

Appendix B

Biological Constraints Report

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Mahany Park Open Space Trail

Biological Constraints Report

August 2020 | CRS-03

Prepared for:

City of Roseville
311 Vernon Street
Roseville, CA 95678

Prepared by:

HELIX Environmental Planning, Inc.
1677 Eureka Road, Suite 100
Roseville, CA 95661

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ACRONYMS AND ABBREVIATIONS

CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CSA	California Special Animals
CWA	Clean Water Act
DBH	diameter at breast height
EPA	Environmental Protection Agency
FESA	Federal Endangered Species Act
HCP	Habitat Conservation Plan
HELIX	HELIX Environmental Planning, Inc.
HUC	hydrologic unit code
IPaC	Information for Planning and Consultation
ISA	International Society of Arboriculture
MBTA	Migratory Bird Treaty Act
MM	mitigation measure
MSL	mean sea level
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Protection Act
NPDES	National Pollution Discharge Elimination System
OHWM	ordinary high water mark
PER	Planning and Environmental Review
RWQCB	Regional Water Quality Control Board
SAA	Streambed Alteration Agreement
SSC	Species of Special Concern
SWRCB	State Water Resources Control Board
TPZ	tree protection zone

ACRONYMS AND ABBREVIATIONS (cont.)

USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
WEAP	Worker Environmental Awareness Program
WOTUS	Waters of the U.S.
WQC	Water Quality Certification

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1.0 INTRODUCTION

The purpose of this Biological Constraints report is to assess the general biological resources on the Mahany Park Open Space site (Study Area), to assess its suitability to support special-status species and sensitive vegetation communities or habitats, and to provide recommendations for any regulatory permitting or further analysis that may be required prior to development activities. HELIX Environmental Planning, Inc. (HELIX) conducted biological and arborist surveys of the Study Area in February 2020.

