>

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
(1	1035	33,97683950, -117.70867733	1054	33,974 30905 -117,70931546
2	1035	33.976&991, -117.70862041	1054	33.97438300 -117.70919085
3	1055	33.97437126	1119	33.97535686 -117.71126704
4	1055	33.97443 879 -117.70942866	1119	33,97539148
5	1120	33,97515299 -117,71174653	1132	33.97423338 -117.71489748
6	1120	33.97524298 -117.71169518	1132	33.974S16 -117.714897
7	1137	33.97463815	1211	33.97559891
8	1137	33,97482529	1211	33.97617 562 -117.71061798
9	1214	33.97579290	1226	33.974775, -117.714780
10	1214	33.97602206 -117.71074088	1226	33.97477S, -117.714780
11	1228	Repeat of #6	1233	Repeat of #6
12	1240	33-97509940 -117.71170784	1247,	33, 974 2 84 91 -117, 70940348

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
13	1240	33.97523199 -117.71149561	1247	33.97437126 -117.70940743
14	1248	33.97446493 -117.70909949	1257	33.97669215
15	1306	33.97659497 -117.70851565	1310	33.97660981
16	1306	33.976S44S4 -117.708S1038	1310	33.97652671,
17	1311	33.9762 8839, -117.70649087	1322	33.97620089, -117.70888505
18	1311	33.97644342,	1322	33.97639638
19	1322	33,97593214 -117,70902436	1328	33.97595066 -117.70650660
20	1322	33.97606794	1328	33.97613563 -117.70650276
21	1330	33.97576609 -117.70650237	1336	33.97560636 -117.70840223
22	1330	33,97586346 -117.70650660	1336	33.97578 2S2 -117.70837397
23	1339	33,97521664	1345	33,9754,9433 -117.70650089
24	1339	33.975494S -117.70840347	1345	33.97560988 -117.70649370
2 -	1250	33.975957	1400	33.975566

1350 33.975957 25 33.975138 -117.715125 26 1406

33.975566 1400 33.973797 1415 -117.715261

Other Pollinators Observed

Painted lad-1
Red admirol
Hairstreak Sp.
Tiger Swallowtail
Tarantula nawk
Honey bee - nive at base of pepper tree
Carpenter bee - 5 on Palo verde
ANHU
ALHU

Plants in Bloom

Palo verde

Cheeseweed - Mai Par

Shortpod mustard - Hir inc

1-evba - Ane Cai

Sow thistle - son asp

Pose sp.

Ped-Stemmed filaree - evo cic

Milk thistle

spanish broom

Pimpernel - Its avv

Bumble Bee Survey Field Data Sheet	Unique Survey ID: Survey #2
Page <u>1</u> of <u>5</u>	Federal Recovery Permit Number:

Permittee/So Name(s)	urveyor	or Email Address			Project Name			Site Name		
C.Tisch	ries	ction	chereecor	p consulting	con Ranc	ho Ci	el.to	Ranch	o Ciel	ito
Day	Month	Yea	Year		erature (F) Est. Wind S		Service and the second	peed Est. Cloud		Cloud Cover
13 5			2020	66°F-71°F		- 1-3-2-4		4	70% - 80%	
Protocol Name (from FWS survey doc)	Transect Length (m) (if applicable)	Transect Width (n (if applic.)		Total combin time sp surveyi (min) All survey	ed St ent Ti ing	art me	Survey End Time	Total Survey (m^2)	/ Area	Total Site Area (m^2) (including area not surveyed)
Bombus crotchi										

	roid of Survey Area (Decimal Degrees)		Survey Area Bour	daries (Decimal Degre	es)
LAT	LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary
			w ==		1.3

Habitat Type (Circle all that apply) From National Land Cover Database, each classification is further defined here https://www.mrlc.gov/nlcd11_leg.php		% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water	Mixed Forest	<10%	0 species		
DevelopedPark	Ever.Forest Shrubland	10-24%	1-4 species		
Developed-	Grassland	25-49%			
Low/Med/High	Pasture/Hay Cultivated Crop	50-75%	5-9 species	THE TANK I	
Barren Land Decid. Forest	Woody wetland Herb. wetland	>75%	10- 14 spp		
	Other		15+ spp		
File/folder name	s of representative	survey area p	hotograph(s)	Supporting map f	ile/folder name(s)

Bumble Bee Survey Field Data Sheet Page <u>7</u> of <u>S</u>	Unique Survey ID: 2 Date: 5-13-2020	Transect ID (if applicable)
Were <i>Bombus</i> present? Y or 🕅	Are Honey Bees (Apis) present?	Bombus to Apis Ratio (circle closest estimate 20:1, 10:1, 1:1, 1:10, or 1:20+)

Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only
Carpenter bees	6	Jotal		Parlo Varde (4)	rion		
		- 4464			- 4.7		
		S No	1	(A to	ı ==		
				7			
						1	
	i escata ini	6					
181.005							
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						1100	

^{*}Self evaluation of your confidence in your identification of each species (95-100% confident, 75-94%, 50-74%, 5-49%, <5%).

Individual Bee Data for B. crotchii (Enter each B. crotchii capture point as separate row)					<i>B.</i> Poi	Distance Sampling only	
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B_affints	·				220	t il betterning	
B. affinis							
B. affinis							
B_affinis							
B. <u>affinis</u>							

3085

5-13-2020 Rancho Cielito B. crotchii #2

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
1_	10:35	33.97682442	See	C. Torres data shed
	=	V		
		3		
	ļ <u>.</u>			
	8			
			P	

4 of 5

Rancho Cielito B. cotchii # 2 5-13-2020

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
	П			
		Ψ ¹		S _k .
		e)		

Rancho Cielito 5-13-2020 Bombus crotchii Survey #2

Other Pollinators Observed

honeybee HOOR Carpenter bee gray handreak W. tiger swallowful ALHU painted lady Cabbagewhite tarantula hawk monarch redadmiral

Plants in Bloom

Water lily Puntago mojor (yellow) Architotus Sow thistle mustard Palo verde milk thistle red-stemmedfilaree white neghtshade cheeseweed scarlet pimpernel elderberry wild rose CA andwerd fruit trees on private property bindweed

Other

RTHA active nest (2 chicks) COYE 040M dragonfly (orange, small) TRES GTER BASW KILL WETA CALT aquatic snails YWAR ** goplar(b) mosquitofish HOFI CA gr. sq. BUSH w. fonce leg. GBHE - nest in euc W/DCCO WIWA HOSP LE60 GRHE EUST (15)DCCO in nests/euc rookery ECDO* NOMO BLPH ladybug beatle buildwed beetle BEWR CANG dead alegator liz SOSP BHCO* WISW

Bumble Bee Survey Field Data Sheet	Unique Survey ID: SUYVEY 3
Page 1 of S	Federal Recovery Permit Number:

Permittee/S	Surveyor	Email Ad	ldress		Project Name		Site Name			
C. TOYVE		c to vve	's@ onsulti	ng-com	Pan	cho ·	cielito	lito Rancho Ci		Cielito
Day	Month	Year		Tempera		Es	t. Wind Sp nph)			Cloud Cover
10	06	20	20	91 -	start en d	0	•	tavt end	00	- Start - end
Protocol Name (from FWS survey doc)	Transect Length (m) (if applicable)	Transect Width (m) (if applic.)	Transect ID (if applic.)	Total combin time sp surveyi (min)	ent ng	Surve Start Time	Survey End Time	Total Survey (m^2)	/ Area	Total Site Area (m^2) (including area not surveyed)
						0710	1145			

Centroid of Survey Area (Decimal Degrees)			Survey Area Bour	ndaries (Decimal Degre	es)
LAT	LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary

(Circle all From National La each classification is	at Type that apply) nd Cover Database, sfurther defined here gov/nlcd11_leg.php	% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water DevelopedPark Developed- Low/Med/High Barren Land Decid. Forest	Mixed Forest Ever.Forest Shrubland Grassland Pasture/Hay Cultivated Crop Woody wetland Herb. wetland Other	<10% 10-24% 25-49% 50-75%	0 species 1-4 species 5-9 species 10- 14 spp 15+ spp	Landscaping	Some areas have been mowed since last survet
File/folder name	es of representative	e survey area p	hotograph(s)	Supporting map file	e/folder name(s)

Bumble Bee Survey Field Data Sheet	Unique Survey ID: 3	Transect ID (if applicable)
Page 2 of S	Date: 6 (10 12020	
0 =	Are Honey Bees (Apis) present?	Bombus to Apis Ratio (circle closest
Were Bombus present?	(YdrN	estimate 20:1, 10:1, 1:1, 1:10, or 1:20+)

Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only
vo bombus detected							
		·.		· ·			
						ļ	
	1.						
<u> </u>							

	Indiv (Enter each <i>E</i>	idual Bee L crotchii cap	Data for <i>B</i> . ture point as	B. Poi	Distance Sampling only		
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B. crotchii	NA	,					
B. crotchii							
B. crotchii							·
B. crotchii							
B. crotchii							

C. Towes Transects- all Pts in Collector

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
1	0720	33.97662204	0727	33.97663846 -117.70690788
2	0731	33.97632030 -117.70647623	0741	33.97635237,
3	0743	33,97617407 -117,70896745		33.97614449
4	0753	33.97596161 -117.70647579	0806	39.97-58682S -117.70906862
S	0814	33.97 5681SZ -117.7083 8909	0822	33, 97573052 -117,70646286
6	0824	33.97562541	0834	33.97528509 -117.70842328
7	0842	33,9768 0981 -117. 70870863	0904	33.97434254
8	0908	33,97451180	0923	33.97 S 86169 -117.71080218
9	0924	-11t, TO 31521	0929	33.97824557
10	0931	33,97520689 -117 71140804	0940	33.97431055 -117.71492902
11	0943	33,97446967 -117.71488915	0953	33.97538893 -117.71136628
12	0955	33.975562S8 -117.7113061)	1009	33,974794SZ -117,71484377

pg. 415 survet3

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
13	1014	33.974 +6938 -117.71485985	1031	33.97587144
14	1038	33.97585536	1096	33.97571584
15	1051	33,97506678 -117-71134997	1059	33.97434061
16	1105	33.97449826	1112	53.97673706 -117.708440GT
17	1120	33.975957	1130	33.975566 ~117.714315
18	1137	33.975138	1145	33.973797
	3		*	
			. ,	
		•		
		☆		

Other Pollinators Observed

Monarch, cabbage white, xylocopa sp., Apis mellifera, tarantula hawk Sp., trger Swallowtail, hairstreak sp., dvagonfly,

Plants in Bloom

Palo verde, Pepper tree, MAR VUL, ero cic, onion plant, wild rose Sp., CA fuschia, son asp, denothera Sp., Sol ela, Datura Sp., Con arr, milkweed, vattesnake weed, grass, hir inc

other wildlife

RTHA, NOMO, CAKI, EUST, ANHU, MODO, ALHU, BLPH, NESW, HOOR, CORA, CALT, Canada goose, GITGIZ, western fence lizard, co-to-te, pocket gopher, SNEG, bufflehead, MALL, HOFI,

Bumble Bee Survey Field Data Sheet	Unique Survey ID: Survey #3	
Page <u>1</u> of <u>5</u>	Federal Recovery Permit Number:	

Permittee/Surveyor Name(s)		Email Ad	Email Address			Project Name			Site Name		
CITE	her CCT Yes (CT) chisch	er@ecorpu	onsulting. orn	Ronche	. Ciel	to	*			
Day	Month	Year	260	Tempera	ature (F)	Est. (mp	Wind Spe h)	ed	Est. (%)	Cloud Cover	
lo	06	20	20	69°F 0-1.		0-1 mx	sh	0	2		
Protocol Name (from FWS survey doc)	Transect Length (m) (if applicable)	Transect Width (m) (if applic.)	Transect ID (if applic.)	Total combin time sp surveyi (min) All survey	ed S ent T ing	urvey start ime	Survey End Time	Total Survey (m^2)	y Area	Total Site Area (m^2) (including area not surveyed)	
Bombaus Crotchii											

oid of Survey Area Decimal Degrees)		Survey Area Bour	idaries (Decimal Degree	es)
LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary
			×	-
	Decimal Degrees)	Decimal Degrees) LONG LAT North of	Decimal Degrees) LONG LAT North of LAT South of	Decimal Degrees) LONG LAT North of LAT South of LONG West of

(Circle all From National Lar each classification is	at Type that apply) nd Cover Database, further defined here gov/nlcd11_leg.php	% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water	Mixed Forest	<10%	0 species		
DevelopedPark	Ever.Forest Shrubland	10-24%	1-4 species		
Developed-	Grassland	25-49%			
Low/Med/High	Pasture/Hay Cultivated Crop	50-75%	5-9 species	/mate ?	
Barren Land Decid. Forest	Woody wetland Herb. wetland	>75%	10- 14 spp	13.0	
	Other		15+ spp		
File/folder name	s of representative	survey area p	hotograph(s)	Supporting map f	ile/folder name(s)
	- = -	-	× £		

Bumble Bee Survey Field Data Sheet Page 2 of 5	Unique Survey ID: 3 Date: 6-10-2020	Transect ID (if applicable)
Were Bombus present? Y or N	Are Honey Bees (Apis) present? Y or N	Bombus to Apis Ratio (circle closest estimate 20:1, 10:1, 1:1, 1:10, or 1:20+)

Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only
Carpenter bees				Palo verde Solanum el	eag. ~	8	
				N. Comments	- (Same and Advance who say
					IK I		
			1				
7				Mary Control of the C			_
							7,
	<u> </u>						
Tary							rii y
				L. Killeri Bu			ii i
				a strain			
	9-			B. 73-1			
resident	MAL .						

^{*}Self evaluation of your confidence in your identification of each species (95-100% confident, 75-94%, 50-74%, 5-49%, <5%).

			Data for <i>B</i> . oture point as	B. o Poir	Distance Sampling only		
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B. crotchii							
B. crotchii							
B. crotchii					=		
B. crotchii							
B. crotchii						10 - 11 - 12 - 12	

30	F5	C	Tischer 6-10-2020	Survey	#3 Raucho Cielite
	Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
itat E sect. CL	T	0720	33,97657667/ -117,70864002	0728	33,97651733 -117,70690472
	CLTZ	0730	33.97643098/ -117.70692762	0746	33.97643607 -117.76854247
	UT 3	0743	33.97626742 -117.70883587	0751	33,976 22737 -117,70639567
	CtT 4	6753	33,976 04 658 - 117, 70648168	0806	33.97596173
	CITTS	og 15	33.97576567	0823	33,97584918 -117,70648433
	CU 6	0875	33. 9755 1847	08 33	33,97525585 -117,70836688
end Esoit	Cuty	0842	33.97682443 -117.70861285	0906	· 33,97442517
	CUT 8	0908	33,97436952 -117,70926748	0922	3397585708 -11771062068
	CLTG	0925	33.97579882 -117.71639035	0929	33,97500005
	Cetio	0931	33.97510522 -117.71138438	0940	33.97419597 -117.71486557
	CLTII	0942	33.97441177	0953	33,97526490 -117, 71139173
	CUTIZ	0955	33,975 49468 -117,71131878	10091	33.97465967 -117.11486027

4 85

B. crotchii #3 Rendro Cielito 6-10-2020 **End Time End GPS Coordinates** Start GPS Coordinates **Start Time Transect** Number 33.97513060 33,97615567 1017 CIT 13 1036 -117,71427002 -117,71062363 33.97607242 33.97586543 1047 CETY 1039 117.71063697 -117.71262262 33,97497648 33.97521414 1056 CK 15 1051 -117, 709.89997 -117.71145500 LOOP) 33,97515548 1057 Ehd toop 11:01 CUTIL -117.71 005163 33.97588158 33.97448447 1113 CUIT 1104 -117.70852388 717, 70922848

Rancho Cielito B. crotchii #3 6-10-2020

Other Pollinators Observed

5 of 5

Monarch
fiery skipper
cab bage white green fruit beetle
HOOR
ALHU
aray haurstreak
w. tiger swallowtail
ANHU

Plants in Bloom

Palo verde

Mustard

Salanum clea

beindweed

red-stemmed filaree

rarrow leaf milkweed

ratteesnake spurge

Jemson weed

pruikley sow thiste

Common plantago

Salanum clea

turggy weathplant

CA fuschia

toyon

bustley oxtongue

to calote

(1) wild rose

Creek monkeyflower

Other:

CAKI BHCO4 GRHE pair NUWO YWAR** NRWS AMCR PB6R NOMO tovantula hauk green fruit beette HOFI LEGO MODO coyote (c) SAPH WTSW BEWR CA gr. 59. RTHA HOOR CANG SOSP BLPH KILL HOSPX EUST w. fence legard ECDO* E. fox Sq. GTGR. BUFF 9 gopher (B) tern sp. (royal?) RUDU 97 cottontail bullfrog (V)

Bumble Bee Survey Field Data Sheet	Unique Survey ID: B. Crotchii Survet 4
Page <u>\</u> of <u>\S</u>	Federal Recovery Permit Number:

Permittee/: Name(s)	Surveyor	Email Ad	Email Address			t Na	me		Site Name			
C. TOVYT		(torve ecorpi	s C Onsulti	ng.com	Rant Cie	CNO Lita)		rancho cielito			
Day	Month	Year			ature (F)		Est.	Wind Spe	eed	Est. (Cloud Cover	
08	07	20	20	76-Start 87-end		, •			itart 0.		-start end	
Protocol Name (from FWS survey doc)	Transect Length (m) (if applicable)	Transect Width (m) (if applic.)	Transect ID (if applic.)	Total combin time sp surveyi (min)	ent ng	Sur Sta Tim	_	Survey End Time	Total Survey (m^2)	· Area	Total Site Area (m^2) (including area not surveyed)	
						67	So	1135				

	Survey Area Degrees)		Survey Area Boundaries (Decimal Degrees)						
LAT	LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary				

(Circle all From National Lar each classification is	at Type that apply) nd Cover Database, further defined here gov/nlcd11_leg.php	% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water	Mixed Forest	<10%	0 species		
DevelopedPark	Ever.Forest Shrubland	10-24%	1-4 species	Landscaping	Mowing
Developed-	Grassland	25-49%	· · · · · · · · · · · · · · · · · · ·		
Low/Med/High	Pasture/Hay Cultivated Crop	50-75%	5-9 species		
Barren Land / Decid. Forest	Woody wetland Herb. wetland	> 7 5%	10- 14 spp		
	Other		15+ spp		
File/folder name	s of representative	survey area p	hotograph(s)	Supporting map file	/folder name(s)
					7 (1997)

Bumble Bee Survey Field Data Sheet Page 2 of 5	Unique Survey ID: リ Date: 7-8-7020	Transect ID (if applicable)
Were Bombus present? Yor(N)	Are Honey Bees (<i>Apis</i>) present? Ypr N	Bombus to Apis Ratio (circle closest estimate 20:1, 10:1, 1:1, 1:10, or 1:20+)

Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only
No Bombus Sp. detected							
		c					
·							

^{*}Self evaluation of your confidence in your identification of each species (95-100% confident, 75-94%, 50-74%, 5-49%, <5%).

Individual Bee Data for <i>B. crotchii</i> (Enter each <i>B. crotchii</i> capture point as separate row)					<i>B.</i> Poi	Distance Sampling only	
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B. crotchii	N/A			Charles and Phillips and Company and Compa	The second secon)
B. crotchii	i						
B. crotchii							
B. crotchii							
B. crotchii	1						



C. Torres Transects

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
CT7	0800	33.97680981	0811	33.97434284
CT8	0812	33.97451180	0820	33.97586169 -117.7LOSO218
CT9	0821	33.97604301 -117.71031521	0873	33.97524SS7 -117.71136827
CTIO	0824	33.97520684 -117,71140804	0834	33.974310TS- -117.71492902
CT II	0835	33.97446967	0845	33.97538893 -117.71136628
CT 12	0846	33.97556258 -117.71130611	0904	33,97479452
CT 13	0905	33.97476938	0938	33.97557144
CT14	0941	33.97S8S36 -117.71073784	0949	33.97571584
CT15	0956	33.97506678 -117.71134997	1003	33. 97434061 -117. 70920379
CT16	1005	33. 97444 826 -117.70912043	1009	33.97673706
CTI	1013	33.9766204 -117.70854263	1016	33,97663846
CT2	1017	33.97632030	1025	33.97635237 -117.70877638

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
CT3	1025	33.97617407	1033	33.97614449
CT4	1033	33.97896161 ~117.70647879	1039	33.97586825
CTS	1043	33.97568152 -117.70838909	1047	33.97573052 ~117.70646286
CT6	1049	33.97562541 -117.70646046	1054	33.97528509 -117.70842328
CTIT	1115	33.975957 -117.713969	1125	33.975566
CT 18	1129	33.975138 -117.715125	1135	33.973797



Other Pollinators Observed

Monarch, cabbage white, tiger Swallowtail, honeybee Capis m)
ANHU, ALHU, mourning Cloak, carpenter bee-3 total
hover fH, dragon fit sp, (2 palo verde, 1 filorer)
damsel fit sp.

Plants in Bloom

Mustard, Palo verde, onion Plant, CA fuschia, milkwerd, rattlesnake weed, Vinegar weed, Silver leaf nightshade, bristly 6x-tongue, stork's bill, flax-leaved norseweed, Hooker's evening primvose, field bindweed

Other wildlife

MODO, RTHA, ECDO, HOOR, HOFI, BLPH, NOMO, CAKI, DCCO, CORA, GHOW, CALT, LEGO, GIBHE, LBV 1th, BUSH, alligator lizard (C), ACWO, EUST, SOSP, MALL, drage Cottontail,

Bumble Bee Survey Field Data Sheet	Unique Survey ID:	Bambus crotchii	Suryen #4
Page 1 of 5	Federal Recovery Per	mit Number:	0

Day Month	chisch	exectofpe		Ranc	ho	.,	Ranc	ho	
	Year			, Rancho Cielito		to	Rancho Cielito		ito
			Tempera	ture (F)	Est.	Wind Spe n)	ed	Est. C (%)	loud Cover
8 7	20	20	76 -	87	0	1/0	-1	0	1
Protocol Transect Name Length (from FWS (m) (if applicable)	Transect Width (m) (if applic.)	Transect ID (if applic.)	Total combine time spe surveyin (min) All surveyor	ed St ent Ting	art me	Survey End Time	Total Survey (m^2)	Area	Total Site Area (m^2) (including area not surveyed)

	roid of Survey Area (Decimal Degrees)	Survey Area Boundaries (Decimal Degrees)				
LAT	LONG	LAT North of Boundary	LAT South of Boundary	LONG West of Boundary	LONG East of Boundary	

Habitat Type (Circle all that apply) From National Land Cover Database, each classification is further defined here https://www.mrlc.gov/nlcd11_leg.php		% Est. Vegetative cover (circle one)	Number of native plant spp. in flower (circle one)	Description of dominant management practices on the survey area	Description of observed or likely stressors in survey area (e.g., use of pesticides, tilling, etc.)
Open water DevelopedPark Developed- Low/Med/High Barren Land Decid. Forest	Mixed Forest Ever.Forest Shrubland Grassland Pasture/Hay Cultivated Crop Woody wetland Herb. wetland Other	<10% 10-24% 25-49% 50-75% >75%	0 species 1-4 species 5-9 species 10- 14 spp 15+ spp	Maring landscape maintenen	mowins/filling
File/folder name	s of representative	e survey area p	hotograph(s)	Supporting map file,	/folder name(s)

Bumble Bee Survey Field Data Sheet Page <u>2</u> of <u>5</u>	Unique Survey ID: 4 Date: 7-8-2020	Transect ID (if applicable)
Were Bombus present? Y or N	Are Honey Bees (Apis) present?	Bombus to Apis Ratio (circle closest estimate 20:1, 10:1, 1:1, 1:10, or 1:20+)

Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	Actual (A) or Estimated (E) counts?	% ID Conf*	Distance (m) Distance sampling only
Carporter bee	3	total		Palo Verde (2) Solanum eleagy	atolian		
A.K.							
	. 22 =			L 1			

^{*}Self evaluation of your confidence in your identification of each species (95-100% confident, 75-94%, 50-74%, 5-49%, <5%).

Individual Bee Data for <i>B. crotchii</i> (Enter each <i>B. crotchii</i> capture point as separate row)					B. Poir	Distance Sampling only	
Species	No. of Females	No. of Males	No. of Queens	Flowers or species of plant being used	LAT	LONG	Distance (m)
B. crotchii					and the second section is the second	Open Control of the C	
B. crotchii						y .	
B. crotchii						1	
B. crotchii							
B. crotchii							

305

7-8-2000 Rancho Cielito Bombus #4 Transect Start Time Start GPS Coordinates **End Time End GPS Coordinates** Number 33.97682443 33.9744 2517 0180 at 7 0800 717.70911545 -117.70861285 33,97436952 33,97585708 (418 0812 -117,71062068 0814 -117.70926748 33,97579982 33,97500005 0823 0820 CLTQ -117.71039035 -117, 71127617 33.97510522 33.97419597 CLTIO 0824 0834 -117.71138438 -117,71486557 33.97526490 33,97441177 CLIII 0836 0845 -117.71492643 -117.71139173 33,97465967 33.97549458 0403 0846 61712 717.713 1878 -117.714866277 33,97513060 33.97615567 CU13 0908 0939 -117.71427002 -117,71062363 33,97667242 33,97580543 CLTH 0940 -117,71063697 0949 -117.71262262 33.9752144 33.97497648 Chr15 0956 0958 -117.71145500 117.70989997 Barne Coords 33,97515548 1002 CUTIL (loop) 0958 -117.71005663 33,97583016 33,97448447 CHI 1009 1004 -117.709 22848 -117.70927346 33,975 88158 33,97583016 cont. CUTT 1105 1100 -117,70927346 -117,70852388

7-8-2020 B. crotchii #4 Rancho Cielito

Transect Number	Start Time	Start GPS Coordinates	End Time	End GPS Coordinates
CHI	1012	33.97657667/	1016	33,97651733
CUTZ	1018	33.97643098	1023	33,97643667
113	1025	33.97626742	1033	33.97622737
4	1034	33.97604658	1039	33.975 96173
CLT5	1041	33.97576567 -117.70836138	1049	33.97584918 -117.7648433
UTL	1049	33.97551847	1057	33,97525585
			41	
1120				
7.6			=1	-11.1

Other Pollinators Observed

7-8-2020 Runcho Cielito Bombus#4 calabage white Apris common white W. papyrny blue ANHU ALHU Carpenter bee HOOR Sulfer Monarch Common white mouning dock group hairstreak

Plants in Bloom

narrow leaf milkweed Palo verde CA fuschia Vinegar weed bindweed silver leaf hightshade prickly sow thistle mustard bristly ox - topique twissy wreathplant Evening primrose

Other ELIST HOSPY GHOW YWAR ** CANG W. furer lizard ATFL ECDO aligator lizard (c) RTHA CAKI dragonfly Acwo MODO MALL milkweed beetle des. cottontail dancselfly HOFI Egyptian goose BUSH Ambullfrag (V) ladybug beetle GRHE LBV1** (1) SOSP CALT Nuwo BASW gopher (6) BHCO* LE60 click bootle BLPH CAgr. sq (b) E fox sq (o) pepsis wasp CORA Acco + (nesting) GRHE

APPENDIX B

Plant and Nectar Sources

Rancho Cielito Plant Species Compendium

VASCULA	AR PLANTS
	IS (GNETALES)
PINACEAE	PINE FAMILY
Pinus sp.	pine sp.
	AS (EUDICOTS)
ASTERACEAE	SUNFLOWER FAMILY
Ambrosia psilostachya	western ragweed
Artemisia douglasiana	Douglas' sagewort
Artemisia dracunculus	tarragon
Baccharis pilularis	coyote brush
Baccharis salicifolia	mule fat
Centaurea melitensis* (B)	tocalote
Cirsium vulgare* (B)	bull thistle
Erigeron bonariensis* (B)	flax-leaved horseweed
Erigeron canadensis	Canada horseweed
Helminthotheca echioides* (B)	bristly ox-tongue
Heterotheca grandiflora	telegraph weed
Iva hayesiana CRPR 2B.2	San Diego marsh elder
Lactuca serriola*	prickly lettuce
Matricaria discoidea (B)	pineapple weed
Senecio vulgaris* (B)	common groundsel
Silybum marianum* (B)	milk thistle
Sonchus asper* (B)	spiny sowthistle
Stephanomeria virgata (B)	twiggy wreath plant
ANACARDIACEAE	CASHEW FAMILY
Schinus molle* (B)	Peruvian pepper tree
APOCYNACEAE	DOGBANE FAMILY
Asclepias fascicularis (B)	narrow leaf milkweed
BORAGINACEAE	BORAGE FAMILY
Amsinckia tessellata (B)	fiddleneck
BRASSICACEAE	MUSTARD FAMILY
Capsella bursa-pastoris*	sheperd's purse
Hirschfeldia incana* (B)	short podded mustard
Sisymbrium orientale* (B)	Oriental hedge mustard
Sisymbrium irio* (B)	London rocket
CAPRIFOLIACEAE	HONEYSUCKLE FAMILY
Sambucus nigra (B)	black elderberry
CARYOPHYLLACEAE	CARNATION FAMILY
Cerastium glomeratum*	mouse-ear chickweed
CHENOPODIACEAE	GOOSEFOOT FAMILY
Atriplex semibaccata*	Australian saltbush
Chenopodium album*	white goosefoot
Chenopodium murale*	nettle leaf goosefoot
Salsola tragus*	Russian thistle
CONVOLVULACEAE	MORNING GLORY FAMILY
Convolvulus arvensis* (B)	field bindweed
Cressa truxillensis	alkali weed
EUPHORBIACEAE Crater actions	SPURGE FAMILY
Croton setiger	turkey-mullein
Euphorbia prostrata* (B)	petty spurge
Euphorbia prostrata* (B)	prostrate sandmat
Euphorbia sp.	sandmat
FABACEAE	LEGUME FAMILY
Lupinus sp. (B)	lupine

Medicago polymorpha* (B)	bur clover
Melilotus albus* (B)	white sweetclover
* 1	
Melilotus indicus* (B)	yellow sweetclover
Parkinsonia aculeata* (B)	Mexican palo verde
Spartium junceum* (B)	Spanish broom
FAGACEAE Oversus agrifelia	OAK FAMILY
Quercus agrifolia	coast live oak GERANIUM FAMILY
GERANIACEAE	
Erodium cicutarium* (B)	redstem stork's bill
Trichostema lanceolatum (B)	vinegarweed
Marrubium vulgare*	white whorehound
MALVACEAE	MALLOW FAMILY
Malva parviflora* (B)	cheeseweed mallow
MYRSINACEAE	MYRSINACEAE FAMILY
Lysimachia arvensis* (B)	scarlet pimpernel MYRTLE TREE
MYRTACEAE Fucalization on (R)	eucalyptus
Eucalyptus sp. (B)	WATER LILY FAMILY
NYMPHAEACEAE	
Nymphaea odorata* (B) ONAGRACEAE	white water lily EVENING PRIMROSE FAMILY
Epilobium canum (B)	
, , ,	California fuchsia
Oenothera elata (B)	evening primrose LOPSEED FAMILY
PHRYMACEAE Fruthrantha guttata (R)	yellow monkey flower
Erythranthe guttata (B)	
PLANTAGINACEAE	PLANTAIN FAMILY
Plantago major* (B)	common plantain PLANE TREE FAMILY
PLATANACEAE	
Platanus racemosa	Western sycamore
Platanus racemosa POLYGONACEAE	Western sycamore BUCKWHEAT FAMILY
Platanus racemosa POLYGONACEAE Rumex crispus*	Western sycamore BUCKWHEAT FAMILY curly dock
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B)	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B)	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B)	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B) SOLANACEAE	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa NIGHTSHADE FAMILY
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B) SOLANACEAE Datura wrightii (B)	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa NIGHTSHADE FAMILY jimsonweed
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B) SOLANACEAE Datura wrightii (B) Nicotiana glauca* (B)	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa NIGHTSHADE FAMILY jimsonweed tree tobacco
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B) SOLANACEAE Datura wrightii (B) Nicotiana glauca* (B) Solanum elaeagnifolium* (B)	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa NIGHTSHADE FAMILY jimsonweed tree tobacco silverleaf nightshade
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B) SOLANACEAE Datura wrightii (B) Nicotiana glauca* (B) Solanum elaeagnifolium* (B) URTICACEAE	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa NIGHTSHADE FAMILY jimsonweed tree tobacco silverleaf nightshade NETTLE FAMILY
Platanus racemosa POLYGONACEAE Rumex crispus* ROSACEAE Heteromeles arbutifolia (B) Prunus ilicifolia ssp. lyonii (B) Rosa californica SALICACEAE Populus fremontii Salix exigua Salix laevigata SAURURACEAE Anemopsis californica (B) SOLANACEAE Datura wrightii (B) Nicotiana glauca* (B) Solanum elaeagnifolium* (B) URTICACEAE Urtica urens*	Western sycamore BUCKWHEAT FAMILY curly dock ROSE FAMILY toyon Catalina cherry California wild rose WILLOW FAMILY Fremont cottonwood narrow leaved willow red willow RATTAIL FAMILY Yerba mansa NIGHTSHADE FAMILY jimsonweed tree tobacco silverleaf nightshade NETTLE FAMILY stinging nettle
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JUNCACEAE	RUSH FAMILY
Juncus acutus ssp. leopoldii CRPR 4.2	Southwestern spiny rush
POACEAE	GRASS FAMILY
Avena fatua*	wildoat
Bromus diandrus*	ripgut brome
Bromus madritensis subsp. rubens*	red brome
Cortaderia jubata*	pampas grass
Cynodon dactylon*	Bermuda grass
Festuca myuros*	rattail sixweeks grass
Festuca perennis*	Italian rye grass
Hordeum murinum*	foxtail barley
Lamarckia aurea*	goldentop grass
Polypogon monspeliensis*	annual beard grass
TYPHACEAE	CATTAIL FAMILY
Typha domingensis	narrowleaf cattail

California Native Plant Society (CNPS) Rare Plant Ranks (CRPR):

2B: Plants rare, threatened, or endangered in California but more common elsewhere

4: Plants of limited distribution; a watch list."

CNPS Threat Rank:

- 0.2 Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
- * Not native to California.
- (B) Blooming, potential nectar source

Sources:

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2020. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: Aug 03, 2020).

APPENDIX C

Wildlife Species Observed

Rancho Cielito Wildlife Species Compendium

Scientific Name	Common Name
	INSECTS
Coleoptera	Beetles
Coccinellidae sp.	lady beetle sp.
Cotinis mutabilis	green fruit beetle
Elateridae sp.	click beetle sp.
Diptera	Flies
Syrphidae sp.	hoverfly sp.
Hemiptera	True Bugs, Cicads, Hoppers, Aphids
Lygaeus kalmia	small milkweed bug
Hymenoptera	Ants, Bees, and Wasps
Apis mellifera*	western honey bee
Bombus melanopygus	black-tailed bumble bee
Pepsis chrysothemis	tarantula hawk
Vespula sp.	yellow jacket sp.
Xylocopa californica	western carpenter bee
Lepidoptera	Butterflies and Moths
Brephidium exilis	western pygmy-blue
Danaus plexippus	monarch
Hylephila phyleus	fiery skipper
Nymphalis antiopa	mourning cloak
Papilio rutulus	western tiger swallowtail
Phoebis sennae	cloudless sulphur
Pieris rapae*	cabbage white
Pontia protodice	common white
Strymon melinus	gray hairstreak
Vanessa atalanta	red admiral
Vanessa cardui	painted lady
Odonata	Dragonflies & Damselflies
Anisoptera sp.	dragonfly sp.
<i>Zygoptera</i> sp.	damselfly sp.
	AMPHIBIANS
Ranidae	True frogs
Lithobates catesbeianus*	American bullfrog
	FISH
Poeciliidae	Livebearers
Gambusia affinis	mosquitofish
	REPTILES
Anguidae	Lizards
Elgaria multicarinata	southern alligator lizard
Phrynosomatidae	Spiny Lizards
Sceloporus occidentalis	western fence lizard
	BIRDS
Accipitridae	Hawks

Buteo jamaicensis	red-tailed hawk (nesting)
Aegithalidae	Bushtits
Thryomanes bewickii	Bewick's wren
Psaltriparus minimus	bushtit
Anatidae	Geese, Ducks, & Swans
Alopochen aegyptiaca*	Egyptian goose
Anas platyrhynchos	mallard
Branta canadensis	Canada goose
Bucephala albeola	bufflehead
Oxyura jamaicensis	ruddy duck
Apodidae	Swifts
Aeronautes saxatalis	white-throated swift
Ardeidae	Herons, Egrets, & Bitterns
Ardea herodias	great blue heron (nesting colony)
Butorides virescens	green heron
Egretta thula	snowy egret
Cardinalidae	Cardinals
Piranga ludoviciana	western tanager
Charadriidae	Plovers, Dotterels, and Lapwings
Charadrius vociferus	killdeer
Columbidae	Pigeons and Doves
Streptopelia decaocto*	Eurasian collared dove
Zenaida macroura	mourning dove
Corvidae	Jays and Crows
Corvus brachyrhynchos	American crow
Corvus corax	common raven
Fringillidae	Finches
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Hirundinidae	Swallows
Hirundo rustica	barn swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Tachycineta bicolor	tree swallow
Icteridae	Blackbirds and allies
Icterus cucullatus	hooded oriole
Molothrus ater*	brown-headed cowbird
Quiscalus mexicanus	great-tailed grackle
Laridae	Gulls, Terns, and Skimmers
Thalasseus sp.	tern sp.
Mimidae	Mockingbirds and Thrashers
Mimus polyglottos	northern mockingbird
Parulidae	New World Warblers
Cardellina pusilla	Wilson's warbler
Geothlypis trichas	common yellowthroat
Setophaga petechia**	yellow warbler
Passerellidae	Sparrows and Towhees

Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Passeridae	Old World Sparrows
Passer domesticus*	house sparrow
Phalacrocoracidae	Cormorants
Phalacrocorax auratus**	double-crested cormorant (nesting colony)
Picidae	Woodpeckers
Dryobates nuttallii	Nuttall's woodpecker
Melanerpes formicivorus	acorn woodpecker
Podicipedidae	Grebes
Podilymbus podiceps	pied-billed grebe
Strigidae	True Owls
Bubo virginianus	great horned owl
Sturnidae	Starlings
Sturnus vulgaris*	European starling
Trochilidae	Hummingbirds
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
Troglodytidae	Wrens
Thryomanes bewickii	Bewick's Wren
Tyrannidae	Tyrant Flycatchers
Myiarchus cinerascens	ash-throated flycatcher
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Tyrannus vociferans	Cassin's kingbird
Vireonidae	Vireos
Vireo bellii pusillus***	least Bell's vireo
	MAMMALS
Canidae	Canines
Canis latrans	coyote
Geomyidae	Gophers
Thomomys bottae	Botta's pocket gopher (burrow)
Leporidae	Rabbits and Hares
Sylvilagus audubonii	desert cottontail
Sciuridae	Squirrels
Otospermophilus beecheyi	California ground squirrel
Sciurus niger*	eastern fox squirrel
+N1 ±	

^{*}Nonnative species

^{**}CDFW California Species of Special Concern/CDFW Fully Protected Species/Watch List Species

^{***}Federally endangered or threatened/State endangered or threatened

APPENDIX D

Representative Photographs



Photo 1. Vegetation in eastern grassland of survey area, facing north. April 15, 2020.



Photo 2. Blooming mustard in southwestern portion of grassland in survey area, facing west. April 15, 2020.



Photo 3. One of two *Bombus melanopygus* observed foraging in Catalina cherry at the northeastern portion of survey area. April 15, 2020.



Photo 4. Dried vegetation in western portion of grassland in the survey area, facing east. May 13, 2020.



Photo 5. Dried and mowed vegetation located in the central portion of the survey area near the concrete channel, facing north. May 13, 2020.



Photo 6. Grasslands located in the eastern portion of the survey area, facing south. June 10, 2020.



Photo 7. Mowed vegetation along southern boundary in western portion of survey area, facing west. June 10, 2020.



Photo 8. Vegetation within survey buffer area along the western shoreline, facing east. June 10, 2020.



Photo 9. Eastern portion of lake shoreline within survey area, facing south. June 10, 2020.



Photo 10. Blooming Palo Verde along eastern portion of survey area, providing a nectaring source for carpenter bees. June 10, 2020.



Photo 11. View of Lake los Serranos along the eastern shoreline, facing west. July 8, 2020.



Photo 12. Vegetation lining the eastern portion of shoreline within survey area, facing south. July 8, 2020.

Representative Photographs



Photo 13. Burrows in southwestern portion of survey area providing potential nesting habitat. July 8, 2020.



Photo 14. Vegetation along southwest shoreline within survey area, facing west. July 8, 2020.

2020 Least Bell's Vireo Survey Report

Rancho Cielito Project

San Bernardino County, California

Prepared by ECORP Consulting, Inc. for:

City of Chino Hills Community Development Department 14000 City Center Drive Chino Hills, California 91709

> Report Prepared: July 30, 2020



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Appendix A - Representative Photographs

Appendix B - Least Bell's Vireo Survey Datasheets

Appendix C - Wildlife Species List

1.0 INTRODUCTION

This report presents the results of focused surveys for the least Bell's vireo (LBVI, *Vireo bellii pusillus*) conducted by ECORP Consulting, Inc. (ECORP) for the Rancho Cielito Project (Project) during the 2020 breeding season.

1.1 Project Location and Description

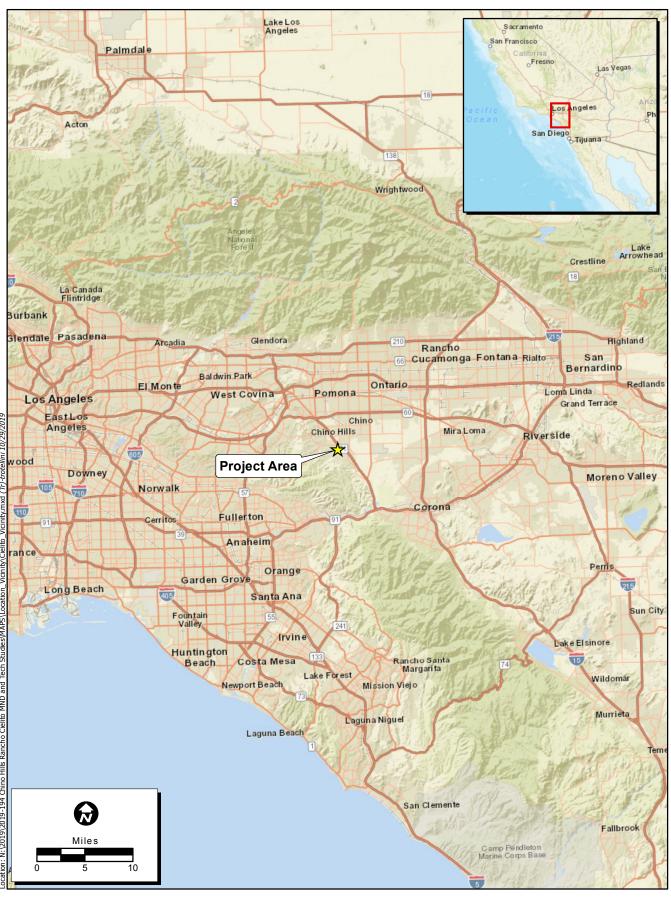
The Project Applicant proposes to develop a multi-building apartment complex called Rancho Cielito. The proposed Project would include approximately 354 residential units and associated features and facilities including two clubhouses, a leasing/management office, three active recreation areas, passive open spaces, trails, a maintenance garage, and associated infrastructure.

The Project site is located within the City of Chino Hills in San Bernardino County (Figure 1. *Project Location and Vicinity*). The Project site is generally located north of Los Serranos Boulevard/Valle Vista Drive, south of the Lake Los Serranos Club, and comprises ±48.37 acres (29.50 acres of dry land and 18.87 acres of water surface area that make up Lake Los Serranos [Lake]). The Project site is situated between Pipeline and Ramona Avenue, along the northern end of Los Serranos Boulevard/Valle Vista Drive to the southern end of the Lake Los Serranos Club in the City of Chino Hills (Figure 2. *Project Location*). The Project site, as depicted on the U.S. Geological Survey (USGS) 7.5-minute Prado Dam topographic quadrangle, falls within Sections 22 and 27, Township 2 South and Range 8 West, San Bernardino Baseline Meridian (USGS 1960). The property is composed of three legal parcels: Assessor Parcel Numbers 1025-561-04, -05, and -06 (Figure 2) at an elevation of approximately 645 feet above mean sea level.

The Project site consists primarily of undeveloped land, composed of disturbed annual grasslands with scattered ornamental trees and shrubs and cottonwood (*Populus fremontii*) willow (*Salix* species [spp.]) riparian vegetation along the banks of the Lake. Hickory Creek enters the property at the southwestern corner of the Lake and an unnamed drainage runs throughout the central portion of the Project site.

1.2 Least Bell's Vireo Status and Natural History

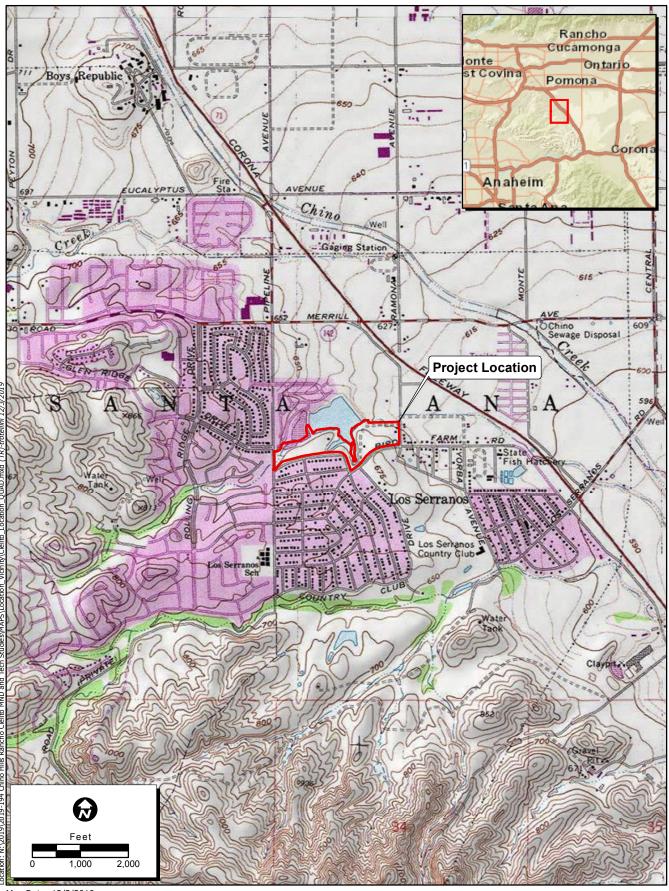
The LBVI was state-listed as endangered in 1980 and was federally-listed as endangered in 1986 (California Department of Fish and Wildlife [CDFW] 2019a, United States Fish and Wildlife Service [USFWS] 1986). The LBVI is endemic to California and Baja California, Mexico. It is a highly migratory species that only occurs in the region during the breeding season. The males arrive sometime in late March to April and establish breeding territories, and the females arrive shortly thereafter (USFWS 1998). The least Bell's vireo usually returns to the wintering grounds sometime in August to September. The species is dependent upon riparian habitat during the breeding season and prefers willow-dominated woodland or scrub that typically exists along streams and rivers (Franzreb 1989). Other habitat types used by this species include mule fat (*Baccharis salicifolia*) scrub, mixed oak (*Quercus* spp.)/willow woodland, mesquite woodland (*Prosopis* spp.), and elderberry scrub (*Sambucus* spp.). Habitat characteristics that appear to be essential for vireo occupation include dense cover from three to six feet in height for nesting and foraging, and a stratified canopy providing both foraging habitat and song perches for territorial advertisement. Critical Habitat for the LBVI was designated on March 4, 1994 (USFWS 1994). The study area does not fall within any Critical Habitat for LBVI.



Map Date: 10/29/2019
Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korsa, Esri (Thailand), NGCC, (c) Qens/SteeMap contributors, and the GIS User Community



Figure 1. Project Vicinity



Map Date: 12/3/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



2.0 SURVEY METHODOLOGY

2.1 Literature Review

A review of the CDFW's California Natural Diversity Database (CNDDB) was performed in the Prado Dam and the eight surrounding USGS 7.5-minute topographic quadrangles before surveys were conducted to determine the nearest recorded locations of LBVI to the Project site. In addition, a literature review was completed to determine the historic status of LBVI in and around the Project site.

2.2 Least Bell's Vireo Surveys

Surveys for LBVI were conducted by a qualified ECORP biologist familiar with LBVI songs, calls, scolds, and plumage characteristics of adults and juveniles in accordance with the 2001 USFWS protocol guidelines (USFWS 2001). A total of eight surveys were conducted between April 13 and July 9, 2020. The protocol recommends that surveys be conducted between dawn and 1100, when weather conditions are favorable (no excessive fog, wind, rain, cold, heat). All areas of suitable LBVI habitat within the Project site and 500-foot buffer were traversed on foot with frequent stops to look and listen for LBVIs. Precautions were taken to prevent disturbance of habitats, birds, and nesting behavior. Any LBVI detections (e.g. vocalization, foraging behavior, nesting behavior, etc.) or other sensitive biological resources were mapped using a Global Positioning System- (GPS)-enabled smartphone application (i.e., Collector for ArcGIS) in World Geodetic System 1984 (WGS84) Web Mercator. Digital photographs were taken to document LBVI (if possible), habitats, and other wildlife during the surveys.

3.0 RESULTS

3.1 Least Bell's Vireo Results

The literature review identified several observations of LBVI within five miles of the Project site, with the closest being documented in 2010 approximately two miles away (CDFW 2019b). Suitable habitat on the Project site consisted of a cottonwood willow riparian woodland riparian along the banks of the Lake. Unbanded male LBVIs were detected in and adjacent to the Project site on May 22, June 2, and July 9, 2020 during focused surveys and incidentally on July 8 during a Crotch's bumblebee survey. These individuals were observed and heard constantly advertising from various perches extending from the western edge of the survey buffer in Hickory Creek to the southwestern portions of Lake (Figure 3). The riparian habitat in Hickory Creek and along the southwest bank of the Lake provides the best breeding habitat for LBVI (Appendix A, Representative Photographs). LBVI datasheets are included as Appendix B.

Weather conditions during the time of surveys are listed in Table 1.