2.0 PROJECT SITE

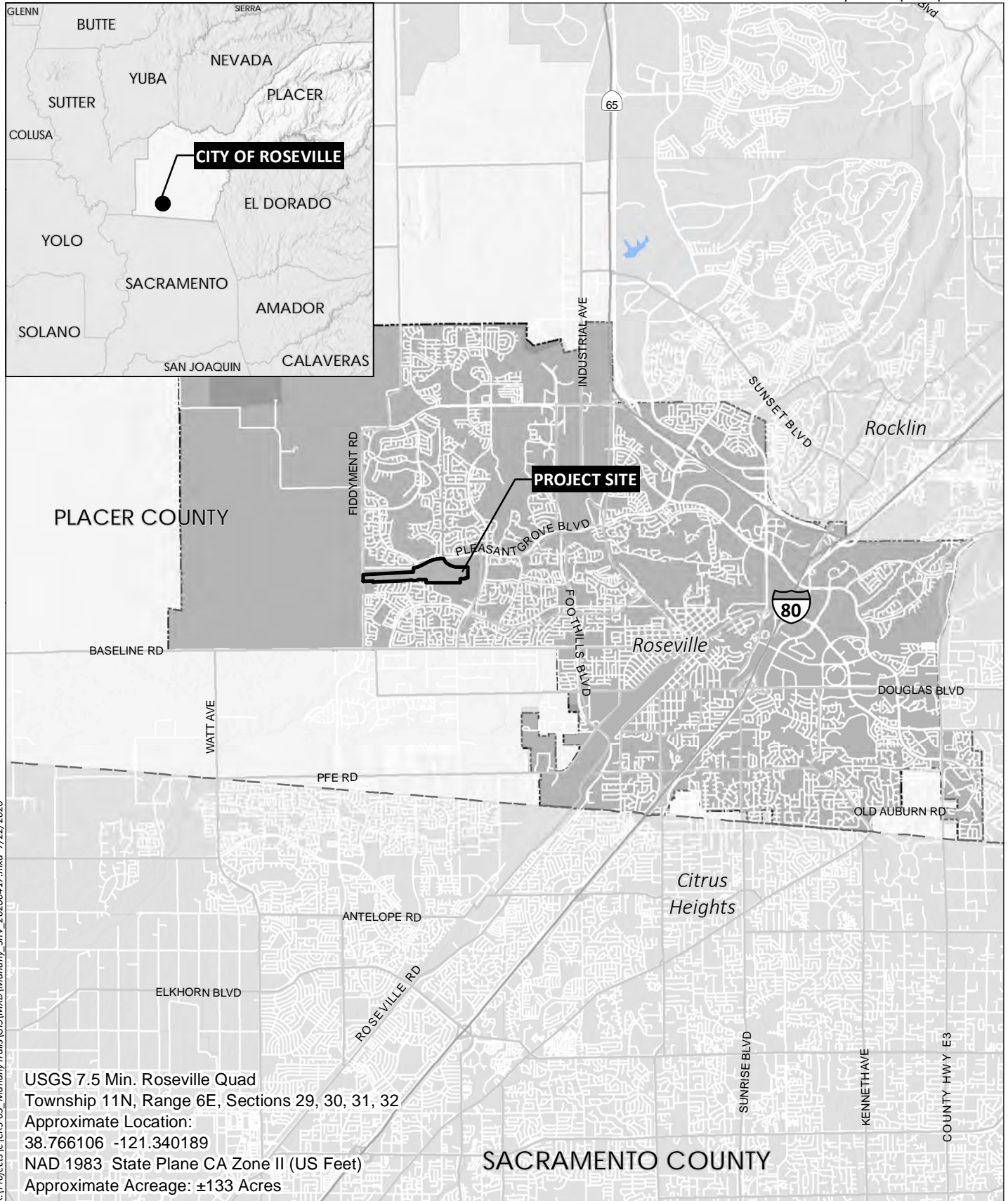
2.1 PROJECT LOCATION

The ±133-acre Study Area is located in the western half of the City of Roseville, California. It is within Township 11N, Range 6E, Sections 29, 30, 31, and 32 of the United States Geological Survey (USGS) 7.5-minute series *Roseville* quadrangle and its approximate location is -121.340189 West and 38.766106 North. Parks, schools, businesses, and multi-family and single-family residences surround the Study Area. Pleasant Grove Boulevard, Mahany Regional Park, and Bear Dog Park are located to the north of the Study Area. Bottlebrush Circle, Woodcreek High School, and Silverado Oaks Urban Preserve are located to the south of the Study Area. Fiddymont Road is located to the west of the Study Area. A CVS drugstore is to the northwest of the Study Area and to the east of the Study Area is Woodcreek Oaks Boulevard (Figure 1).

2.2 TOPOGRAPHY AND WATERSHED

The general topography of the Study Area consists of rolling and moderately sloped areas, with elevations that range from approximately 116 to 137 feet (35 to 41 meters) above mean sea level (MSL).

The Study Area is in the Pleasant Grove Creek Watershed Hydrologic Unit Code (HUC) 12-180201610302 and the Curry Creek Watershed HUC 12-180201610401. Both creeks empty into the Pleasant Grove Creek Canal which drains to the Sacramento River via the Cross Canal. The majority of the Study Area is located within the Pleasant Grove Creek Watershed. The hydrologic regime within the Study Area is predominantly seasonal stormwater runoff and direct precipitation, which primarily falls between November and March. Kaseberg Creek, a major drainage of the Pleasant Grove watershed meanders through the eastern portion of the Study Area.



3.0 REGULATORY BACKGROUND

3.1 JURISDICTIONAL WATERS

3.1.1 Federal Jurisdiction

Any person, firm, or agency planning to alter or work in Waters of the U.S. (WOTUS), including the discharge of dredged or fill material, must first obtain authorization from the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA; 33 United States Code [USC] 1344). Waters of the U.S. are defined as:

- (1) All waters which are currently used, 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) The territorial seas;
- (4) All impoundments of waters otherwise identified as waters of the United States under this section;
- (5) All tributaries, as defined in paragraph (c)(3) of this section, of waters identified in paragraphs (a)(1) through (3) of this section;
- (6) All waters adjacent to a water identified in paragraphs (a)(1) through (5) of this section, including wetlands, ponds, lakes, oxbows, impoundments, and similar waters;
- (7) All waters in paragraphs (a)(7)(i) through (v) of this section where they are determined, on a case-specific basis, to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. The waters identified in each of paragraphs (a)(7)(i) through (v) of this section are similarly situated and shall be combined, for purposes of a significant nexus analysis, in the watershed that drains to the nearest water identified in paragraphs (a)(1) through (3) of this section. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.
 - (i) **Prairie potholes.** Prairie potholes are a complex of glacially formed wetlands, usually occurring in depressions that lack permanent natural outlets, located in the upper Midwest.
 - (ii) **Carolina bays and Delmarva bays.** Carolina bays and Delmarva bays are ponded, depressional wetlands that occur along the Atlantic coastal plain.
 - (iii) **Pocosins.** Pocosins are evergreen shrub and tree dominated wetlands found predominantly along the Central Atlantic coastal plain.

(iv) *Western vernal pools.* Western vernal pools are seasonal wetlands located in parts of California and associated with topographic depression, soils with poor drainage, mild, wet winters and hot, dry summers.

(v) *Texas coastal prairie wetlands.* Texas coastal prairie wetlands are freshwater wetlands that occur as a mosaic of depressions, ridges, intermound flats, and mima mound wetlands located along the Texas Gulf Coast.

(8) All waters located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section and all waters located within 4,000 feet of the high tide line or ordinary high water mark of a water identified in paragraphs (a)(1) through (5) of this section where they are determined on a case-specific basis to have a significant nexus to a water identified in paragraphs (a)(1) through (3) of this section. For waters determined to have a significant nexus, the entire water is a water of the United States if a portion is located within the 100-year floodplain of a water identified in paragraphs (a)(1) through (3) of this section or within 4,000 feet of the high tide line or ordinary high water mark. Waters identified in this paragraph shall not be combined with waters identified in paragraph (a)(6) of this section when performing a significant nexus analysis. If waters identified in this paragraph are also an adjacent water under paragraph (a)(6), they are an adjacent water and no case-specific significant nexus analysis is required.

Within non-tidal waters that meet the definition given above, and in the absence of adjacent wetlands, the indicator used by the USACE to determine the lateral extent of its jurisdiction is the ordinary high water mark (OHWM), which is defined as that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Wetlands are defined under the CFR Part 328.3 as those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

The USACE has determined that not all features which meet the WOTUS definition are, in fact, considered WOTUS. Normally, features not considered WOTUS include:

(1) Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA.

(2) Prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the U.S. Environmental Protection Agency (EPA).

(3) The following ditches:

(i) Ditches with ephemeral flow that are not a relocated tributary or excavated in a tributary.

(ii) Ditches with intermittent flow that are not a relocated tributary, excavated in a tributary, or drain wetlands.

(iii) Ditches that do not flow, either directly or through another water, into a water identified in paragraphs (a)(1) through (3) of this section.

(4) The following features:

(i) Artificially irrigated areas that would revert to dry land should application of water to that area cease;

(ii) Artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds, irrigation ponds, settling basins, fields flooded for rice growing, log cleaning ponds, or cooling ponds;

(iii) Artificial reflecting pools or swimming pools created in dry land;

(iv) Small ornamental waters created in dry land;

(v) Water-filled depressions created in dry land incidental to mining or construction activity, including pits excavated for obtaining fill, sand, or gravel that fill with water;

(vi) Erosional features, including gullies, rills, and other ephemeral features that do not meet the definition of tributary, non-wetland swales, and lawfully constructed grassed waterways; and

(vii) Puddles.

(5) Groundwater, including groundwater drained through subsurface drainage systems.

(6) Stormwater control features constructed to convey, treat, or store stormwater that are created in dry land.

(7) Wastewater recycling structures constructed in dry land; detention and retention basins built for wastewater recycling; groundwater recharge basins; percolation ponds built for wastewater recycling; and water distributary structures built for wastewater recycling.

Other features may be excluded based on Federal court rulings (e.g., SWANCC and Rapanos) or by regulation.

Permits, licenses, variances, or similar authorization may also be required by other federal, state, and local statutes. Section 10 of the Rivers and Harbors Act of 1899 prohibits the obstruction or alteration of navigable WOTUS without a permit from the USACE (33 USC 403).