Table 1. Survey Dates, Personnel, and Conditions

Date	Surveyors ¹	Tir	me	Tempera	ture (°F)	Cloud (%		Wind (m)	
		start	end	start	end	start	end	start	end
4/13/20	BZ, CL	0600	1048	54	57	100	100	1-2	1-2
4/24/20	BZ	0552	0905	61	77	0	0	1-2	1-2
5/11/20	BZ	0535	0915	64	66	100	75	2-4	1-3

Date	Surveyors ¹	Tir	me	Tempera	ture (°F)	Cloud (%		Wind (m)	•
		start	end	start	end	start	end	start	end
5/22/20	BZ	0530	0852	50	54	75	50	3-7	1-4
6/2/20	BZ	0535	1005	64	77	5	95	1-2	1-3
6/12/20	BZ	0524	0951	59	73	0	0	0-1	1-3
6/29/20	BZ	0528	1007	61	68	100	70	0-1	3-5
7/9/20	BZ	0539	0957	61	73	100	0	0-1	1-2

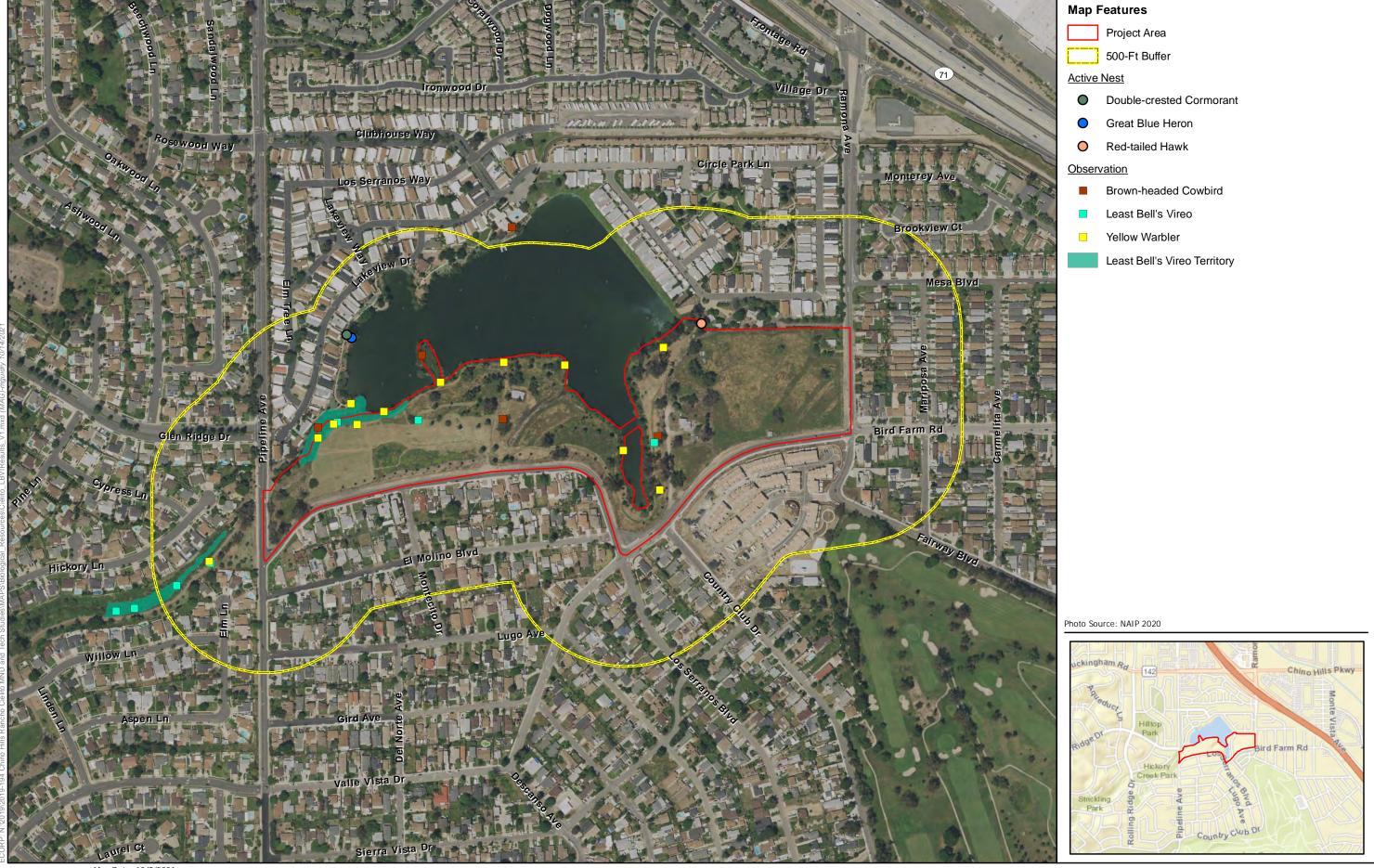
¹BZ=Brian Zitt, CL=Carley Lancaster

In addition to LBVI detections, other sensitive species observed included yellow warblers (*Setophaga petechia*), a CDFW Species of Special Concern (SCC, CDFW 2019c) and several nesting birds: red-tailed hawk (*Buteo jamaicensis*), great blue heron (*Ardea herodias*), double-crested cormorant (*Phalacrocorax auritus*), Canada goose (*Branta canadensis*), mallard (*Anas platyrhynchos*), acorn woodpecker (*Melanerpes formicivorus*), hooded oriole (*Icterus cucullatus*), bushtit (*Psaltriparus minimus*), black phoebe (*Sayornis nigricans*), and barn swallow (*Hirundo rustica*).

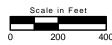
Brown-headed cowbirds (*Molothrus ater*) were observed in Project area on a regular basis, although it is likely that the same individuals were observed over the course of the surveys. The brown-headed cowbird is a nest parasite, meaning that does not build its own nest or tend to its own young. Instead, female cowbirds deposit one or more eggs into a host species' nest, often removing or destroying some of the host's eggs. The widespread loss of riparian habitat and brood parasitism by the brown-headed cowbird are the major causes of the decline for LBVI (Garrett and Dunn 1981). The number of cowbirds observed during each survey is provided in Table 2. A comprehensive list of wildlife species observed during the surveys is included as Appendix C.

Table 2. Brown-Headed Cowbird Observations

Data	Number Observed				
Date	Males	Females	Juveniles		
4/19/2019	2	0	0		
5/9/2019	2	3	0		
5/20/2019	2	1	0		
5/30/2019	1	1	0		
6/18/2019	2	2	0		
6/24/2019	1	0	0		
7/5/2019	3	1	0		
7/15/2019	1	0	0		









4.0 CONCLUSION AND DISCUSSION

Focused surveys were conducted according to agency-accepted protocol guidelines for LBVI during the 2020 breeding season. Over the course of six weeks, male LBVIs were detected on four separate occasions between late May and early July. It is believed that at least two un-banded males were present, but it is unclear if the same individuals were observed during separate surveys. All detections were concentrated on the western portions of the survey area, from Hickory Creek to the southwestern portion of the Lake. Other than male's advertising, no pairs or nests were detected. Observations of LBVI previously documented within 5-miles of the Project area have been irregular and typically coincide with seasonal migrations through the area (CDFW 2019b). As described by the Draft Recovery Plan for the LBVI, the species is migratory and overwinters in southern Baja California, Mexico, breeding in California and northern Baja California, Mexico. It typically returns to its southern California breeding grounds between mid-March and early April and departs between late July and late September.

Yellow warblers were observed on several occasions throughout the southern riparian areas of the Lake. The species has potential to nest within the riparian habitat on Project site. In addition to yellow warbler, several native birds also have potential to nest in the Project site. The federal Migratory Bird Treaty Act (MBTA) makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations Part 10. In addition to the MBTA, CDFW (formerly California Department of Fish and Game) also enforces the protection of non-game native birds. California Fish and Game Code §§ 3503 and 3503.5 mandate the protection of California non-game native birds' nests, and California Fish and Game Code § 3800 makes it unlawful to take California native non-game birds. These species may be directly affected by the proposed Project activities through removal of nests, removal of breeding habitat and exposure to construction noise, dust, and lighting that could result in nest abandonment. As such, removal of vegetation should be conducted outside of the bird nesting season (February 1-September 15). Construction activities should be limited to the bird non-breeding season (September 16 through January 31) to the maximum extent possible. Should the Project schedule require construction during the bird breeding season, nesting bird/pre-construction surveys within 500 feet of the Project impact area would be required to ensure that the Project does not impact nesting birds.

5.0 CERTIFICATION

I hereby certify that the statements furnished above present the data and information required for this biological survey results report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date:	7/30/2020	SIGNED:	B-3
			Brian Zitt
			Senior Biologist

6.0 LITERATURE CITED

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USGS. 1960. 1:24000 topographic quadrangles, 7.5-minute topographic series, Prado Dam.

LIST OF APPENDICES

Appendix A - Representative Photographs

Appendix B - Least Bell's Vireo Survey Datasheets

Appendix C - Wildlife Species List

APPENDIX A

Representative Photographs



A) Hickory Creek, west of Pipeline Avenue, looking west along trail. Photo taken on April 13, 2020.



B) Hickory Creek, east of Pipeline Avenue, looking east towards Lake Los Serranos. Photo taken on June 2, 2020.



C) Hickory Creek, between Pipeline Avenue and the confluence with Lake Los Serranos, looking east. Photo taken on April 24, 2020.



D) Eastern portion of Lake Los Serranos looking west towards the confluence with Hickory Creek looking west. Photo taken on July 9, 2020.



E) Southern riparian bank adjacent confluence of Hickory Creek and Lake Los Serranos with recent mowing, looking west. Photo taken on June 12, 2020.



F) Southern bank of riparian habitat along Lake Los Serranos and eastern edge of the habitat used by male least Bell's vireos for advertisement, looking east. Photo taken on April 13, 2020.



G) View of upland habitat looking towards Lake Los Serranos adjacent to its southern cove. Photo taken on June 12, 2020.



H) View along the eastern edge of Lake Los Serranos. Photo taken on April 13, 2020.

APPENDIX B

Least Bell's Vireo Survey Datasheets



LEAST BELL'S VIREO (Vireo bellii pusillus) SURVEY FORM

Date: 13APR-2020 Project # 2019-194
Survey number: #1 Project Name Rancho Cialito

OBSERVERS:	SURVEY CONDITIONS				
BZ, CL	5.	Time	Temp (F)	Wind (mph)	% Cloud Cover
	START	0600	54	1-2	100
	END	1048	57	1-2	100

Vireo Status	Location in Survey Area	~ Age	Sex	Number Observed	Bands Y/N	Band Color
Paired	NA -				1	211118
Territorial Male	NA -	20.31			1-1	
Juvenile	N/A -	21-2			tel.	7-2
	Additional Comments (Beh	avior, Act	ivity, L	ocation in C	anopy, etc.)	
	NA					

BROWN-HEADED COWBIRD OBSERVATIONS			
# of individuals	3 (I mule and 2 female)		
Locations	33.97627493,-117.712516		

OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)		
Species	YEWA	
# of individuals	1	
Locations	Southern Bank of Channel near Lake	



LEAST BELL'S VIREO (Vireo bellii pusillus) SURVEY FORM

Date: _13A[R2020	Project # _ 2019-194	
Survey number: #1	Project Name Rancho Ciclita	

	INC	IDENTAL SPECIES OF	BSERVED	
RTHA N	EST (ACTIVE)		YEWA	Fox Sovial
Acmo	ATVI	CAGO	SPTO	Cottonfail
ALHU	BEKI	GBHE/DECO	rest (rosky)	CALA
BF	BLPH	area		Redeared 81ide
AMCO	BHCO	KILL		, vol. vo.
AMGO	CA grand se	And RUDU		
AMKE	COYE	LESC		
DBCO	HOOR	RSC		
EYCD	RCKI	HOME		
NRWS	SPSA	PBar	1	
BASW	NRWS	SNGO		
ENST	BHCO	BusH		*
GTGR	CENA	WESL		
HOFI	WCSP			
WODO				
SOSP	Mapa			
1. Free Li	ead YRWA			

ADDITIONAL NOTES:	



Date: 24APR2020 Project # 2019-194
Survey number: 2 Project Name Rancho Cielito

OBSERVERS:					
BZ		Time	Temp (F)	Wind (mph)	% Cloud Cover
	START	0552	61	1-2	0
	END	0905	77	1-2	0

	LEAST BELL'	S VIREO	OBSER	VATIONS		
Vireo Status	Location in Survey Area	~ Age	Sex	Number Observed	Bands Y/N	Band Color
Paired						
Territorial Male	MA	***				
Juvenile	1 1 1			~		
	Additional Comments (Beha	avior, Act	ivity, L	ocation in Ca	nopy, etc.)	

	BROWN-HEADED COWBIRD OBSERVATIONS
# of individuals	one
Locations	branch of enc. 33.97559415, -117.711496

	OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)
Species	YEWA
# of individuals	DNE
Locations	Bouncing between interpolished point on southern book of Lake



Date: April 24, 2020 Project # 2019-194
Survey number: #2 Project Name Racho Ciclito

	INCIDENT	TAL SPECIES OBSERVED	
HOFI	Cottonten)	CAKI	
MODO	Acwo	CARO	
ANHU	Amao	WETA	
CAGO	wesp	RAHA - actla nest	
COOT	ALHU	SESA	
Brish DCCO GOHE GREG SNEG	BLPH eating (active) GCSP KILL	Domestic cost Amer Tuv	
SOSP		point taken true soviered 3 male, I female	
HOMO HOOR BF CA ground		5)ider	
SB Munio GRHE	Longon	non buss - fry?	

ADDITIONAL NOTES:	



Vireo Status Paired Cocation in Survey Area Age Sex Number Bands Y/N Ferritorial Male Juvenile Additional Comments (Behavior, Activity, Location in Canopy, etc.)	Survey num	1		Pio	ject Nan	ne .	KANCH	CII	ELIT	D
Time Temp (F) Wind (mph) % Cloud Cover START 0535	OBSERV	/ERS:			SURVE	v c	ONDITIO	NC		
START 0535 64 2-4 100 END 0915 66 1-3 75 LEAST BELL'S VIREO OBSERVATIONS Vireo Status Paired Territorial Male Juvenile BROWN-HEADED COWBIRD OBSERVATIONS # of individuals OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) Species # of individuals	BZ		Time	e				100	0/-	Cloud Cover
LEAST BELL'S VIREO OBSERVATIONS Vireo Status Location in Survey Area Age Sex Number Observed Y/N Bands Observed Y/N Bands Observed Y/N Bands Observed Status Discovery Area Age Sex Number Observed Status Observed Status Observed Status Observed Status Observed Status Observed Status Discovery Observed Status Observed		START	05		4.002	_	1. The P.		70	THE CANADA
LEAST BELL'S VIREO OBSERVATIONS Vireo Status Paired Territorial Male Juvenile BROWN-HEADED COWBIRD OBSERVATIONS F of individuals OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) For individuals OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)		END				_				
Status Paired Paired Territorial Male Juvenile BROWN-HEADED COWBIRD OBSERVATIONS ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of idividuals			09	15	66		1-	5		75
Paired Territorial Male Juvenile BROWN-HEADED COWBIRD OBSERVATIONS ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of idividuals	Vireo	LEAST	BELL'			_				-244
Territorial Male Juvenile Additional Comments (Behavior, Activity, Location in Canopy, etc.) BROWN-HEADED COWBIRD OBSERVATIONS of individuals OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) species of individuals	Status	Location in Survey	Area	~ Ag	e Sex	100				Band Color
Additional Comments (Behavior, Activity, Location in Canopy, etc.) BROWN-HEADED COWBIRD OBSERVATIONS of individuals OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) Species of individuals	Paired	1		115		Ť	200,100	- 11	.,	
Additional Comments (Behavior, Activity, Location in Canopy, etc.) BROWN-HEADED COWBIRD OBSERVATIONS ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of addividuals										himbs.
Additional Comments (Behavior, Activity, Location in Canopy, etc.) BROWN-HEADED COWBIRD OBSERVATIONS ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of addividuals		(/)				di	i de			*=107
BROWN-HEADED COWBIRD OBSERVATIONS f of individuals ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of individuals	Juvenile					-				()
BROWN-HEADED COWBIRD OBSERVATIONS # of individuals OCCATIONS OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) Species of of individuals		Additional Comments	(Beha	avior. A	Activity, L	oca	tion in C	anopy.	etc.)	
BROWN-HEADED COWBIRD OBSERVATIONS ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of dividuals									0.0.7	The state of
BROWN-HEADED COWBIRD OBSERVATIONS f of individuals OCCATIONS OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of individuals										
BROWN-HEADED COWBIRD OBSERVATIONS f of individuals ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of individuals										41.010
BROWN-HEADED COWBIRD OBSERVATIONS f of individuals cocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) species of individuals										
BROWN-HEADED COWBIRD OBSERVATIONS f of individuals ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of individuals			-							
ocations OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) pecies of individuals										
OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) Species of adividuals	t of individua		EADE	cowi	BIRD OB	SER	EVATION:	5		
OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.) Species of adividuals		113	1	1						
pecies of adividuals	ocations		X							
pecies of adividuals		OTHER SENSITIVE S	PECIE	S OBS	ERVATIO	NS	(SWWF,	YBC, E	TC.)	
ndividuals	pecies	\sim	Y							
		+ X/								



Date: 3

Project # 2019-194

Survey number: 11MAY 2020

Project Name Ranch Gillite

	INCIDE	ENTAL SPECIES OBSERVED	
EGG0 DBCO	AMCO BASW	Cottontail Fox Squared	
Collection	DCCO	Raccon	
RTHA ANHU HOOR ACWO ALHU AMCR BUSH BLPH	EXCD MODO ENST RTHA SOSP GRHE W. Fencelized Redered slide	CATO CA grand squirel RSHA	
AMGO GREG MALL KILL	NOMO HOFI GTGR CAKI HOSP SPSA		

	ADDITION	AL NOTES:		
	- in -			



Date: 2019-194

Survey number: 4 Project Name Ranche Cielito

OBSERVERS:			SURVEY (CONDITIONS	
BZ		Time	Temp (F)	Wind (mph)	% Cloud Cover
	START	0530	59	1-2	0
	END	0949	69	1-2	0

	LEAST BELL'	S VIREO (OBSER	VATIONS		
Vireo Status	Location in Survey Area	~ Age	Sex	Number Observed	Bands Y/N	Band Color
Paired				3330.100		3-1
Territorial / Male	33.9755571B -117.713951	+1	ಕ	2	N	-
Juvenile						

Additional Comments (Behavior, Activity, Location in Canopy, etc.)

*Continuous song bouncing between perches of willow/cottonwoods

along channel that feeds Lake (mostly on southern bunk). Obs

individual for approximately 1:10 moved a 30 meters non-stop song.

- Another individual was observed (unbounded) further apstream in thickey

Creek - also completely in song. Obs. ~:30

	ROWN-HEADED COWBIRD OBSERVATIONS
# of individuals	6 (58,19)
Locations	Pinetree opp. lake 33.97795763,-117.71135

	OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)
Species	YEWA
# of individuals	3
Locations	Various locations around Western Southern portions of Lake bond



Date: 22MAY 2020 Project # 2019-194
Survey number: #4 Project Name Ranche Cielito

		NCIDENTAL SPECIES	S OBSERVED	
ANHU HOFI NOMO BUSH ACWO BHCO CATO EUBD DECO GBHE	CAKI COYE ENST KILL RTHA SOSP YENA	LBVI		Fox squired Cothetail Released Slider BSF
CAGO MUDU RUDU GREG GTER HOOR BLPH CATO				- I

ADDITIONAL NOTES:

Construction on road - loud drilling - LBVI say through it (Pipeline Ave. adjacent to creek)



Date: _ 02 Jul 2020	Project #	2019-194
Survey number: #5	Project Name Rancho	Cielita

OBSERVERS:	SURVEY CONDITIONS						
B2	7.	Time	Temp (F)	Wind (mph)	% Cloud Cover		
	START	0535	64	1-2	5		
	END	1005	77	1-3	95		

Vireo	LEAST BELL'S		_			To the same
Status	Location in Survey Area	~ Age	Sex	Number Observed	Bands Y/N	Band Color
Paired	Но	_			.,,,	
Territorial Male	immediately ontside survey buffer in Hickory creek w. of trickory creek w. of	+1	8	one	N	
Juvenile	Ø					

Individual was in song continuously during observation, likely one of the individuals from previous visit trying to attract a mate.

BI	ROWN-HEADED COWBIRD OBSERVATIONS	
# of individuals	Ø	
Locations		

OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)			
Species	N/A		
# of individuals	Ø		
Locations			



Project # 2019 - 194
Project Name Rancho Cielito Date: 02 JUN 2020 Survey number: #5

INCIDENTAL SPECIES OBSERVED				
HOFI	cottonteils			
NOMO	Dullfrag Cactive calling)		
DCCO	Slider			
GBHE	CAKI			
ANHU	AMGO			
Bush	Rudu			
Sost	ENOT	7		
CAGO	GREG			
HOOR	GTGR			
RTHA	Acmo			
AMCO	BCNH			
CATO	RSC			
M000	KILL			
BLPH	MALL			
tree squimel	LBVI - & in Hickory C	reek		

ADDITIONAL NOTES:

Site was being moved, near were LBVI was detected.
No LBVI detected on Project site



Date: 12 JUN 2020_	Project #
Survey number: # 6	Project Name Rancho Cielito

OBSERVERS:	SURVEY CONDITIONS					
BZ ,	14	Time	Temp (F)	Wind (mph)	% Cloud Cover	
	START	0524	59	0-1	٥	
	END	0951	73	1-3	0	

Vireo Status	LEAST BELL' Location in Survey Area	~ Age	Sex	Number Observed	Bands Y/N	Band Color
Paired	Ø	_	_	_	1,4	-
Territorial Male	Ø	_	-	- =	-	-
Juvenile	Ø	_	_		-	
	Additional Comments (Beh	avior, Act	ivity, L	ocation in Ca	nopy, etc.)	
	NA					

	BROWN-HEADED COWBIRD OBSERVATIONS
# of individuals	3 (2 separate observations: 1 pair and 19)
Locations	PAIR: 33,9754961, -117.714239 4:33.97637516;117.712695

	OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)
Species	YEWA
# of individuals	2
Locations	Riperian zone along like (southern bank). Confirmed of creek and like



 Date:
 12 JUN 2020
 Project #
 2019-194

 Survey number:
 #6
 Project Name
 Rancho Cielizo

	INCIDENTAL SPECIES	OBSERVED
HOFI	Sose	
Nomo	CATO	
EUST	BHCO (pair)	
Acro	WODO	
RUDU	tru scinel	
BLAH	RTHA	
DCCO	Nuwo	
GRHE	FOTE	
CAGO	LEGO	
MUDU	GTGR	
ANHU		
YEWA	Slider	
HOOR	BF	
WEKI	COYE	
BusH		

ADDITIONAL NOTES:	
	ADDITIONAL NOTES:



Date: _	295UN2020	Project #	2019-194
Survey	number: #7	Project Name Rancho	

OBSERVERS:	SURVEY CONDITIONS						
82		Time	Temp (F)	Wind (mph)	% Cloud Cover		
	START	0528	61	8-1	100		
	END	1007	68	3-5	70		

	LEAST BELL'	S VIREO	DBSER	VATIONS		
Vireo Status	Location in Survey Area	~ Age	Sex	Number Observed	Bands Y/N	Band Color
Paired	Ø		(e ²)			
Territorial Male	y				1	
Juvenile	D					
	Additional Comments (Beha	avior, Act	ivity, L	ocation in Ca	nopy, etc.)	

NA

BROWN-HEADED COWBIRD OBSERVATIONS					
# of individuals	PAIR - mating in Eucalyptus tree				
Locations	33.97537475,-117.709203				

OTHER SENSITIVE SPECIES OBSERVATIONS (SWWF, YBC, ETC.)					
Species	Ø				
# of individuals	NA				
Locations	NIK				



Date: _	29 JUN2020	Project # 2019-194	
Survey	number: #7	Project Name Reneto Cielito	

	INCI	DENTAL SPECIES OBSERVED	
CASJ	HOOR BEWR	HOSP COYE	
SHG0 SHEG	BF	Tra 38-21	
NOMO HOFI	DCCO GBHE	MAWR RSC SBMU	
BASW	LEGO	NUWO GRHE	
Cottontail PBGR	RTHA	W. fenez Lizard	
AMCO MODO	FOTE		
Slider	EUST		
ANHU SOSP	Feral Cat BLPH ACWO	-1 -1	

ADE	OITIONAL NOTES:	



Date:09 Survey nun	nber:	€B	Project # 2019-194 Project Name Ranco Cielito							
OBSER	VERS:				SURVE	Y CONDITIO	NS			
B7	2		Time	e	Temp (F) Wind (n	nph)	% (Cloud Cover	
		START	05	39	61	0-1			100	
		END		57	73	1-2			0	
		LFAST	RELL"	CVIDE	O OBSER	VATIONS				
Vireo Status	Location	in Survey	Area	~ Ag		Number Observed	Bane Y/I	33.7%	Band Color	
Paired						Observed	-,,			
Territorial Male	IN BW	5664		1+	\$	1.	7	0	_	
Juvenile	21 136							-		
	Additional	Comments	(Reh	avior A	ctivity I	ocation in Ca	nony (otc)		
veget	ation m	ignt cr	'ne	ar the	edge	of Proje	et b.	non	r, sawa	
# of individ	uale	BROWN-H	IEADEI	cow	BIRD OB	SERVATIONS				
# or inaivial	uais									
Locations										
	OTHER S	ENSITIVE S	SPECIE	S OBS	ERVATIO	NS (SWWF, Y	BC, ET	C.)		
Species	YEV	VA				3/11/11				
# of individuals	2									
Locations	Forasin	in willow	1 - 5	in the	- Ripa	in Bank				



Date: 09 Jul 2020 Project # 2019-194
Survey number: #8 Project Name Rancho Cielito

HOFI	BF	Cotherail
Nomo	Feral Cat	CA ground = arred
ANHU	CAGO	•
AMCR	WFliend	
MODO	YEWA	
FOTE	AMKE	
SBHE	ROPI	
PBGR	EUCD	
HOOR	MALL	
EUST ACWO	KILL	
CATO	BCNH	
BLPH	OCWA	
Hose	SBMU	
RTHA	LBVI	
LEGO		

ADDITIONAL NOTES:	

APPENDIX C

Wildlife Species Observed

SCIENTIFIC NAME	COMMON NAME
MALACOSTRACA	CRUSTACEANS
Cambaridae	Crayfish and Shrimp
* Procambarus clarkii	Red Swamp Crayfish
OSTEICTHYES	BONY FISH
Poecilidae	Livebearers
* Gambusia affinis	Western Mosquitofish
AMBIPHIA	AMPHIBIANS
	True Frogs
Ranidae	
* Lithobates catesbeianus	American Bullfrog REPTILES
REPTILIA	
Emydidae	Box & Water turtles
* Trachemys scripta elegans	Red-eared Slider
Iguanidae	Iguanids
Sceloporus occidentalis	Western Fence Lizard
Uta stansburiana	Side-blotched Lizard
AVES	BIRDS
Podicipedidae	Grebes
Podilymbus podiceps	Pied-billed Grebe
Phalacrocoracidae	Cormorants
** Phalacrocorax auritus	Double-crested Cormorant
Ardeidae	Herons and Egrets
Ardea herodias	Great Blue Heron
Ardea alba	Great Egret
Butorides virescens	Green Heron
Egretta thula	Snowy Egret
Nycticorax nycticorax	Black-crowned Night-Heron
Cathartidae	Vultures
Cathartes aura	Turkey Vulture
Anatidae	Geese, Ducks, & Swans
Chen caerulescens	Snow Goose
* Alopochen aegyptiaca	Egyptian Goose
Branta canadensis	Canada Goose
* Cairina moschata	Muscovy Duck
Anas platyrhynchos	Mallard
Aythya affinis	Lesser Scaup
Lophodytes cucullatus	Hooded Merganser
Accipitridae	Hawks, Kites, & Eagles
Buteo jamaicensis	Red-tailed Hawk
Buteo lineatus	Red shoulder Hawk
Falconidae	Falcons
Falco sparverius	American Kestrel
Rallidae	Rails and Coots
Fulica americana	American Coot
Charadriidae	Plovers & Lapwings
Charadrius vociferus	Killdeer
Scolopacidae	Sandpipers, Phalaropes & Allies
Actitis macularius	Spotted Sandpiper
Laridae	Gulls, Terns, & Skimmers
Sterna forsteri	Forester's Tern
Columbidae	Pigeons and Doves
Columbidae Columba livia livia	Rock Pigeon
* Streptopelia decaocto	Eurasian Collared Dove
, ,	
Zenaida macroura	Mourning Dove
Trochilidae	Hummingbirds Allon's Hummingbird
Selasphorus sasin	Allen's Hummingbird
Calypte anna	Anna's Hummingbird
Alcedinidae	Kingfishers Polted Kingfisher
Megaceryle alcyon	Belted Kingfisher
Picidae Malanarnas formicivarus	Woodpeckers
Melanerpes formicivorus	Acorn Woodpecker
Picoides nuttallii	Nuttall's Woodpecker
Tyrannidae	Tyrant flycatchers
Sayornis nigricans	Black Phoebe
Myiarchus cinerascens	Ash-throated Flycatcher
Tyrannus vociferans	Cassin's Kingbird
Tyrannus verticalis	Western Kingbird

SCIENTIFIC NAME	COMMON NAME
AVES (cont.)	BIRDS
Vireonidae	Vireos
*** Vireo bellii pusillus	Least Bell's Vireo
Corvidae	Jays and Crows
Corvus brachyrhynchos	American Crow
Aphelocoma californica	Western Scrub-Jay
Hirundinidae	Swallows
Stelgidopteryx serripennis	Northern Rough-winged Swallow
Hirundo rustica	Barn Swallow
Troglodytidae	Wrens
Thryomanes bewickii	Bewick's Wren
Cistothorus palustris	Marsh Wren
Aegithalidae	Bushtits
Psaltriparus minimus	Bushtit
Regulidae	Kinglets
Regulus calendula	Ruby-crowned Kinglet
Turdidae	Solitaires, Thrushes, and Allies
Sialia mexicana	Western Bluebird
Mimidae	Mockingbirds
Sialia mexicana	Northern Mockingbird
Sturnidae	Starlings
* Sturnus vulgaris	European Starling
Bombycillidae	Waxwings
Bombycilla cedrorum	Cedar Waxwing
Parulidae	Wood warblers
Vermivora celata	Orange-crowned Warbler
** Setophaga petechia	Yellow Warbler
Dendroica coronata	Yellow-rumped Warbler
Geothlypis trichas	Common Yellowthroat
Thraupidae	Tanagers Western Tanager
Piranga ludoviciana Emberizidae	Western Tanager Towhees and Sparrows
Pipilo maculatus	Spotted Towhee
Pipilo maculatus Pipilo crissalis	California Towhee
Melospiza melodia	Song Sparrow
Melospiza melodia	White-crowned Sparrow
Pipilo maculatus	Golden-crowned Sparrow
Icteridae	Blackbirds and Allies
Quiscalus mexicanus	Great-tailed Grackle
* Molothrus ater	Brown-headed Cowbird
Icterus cucullatus	Hooded Oriole
Fringillidae	Finches
Haemorhous mexicanus	House Finch
Carduelis psaltria	Lesser Goldfinch
Carduelis tristis	American Goldfinch
Estrildidae	Munia and Waxbills
* Lonchura punctulata	Scaly-breasted Munia
Passeridae	Old world sparrows
* Passer domesticus	House sparrow
MAMMALIA	MAMMALS
Didelphidae	Opossums
Sylvilagus audubonii	Audubon's Cottontail
Sciuridae	Squirrels
Spermophilus beecheyi	California Ground Squirrel
* Scirus niger	Eastern Tree Squirrel
Canidae	Dogs, Wolves, & Foxes
Canis latrans	Coyote
Procyonidae	Raccoons
Procyon lotor	Raccoon
Felidae	Cats
* Felis catus	Domestic/Feral Cat

^{*} Non-native species

* CDFW California Species of Special Concern/Watch List Species/FP Species

*** State and/or Federally Listed Species

2020 Western Spadefoot Survey Report

Rancho Cielito Project

San Bernardino County, California

Prepared by ECORP Consulting, Inc. for:

City of Chino Hills Community Development Department 14000 City Center Dr. Chino Hills, CA, 91709

> Report Prepared: July 30, 2020



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Appendix B: Wildlife Species Observed

1.0 INTRODUCTION

1.1 Project Location and Description

The Project Applicant proposes to develop a multi-building apartment complex called Rancho Cielito. The Proposed Project would include approximately 354 residential units and associated features and facilities including two clubhouses, a leasing/management office, three active recreation areas, passive open spaces, trails, a maintenance garage, and associated infrastructure.

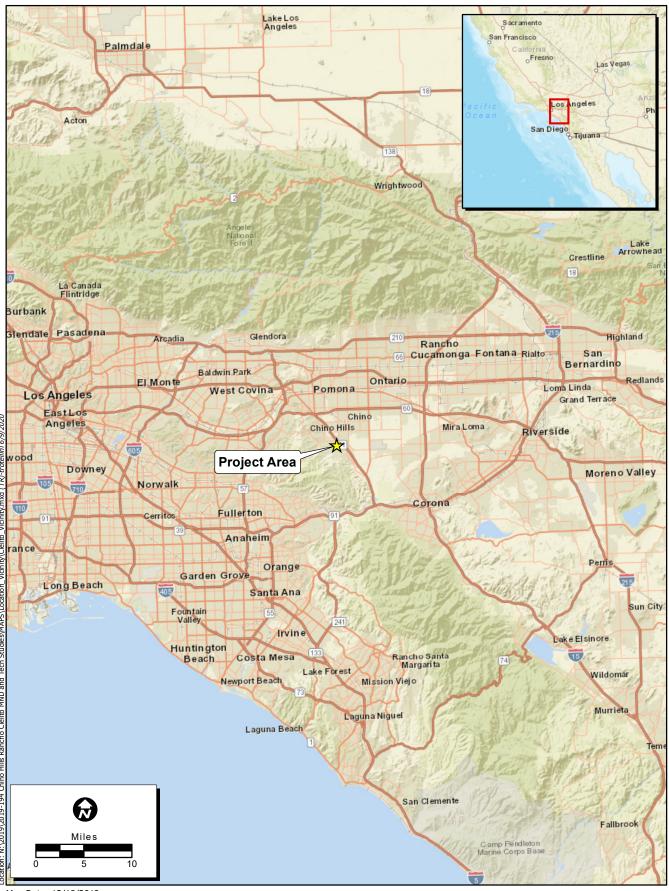
The Project site is located within the City of Chino Hills in San Bernardino County (Figure 1. *Project Location and Vicinity*). The Project site is generally located north of Los Serranos Boulevard/Valle Vista Drive, south of the Lake Los Serranos Club, and comprises ±48.37 acres (29.50 acres of dry land and 18.87 acres of water surface area that make up Lake Los Serranos). The Project site is located along the northern end of Los Serranos Boulevard/Valle Vista Drive and the southern end of the Lake Los Serranos Club in the City of Chino Hills (Figure 2. *Project Location*). The Project site, as depicted on the U.S. Geological Survey (USGS) 7.5-minute Prado Dam topographic quadrangle, falls within Sections 22 and 27, Township 2 South and Range 8 West, San Bernardino Baseline Meridian (USGS 1960). The property is composed of three legal parcels: Assessor Parcel Numbers 1025-561-04, -05, and -06 (Figure 2). The elevation of the Project site is approximately 645 feet above mean sea level.

1.2 Western Spadefoot Status and Natural History

The western spadefoot is a California Department of Fish and Wildlife (CDFW) Species of special concern (SSC, CDFG 2011). This toad is an upland terrestrial amphibian of the coast and inland valleys of California. Western spadefoots occur in California from Redding south through the Central Valley, into coastal southern California west of the Peninsular Range, to northern Baja California, México. The species prefers open areas with unconsolidated soils in a variety of habitats, including riparian floodplains, alluvial fans, playas, foothills, and mountain areas. Adult western spadefoots spend the majority of their time aestivating, becoming active during the rainy season, when they seek out open pools, ponds, vernal pools, or stream channels with little or no flow in which to reproduce.

Western spadefoots typically inhabit lowland habitats such as washes, floodplains of rivers, alluvial fans, and alkali flats and can lay their eggs in a variety of permanent, semi-permanent, and temporary wetlands including rivers, creeks, vernal and temporary rain pools, and stock ponds (Stebbins 2003). Generally, western spadefoots are not found in areas where nonnative predators (e.g., American bullfrog [Lithobates catesbeianus], African clawed frog [Xenopus laevis]) are present. The toads typically breed one to two days following a heavy rain, where the success of the larvae are dependent upon the breeding pool staying wetted for a period of at least 30 days (CaliforniaHerps.com 2020). Western spadefoots are considered opportunistic breeders able to breed at any time if optimal conditions exist.

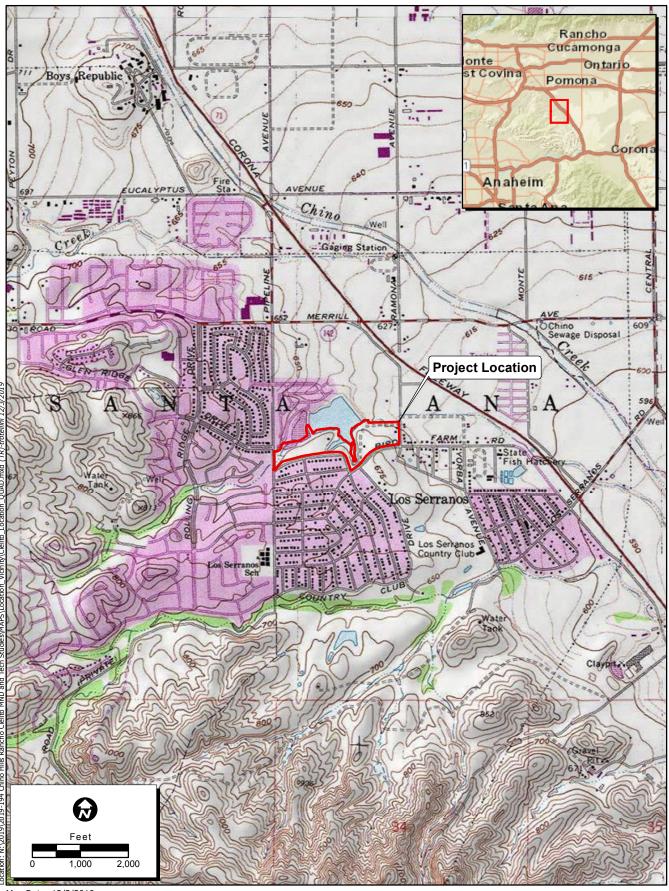
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Key identification features for western spadefoots are the cat-like vertical irises of the eyes, light olive coloration, with a smooth pale underside. Adult western spadefoots breed in still water of any kind, but are extremely sensitive to the presence of exotic aquatic organisms such as American bullfrogs and red swamp crayfish (*Procambarus clarkii*). Vocalization is a harsh buzz, usually lasting less than a second. Females locate the males and then amplexing pairs lay eggs clumps in shallow, still water.

Western spadefoots typically reproduce from January to April, peaking in February and March; however, the season may be extended during exceptionally wet years. Eggs are small, dark, and deposited in clumps on sticks and debris along the edges of pools with little or no water movement. Tadpoles develop within 30 to 70 days, during which they are vulnerable to predation and water quality disturbances (Stebbins 2003). Tadpoles tend to be quite sedate, generally resting in these same shallow and quiet portions of the stream. Juvenile spadefoots, which look like smaller versions of the adults, rapidly disperse from the nursery pool into the upland areas.

The pumping of groundwater may lower the water tables and alter the presentation of surface water habitat. Other forms of disturbance that affect toad populations include off-highway vehicle activity, pollution in the form of litter and hazardous waste contamination, human activity within drainage courses, grazing/livestock activity within drainage courses, and introduction of nonnative aquatic predators.

2.0 SURVEY METHODOLOGY

2.1 Literature Review

A review of the CDFW's California Natural Diversity Database (CNDDB) was performed in the Prado Dam and the eight surrounding USGS 7.5-minute topographic quadrangles before surveys were conducted to determine the nearest recorded locations of western spadefoot to the Survey Area. In addition, a literature review was completed to determine the historic status of western spadefoot in and around the Project site.

2.2 Western Spadefoot Focused Surveys

Focused surveys were conducted in Rancho Cielito during rain events in order to target a time period where spadefoot are most likely to be encountered (Fisher et al. 2004). Two field surveys were conducted April 2020. Surveys included both a daytime and nighttime component within the same 24-hour period. The daytime survey component was used to assess and map potential breeding pools and to visually assess pools for the presence of western spadefoot eggs, larvae, or juveniles.

Nighttime surveys were conducted between one hour after dusk and midnight. These surveys consisted of walking slowly and carefully near potential breeding pools and the surrounding upland habitat. Headlamps and flashlights were shut off periodically and surveyors remained still and silent in order to listen for spadefoot calls. If no calls were detected, surveyors searched near the edges of pools and the surrounding area to visually locate spadefoot by eye-shine. During the surveys, every precaution was taken to avoid injury to potentially occurring spadefoot.

A digital camera was used to document toads (if observed), potential breeding habitat, and other wildlife during the surveys. Any western spadefoot detections or other sensitive biological resources were mapped using a Global Positioning System- (GPS)-enabled smartphone application (i.e., Collector for ArcGIS) in World Geodetic System 1984 (WGS84) Web Mercator.

3.0 RESULTS

3.1 Western Spadefoot Survey Results

No western spadefoot were observed or detected within the Survey Area. Surveys were conducted during weather conditions within the appropriate range for detecting the targeted species. Weather conditions during the time of surveys are listed in Table 1.

Table 1. Weather Data for the Western Spadefoot Surveys												
	#	ors*		Tin	пе	Air T (°	emp. F)	Cloud (%		Wind (m	Speed ph)	
Date	Survey	Surveyors*	Survey Type	Start	End	Start	End	Start	End	Start	End	Rain (inches)
4/6/20	1	MM, TD	Day	1520	1900	60	58	100	100	1-4	1-4	1.28
4/0/20	ļ	I IVIIVI, ID	Night	1945	2130	55	57	100	100	1-4	1-4	1.20
4/9/20	2	MM, AS	Day	1600	1815	52	51	100	100	0-3	0-3	1.74
4/3/20	2	IVIIVI, AS	Night	1930	2100	49	49	100	100	0-3	0-1	1.74

^{*}MM=Max Murray, TD=Taylor Dee, AS=Adam Schroeder

The Rancho Cielito property is mostly disturbed with a large portion of the Survey Area being occupied by Lake Los Serranos (Figure 3). The pools that were present onsite were mostly road ruts in trails meandering through the property (Figure 3. *Western Spadefoot Survey Results*). Although surface water was present, no pools were found to be larger than 75 square feet and no deeper than five inches. The upland habitat in the Survey Area primarily consisted of nonnative grassland with some riparian and ornamental trees near the lake.

American bullfrogs were detected calling along the margin of the south side of Lake Los Serranos during the nighttime portion of Survey 2. No native amphibians were detected during the surveys. The wildlife species observed during this survey can be viewed in Appendix A.

4.0 CONCLUSION AND DISCUSSION

Western spadefoot rely on seasonal surface water collecting in road ruts and vernal pools in order to successfully reproduce. Breeding pools must hold surface water for four or more weeks to complete the lifecycle of the western spadefoot (CaliforniaHerps.com 2020). While the potential breeding pools on the Project site were holding surface water between storm systems, biologists conducting plant surveys on the following week observed that all the pools were no longer holding water. This would suggest that the potential breeding habitat on the Project site is not suitable for western spadefoot.

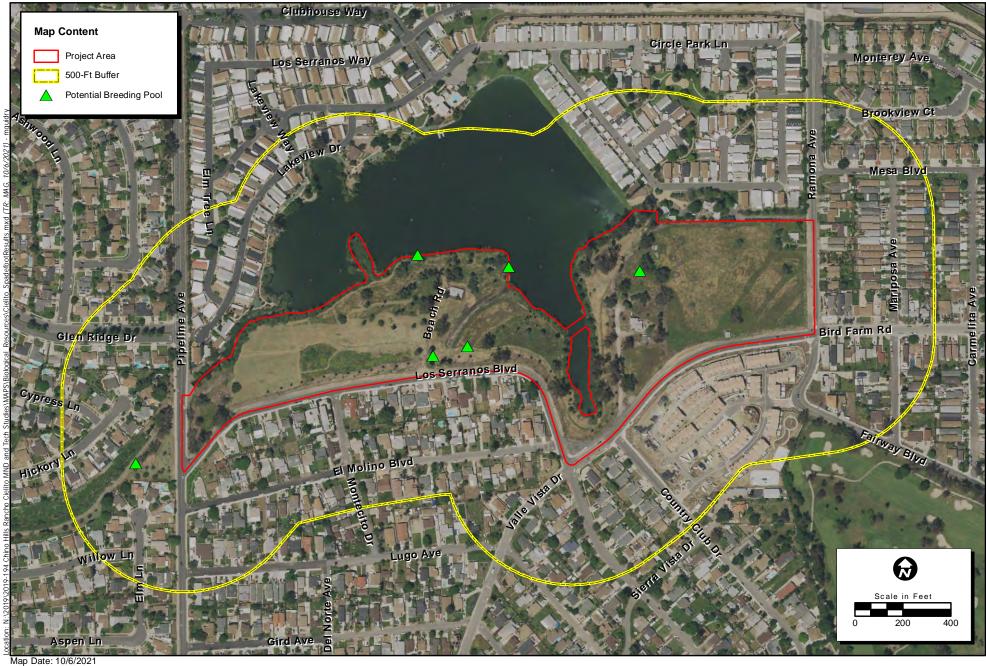


Photo Source: NAIP (2020)



Figure 3. Western Spadefoot Survey Results

Additionally, the presence of nonnative predators such as the American bullfrog in Lake Los Serranos would likely negatively impact western spadefoot on the Project site.

The western spadefoot is estimated to have been extirpated from 80 percent of its natural range in southern California (CaliforniaHerps.com 2020). The literature review yielded historic detections of western spadefoot approximately two miles southwest of the Project site. However, large residential developments surround the Project site and would decrease the likelihood of western spadefoot dispersal between the localities.

Development of the area surrounding the Project site appears to limit the dispersal of western spadefoot from adjacent populations in Chino Hills State Park. Due to the negative surveys, unsuitable breeding habitat, presence of nonnative predators, surrounding land usage and distance from known populations, it is unlikely western spadefoot are present within the Project site and have likely been absent from this area following the residential development of this portion of Chino Hills.

5.0 CERTIFICATION

I hereby certify that the statements furnished above present the data and information required for this biological survey results report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

	July 30, 2020
Max Murray	Date
Associate Biologist	

6.0 LITERATURE CITED

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APPENDIX A

Representative Photos



Photo 1. A potential western spadefoot breeding pool road rut.



Photo 2. Disturbed upland vegetation.



Photo 3. Nonnative upland vegetation.



Photo 4. Potential western spadefoot breeding pool.

APPENDIX B

Wildlife Species Observed

Wildlife Species Observed

Scientific Name	Common Name
Lithobates catesbeianus*	American bullfrog
Branta canadensis	Canada goose
Anas platyrhynchos	mallard
Phalacrocorax auratus	double-crested cormorant
Charadrius vociferous	killdeer
Ardea herodias	great blue heron
Fulica americana	American coot
Columba livia	rock pigeon
Zenaida macroura	mourning dove
Buteo jamaicensis	red-tailed hawk
Stelgidopteryx serripennis	northern rough-winged swallow
Tachycineta thalassina	violet-green swallow
Hirundo rustica	barn swallow
Petrochelidon pyrrhonota	cliff swallow
Megaceryle alcyon	belted kingfisher
Sayornis nigricans	black phoebe
Sayornis saya	Say's phoebe
Mimus polyglottos	northern mockingbird
Psaltriparus minimus	bushtit
Geothlypis trichas	common yellowthroat
Setophaga coronata	yellow-rumped warbler
Zonotrichia leucophrys	white-crowned sparrow
Melospiza melodia	song sparrow
Melozone crissalis	California towhee
Passer domesticus*	house sparrow
Haemorhous mexicanus	house finch
Sturnus vulgaris*	European starling

^{*}Nonnative species

2020 Special-Status Plant Survey Report

Rancho Cielito Project

Prepared by ECORP Consulting, Inc. for:

City of Chino Hills Community Development Department 14000 City Center Dr. Chino Hills, CA, 91709

Report Prepared:

September 9, 2020

As Revised:

September 28, 2021



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LIST OF ACRONYMS AND ABBREVIATIONS

CDFW California Department of Fish and Wildlife CNDDB California Natural Diversity Database

CNPS California Native Plant Society CRPR California Rare Plant Rank

Global Positioning System Information for Planning and Consultation IPaC

USFWS U.S. Fish and Wildlife Service

USGS U.S. Geological Survey

CDFW Vegetation Classification and Mapping Program VegCAMP

1.0 INTRODUCTION

1.1 Project Description and Location

The Rancho Cielito Project (Project) includes development of a multi-building apartment complex with approximately 354 multifamily dwelling units and associated features and facilities including two clubhouses, a leasing/management office, three active recreation areas, passive open spaces, trails, a maintenance garage, and associated infrastructure. The Project site is located within the City of Chino Hills in San Bernardino County (Figure 1. *Project Vicinity*). The Project site is generally located north of Los Serranos Boulevard/Valle Vista Drive, south of the Lake Los Serranos Club, and comprises ±48.37 acres (29.50 acres of dry land and 18.87 acres of water surface area that make up Lake Los Serranos). The Project site is located along the northern end of Los Serranos Boulevard/Valle Vista Drive and the southern end of the Lake Los Serranos Club in the City of Chino Hills (Figure 2. *Project Location*). The Project site, as depicted on the U.S. Geological Survey (USGS) 7.5-minute "Prado Dam, California" topographic quadrangle, falls within Sections 22 and 27, Township 2 South and Range 8 West, San Bernardino Baseline and Meridian (USGS 1960). The property is composed of three legal parcels: Assessor Parcel Numbers 1025-561-04, -05, and -06 (Figure 2). The elevation of the Project site is approximately 645 feet above mean sea level.

2.0 SURVEY METHODOLOGY

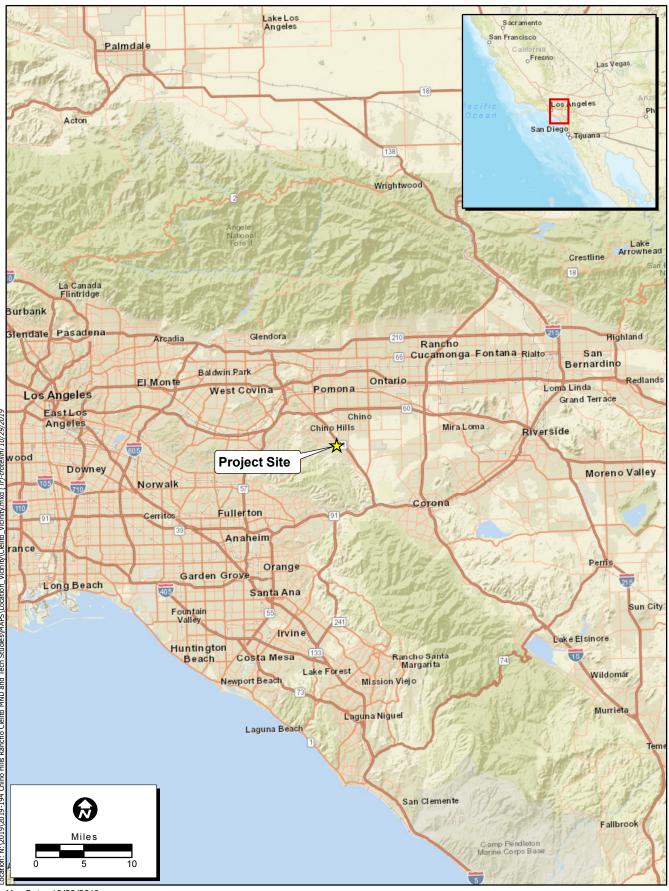
2.1 Literature Review

Prior to conducting the field study, ECORP conducted a review of the U.S. Fish and Wildlife Service's (USFWS') Information for Planning and Consultation (IPaC) (USFWS 2020), California Natural Diversity Database (CNDDB) (California Department of Fish and Wildlife [CDFW] 2020) and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (hereafter referred to as CNPS Electronic Inventory) (CNPS 2020) to determine whether special-status plant species have been previously reported within the Project site and the surrounding USGS 7.5-minute topographic quadrangles.

In addition, a previously prepared report for the Project was also reviewed for information pertaining to vegetation mapping and special-status plant species: *Biological Technical Report for Rancho Cielito* (ECORP 2019).

2.2 Special-Status Plant Focused Surveys

Special-status plant species are those listed under the California or federal Endangered Species Acts, or those considered rare by CNPS. Three focused special-status plant surveys were conducted during April, May, and August 2020, based on the expected blooming periods of the target plant species. Surveys were conducted by biologists with extensive experience with botanical surveys and knowledge regarding plant taxonomy, plant species in the region, and special-status plant species. The purpose of the surveys was to determine the presence or absence and number of individuals of special-status plant species within the Project site, if present.

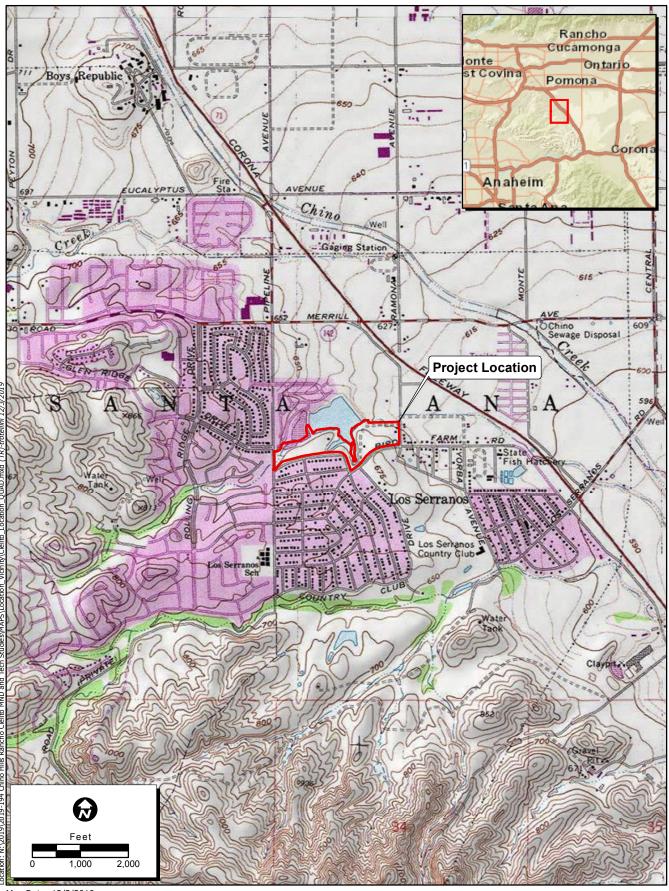


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Figure 1. Project Vicinity



Map Date: 12/3/2019

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Survey methods were devised with consideration of the following resources:

- Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants (USFWS 1996),
- Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018), and
- CNPS Botanical Survey Guidelines (CNPS 2001).

The surveys were scheduled to coincide with the target species' blooming periods and during a period when target species were most likely identifiable. Mapping of vegetation communities was also completed in addition to focused special-status plant surveys.

A total of three surveys were conducted to provide 100 percent visual coverage of the entire Project site. Surveyors focused their efforts in vegetation communities most likely to support special-status plant species that would be in bloom at that time. Vegetation communities that were not disturbed (i.e., infested by invasive plant species, dirt roads) were also given priority. Areas that were not known to support special-status plant species and/or were disturbed were surveyed after prioritized vegetation communities. Pedestrian-based survey transects were walked 10 meters apart by two biologists, however, for portions of the Project site that were heavily disturbed and developed (e.g., concrete slabs, housing) transects were extended to 20 meters based on higher visibility and the low probability of special-status plants occurring in those areas. Global Positioning System (GPS) devices (iPads® running Collector software) were used during surveys to record the coordinates of any special-status plant species. Arrow™ receivers were used to obtain sub-meter accuracy on the GPS devices. Each GPS device displayed a position using the Universal Transverse Mercator coordinate system, North American Datum 1983.

Common plant species were identified and recorded in order to maintain a compendium of plant species that occur in the Project site. In some cases, biologists took samples from the site so that a dissecting microscope could be used for plant identification. Taxonomy of plant species identified within the Project site is based on the following sources:

- *The Jepson Manual* (Hickman 1993)
- The Jepson Manual, 2nd Ed. (Baldwin et al. 2012)

The GPS data collected in the field were uploaded from the GPS device to a server and differential correction post-processing was performed. The data were then viewed and analyzed for verification, edited, and converted to a GIS format at the time of upload. In addition, field map notes were completed concurrent with GPS data collection and in some cases field data forms were also completed when appropriate.

For every special-status plant GPS feature collected, population size and extent were estimated and recorded. In addition, all GPS data features that were within seven meters of each other were merged into a larger polygon, thereby increasing the acreage by including all potential habitat.

2.3 Vegetation Mapping

Vegetation community mapping provides baseline information on the existing vegetation communities within the Project site, including the acreage and specific locations of each community, and the acreage of vegetation communities occurring within the impact areas for the Project. This document and associated deliverables were prepared to assist the responsible federal and state agencies to make appropriate landuse decisions regarding the management of the vegetation communities present in the Project site.

ECORP biologist Greg Hampton conducted vegetation community mapping concurrently with the special-status plant surveys, using pedestrian surveys and assessments from key vantage points to characterize and map the vegetation communities and to identify any sensitive habitats within the Project site. Vegetation mapping was conducted in consideration of Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018).

During vegetation community mapping, the boundaries of the vegetation communities were recorded with GIS software to create the vegetation community map. Vegetation community type descriptions followed the designations in *The Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009); however, in some cases a best-fit definition based on habitat descriptions and land-use has been applied. Sensitive vegetation communities were designated based on the California Sensitive Natural Communities list provided as part of CDFW Vegetation Classification and Mapping Program (VegCAMP) (CDFW 2019). Photographs were taken during the survey to provide visual representation of select vegetation communities within the Study Area.

3.0 RESULTS

3.1 Literature Review

Forty-nine (49) special-status plant species have been recorded within five miles of the Project area, according to the CNDDB (CDFW 2020) and CNPS Electronic Inventory (CNPS 2020). Due to lack of suitable habitat and the site's condition of being heavily disturbed and developed, 35 of the special-status plant species identified in the literature review were presumed absent from the Project site (ECORP 2019). A total of 14 target species were identified as those with the potential for occurrence within the vicinity of the Project site.

3.2 Focused Special-Status Plant Surveys

Focused special-status plant surveys were conducted by ECORP biologists Greg Hampton (lead surveyor), Christina Torres, and Caroline Garcia. The surveys were scheduled to coincide with the target species bloom periods, and were conducted during a period when target species were readily identifiable. Representative site photos can be viewed in Appendix B and a complete plant compendium of the plant species observed during each survey and be viewed in Appendix C.

Three separate surveys were conducted within the Project site during 2020. The first survey was conducted on April 2, the second survey was conducted on May 21, and the third survey was conducted on August 8, 2020 (Table 1).

Table	1. 2020 Survey Dates and Personnel	
Date Personnel		
4/2/2020	Greg Hampton and Christina Torres	
5/21/2020	Greg Hampton and Caroline Garcia	
8/6/2020	Greg Hampton	

No observations of the 14 target special-status plant species were detected during focused surveys, however, numerous individuals of two non-target special-status plant species were observed during the surveys. San Diego marsh elder (*Iva hayesiana*) and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) were both observed within a few feet of the shoreline of the lake. Special-status plant species found to occur are detailed below and shown in Figure 3. Overall survey results are detailed in Table 2.

San Diego marsh elder is a perennial herb in the Asteraceae Family and most commonly occurs in riparian/wetlands habitats. It has a CNPS California Rare Plant Rank (CRPR) of 2B.2, 2B meaning the species is rare or endangered in California and threat rank 0.2 meaning it is moderately threatened in California. Ninety-seven individuals of San Diego marsh elder were observed within the Project site.

Southwestern spiny rush is a perennial grass-like herb belonging to the Juncaceae Family and most commonly occurs in riparian/wetland habitats. It has a CNPS CRPR of 4.2, 4.0 meaning it is of limited distribution and threat rank 0.2 defining it is moderately threatened in California. Twenty-five individuals of southwestern spiny rush were observed within the Project site.

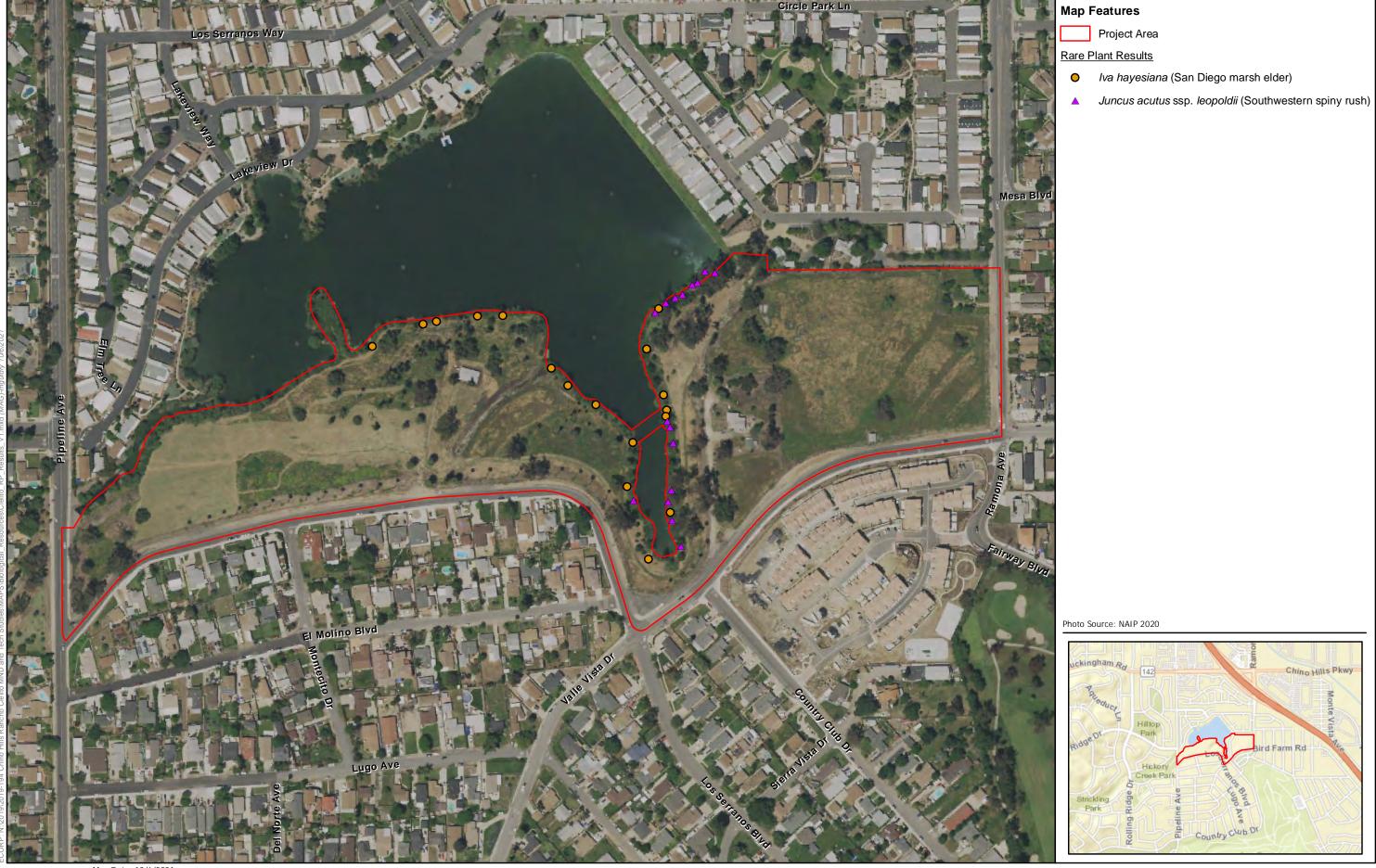








	Table 2. Special-Status Plant Species Survey Results					
Scientific Name Common Name	Status	Blooming Period/ Elevation Range (meters)	Habitat	Presence/Absence on Project site		
Astragalus brauntonii Braunton's milkvetch	USFWS: END CDFW: None CNPS: 1B.1	Jan-Aug (4 - 640)	ChaparralCoastal ScrubValley and foothill grassland	Absent: Not observed during 2020 focused rare plant surveys.		
Atriplex coulteri Coulter's saltbush	USFWS: None CDFW: None CNPS: 1B.2	Mar-Oct (3 - 460)	 Coastal bluff scrub Coastal dunes Coastal scrub Valley and foothill grassland 	Absent: Not observed during 2020 focused rare plant surveys.		
Calochortus catalinae Catalina mariposa lily	USFWS: None CDFW: None CNPS: 4.2	Mar-Jun (15 - 700)	 Chaparral Cismontane woodland Coastal scrub Valley and foothill grassland 	Absent: Not observed during 2020 focused rare plant surveys.		
Calystegia felix lucky morning-glory	USFWS: None CDFW: None CNPS: 1B.1	Mar-Sep (30 - 215)	Meadows and seeps Riparian scrub	Absent: Not observed during 2020 focused rare plant surveys.		
Camissoniopsis lewisii Lewis' evening-primrose	USFWS: None CDFW: None CNPS: 3	Mar-May(Jun) (0-300)	 Coastal bluff scrub Cismontane woodland Coastal dunes Coastal scrub Valley and foothill grassland 	Absent: Not observed during 2020 focused rare plant surveys.		
Centromadia pungens ssp. laevis smooth tarplant	USFWS: None CDFW: None CNPS: 1B.1	Apr-Sep (0 - 640)	 Chenopod scrub Meadows and seeps Playas Riparian woodland Valley and foothill grassland 	Absent: Not observed during 2020 focused rare plant surveys.		
Convolvulus simulans small-flowered morning- glory	USFWS: None CDFW: None CNPS: 4.2	Mar-Jul (30 - 740)	ChaparralCoastal scrubValley and foothill grassland	Absent: Not observed during 2020 focused rare plant surveys.		
Dudleya multicaulis many-stemmed dudleya	USFWS: None CDFW: None CNPS: 1B.2	Apr-Jul (15 - 790)	Chaparral Coastal scrub Valley and foothill	Absent: Not observed during 2020 focused rare plant surveys.		
Iva hayesiana San Diego marsh-elder	USFWS: None CDFW: None CNPS: 2B.2	Apr-Oct (10 - 500)	Marshes and swampsPlayas	Present: 97 individuals were observed in the Project site during the 2020 surveys.		

Table 2. Special-Status Plant Species Survey Results

	Blooming Period/		
	Elevation		Presence/Absence on
Status	Range (meters)	Habitat	Project site

Scientific Name Common Name	Status	Period/ Elevation Range (meters)	Habitat	Presence/Absence on Project site
Juglans californica Southern California black walnut	USFWS: None CDFW: None CNPS: 4.2	Mar-Aug (50 - 900)	ChaparralCismontane woodlandCoastal scrubRiparian woodland	Absent: Not observed during 2020 focused rare plant surveys.
Juncus acutus ssp. leopoldii southwestern spiny rush	USFWS: None CDFW: None CNPS: 4.2	May-Jun (3 - 900)	Coastal dunesMeadows and seepsMarshes and swamps	Present: 25 individuals were observed in the Project site during the 2020 surveys.
Pentachaeta aurea Allen's pentachaeta	USFWS: None CDFW: None CNPS: 1B.1	Mar-Jun (75 - 520)	Coastal scrub Valley and foothill grassland	Absent: Not observed during 2020 focused rare plant surveys.
Phacelia hubbyi Hubby's phacelia	USFWS: None CDFW: None CNPS: 4.2	Apr-Jul (0 - 1000)	ChaparralCoastal scrubValley and foothill grassland	Absent: Not observed during 2020 focused rare plant surveys.
Pseudognaphalium leucocephalum white rabbit-tobacco	USFWS: None CDFW: None CNPS: 2B.2	Aug-Nov (0 - 2100)	ChaparralCismontane woodlandCoastal scrubRiparian woodland	Absent: Not observed during 2020 focused rare plant surveys.
Quercus engelmannii Engelmann oak	USFWS: None CDFW: None CNPS: 4.2	Mar-Jun (50 - 1300)	 Chaparral Cismontane woodland Riparian woodland Valley and foothill grassland 	Absent: Not observed during 2020 focused rare plant surveys.
Symphyotrichum defoliatum San Bernardino aster	USFWS: None CDFW: None CNPS: 1B.2	Jul-Nov (2 - 2040)	 Cismontane woodland Coastal scrub Lower montane coniferous forest Meadows and seeps Marshes and swamps Valley and foothill grassland 	Absent: Not observed during 2020 focused rare plant surveys.

California Native Plant Society (CNPS) Rare Plant Ranks:

CNPS Threat Ranks:

0.1: Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat) 0.2: Fairly threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

California Natural Diversity Data Base (CNDDB) (CDFW 2020) CNPS Rare and Endangered Plant Inventory (CNPS 2020) Calflora Information on California Plants (Calflora 2020)

¹B: Plants rare, threatened, and endangered in California and elsewhere.

²B: Plants rare, threatened, or endangered in California, but more common elsewhere.

^{4:} Plants of limited distribution; a watch list.

3.3 Vegetation and Land Cover Mapping

Vegetation mapping occurred concurrently with special-status plant surveys. Vegetation communities and other land cover types observed within and adjacent to the Project include Fremont Cottonwood Forest and Woodland, California Bulrush Marsh, Wild Oat and Annual Brome Grasslands, Eucalyptus Groves, Ornamental, Disturbed, Developed Areas, and Open Water (Figure 4). Two vegetation communities present on the Project site, Fremont Cottonwood Forest and Woodland and California Bulrush Marsh are considered sensitive vegetation communities by CDFW (CDFW 2019). Descriptions of each vegetation community and land cover type that were mapped are provided below.

3.3.1 Fremont Cottonwood Forest and Woodland

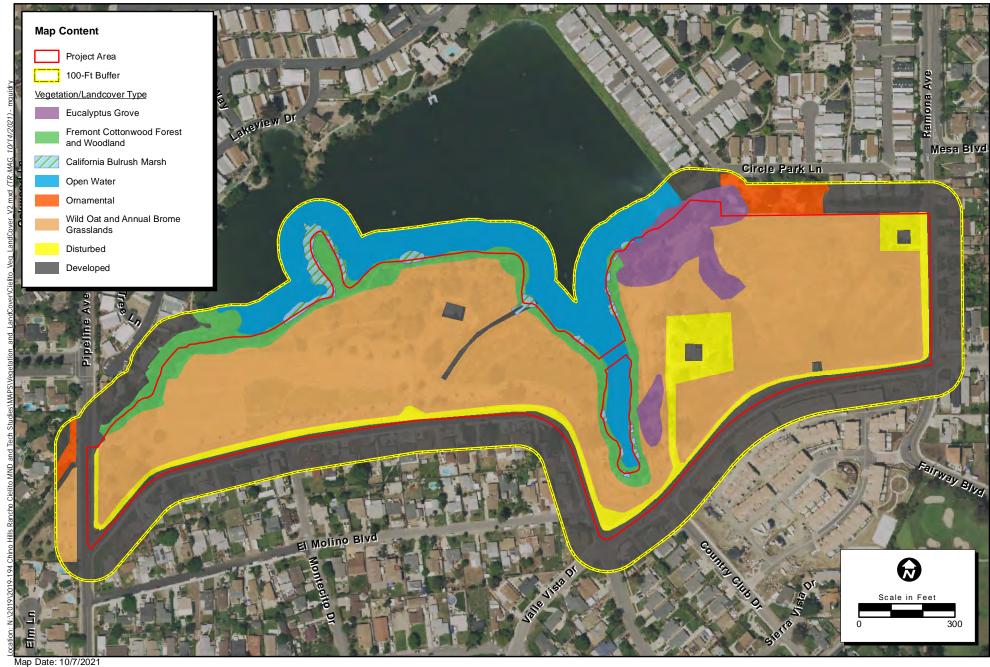
Fremont Cottonwood Forest and Woodland occurs in seasonally flooded freshwater habitats or saturated areas, often on gently sloping rocky floodplains, or edges of rivers, streams, and/or meadows. Fremont Cottonwood Forest and Woodland has a sensitivity ranking of S3 in California (CDFW 2019). On the Project site, this community is located along the edges of Lake Los Serranos and includes areas that are dominant or co-dominant with willow (*Salix* sp.) and Fremont's cottonwood (*Populus fremontii*). Other species present in this community on the Project site include black willow (*Salix gooddingii*), red willow (*S. laevigata*), narrow-leaved willow (*S. exigua*), and a few species of palm trees (*Arecaceae* spp.). Approximately 3.12 acres were mapped as Fremont Cottonwood Forest and Woodland, 2.20 acres of which were within the Project area.

3.3.2 California Bulrush Marsh

California Bulrush Marsh occurs in seasonally flooded freshwater habitats or saturated areas, often along stream shores, bars, and channels of river mouth estuaries, around ponds and lakes, in sloughs, swamps, and roadside ditches. on gently sloping rocky floodplains, or edges of rivers, streams, and/or meadows. California Bulrush Marsh has a sensitivity ranking of S4 in California (CDFW 2019). On the Project site, this community is located along the edges of Lake Los Serranos and includes areas that are dominant with California bulrush (*Schoenoplectus californicus*). Approximately 0.57 acre of California Bulrush Marsh was mapped within the survey area, of which 0.17 acre occurs within the Project area.

3.3.3 Wild Oat and Annual Brome Grasslands

Areas mapped as Disturbed annual grassland are largely devoid of native vegetation due to human disturbance and are dominated by open areas of nonnative grasses. Plants present in this vegetation community on the Project site are dominated by nonnative weedy species such brome (*Bromus* sp.), redstem stork's bill (*Erodium cicutarium*), and wild oats (*Avena* sp.) but also include occurrences of native species such as turkey mullein (*Croton setiger*) and telegraph weed (*Heterotheca grandiflora*). A few species of palm trees are distributed throughout the wild oat and annual brome grassland. This vegetation community was present throughout the majority of the Project site. Evidence of previous and repeated mechanical disturbances such as mowing or discing are prevalent throughout this community on the Project site. Approximately 21.58 acres were mapped as Wild Oat and Annual Brome Grasslands, 21.14 acres of which were within the Project area.



Boundary Date: 8/30/2021 Photo Source: NAIP (2020)



Figure 4. Vegetation Communities and Land Cover Types

3.3.4 Eucalyptus Grove

Eucalyptus Grove is a vegetation type characterized by tall trees where Eucalyptus (*Eucalyptus* spp.) species represent more than 80 percent of the relative cover in the tree layer. Eucalyptus species are not native to California and some species are considered invasive. Eucalyptus Groves are present in the northeastern portion of the Project area, along the southeast edge of Lake Los Serranos. Approximately 2.06 acres were mapped as Eucalyptus Groves, 1.73 acres of which occur within the Project area.

3.3.5 Ornamental

Ornamental areas are planted with common landscaping plants not native to California. The Project site is surrounded by residential neighborhoods that are dominated by ornamental landscaping. Ornamental landscaping is present within the Project site adjacent to the mobile home community residential housing development. Vegetation in this area consists of numerous annual species and nonnative tree species such as pepper trees (*Schinus* spp.) and pine trees (*Pinus* spp.). Approximately 0.74 acre was mapped as Ornamental, all of which occurs outside the Project area.

3.3.6 Disturbed

The Disturbed classification includes areas that have been heavily affected by human actions, such as grading or discing, but lack development. Disturbed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. Disturbed areas on the Project site surround two currently occupied houses. In areas classified as Disturbed, vegetation is absent or consists primarily of nonnative species, such as common Mediterranean grass (*Schismus barbatus*). Approximately 2.96 acres were mapped as Disturbed, 2.94 acres of which occur within the Project area.

3.3.7 Developed

Areas designated as developed land have infrastructure present and any vegetation in the immediate surroundings is composed of ornamental landscaping or nonnative plant growth. Developed land is not a vegetation classification, but rather a land cover type and is not restricted by elevation. Developed Areas are distributed throughout the Project site and include a concrete channel and residences. These Developed Areas are generally located adjacent to Disturbed lands. Approximately 12.68 acres were mapped as Developed, 1.53 acres of which occur within the Project area.

3.3.8 Open Water

Open Water is not a vegetation classification, but rather a land cover type. Open water areas occur in the northern portion of the survey area and are associated with Lake Los Serranos. No vegetation or soils are associated with these areas. Approximately 5.09 acres were mapped as Open Water, 0.09 acre of which occurs within the Project area.

4.0 CONCLUSION AND DISCUSSION

Two special-status plant species and one sensitive plant community were observed during the surveys. All three were most likely planted during a restoration effort for Lake Los Serranos and are not naturally occurring. With a CRPR of 2B.2 and 4.2, respectively, neither southwestern spiny rush nor San Diego marsh elder have state or federal protections. However, it is recommended that Project-related impacts to these species are avoided to the extent possible. These plant species were usually present within the Fremont Cottonwood Forest and Woodland and California Bulrush Marsh habitat (which have a State Rarity Rank of S3 and S4, respectively), and it is recommended that these plant communities be avoided to the maximum extent possible in order to prevent Project-related impacts.

5.0 CERTIFICATION

I hereby certify that the statements furnished above present the data and information required for this biological survey results report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Hug Hauntin	
0 1	September 28, 2021
Greg Hampton	Date
Staff Biologist	

6.0 LITERATURE CITED

- Baldwin, B.G., G.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, Eds. 2012. *The Jepson Manual; Vascular Plants of California, Second Edition*. Berkeley, CA, University of California Press.
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LIST OF APPENDICES:

Appendix A: Representative Photographs

Appendix B: Plant Species Compendium

APPENDIX A

Representative Photographs



Photo 1: Fremont Cottonwood Forest and Woodland



Photo 2: Eucalyptus Groves



Photo 3: Wild Oat and Annual Brome Grasslands



Photo 4: Ornamental Vegetation on North-East Side of Project site.

APPENDIX B

Plant Species Compendium

2020 Rancho Cielito Plant Species Compendium

20.	20 Rancho Cielito Plant Species Compendiu	ım		1
Scientific Name	Common Name	April Survey	May Survey	August Survey
	VASCULAR PLANTS GYNOSPERMS (GNETALES)			
PINACEAE	PINE FAMILY			
Pinus sp.		Х	Х	Х
· ····································	ANGIOSPERMS (EUDICOTS)			7.
ASTERACEAE	SUNFLOWER FAMILY			
Ambrosia psilostachya	western ragweed	Х	Х	Х
Artemisia douglasiana	Douglas' sagewort	X	X	Χ
Artemisia dracunculus	tarragon	Х		
Baccharis pilularis	coyote brush	Х	Х	Χ
Baccharis salicifolia	mule fat	Х	Χ	
Centaurea melitensis*	tocalote	Х	Χ	Χ
Cirsium vulgare*	bull thistle		Х	
Erigeron canadensis	Canada horseweed	Х	Х	Х
Helminthotheca echioides*	bristly ox-tongue	Х	Х	Х
Heterotheca grandiflora	telegraph weed	Х		Х
Iva hayesiana CRPR 2B.2	San Diego marsh elder	Х	Х	Х
Lactuca serriola*	prickly lettuce	Х	Х	Χ
Pluchea sericea	arrow weed	X	X	Χ
Pseudognaphalium californicum	ladies' tobacco	Х		
Sonchus asper*	spiny sowthistle	Х	Х	Χ
Sonchus oleraceus*	common sow thistle			Х
AMARANTHACEAE	AMARANTH FAMILY	<u> </u>		
Amaranthus albus*	pigweed amaranth	Х	Χ	Χ
ANACARDIACEAE	CASHEW FAMILY	<u> </u>		
Schinus molle*	Peruvian pepper tree	Х	Х	Х
APOCYNACEAE	DOGBANE FAMILY			
Asclepias californica	California milkweed			Х
Asclepias fascicularis	narrow leaf milkweed	Х		Χ
BORAGINACEAE	BORAGE FAMILY			
Amsinckia tessellata	fiddleneck	Х		
Heliotropium curassavicum	chinese parsley	Х	Χ	Χ
BRASSICACEAE	MUSTARD FAMILY			
Capsella bursa-pastoris*	sheperd's purse	X		
Hirschfeldia incana*	short podded mustard	X	Х	X
Sisymbrium altissimum*	tumble mustard	X	Χ	
CARYOPHYLLACEAE	CARNATION FAMILY			
Cerastium fontanum*	chickweed	X		
Spergularia sp.	sand spurry	X		
CHENOPODIACEAE	GOOSEFOOT FAMILY			
Atriplex semibaccata*	Australian saltbush	X	X	X
Chenopodium album*	white goosefoot	X		Χ
Chenopodium murale*	nettle leaf goosefoot	X	Х	
Salsola tragus*	Russian thistle	X	X	Х
CONVOLVULACEAE	MORNING GLORY FAMILY		•	
Convolvulus arvensis*	field bindweed		Х	X
Cressa truxillensis	alkali weed	X	Х	Χ
CUPRESSACEAE	CYPRESS FAMILY		•	
Cupressus sempervirens*	Italian cypress		X	
EUPHORBIACEAE	SPURGE FAMILY	T		_
Croton setiger	turkey-mullein		X	Χ
Euphorbia peplus*	petty spurge	X	Х	
Euphorbia prostrata*	prostrate sandmat			Χ
Euphorbia sp.	sandmat	X	<u> </u>	
FABACEAE	LEGUME FAMILY	ı		
Acaia sp.	acacia		X	Χ
Acmispon glaber	deerweed	X	Х	
Lupinus sp.	lupine	X		
Medicago polymorpha*	bur clover	X		

2020 Rancho Cielito Plant Species Compendium

	2020 Rancho Cielito Plant Species Compendiul			ı
Melilotus albus*	white sweetclover	Х		
Melilotus indicus*	yellow sweetclover	X	Χ	X
Parkinsonia aculeata*	Mexican palo verde		Χ	
FAGACEAE	OAK FAMILY			
Quercus agrifolia	coast live oak	Х	Χ	Χ
GERANIACEAE	GERANIUM FAMILY			
Erodium cicutarium*	redstem stork's bill	Х	Χ	
LAMIACEAE	MINT FAMILY			
Marrubium vulgare*	white whorehound		X	X
LYTHTACEAE	LOOSESTRIFE FAMILY			
Lythrum hyssopifolia*	hyssop loosestrife		Χ	X
MALVACEAE	MALLOW FAMILY			
Malva parviflora*	cheeseweed mallow	Х	Χ	X
MYRSINACEAE	MYRSINACEAE FAMILY			
Lysimachia arvensis*	scarlet pimpernel	X	Χ	
MYRTACEAE	MYRTLE TREE			
Eucalyptus sp.	eucalyptus	Х	Х	Χ
ONAGRACEAE	EVENING PRIMROSE FAMILY			
Epilobium canum	California fuchsia		Х	Х
Oenothera elata	evening primrose	Х	X	X
PINACEAE	PINE FAMILY	Λ		
Pinus sp.	pine tree	1		
PLANTAGINACEAE	PLANTAIN FAMILY			L
Kickxia elatine	sharp leaved fluellin			X
				Ι Λ
PLATANACEAE	PLANE TREE FAMILY	l v		I v
Platanus racemosa	Western sycamore	X	X	Х
POLEMONIACEAE	PHLOX FAMILY	<u> </u>		1
Gilia sp.	gilia		X	L
POLYGONACEAE	BUCKWHEAT FAMILY			
Polygonum aviculare*	prostrate knotweed		X	Х
Rumex crispus*	curly dock	Х	Χ	Х
Rumex pulcher*	fiddle dock			X
PORTULACACEAE	PURSLANE FAMILY			
Portulaca oleracea*	common purslane			Χ
ROSACEAE	ROSE FAMILY			
Heteromeles arbutifolia	toyon	Χ	Χ	
Prunus ilicifolia	hollyleaf cherry	X	Χ	Χ
Prunus persica*	peach tree		Χ	
Rosa californica	California wild rose	Х	Х	Χ
RUBIACEAE	BEDSTRAW FAMILY			
Galium sp.	bedstraw	Х		
SALICACEAE	WILLOW FAMILY			•
Populus fremontii	Fremont cottonwood	Х	Х	Х
Salix exigua	narrow leaved willow	X	X	X
Salix gooddingii	black willow	X	X	X
Salix Igoudingii Salix laevigata	red willow	X	X	
SAPINDACEAE	SOAPBERRY FAMILY	^		<u> </u>
Acer sp.		V		
_	maple	X		Х
Koelreuteria bipinnata*	goldenrain tree			X
SAURURACEAE	RATTAIL FAMILY		\ <u>'</u>	1 1/
Anemopsis californica	Yerba mansa	X	X	X
SIMAROUBACEAE	QUASSIA FAMILY		.,	1
Ailanthus altissima*	tree of heaven		X	<u> </u>
SOLANACEAE	NIGHTSHADE FAMILY	ı		
Nicotiana glauca*	tree tobacco	X		
Solanum americanum	american black nightshade	X		
Solanum elaeagnifolium*	horse nettle		Χ	Χ
URTICACEAE	NETTLE FAMILY			
Urtica urens*	stinging nettle	X	Χ	
	ANGIOSPERMS (MONOCOTS)			
AGAVACEAE	AGAVE FAMLIY			

2020 Rancho Cielito Plant Species Compendium

ARECACEAE	PALM TREE FAMILY			
Phoenix canariensis*	Canary island date palm	Х	Х	Χ
Washingtonia robusta*	Mexican fan palm	Χ	Х	Χ
ASPHODELACEAE	ALOE FAMILY			
Asphodelus fistulosus*	onionweed	X	Х	Χ
CYPERACEAE	SEDGE FAMILY			
Cyperus eragrostis	tall flatsedge			Χ
Cyperus involucratus*	umbrella plant	Х	Х	
Schoenoplectus californicus	California bulrush	Χ	Х	
JUNCACEAE	RUSH FAMILY			
Juncus acutus ssp. leopoldii CRPR 4.2	Southwestern spiny rush	Х	Х	Х
POACEAE	GRASS FAMILY			
Avena fatua*	wildoat	Х	Х	Χ
Brachypodium distachyon*	Purple false brome		Х	
Bromus diandrus*	ripgut brome	Χ		
Bromus madritensis subsp. rubens*	red brome	Χ		
Cortaderia jubata*	pampas grass	X	X	Χ
Cynodon dactylon*	Bermuda grass		Χ	Χ
Festuca myuros*	rattail sixweeks grass	X		
Festuca perennis*	Italian rye grass	Х	Х	
Hordeum murinum*	foxtail barley	Х	Х	Χ
Lamarckia aurea*	goldentop grass	X		
Polypogon monspeliensis*	annual beard grass		Х	Χ
Polypogon viridis*	water beard grass		Х	
Stipa miliacea*	smilo grass		Χ	Χ
PONTEDERIACEAE	HYACINTH FAMILY			
Eichhornia crassipes*	Common water hyacinth	X	Х	Χ
TYPHACEAE	CATTAIL FAMILY			
Typha domingensis	narrowleaf cattail	Х	Х	Χ

California Native Plant Society (CNPS) Rare Plant Ranks (CRPR):

2B: Plants rare, threatened, or endangered in California but more common elsewhere

4: Plants of limited distribution; a watch list."

CNPS Threat Rank:

0.2 Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)

Sources:

Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals, including the Consortium of California Herbaria. [web application]. 2020. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/ (Accessed: Aug 03, 2020).

^{*} Not native to California.

Johnny's Tree Service

2479 Mountain Lane Upland, CA 91784 (909) 946-1123 office (909) 985-1039 fax johnniestreeservice@verizon.net

March 5, 2019

Dear Fellow Arborists and Concerned Parties:

With regards to The Lake Property a.k.a: Rancho Cielito, and field review of the trees, I have listed below the following considerations that will be made:

- Prior to grading, material deliveries and/or construction, steps will be taken to protect and minimize any damage to the existing trees.
- Trees marked for preservation will be temporarily fenced at the drip line to protect root areas and low limbs from heavy equipment and traffic.
- Any pruning of limbs for safety and/or clearance issues will conform to I.S.A. standards.
 Trees will be kept in their natural state as much as possible.
- Where there is a root pruning or damage to any roots, feeding and additional water will be added.
- See attached appendix of tree identification with survey of map for specific location of trees identified.

We appreciate your concern and look forward to a win-win for the trees and the Rancho Cielito construction project.

Sincerely,

John P. Garbo Certified Arborist

WE-3453A

RECEIVED

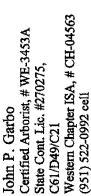
MAR 26 2019

CITY OF CHINO HILLS
COMMUNITY DEVELOPMENT DEPARTMENT

Johnny's Tree Service

2479 Mountain Lane Upland, CA 91784

(909) 946-1123 office (909) 985-1039 fax johnniestreeservice@verizon.net





ARBORIST REPORT / INVENTORY REPORT

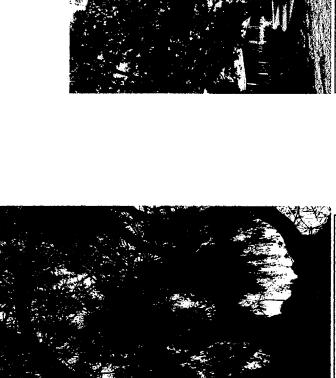
The Lake Property - (a.k.a.) Rancho Clelito Chino Hills, CA 91790 15111 Pipeline Ave.

Tag #	Tag # Species/Common Name	Size (M=multi trunk)	Preserve/Remove	Category	Condition/Health	Ith Comments
γ1	Quercus agrifolia/Coastal Oak	M 32"	Preserve	Native	Good	
4	Quercus agrifolia/Coastal Oak	01	Preserve	Native	Good	
52	Shinus molle/Ca. Pepper	M 80"	Remove	Heritage	Good.	Parking areas required in this location
74	Quercus agrifolia/Coastal Oak	53.	Preserve	Native	Good	
0 8	Shinus molle/Ca. Pepper	52"	Remove	Heritage	Good	Extensive cavities compromise stability
%	Shinus molle/Ca.Pepper	45"	Preserve	Heritage	Good	
82	Shinus molle/Ca.Pepper	46"	Preserve	Heritage	Good	
83	Shinus molle/Ca. Pepper	49"	Preserve	Heritage	Good	
8	Quercus agrifolia/Coastal Oak	. 63	Preserve	Native		
25	Quercus agrifolia/Coastal Oak	4**	Preserve	Native		
93	Quercus agrifolialCoastal Oak	Ŋ	Preserve	Native		
3	Quercus agrifolia/Coastal Oak	53.	Preserve	Native		
95	Quercus agrifolia/Coastal Oak	4.*	Preserve	Native		
141	Shinus molle/Ca. Pepper	59"	Remove	Heritage		Extensive cavities compromise stability
145	Quercus agrifolia/Coastal Oak	ŝo	Preserve	Native		·
146	Quercus agrifolia/Coastal Oak	4"	Preserve	Native		
147	Quercus agrifolia/Coastal Oak	M 9"	Preserve	Native		
148	Quercus agrifolia/Coastal Oak	733	Preserve	Native		
198	Platanus racemosa/Sycamore	32"	Removed	Native		Extensive cavities compromised stability
306	Platanus racemosa/Sycamore	M 18"	Preserve	Native		
321	Quercus agrifolia/Coastal Oak	12"	Preserve	Native		
322	Platanus racemosa Sycamore	M 20"	Preserve	Native		
366	Salix lasiolepis/Arroyo willow	M 59"	Preserve	Heritage		
454	Shinus molle/Ca. Pepper	M 64"	Preserve	Heritage		Decay cavity
455	Cerationia sillqua/Carob	M 60"	Preserve	Heritage		
459	Cerationia siliqua/Carob	M 70"	Preserve	Heritage		

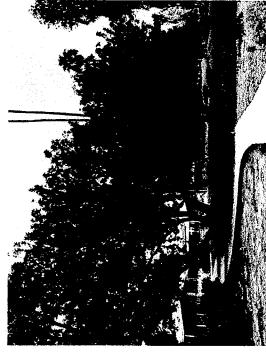
Natives Trees - 16 Heritage Trees - 10 Total Trees - 26

John Gaffac

١



Sample Heritage Tree # 454
Shinus molle-California Pepper



Sample Heritage Tree # 455 Ceratonia siliqua-Carob tree



Sample Preservation Trees #522, 523, 524

Quercus agrifolia/ Coastal oak tree, seedlings
grown from heritage #1 tree

Sample Heritage Tree # 1 Quercus agrifolia/ Coastal oak tree



		pecies L		
Tag#	Species	Size	*	Preserve/Remove
1	Quercus Agrifolia	32"	М	Preserve
2	Lagerstroemia Indica	30"	М	Preserve
3	Pinus Halepensis	14"		Preserve
4	Quercus Agrifolia	10"		Preserve
5	Magnolia Grandiflora	12"		Preserve
6	Callistemon Citrinus	30"	М	Preserve
7	Callistemon Citrinus	20"	М	Preserve
8	Carya Illinoensis	30"		Preserve
9	Carya Illinoensis	14"		Preserve
10	Olea Europaea	28"	М	Preserve
11	Pinus Halepensis	17"		Preserve
12	Olea Europaea	31"	М	Preserve
13	Carya Illinoensis	11"		Preserve
14	Callistemon Citrinus	10"	М	Preserve
15	Callistemon Citrinus	12"	М	Preserve
16	Callistemon Citrinus	12"	М	Preserve
17	Callistemon Citrinus	12"	М	Preserve
18	Callistemon Citrinus	16"	М	Preserve
19	Heteromeles Arbutifolia	18"	М	Preserve
20	Heteromeles Arbutifolia	11"	М	Preserve
21	Pinus Halepensis	36"		Preserve
22	Pinus Halepensis	6"		Preserve
23	Olea Europaea	40"	М	Preserve
24	Carya Illinoensis	24"		Preserve
25	Pinus Halepensis	5"		Preserve
26	Pinus Halepensis	6"		Preserve
27	Morus Alba	20"		Preserve
28	Callistemon Citrinus	16"	М	Preserve
29	Olea Europaea	26"	М	Preserve
30	Pittosporum Phillyraeoides	6"		Preserve
31	Olea Europaea	21"	М	Preserve
32	Olea Europaea	14"		Preserve
33	Carya Illinoensis	7"	†	Preserve
34	Carya Illinoensis	14"	†	Preserve
35	Carya Illinoensis	13"		Preserve
36	Carya Illinoensis	15"		Preserve
37	Carya Illinoensis	17"	1	Preserve
38	Carya Illinoensis	18"		Preserve
39	Carya Illinoensis	16"		Preserve
40	Carya Illinoensis	30"	М	Preserve
41	Lagerstroemia Indica	9"	М	Preserve

Tag #	Species	Size	*	Preserve/Remove
42	Lagerstroemia Indica	16"	М	Preserve
43	Pittosporum Phillyraeoides	7"		Preserve
44	Magnolia Grandiflora	8"		Preserve
45	Lagerstroemia Indica	30"	М	Preserve
46	Magnolia Grandiflora	7"		Preserve
47	Pittosporum Phillyraeoides	7"		Preserve
48	Magnolia Grandiflora	8"		Preserve
49	Pittosporum Phillyraeoides	13"	М	Preserve
50	Pittosporum Phillyraeoides	8"		Preserve
51	Lagerstroemia Indica	8"	М	Preserve
52	Lagerstroemia Indica	7"	М	Preserve
53	Carya Illinoensis	27"		Preserve
54	Carya Illinoensis	6"		Preserve
55	Pinus Halepensis	28"		Preserve
56	Eucalyptus Globulus	57"		Preserve
57	Schinus Molle	12"	М	Preserve
58	Eucalyptus Globulus	32"		Remove
59	Juniperus Californica	21"		Remove
60	Eucalyptus Globulus	90"		Preserve
61	Schinus Molle	28"		Preserve
62	Schinus Molle	27"		Preserve
63	Schinus Molle	24"		Preserve
64	Schinus Molle	21"		Preserve
65	Juniperus Californica	22"	М	Remove
66	Juniperus Californica	22"		Remove
67	Schinus Molle	7"		Preserve
68	Schinus Molle	30"		Preserve
69	Eucalyptus Globulus	22"		Preserve
70	Eucalyptus Globulus	45"		Preserve
71	Eucalyptus Globulus	77"	М	Remove
72	Eucalyptus Globulus	74"	М	Remove
73	Schinus Molle	80"	М	Removed
74	Quercus Agrifolia	5"		Preserve
75	Schinus Molle	36"		Remove
76	Phoenix Canariensis	36"		Remove
77	Eucalyptus Globulus	55"	М	Remove
78	Schinus Molle	36"	М	Remove
79	Eucalyptus Globulus	54"		Preserve
80	Schinus Molle	52"		Remove

Tag#	Species	Size	*	Preserve/Remove
81	Schinus Molle	45"		Preserve
82	Schinus Molle	46"		Preserve
83	Schinus Molle	49"		Preserve
84	Eucalyptus Globulus	28"	Ī	Remove
85	Schinus Molle	32"	М	Remove
86	Eucalyptus Globulus	22"	М	Remove
87	Eucalyptus Globulus	46"		Remove
88	Quercus Agrifolia	6"		Preserve
89	Eucalyptus Globulus	26"	М	Remove
90	Eucalyptus Globulus	14"		Remove
91	Eucalyptus Globulus	31"		Remove
92	Quercus Agrifolia	4"		Preserve
93	Quercus Agrifolia	. 5"		Preserve
94	Quercus Agrifolia	5"		Preserve
95	Quercus Agrifolia	4"		Preserve
96	Eucalyptus Globulus	32"	## 409243.07.21014.004(C	Remove
97	Eucalyptus Globulus	25"	1	Remove
98	Eucalyptus Globulus	36"		Remove
99	Eucalyptus Globulus	44"	1	Remove
100	Eucalyptus Globulus	72"	М	Remove
101	Pittosporum Phillyraeoides	24"		Remove
102	Pittosporum Phillyraeoides	17"	М	Remove
103	Koelreuteria Paniculata	18"		Remove
104	Koelreuteria Paniculata	18"		Remove
105	Koelreuteria Paniculata	12"		Remove
106	Carya Illinoensis	15"		Remove
107	Carya Illinoensis	14"		Remove
108	Syagrus Romanzoffianum	12"		Remove
109	Koelreuteria Paniculata	12"		Remove
110	Koelreuteria Paniculata	16"		Remove
111	Cercidium Microphyllum	7"		Remove
112	Phoenix Canariensis	36"		Remove
113	Phoenix Canariensis	32"		Remove
114	Phoenix Canariensis	30"		Remove
115	Carya Illinoensis	32"	М	Remove
116	Carya Illinoensis	18"		Remove
117	Brachychiton Populneus	15"		Remove
118	Brachychiton Populneus	9"		Remove
119	Brachychiton Populneus	5"	1	Remove
120	Brachychiton Populneus	12"		Remove
121	Brachychiton Populneus	12"		Remove

Tag #	Species	Size	*	Preserve/Remove
122	Brachychiton Populneus	7"		Remove
123	Brachychiton Populneus	5"		Remove
124	Brachychiton Populneus	14"		Remove
125	Eucalyptus Globulus	35"		Remove
126	Eucalyptus Globulus	28"	М	Remove
127	Eucalyptus Globulus	7"		Remove
128	Brachychiton Populneus	17"		Remove
129	Morus Alba	11"		Remove
130	Morus Alba	6"		Remove
131	Jacaranda Mimosifolia	13"	 	Remove
132	Ulmus Pavifolia	18"		Remove
133	Lagerstroemia Indica	5"	М	Remove
134	Eucalyptus Globulus	26"		Remove
135	Eucalyptus Globulus	32"		Remove
136	Juniperus Californica	12"		Remove
137	Eucalyptus Globulus	44"		Remove
138	Eucalyptus Globulus	23"		Remove
139	Eucalyptus Globulus	53"	М	Remove
140	Eucalyptus Globulus	34"		Remove
141	Schinus Molle	59"		Remove
142	Juniperus Californica	15"	М	Remove
143	Eucalyptus Globulus	48"	М	Remove
144	Acer Saccharinum	24"	·	Remove
145	Quercus Agrifolia	8"		Preserve
146	Quercus Agrifolia	4"		Preserve
147	Quercus Agrifolia	9"	M	Preserve
148	Quercus Agrifolia	7"		Preserve
149	Eucalyptus Globulus	100"	М	Remove
150	Eucalyptus Globulus	32"	М	Remove
151	Phoenix Canariensis	24"		Remove
152	Phoenix Canariensis	24"		Remove
153	Phoenix Canariensis	29"		Remove
154	Washingtonia Robusta	11"		Remove
155	Washingtonia Robusta	12"		Remove
156	Washingtonia Robusta	12"		Remove
157	Washingtonia Robusta	12"		Remove
158	Washingtonia Robusta	13"		Remove
159	Washingtonia Robusta	13"		Remove
160	Washingtonia Robusta	12"		Remove

Tag #	Species	Size	*	Preserve/Remove
161	Washingtonia Robusta	12"		Remove
162	Washingtonia Robusta	12"		Remove
163	Washingtonia Robusta	13"		Remove
164	Washingtonia Robusta	12"		Remove
165	Eucalyptus Globulus	55"	М	Remove
166	Juniperus Californica	6"		Remove
167	Eucalyptus Globulus	9"		Remove
168	Eucalyptus Globulus	11"		Remove
169	Eucalyptus Globulus	15"		Remove
170	Eucalyptus Globulus	63"	М	Remove
171	Eucalyptus Globulus	24"	М	Remove
172	Eucalyptus Globulus	24"		Remove
173	Phoenix Canariensis	29"		Remove
174	Phoenix Canariensis	36"		Remove
175	Eucalyptus Globulus	41"		Remove
176	Phoenix Canariensis	27"		Remove
177	Schinus Molle	33"		Preserve
178	Juniperus Californica	36"	М	Remove
179	Juniperus Californica	23"	М	Remove
180	Juniperus Californica	33"	М	Remove
181	Juniperus Californica	25"		Remove
182	Juniperus Californica	18"	М	Remove
183	Schinus Molle	24"		Remove
184	Schinus Molle	32"		Remove
185	Juniperus Californica	17"		Remove
186	Juniperus Californica	24"		Remove
187	Tipuana Tipu	11"		Remove
188	Washingtonia Robusta	16"		Remove
189	Washingtonia Robusta	13"		Remove
190	Washingtonia Robusta	18"		Remove
191	Juniperus Californica	22"		Remove
192	Juniperus Californica	20"	М	Remove
193	Juniperus Californica	22"	М	Remove
194	Washingtonia Robusta	18"		Remove
195	Schinus Molle	33"		Remove
196	Schinus Molle	36"		Remove
197	Washingtonia Robusta	16"		Remove
198	Platanus Racemosa	32"		Remove
199	Washingtonia Robusta	18"		Remove
200	Juniperus Californica	31"	М	Remove
201	Washingtonia Robusta	18"		Remove

Tag#	Species	Size	*	Preserve/Remove
202	Washingtonia Robusta	15"		Remove
203	Washingtonia Robusta	16"		Remove
204	Washingtonia Robusta	15"		Remove
205	Washingtonia Robusta	15"		Remove
206	Washingtonia Robusta	15"		Remove
207	Juniperus Californica	22"		Remove
208	Washingtonia Robusta	18"		Remove
209	Juniperus Californica	20"		Remove
210	Washingtonia Robusta	15"		Remove
211	Washingtonia Robusta	16"		Remove
212	Washingtonia Robusta	16"		Remove
213	Washingtonia Robusta	16"		Remove
214	Washingtonia Robusta	18"		Remove
215	Washingtonia Robusta	18"		Remove
216	Washingtonia Robusta	15"		Remove
217	Washingtonia Robusta	16"		Remove
218	Washingtonia Robusta	19"		Remove
219	Washingtonia Robusta	18"		Remove
220	Washingtonia Robusta	15"		Remove
221	Washingtonia Robusta	17"		Remove
222	Washingtonia Robusta	16"		Remove
223	Washingtonia Robusta	16"		Remove
224	Washingtonia Robusta	13"		Remove
225	Washingtonia Robusta	14"		Remove
226	Washingtonia Robusta	17"		Remove
227	Washingtonia Robusta	16"		Remove
228	Eucalyptus Polyanthemos	36"		Preserve
229	Washingtonia Robusta	15"		Remove
230	Syagrus Romanzoffianum	12"		Remove
231	Juniperus Californica	19"	М	Remove
232	Phoenix Canariensis	22"		Remove
233	Juniperus Californica	10"		Remove
234	Juniperus Californica	8"		Remove
235	Washingtonia Robusta	24"		Remove
236	Juniperus Californica	20"	М	Remove
237	Juniperus Californica	32"	М	Remove
238	Washingtonia Robusta	17"		Remove
239	Washingtonia Robusta	16"		Remove
240	Washingtonia Robusta	17"		Remove

Tag #	Species	Size	*	Preserve/Remove
241	Schinus Molle	40"		Remove
242	Washingtonia Robusta	16"		Remove
243	Washingtonia Robusta	17"		Remove
244	Washingtonia Robusta	16"		Remove
245	Schinus Molle	39"		Removed
246	Washingtonia Robusta	18"		Remove
247	Juniperus Californica	24"		Remove
248	Juniperus Californica	14"		Remove
249	Juniperus Californica	18"		Remove
250	Washingtonia Robusta	16"		Remove
251	Carya Illinoensis	20"		Remove
252	Carya Illinoensis	14'		Remove
253	Juniperus Californica	36"	М	Remove
254	Juniperus Californica	24"	М	Remove
255	Juniperus Californica	16"		Remove
256	Schinus Molle	39"	М	Remove
257	Juniperus Californica	18"		Remove
258	Schinus Molle	30"	М	Remove
259	Eucalyptus Globulus	45"	М	Remove
260	Eucalyptus Globulus	8"		Preserve
261	Eucalyptus Globulus	49"		Preserve
262	Eucalyptus Globulus	24"		Preserve
263	Eucalyptus Globulus	8"		Preserve
264	Eucalyptus Globulus	32"	М	Preserve
265	Eucalyptus Globulus	15"		Preserve
266	Eucalyptus Globulus	30"		Preserve
267	Eucalyptus Globulus	15"		Remove
268	Eucalyptus Globulus	9"		Preserve
269	Eucalyptus Globulus	8"		Preserve
270	Eucalyptus Globulus	22"		Remove
271	Washingtonia Robusta	12"		Remove
272	Washingtonia Robusta	16"		Remove
273	Washingtonia Robusta	17"		Remove
274	Washingtonia Robusta	16"		Remove
275	Washingtonia Robusta	15"		Remove
276	Washingtonia Robusta	14"		Remove
277	Washingtonia Robusta	16"		Remove
278	Washingtonia Robusta	16"		Remove
279	Washingtonia Robusta	14"		Remove
280	Washingtonia Robusta	16"		Remove
281	Washingtonia Robusta	15"		Remove

		pecies Li	·	Preserve/Remove
Tag#	Species	Size	*	r reserve/ Kemove
282	Washingtonia Robusta	15"		Remove
283	Washingtonia Robusta	15"		Remove
284	Phoenix Canariensis	32"		Remove
285	Washingtonia Robusta	16"		Remove
286	Phoenix Canariensis	36"		Remove
287	Phoenix Canariensis	32"		Remove
288	Washingtonia Robusta	17"		Remove
289	Washingtonia Robusta	16"		Remove
290	Washingtonia Robusta	17"		Remove
291	Washingtonia Robusta	16"		Remove
292	Washingtonia Robusta	12"		Remove
293	Washingtonia Robusta	14"		Remove
294	Washingtonia Robusta	16"		Remove
295	Washingtonia Robusta	17"		Remove
296	Washingtonia Robusta	16"		Remove
297	Washingtonia Robusta	17"		Remove
298	Washingtonia Robusta	15"		Remove
299	Washingtonia Robusta	16"		Remove
300	Washingtonia Robusta	16"		Remove
301	Washingtonia Robusta	15"		Remove
302	Washingtonia Robusta	15"		Remove
303	Populus Fremontii	22"	М	Preserve
304	Populus Fremontii	11"		Preserve
305	Populus Fremontii	20"	М	Preserve
306	Platanus Racemosa	18"	М	Preserve
307	Populus Fremontii	23"	М	Remove
308	Salix Lasiolepis	20"	М	Remove
309	Populus Fremontii	26"	М	Preserve
310	Populus Fremontii	30"	М	Preserve
311	Populus Fremontii	19"		Preserve
312	Populus Fremontii	24"	М	Remove
313	Populus Fremontii	14"		Preserve
314	Populus Fremontii	27"	М	Preserve
315	Populus Fremontii	12"		Preserve
316	Populus Fremontii	12"		Preserve
317	Salix Lasiolepis	13"	м	Preserve
318	Salix Lasiolepis	10"	M	Preserve
319	Populus Fremontii	11"		Preserve
320	Populus Fremontii	26"	М	Preserve

Tag#	Species	Size	*	Preserve/Remove
321	Quercus Agrifolia	12"		Preserve
322	Platanus Racemosa	20"	М	Preserve
323	Populus Fremontii	16"		Preserve
324	Populus Fremontii	5"		Preserve
325	Populus Fremontii	22"	М	Preserve
326	Salix Lasiolepis	20"	М	Preserve
327	Populus Fremontii	11"		Preserve
328	Populus Fremontii	5"		Preserve
329	Salix Lasiolepis	20"	М	Preserve
330	Populus Fremontii	18"	М	Preserve
331	Phoenix Canariensis	32"		Remove
332	Salix Lasiolepis	22"	М	Remove
333	Salix Lasiolepis	21"	М	Remove
334	Phoenix Canariensis	26"		Remove
335	Phoenix Canariensis	26"		Preserve
336	Salix Lasiolepis	17"	М	Remove
337	Populus Fremontii	10"		Remove
338	Salix Lasiolepis	20"	М	Remove
339	Populus Fremontii	21"	М	Remove
340	Populus Fremontii	13"		Preserve
341	Salix Lasiolepis	11"		Preserve
342	Salix Lasiolepis	6"		Remove
343	Salix Lasiolepis	33"	М	Preserve
344	Populus Fremontii	40"	М	Preserve
345	Salix Lasiolepis	42"	М	Preserve
346	Salix Lasiolepis	16"		Preserve
347	Salix Lasiolepis	18"	1	Preserve
348	Populus Fremontii	18"	М	Preserve
349	Populus Fremontii	12"		Preserve
350	Salix Lasiolepis	22"	М	Preserve
351	Salix Lasiolepis	30"	М	Preserve
352	Populus Fremontii	17"	<u> </u>	Preserve
353	Salix Lasiolepis	7"		Preserve
354	Salix Lasiolepis	32"	М	Preserve
355	Salix Lasiolepis	24"	М	Preserve
356	Salix Lasiolepis	10"	 	Preserve
357	Salix Lasiolepis	16"	М	Preserve
358	Salix Lasiolepis	14"	М	Preserve
359	Salix Lasiolepis	24"	М	Preserve
360	Populus Fremontii	14"	М	Preserve
361	Populus Fremontii	9"	M	Preserve

Tag #	Species	Size	*	Preserve/Remove
362	Salix Lasiolepis	26"	М	Preserve
363	Salix Lasiolepis	21"	М	Preserve
364	Populus Fremontii	14"		Preserve
365	Populus Fremontii	5"		Preserve
366	Salix Lasiolepis	29"	М	Preserve
367	Salix Lasiolepis	25"	М	Preserve
368	Salix Lasiolepis	20"	М	Preserve
369	Salix Lasiolepis	31"	М	Preserve
370	Populus Fremontii	14"		Preserve
371	Populus Fremontii	7"		Preserve
372	Salix Lasiolepis	28"	М	Preserve
373	Salix Lasiolepis	18"	М	Preserve
374	Salix Lasiolepis	26"	М	Preserve
375	Populus Fremontii	39"		Preserve
376	Salix Lasiolepis	11"		Preserve
377	Salix Lasiolepis	26"	М	Preserve
378	Salix Lasiolepis	24"	М	Preserve
379	Populus Fremontii	24"	М	Preserve
380	Salix Lasiolepis	20"	М	Preserve
381	Salix Lasiolepis	30"	М	Preserve
382	Salix Lasiolepis	29"		Preserve
383	Salix Lasiolepis	20"	М	Preserve
384	Salix Lasiolepis	24"	М	Preserve
385	Salix Lasiolepis	33"	М	Preserve
386	Populus Fremontii	24"	М	Preserve
387	Salix Lasiolepis	30"	М	Preserve
388	Salix Lasiolepis	27"	М	Preserve
389	Salix Lasiolepis	36"	М	Preserve
390	Salix Lasiolepis	36"	М	Preserve
391	Populus Fremontii	38"	М	Preserve
392	Salix Lasiolepis	41"	М	Preserve
393	Salix Lasiolepis	18"		Preserve
394	Salix Lasiolepis	27"	М	Preserve
395	Salix Lasiolepis	17"		Preserve
396	Salix Lasiolepis	26"	М	Preserve
397	Salix Lasiolepis	36"	М	Preserve
398	Salix Lasiolepis	20"	М	Preserve
399	Salix Lasiolepis	59"	М	Preserve
400	Washingtonia Robusta	16"		Preserve

Tag#	Species	Size	*	Preserve/Remove
401	Salix Lasiolepis	20"		Preserve
402	Salix Lasiolepis	7"		Remove
403	Salix Lasiolepis	11"	М	Preserve
404	Salix Lasiolepis	34"	М	Preserve
405	Salix Lasiolepis	29"	М	Preserve
406	Salix Lasiolepis	37"	М	Remove
407	Salix Lasiolepis	24"	М	Remove
408	Salix Lasiolepis	16"		Remove
409	Salix Lasiolepis	34"	М	Preserve
410	Populus Fremontii	26"	М	Preserve
411	Salix Lasiolepis	34"	М	Preserve
412	Salix Lasiolepis	16"	М	Preserve
413	Salix Lasiolepis	21"	М	Preserve
414	Salix Lasiolepis	18"	М	Preserve
415	Salix Lasiolepis	29"	М	Preserve
416	Populus Fremontii	16"	М	Preserve
417	Salix Lasiolepis	19"		Preserve
418	Populus Fremontii	26"	М	Preserve
419	Alnus Rhombifolia	11"		Preserve
420	Washingtonia Robusta	13"		Preserve
421	Lagerstroemia Indica	7"		Preserve
422	Lagerstroemia Indica	5"		Preserve
423	Eucalyptus Globulus	14"		Preserve
424	Populus Fremontii	18"		Preserve
425	Populus Fremontii	10"		Preserve
426	Salix Lasiolepis	5"		Preserve
427	Salix Lasiolepis	14"		Preserve
428	Salix Lasiolepis	32"	М	Preserve
429	Salix Lasiolepis	9"		Preserve
430	Salix Lasiolepis	12"	М	Preserve
431	Salix Lasiolepis	11"	М	Preserve
432	Washingtonia Robusta	18"		Preserve
433	Washingtonia Robusta	16"		Preserve
434	Salix Lasiolepis	14"		Preserve
435	Alnus Rhombifolia	5"		Preserve
436	Alnus Rhombifolia	6"		Preserve
437	Alnus Rhombifolia	7"	*****	Preserve
438	Salix Lasiolepis	9"		Preserve
439	Salix Lasiolepis	14"		Preserve
440	Salix Lasiolepis	10"	М	Preserve
441	Salix Lasiolepis	8"	М	Preserve

	riee species List				
Tag#	Species	Size	*	Preserve/Remove	
442	Salix Lasiolepis	10"	М	Preserve	
443	Salix Lasiolepis	11"	М	Preserve	
444	Salix Lasiolepis	6"		Preserve	
445	Salix Lasiolepis	6"		Preserve	
446	Podocarpus Gracilior	10"	М	Preserve	
447	Salix Lasiolepis	11"	М	Preserve	
448	Salix Lasiolepis	21"		Preserve	
449	Salix Lasiolepis	26"	М	Preserve	
450	Alnus Rhombifolia	11"		Preserve	
451	Alnus Rhombifolia	11"		Preserve	
452	Alnus Rhombifolia	7"		Preserve	
453	Melaleuca Quinquenervia	8"		Preserve	
454	Schinus Molle	64"	М	Preserve	
455	Ceratonia Siliqua	60"	М	Preserve	
456	Ceratonia Siliqua	40"		Preserve	
457	Washingtonia Robusta	15"		Preserve	
458	Washingtonia Robusta	16"		Preserve	
459	Ceratonia Siliqua	70"	M	Preserve	
460	Salix Lasiolepis	24"	М	Preserve	
461	Brachychiton Populneus	16"		Preserve	
462	Washingtonia Robusta	16"		Preserve	
463	Alnus Rhombifolia	8"		Preserve	
464	Alnus Rhombifolia	15"	М	Preserve	
465	Alnus Rhombifolia	11"		Preserve	
466	Alnus Rhombifolia	9"		Preserve	
467	Salix Lasiolepis	21"	М	Preserve	
468	Washingtonia Robusta	18"		Preserve	
469	Washingtonia Robusta	18"		Preserve	
470	Salix Lasiolepis	5"		Preserve	
471	Salix Lasiolepis	12"		Preserve	
472	Populus Fremontii	8"		Preserve	
473	Populus Fremontii	9"		Preserve	
474	Populus Fremontii	10"		Preserve	
475	Populus Fremontii	8"		Preserve	
476	Populus Fremontii	6"		Preserve	
477	Olea Europaea	15"		Preserve	
478	Phoenix Canariensis	28"		Preserve	
479	Salix Lasiolepis	13"		Preserve	
480	Alnus Rhombifolia	18"	М	Preserve	

Tag#	Species	Size	*	Preserve/Remove
481	Alnus Rhombifolia	10"		Preserve
482	Populus Fremontii 31"			Preserve
483	Populus Fremontii	36"	М	Preserve
484	Populus Fremontii	15"		Preserve
485	Eucalyptus Globulus	51"		Preserve
486	Eucalyptus Globulus	43"		Preserve
487	Alnus Rhombifolia	12"		Preserve
488	Alnus Rhombifolia	13"		Preserve
489	Alnus Rhombifolia	12"		Preserve
490	Salix Lasiolepis	16"		Preserve
491	Populus Fremontii	12"		Preserve
492	Populus Fremontii	12"		Preserve
493	Populus Fremontii	11"		Preserve
494	Populus Fremontii	16"		Preserve
495	Populus Fremontii	13"		Preserve
496	Salix Lasiolepis	24"	,	Preserve
497	Salix Lasiolepis	21"		Preserve
498	Alnus Rhombifolia	9"		Preserve
499	Alnus Rhombifolia	13"	М	Preserve
500	Alnus Rhombifolia	6"		Preserve
501	Alnus Rhombifolia	6"		Preserve
502	Salix Lasiolepis	28"	М	Preserve
503	Washingtonia Robusta	18"		Preserve
504	Washingtonia Robusta	18"		Preserve
505	Salix Lasiolepis	14"	М	Preserve
506	Salix Lasiolepis	22"	М	Preserve
507	Salix Lasiolepis	25"	М	Preserve
508	Salix Lasiolepis	22"	М	Preserve
509	Populus Fremontii	7"		Preserve
510	Salix Lasiolepis	13"		Preserve
511	Salix Lasiolepis	5"		Preserve
512	Washingtonia Robusta	16"		Preserve
513	Salix Lasiolepis	5"		Preserve
514	Salix Lasiolepis	16"	М	Preserve
515	Salix Lasiolepis	18"	М	Preserve
516	Salix Lasiolepis	13"	М	Preserve
517	Salix Lasiolepis	16"	М	Preserve
518	Salix Lasiolepis	12"	М	Preserve
519	Salix Lasiolepis	5"		Preserve
520	Salix Lasiolepis	7"		Preserve
521	Koelreuteria Paniculata	18"	М	Preserve

Tag #	Species	Size	*	Preserve/Remove	
522	Alnus Rhombifolia	14"	М	Preserve	
523	Alnus Rhombifolia	11"	М	Preserve	
524	Alnus Rhombifolia	11"	М	Preserve	
525	Alnus Rhombifolia	14"		Preserve	
526	Alnus Rhombifolia	12"		Preserve	
527	Lagerstroemia Indica	4"		Preserve	
528	Lagerstroemia Indica	5"		Preserve	
529	Lagerstroemia Indica	5"		Preserve	
530	Lagerstroemia Indica	5"		Preserve	
531	Lagerstroemia Indica	4"		Preserve	
532	Lagerstroemia Indica	5"		Preserve	

×

M = Multi-trunk

Denotes Heritage or Native Specimen

Ecosystem

Arborist Report Review

Addressed To:

Kim Zuppiger, Planner Community Development 14000 City Center Drive Chino Hills, CA 91709 (909) 364-2761 kzuppiger@chinohills.org

Report Date:

February 6, 2020

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Assessment Site:

Future site of Ranch Cielito Within the City of Chino Hills Bordered to the north by Lake Los Serranos Bordered to the east by Ramona Ave Bordered to the south by Los Serranos Blvd Bordered to the west by Pipeline Ave

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Site Location



Protected Tree Locations

Introduction

Landscape Dynamics was contacted to provide a review of the Arborist Report / Inventory Report for The Lake Property known as Rancho Cielito. The arborist report provided data on 532 trees, 26 of which are considered protected by the City of Chino Hills Tree Preservation Ordinance Chapter 16.90.

Report and Site Review

The Arborist Report / Inventory Report prepared by Johnny's Tree service was reviewed for compliance with the City of Chino Hills Tree Preservation Ordinance and all tree locations and varieties were confirmed in the field by Landscape Dynamics staff. Locations of protected trees were GPS tagged and photographed by Landscape Dynamics staff and locations are shown in the exhibits included in this report. Two (2) trees were identified that were not included in the arborist report or site plan. Both of the untagged trees identified are Eucalyptus globulus and are excluded from the heritage tree designation. These trees have been given the designation #533 and #534 and should be added to the tree inventory and site plan.

Tree Protection and Mitigation

A Tree Protection, Replacement, and Mitigation Plan shall be prepared and submitted to the City of Chino Hills in accordance with the City of Chino Hills Tree Preservation Ordinance, comments included in this document, and the attached Tree Protection Specifications or comparable specifications approved by the City of Chino Hills Arborist.



Protection - Trees that have been identified for preservation or removal should be clearly identified with their variety, DBH, canopy / dripline limits, and the limits of their required tree protection zone. The tree protection zone and canopy / dripline limits shall be shown on all plans including demolition, civil engineering, sewer and water, dry utilities, hardscape, landscape, etc. The tree protection zones are to be developed utilizing the attached Tree Protection Specifications from the Urban Tree Foundation and be delineated and identified clearly on the Tree Protection, Replacement, and Mitigation Plan. In addition to the diameter at breast height, size and shape of the canopy, and proposed tree protection zone, the plan shall include the existing and proposed grade level at the base of the tree trunk and at the limits of the tree canopy.

Mitigation and Replacement - Four (4) trees on site are proposed to be removed and are considered protected by the tree preservation ordinance including one Platanus racemosa and one Schinus molle that were noted as having been removed prior to the inventory. It should be noted that tree # 399 was determined to have less than ideal structure and could be considered for removal, tree #399 has been included on the mitigation table below. The tree protection ordinance requires mitigation of protected trees identified for removal at the following rates based upon the removed trees' DBH:

3" up to 6" = (1) 24" box 24" up to 30" = (2) 48" box 30" up to 12" = (2) 24" box 30" up to 36" = (4) 48" box 12" up to 18" = (1) 36" box 36" up to 42" = (6) 48" box 18" up to 24" = (2) 36" box

For trees larger than 42" a factor of (1) 48" box tree per 7" of DBH was used. A total of (33) 48" box trees will be required to mitigate the trees proposed for removal on the site. These mitigation trees should be selected from one of the three tree varieties protected by the tree protection ordinance, these trees include California Sycamore, Coast Live Oak, California Black Walnut. Mitigation trees are required to be monitored for a period of five (5) years following installation per City of Chino Hills guidelines.

The quantities of trees required for mitigation for the four trees are as follows:

Tree No.	Botanical Name	Common Name	Form	DBH	Preserve / Remove	Required Mitigation
73	Schinus molle	California Pepper	Multi	80	Removed	(12) 48" Box Trees
80	Schinus molle	California Pepper		52	Remove	(8) 48" Box Trees
141	Schinus molle	California Pepper		59	Remove	(9) 48" Box Trees
198	Platanus racemosa	Western Sycamore		32	Removed	(4) 48" Box Trees
399	Salix lasiolepis	Arroyo Willow	Multi	59	Preserve	(9) 48" Box Trees (if removed)

The Tree Protection, Replacement, and Mitigation Plan shall be submitted to the City of Chino Hills showing the location of all trees removed, trees protected in place, including the limits of tree protection zones, and the proposed location of all required mitigation trees. A final tree planting plan can be submitted as part of the Tree Protection, Replacement, and Mitigation Plan if trees for mitigation planting and monitoring are specifically identified.

Greg Zoll

Landscape Architect, Certified Arborist

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(951) 264-4839

CLA# 5204 ISA #WE-9711A



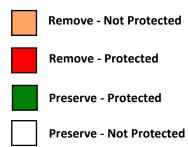


Tree No.	Botanical Name	Common Name	Form	DBH	Preserve / Remove	Required Mitigation
1	Quercus agrifolia	Coast Live Oak	Multi	32	Preserve	
4	Quercus agrifolia	Coast Live Oak		10	Preserve	
73	Schinus molle	California Pepper	Multi	80	Removed	(12) 48" Box Trees
74	Quercus agrifolia	Coast Live Oak		5	Preserve	
80	Schinus molle	California Pepper		52	Remove	(8) 48" Box Trees
71	Schinus molle	California Pepper		45	Preserve	
82	Schinus molle	California Pepper		46	Preserve	
83	Schinus molle	California Pepper		49	Preserve	
88	Quercus agrifolia	Coast Live Oak		6	Preserve	
92	Quercus agrifolia	Coast Live Oak		4	Preserve	
93	Quercus agrifolia	Coast Live Oak		5	Preserve	
94	Quercus agrifolia	Coast Live Oak		5	Preserve	
95	Quercus agrifolia	Coast Live Oak		4	Preserve	
141	Schinus molle	California Pepper		59	Remove	(9) 48" Box Trees
145	Quercus agrifolia	Coast Live Oak		8	Preserve	
146	Quercus agrifolia	Coast Live Oak		4	Preserve	
147	Quercus agrifolia	Coast Live Oak	Multi	9	Preserve	
148	Quercus agrifolia	Coast Live Oak		7	Preserve	
198	Platanus racemosa	Western Sycamore		32	Removed	(4) 48" Box Trees
306	Platanus racemosa	Western Sycamore	Multi	18	Preserve	
321	Quercus agrifolia	Coast Live Oak	No	12	Preserve	
322	Platanus racemosa	Western Sycamore	Multi	20	Preserve	
399	Salix lasiolepis	Arroyo Willow	Multi	59	Preserve	(9) 48" Box Trees (if removed)
454	Schinus molle	California Pepper	Multi	64	Preserve	
455	Cerationia sliqua	Carob	Multi	60	Preserve	
459	Cerationia sliqua	Carob	Multi	70	Preserve	





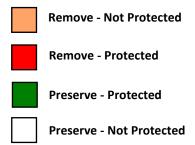
Eastern Property



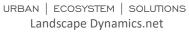




Western Property











Tree #399 Salix iasiolepis Protected - consider removal lacks good form





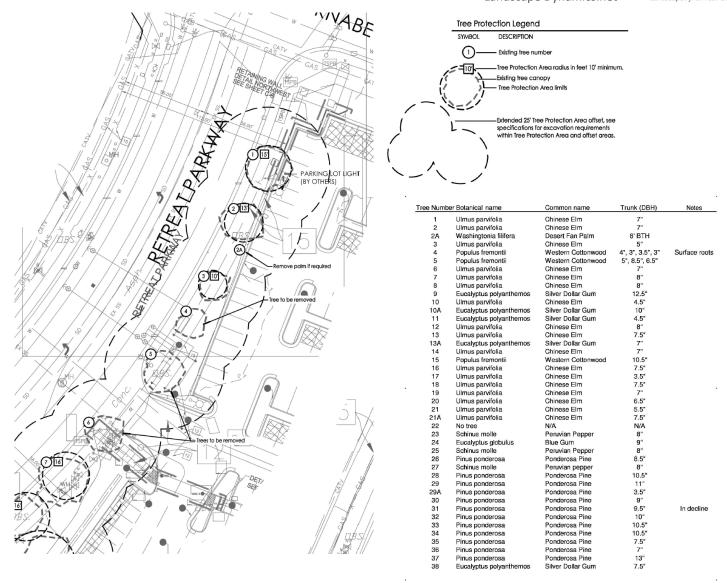
Tree #533 Eucalyptus globulus (not tagged) Not Protected





Not protected Tree #534 Eucalyptus globulus (not tagged) Not Protected





015639 TREE PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

- A. The scope of work includes all labor, materials, tools, equipment, facilities, transportation and services necessary for, and incidental to performing all operations in connection with protection of existing trees as shown on the drawings and as specified herein.
 - 1. Provide preconstruction evaluations
 - 2. Provide tree protection fencing.
 - 3. Provide protection of root zones and above ground tree.
 - 4. Provide pruning of existing trees.
 - 5. Coordinate with the requirements of Section Planting Soil for modifications to the soil within the root zone of existing trees.
 - 6. Provide all insect and disease control.
 - 7. Provide maintenance of existing trees including irrigation during the construction period as described in these Tree Protection Specifications.
 - 8. Provide maintenance of existing trees including irrigation during the post construction plant maintenance period.
 - 9. Remove tree protection fencing and other protection from around and under trees.
 - 10. Clean up and disposal of all excess and surplus material.

1.2 RELATED DOCUMENTS AND REFERENCES

A. Related Documents:

- 1. Drawings and general provisions of contract including general and supplementary conditions and Division I specifications and all other plans and specifications pertaining to this project apply to work of this section.
- B. References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent requirement shall prevail.
 - ANSI A 300 (Part 5) Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most current editions.
 - 2. Pruning practices shall conform with recommendations "Structural Pruning: A Guide For The Green Industry"; Published by Urban Tree Foundation, Visalia, California; most current edition.
 - 3. Glossary of Arboricultural Terms, International Society of Arboriculture, Champaign II, most current edition.

1.3 VERIFICATION

A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's Representative of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the

Owner's Representative.

1.4 PERMITS AND REGULATIONS

- A. The Contractor shall obtain and pay for all permits related to this section of the work unless previously excluded under provision of the contract or general conditions. The Contractor shall comply with all laws and ordinances bearing on the operation or conduct of the work as drawn and specified. If the Contractor observes that a conflict exists between permit requirements and the work outlined in the contract documents, the Contractor shall promptly notify the Owner's Representative in writing including a description of any necessary changes and changes to the contract price resulting from changes in the work.
- B. Wherever references are made to standards or codes in accordance with which work is to be performed or tested, the edition or revision of the standards and codes current on the effective date of this contract shall apply, unless otherwise expressly set forth.
- C. In case of conflict among any referenced standards or codes or between any referenced standards and codes and the specifications, the more restrictive standard shall apply or Owner's Representative shall determine which shall govern.

1.5 PROTECTION OF WORK, PROPERTY AND PERSON

A. The Contractor shall protect the work, adjacent property, and the public, and shall be responsible for any damages or injury due to his/her actions.

1.6 DEFINITIONS

All terms in this specification shall be as defined in the "Glossary of Arboricultural Terms" or as modified below.

- A. Owner's Representative: The person appointed by the Owner to represent their interest in the review and approval of the work and to serve as the contracting authority with the Contractor. The Owner's Representative may appoint other persons to review and approve any aspects of the work.
- B. Reasonable and reasonably: When used in this specification is intended to mean that the conditions cited will not affect the establishment or long term stability, health or growth of the plant. This specification recognizes that plants are not free of defects, and that plant conditions change with time. This specification also recognizes that some decisions cannot be totally based on measured findings and that profession judgment is required. In cases of differing opinion, the Owner's Representative expert shall determine when conditions within the plant are judged as reasonable.
- C. Tree Protection Area: Area surrounding individual trees or groups of trees to be protected during construction, and defined by a circle centered on the trunk with each tree with a radius equal to the crown dripline unless otherwise indicated by the owner's representative.
- D. Tree: Single and multi-stemmed plants, including palms with anticipated mature height approximately greater than 25 feet or any plant identified on the plans as a tree.

1.7 SUBMITTALS

- A. PRODUCT DATA: Submit manufacturer product data and literature describing all products required by this section to the Owner's Representative for approval. Provide submittal two weeks before the start of any work at the site.
- B. QUALIFICATIONS SUBMITTAL: For each applicable person expected to work on the project, provide copies of the qualifications and experience of the Consulting arborist, proof of either the registered Consulting Arborist® (RCA) with American Society of Consulting Arborists or an ISA Certified Arborist and any required Herbicide/Pesticide license to the Owner's Representative, for review prior to the start of work.

1.8 OBSERVATION OF THE WORK

A. The Owner's Representative may inspect the work at any time.

1.9 PRE-CONSTRUCTION CONFERENCE

- A. Schedule a pre-construction meeting with the Owner's Representative at least seven (7) days before beginning work to review any questions the Contractor may have regarding the work, administrative procedures during construction and project work schedule.
 - 1. The following Contractors shall attend the preconstruction conference:
 - a. General Contractor.
 - b. Consulting Arborist.
 - c. Subcontractor assigned to install Tree Protection measures.
 - d. Earthwork Contractor.
 - e. All site utility Contractors that may be required to dig or trench into the soil.
 - f. Landscape subcontractor.
 - g. Irrigation subcontractor
- B. Prior to this meeting, mark all trees to remain and or be removed as described in this specification for review and approval by the Owner's Representative.

1.10 QUALITY ASSURANCE

- A. Contractor qualifications:
 - 1. All pruning, branch tie back, tree removal, root pruning, and fertilizing required by this section shall be performed by or under the direct supervision of ISA Certified Arborist Submit aforementioned individual's qualifications for approval by the Owner's Representative.
 - 2. All applications of pesticide or herbicide shall be performed by a person maintaining a current state license to apply chemical pesticides valid in the jurisdiction of the project. Submit copies of all required state licensing certificates including applicable chemical applicator licenses.

PART 2 - PRODUCTS

2.1 MULCH

- A. Mulch shall be coarse, ground, from tree and woody brush sources. The minimum range of fine particles shall be 3/8 inch or less in size and a maximum size of individual pieces shall be approximately 1 to 1-1/2 inch in diameter and maximum length of approximately 4 to 8 inches. No more that 25% of the total volume shall be fine particles and no more than 20% of total volume be large pieces.
 - 1. It is understood that Mulch quality will vary significantly from supplier to supplier and region to region. The above requirements may be modified to conform to the source material from locally reliable suppliers as approved by the Owner's Representative.
- B. Submit suppliers product data that product meets the requirements and two gallon sample for approval.

2.2 WOOD CHIPS:

A. Wood Chips from an arborist chipping operation with less than 20% by volume green leaves. Chips stockpiled from the tree removal process may be used.

2.3 TREE PROTECTION FENCING:

- A. CHAIN LINK FENCE: 6 feet tall metal chain link fence set in metal frame panels with driven posts every 8 feet or on movable core drilled concrete blocks of sufficient size to hold the fence erect in anticipated wind loads for the site. Fence panels shall be installed to encompass the entire Tree Protection Area.
- B. GATES: For each separate fenced area, provide a minimum of one 3 foot wide gate. Gates shall be lockable. The location of the gates shall be approved by the Owner's Representative.
- C. Submit suppliers product data that product meets the requirements for approval.

2.4 TREE PROTECTION SIGN:

A. Heavy-duty signs, 8.5 inches x 11 inches, white colored background with black 2 inch high or larger letters block letters and shall read "Tree Protection Area - Keep Out", or as approved by the Owner's Representative. The signs shall be attached to the tree protection fence every 50 feet o.c.

2.5 MATTING

- A. Matting for vehicle and work protection shall be heavy duty matting designed for vehicle loading over tree roots, Alturnamats as manufactured by Alturnamats, Inc. Franklin, PA 16323 or approved equal.
- B. Submit suppliers product data that product meets the requirements for approval.

2.6 GEOGRID

- A. Geogrid shall be woven polyester fabric with PVC coating, Uni-axial or biaxial geogrid, inert to biological degradation, resistant to naturally occurring chemicals, alkalis, acids.
 - 1. Geogrid shall be Miragrid 2XT as manufactured by Ten Cate Nicolon, Norcross, GA. http://www.tencate.com or approved equal.
- B. Submit suppliers product data that product meets the requirements for approval.

2.7 FILTER FABRIC

- A. Filter Fabric shall be nonwoven polypropylene fibers, inert to biological degradation and resistant of naturally occurring chemicals, alkalis and acids.
- B. Submit suppliers product data that product meets the requirements for approval.

PART 3 - EXECUTION

3.1 SITE EXAMINATION

A. Examine the site, tree, and soil conditions. Notify the Owner's Representative in writing of any conditions that may impact the successful Tree Protections that is the intent of this section.

3.2 COORDINATION WITH PROJECT WORK

- A. The Contractor shall coordinate with all other work that may impact the completion of the work.
- B. Prior to the start of Work, prepare a detailed schedule of the work for coordination with other trades.
- C. Coordinate the relocation of any irrigation lines currently present on the irrigation plan, heads or the conduits of other utility lines or structures that are in conflict with tree locations. Root balls shall not be altered to fit around lines. Notify the Owner's Representative of any conflicts encountered.
- 3.3 TREE PROTECTION AREA: The Tree Protection Area is defined as all areas indicated on the tree protection plan. Where no limit of the Tree Protection area is defined on the drawings, the limit shall be the drip line (outer edge of the branch crown) of each tree.

3.4 PREPARATION:

- A. Prior to the preconstruction meeting, layout the limits of the Tree Protection Area and then alignments of required Tree Protection Fencing and root pruning. Obtain the Owner's Representative's approval of the limits of the protection area and the alignment of all fencing and root pruning.
- B. Flag all trees to be removed by wrapping orange plastic ribbon around the trunk and obtain the Owner's Representative's approval of all trees to be removed prior to the start of tree removal. After approval, mark all trees to be removed with orange paint in a band completely around the base of the tree 4.5 feet above the ground.
- C. Flag all trees to remain with white plastic ribbon tied completely around the trunk or each tree and on a prominent branch for each shrub. Obtain the Owner's Representative's approval of all trees to be remain prior to the start of tree removal.
- D. Prior to any construction activity at the site including utility work, grading, storage of materials, or

installation of temporary construction facilities, install all tree protection fencing, Filter Fabric, silt fence, tree protection signs, Geogrid, Mulch and or Wood Chips as shown on the drawings.

3.5 SOIL MOISTURE

A. Volumetric soil moisture level, in all soils within the Tree Protection Area shall be maintained above permanent wilt point to a depth of at least 8 inches. No soil work or other activity shall be permitted within the Tree Protection Area when the volumetric soil moisture is above field capacity. The permanent wilt point and field capacity for each type of soil texture shall be defined as follows (numbers indicate percentage volumetric soil moisture).

Soil type	Permanent wilt point v/v	Field capacity v/v	
Sand, Loamy sand, Sandy loam	5-8%	12-18%	
Loam, Sandy clay, Sandy clay	14-25%	27-36%	
loam			
Clay loam, Silt loam	11-22%	31-36%	
Silty clay, Silty clay loam	22-27%	38-41%	

- 1. Volumetric soil moisture shall be measured with a digital, electric conductivity meter. The meter shall be the Digital Soil Moisture Meter, DSMM500 by General Specialty Tools and Instruments, or approved equivalent meter.
- B. The Contractor shall confirm the soil moisture levels with a moisture meter. If the moisture is too high, suspend operations until the soil moisture drains to below field capacity.

3.6 ROOT PRUNING:

- A. Prior to any excavating into the existing soil grade within 25 feet of the limit of the Tree Protection Area or trees to remain, root prune all existing trees to a depth of 24 inches below existing grade in alignments following the edges of the Tree Protection Area or as directed by the Owner's Representative. Root pruning shall be in conformance with ANSI A300 (part 8) latest edition.
 - 1. Using a rock saw, chain trencher or similar trenching device, make a vertical cut within 2 feet of the limit of grading.
 - 2. After completion of the cut, make clean cuts with a lopper, saw or pruner to remove all torn root ends on the tree side of the excavation, and backfill the trench immediately with existing soil, filling all voids.

3.7 INSTALLATION OF GEOGRIDS, FILTER FABRIC, MATTING, WOOD CHIPS AND / OR MULCH

- A. Install Geogrids, Filter Fabric, matting, Wood Chips and/or Mulch in areas and depths shown on the plans and details or as directed by the Owner's representative. In general it is the intent of this specification to provide the following levels of protection:
 - 1. All areas within the Tree Protection area provide a minimum of 5 inches of Wood Chips or Mulch.
 - 2. Areas where foot traffic or storage of lightweight materials is anticipated to be unavoidable provide a layer of Filter Fabric under the 5 inches of Wood Chips or Mulch.
 - 3. Areas where occasional light vehicle traffic is anticipated to be unavoidable provide a layer of Geogrids under 8 inches of Wood Chips or Mulch.
 - 4. Areas where heavy vehicle traffic is unavoidable provide a layer of Geogrids under 8 12 inches of Wood Chips or Mulch and a layer of matting over the Wood Chips or Mulch.
- B. The Owner's Representative shall approve the appropriate level of protection.
- C. In the above requirements, light vehicle is defined as a track skid steer with a ground pressure of 4 psi or lighter. A heavy vehicle is any vehicle with a tire or track pressure of greater than 4 psi. Lightweight materials are any packaged materials that can be physically moved by hand into the location. Bulk materials such as soil, or aggregate shall never be stored within the Tree Protection Area.

3.8 PROTECTION:

A. Protect the Tree Protection Area at all times from compaction of the soil; damage of any kind to trunks, bark, branches, leaves and roots of all plants; and contamination of the soil, bark or leaves with construction materials, debris, silt, fuels, oils, and any chemicals substance. Notify the Owner's Representative of any spills, compaction or damage and take corrective action immediately using methods approved by the Owner's Representative.

3.9 GENERAL REQUIREMENTS AND LIMITATIONS FOR OPERATIONS WITHIN THE TREE PROTECTION AREA:

- A. The Contractor shall not engage in any construction activity within the Tree Protection Area without the approval of the Owner's Representative including: operating, moving or storing equipment; storing supplies or materials; locating temporary facilities including trailers or portable toilets and shall not permit employees to traverse the area to access adjacent areas of the project or use the area for lunch or any other work breaks. Permitted activity, if any, within the Tree Protection Area maybe indicated on the drawings along with any required remedial activity as listed below.
- B. In the event that construction activity is unavoidable within the Tree Protection Area, notify the Owner's Representative and submit a detailed written plan of action for approval. The plan shall include: a statement detailing the reason for the activity including why other areas are not suited; a description of the proposed activity; the time period for the activity, and a list of remedial actions that will reduce the impact on the Tree Protection Area from the activity. Remedial actions shall include but shall not be limited to the following:
 - 1. In general, demolition and excavation within the drip line of trees shall proceed with extreme care either by the use of hand tools, directional boring and or Air Knife excavation where indicated or with other low impact equipment that will not cause damage to the tree, roots or soil.
 - 2. When encountered, exposed roots, 1 inches and larger in diameter shall be worked around in a manner that does not break the outer layer of the root surface (bark). These roots shall be covered in Wood Chips and shall be maintained above permanent wilt point at all times. Roots one inch and larger in diameter shall not be cut without the approval of the owners representative. Excavation shall be tunneled under these roots without cutting them. In the areas where roots are encountered, work shall be performed and scheduled to close excavations as quickly as possible over exposed roots.
 - 3. Tree branches that interfere with the construction may be tied back or pruned to clear only to the point necessary to complete the work. Other branches shall only be removed when specifically indicated by the Owner's Representative. Tying back or trimming of all branches and the cutting of roots shall be in accordance with accepted arboricultural practices (ANSI A300, part 8) and be performed under supervision of the arborist.
 - 4. Matting: Install temporary matting over the Wood Chips or Mulch to the extent indicated. Do not permit foot traffic, scaffolding or the storage of materials within the Tree Protection Area to occur off of the temporary matting.
 - 5. Trunk Protection: Protect the trunk of each tree to remain by covering it with a ring of 8 foot long 2 inch x 6 inch planks loosely banded onto the tree with 3 steel bands. Staple the bands to the planks as necessary to hold them securely in place. Trunk protection must be kept in place no longer than 12 months. If construction requires work near a particular tree to continue longer than 12 months, the steel bands shall be inspected every six months and loosened if they are found to have become tight.
 - 6. Air Excavation Tool: If excavation for footings or utilities is required within the Tree Protection Area, air excavation tool techniques shall be used where practical or as designed on the drawings.
 - a. Remove the Wood Chips from an area approximately 18 inches beyond the limits of the hole or trench to be excavated. Cover the Wood Chips for a distance of not less than 15 feet around the limit of the excavation area with Filter Fabric or plastic sheeting to protect the Wood Chips from silt. Mound the Wood Chips so that the plastic slopes towards the excavation.
 - b. Using a sprinkler or soaker hose, apply water slowly to the area of the excavation for a period of at least 4 hours, approximately 12 hours prior to the work so that the ground water level is

- at or near field capacity at the beginning of the work. For excavations that go beyond the damp soil, rewet the soil as necessary to keep soil moisture near field capacity.
- c. Using an air excavation tool specifically designed and manufactured for the intended purpose, and at pressures recommended by the manufacturer of the equipment, to fracture the existing soil to the shape and the depths required. Work at rates and using techniques that do not harm tree roots. Air pressure shall be a maximum of 90-100 psi.
- d. Using a commercial, high-powered vacuum truck if required, remove the soil from the excavation produced by the Air Knife excavation. The vacuum truck should generally operate simultaneously with the hose operator, such that the soil produced is picked up from the excavation hole, and the exposed roots can be observed and not damaged by the ongoing operation. Do not drive the vacuum truck into the Tree Protection Area unless the area is protected from compaction as approved in advance by the Owner's Representative.
- e. Remove all excavated soil and excavated Wood Chips, and contaminated soil at the end of the excavation.
- f. Schedule the work so that foundations or utility work is completed immediately after the excavation. Do not let the roots dry out. Mist the roots several times during the day. If the excavated area must remain open over night, mist the roots and cover the excavation with black plastic.
- g. Dispose of all soil in a manner that meets local laws and regulations.
- h. Restore soil within the trench as soon as the work is completed. Utilize soil of similar texture to the removed soil and lightly compact with hand tools. Leave soil mounded over the trench to a height of approximately 10% of the trench depth to account for settlement.
- i. Restore any Geogrids, Filter Fabric, Wood Chips or Mulch and or matting that was previously required for the area.

3.10 TREE REMOVAL:

- A. Remove all trees indicated by the drawings and specifications, as requiring removal, in a manner that will not damage adjacent trees or structures or compacts the soil.
- B. Remove trees that are adjacent to trees or structures to remain, in sections, to limit the opportunity of damage to adjacent crowns, trunks, ground plane elements and structures.
- C. Do not drop trees with a single cut unless the tree will fall in an area not included in the Tree Protection Area. No tree to be removed within 50 feet of the Tree Protection Area shall be pushed over or up-rooted using a piece of grading equipment.
- D. Protect adjacent paving, soil, trees, shrubs, ground cover plantings and understory plants to remain from damage during all tree removal operations, and from construction operations. Protection shall include the root system, trunk, limbs, and crown from breakage or scarring, and the soil from compaction.
- E. Remove stumps and immediate root plate from existing trees to be removed. Grind trunk bases and large buttress roots to a depth of the largest buttress root or at least 18 inches below the top most roots whichever is less and over the area of three times the diameter of the trunk (DBH).
 - 1. For trees where the stump will fall under new paved areas, grind roots to a total depth of 18 inches below the existing grade. If the sides of the stump hole still have greater than approximately 20% wood visible, continue grinding operation deeper and or wider until the resulting hole has less than 20% wood. Remove all wood chips produced by the grinding operation and back fill in 8 inch layers with controlled fill of a quality acceptable to the site engineer for fill material under structures, compacted to 95% of the maximum dry density standard proctor. The Owner's Representative shall approve each hole at the end of the grinding operation.
 - In areas where the tree location is to be a planting bed or lawn, remove all woodchips and backfill stump holes with planting soil as defined in Specification Section Planting Soil, in maximum of 12 inch layers and compact to 80 - 85% of the maximum dry density standard proctor.

3.11 PRUNING:

- A. Within six months of the estimated date of substantial completion, prune all dead or hazardous branches larger than 2 inch in diameter from all trees to remain.
- B. Prune any low, hanging branches and vines from existing trees and shrubs that overhang walks, streets and drives, or parking areas as follows:
 - 1. Walks within 8 feet vertically of the proposed walk elevation.
 - 2. Parking areas within 12 feet vertically of the proposed parking surface elevation.
 - 3. Streets and drives within 14 feet vertically of the proposed driving surface elevation.
- C. All pruning shall be done in accordance with ANSI A300 (part 1), ISA BMP Tree Pruning (latest edition, and the "Structural Pruning: A Guide for the Green Industry", Edward Gilman, Brian Kempf, Nelda Matheny and Jim Clark, 2013 Urban Tree Foundation, Visalia CA.
- D. Perform other pruning task as indicated on the drawings or requested by the Owner's Representative.
- E. Where tree specific disease vectors require, sterilize all pruning tools between the work in individual trees.

3.12 WATERING

- A. The Contractor shall be fully responsible to ensure that adequate water is provided to all plants to be preserved during the entire construction period. Adequate water is defined to be maintaining soil moisture above the permanent wilt point to a depth of 8 inches or greater.
- B. The Contractor shall adjust the automatic irrigation system, if available, and apply additional water, using hoses or water tanks as required.
- C. Periodically test the moisture content in the soil within the root zone to determine the water content.

3.13 WEED REMOVAL

- A. During the construction period, control any plants that seed in and around the fenced Tree and Plant Protection area at least three times a year.
 - 1. All plants that are not shown on the planting plan or on the Tree and Plant Protection Plan to remain shall be considered as weeds.
- B. At the end of the construction period provide one final weeding of the Tree and Plant Protection Area.

3.14 INSECT AND DISEASE CONTROL

A. Monitor all plants to remain for disease and insect infestations during the entire construction period. Provide all disease and insect control required to keep the plants in a healthy state using the principles of Integrated Plant Management (IPM). All pesticides shall be applied by a certified pesticide applicator.

3.15 CLEAN-UP

- A. During tree and plant protection work, keep the site free of trash, pavements reasonably clean and work area in an orderly condition at the end of each day. Remove trash and debris in containers from the site no less than once a week.
 - 1. Immediately clean up any spilled or tracked soil, fuel, oil, trash or debris deposited by the Contractor from all surfaces within the project or on public right of ways and neighboring property.
- B. Once tree protection work is complete, wash all soil from pavements and other structures. Ensure that Mulch is confined to planting beds.
- C. Make all repairs to grades, ruts, and damage to the work or other work at the site.
- D. Remove and dispose of all excess Mulch, Wood Chips, packaging, and other material brought to the site by the Contractor.

3.16 REMOVAL OF FENCING AND OTHER TREE PROTECTION

A. At the end of the construction period or when requested by the Owner's Representative remove all fencing, Wood Chips or Mulch, Geogrids and Filter Fabric, trunk protection and or any other Tree Protection material.

3.17 DAMAGE OR LOSS TO EXISTING PLANTS TO REMAIN

- A. Any trees designated to remain and which are damaged by the Contractor shall be replaced in kind by the Contractor at their own expense. Trees shall be replaced with a tree of similar species and of equal size or as agreed upon by Owner's Representative and any applicable approving agencies.
 1. All trees shall be installed per the requirements of Specification Section Planting.
- B. Any remedial work on damaged existing trees recommended by the consulting arborist shall be completed by the Contractor at no cost to the owner. Remedial work shall include but is not limited to: soil compaction remediation and vertical mulching, pruning and or cabling, insect and disease control including injections, compensatory watering, and additional mulching.
- C. Remedial work may extend up to two years following the completion of construction to allow for any requirements of multiple applications or the need to undertake applications at required seasons of the year.

END OF SECTION 015639