On January 23, 2020 the EPA and the USACE finalized the Navigable Waters Protection Rule to define Waters of the U.S. and establish federal regulatory authority under the CWA. The rule will become effective 60 days after publication in the *Federal Register*. On April 21, 2020, the EPA and USACE published the Navigable Waters Protection Rule to define “Waters of the United States” in the Federal Register. On June 22, 2020 the Navigable Waters Protection Rule: Definition of “Waters of the United States” (NWPR) became effective in 49 states, including California, and in all US territories.

3.1.2 State Jurisdiction

Regional Water Quality Control Board

Any action requiring a CWA Section 404 permit must also obtain a CWA Section 401 Water Quality Certification. The State of California Water Quality Certification (WQC) Program was formally initiated by the State Water Resources Control Board (SWRCB) in 1990 under the requirements stipulated by Section 401 of the Federal CWA. Although the Clean Water Act is a Federal law, Section 401 of the CWA recognizes that states have the primary authority and responsibility for setting water quality standards. In California, under Section 401, the State and Regional Water Boards are the authorities that certify that issuance of a federal license or permit does not violate California's water quality standards (i.e., that they do not violate Porter-Cologne and the Water Code). The WQC Program currently issues the WQC for discharges requiring USACE permits for fill and dredge discharges within Waters of the United States, and now also implements the State's wetland protection and hydromodification regulation program under the Porter Cologne Water Quality Control Act.

On April 2, 2019, the SWRCB adopted a State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State (Procedures), for inclusion in the forthcoming Water Quality Control Plan for Inland Surface Waters and Enclosed Bays and Estuaries and Ocean Waters of California. The Procedures consist of four major elements: 1) a wetland definition; 2) a framework for determining if a feature that meets the wetland definition is a water of the state; 3) wetland delineation procedures; and 4) procedures for the submittal, review and approval of applications for Water Quality Certifications and Waste Discharge Requirements for dredge or fill activities. The Office of administrative Law approved the Procedures on August 28, 2019, and the Procedures became effective May 28, 2020.

Under the Procedures and the State Water Code (Water Code §13050(e)), "Waters of the State" are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state." Unless excluded by the Procedures, any activity that could result in discharge of dredged or fill material to Waters of the State, which includes Waters of the U.S. and non-federal Waters of the State, requires filing of an application under the Procedures.

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act, Water Code Section 13000 et seq.) is California's statutory authority for the protection of water quality in conjunction with the federal CWA. The Porter-Cologne Act requires the SWRCB and RWQCBs under the CWA to adopt and periodically update water quality control plans, or basin plans. Basin plans are plans in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California. The Porter-Cologne Act also requires dischargers of pollutants or dredged or fill material to notify the RWQCBs of such activities by filing Reports of Waste Discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, National Pollution Discharge Elimination System (NPDES) permits, Section 401 water quality certifications, or other approvals.

3.2 RIPARIAN HABITAT/SECTION 1600 OF FISH AND GAME CODE

The California Department of Fish and Wildlife (CDFW) is a trustee agency that has jurisdiction under Section 1600 et seq. of the California Fish and Game Code. Under Sections 1602 and 1603, a private party must notify CDFW if a proposed project will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambed, except when the department has been notified

pursuant to Section 1601.” Additionally, CDFW asserts jurisdiction over native riparian habitat adjacent to aquatic features, including native trees over four inches in diameter at breast height (DBH). If an existing fish or wildlife resource may be substantially adversely affected by the activity, CDFW may propose reasonable measures that will allow protection of those resources. If these measures are agreeable to the parties involved, they may enter into an agreement with CDFW identifying the approved activities and associated mitigation measures. Generally, CDFW recommends that an application for a Streambed Alteration Agreement (SAA) be submitted for any work done within the lateral limit of water flow or the edge of riparian vegetation, whichever is greater.

3.3 PROTECTED SPECIES

3.3.1 Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) enforces the provisions stipulated within the Federal Endangered Species Act of 1973 (FESA; 16 USC 1531 et seq.). Species identified as federally threatened or endangered (50 CFR 17.11, and 17.12) are protected from take, defined as direct or indirect harm, unless a Section 10 permit is granted to an entity other than a federal agency or a Biological Opinion with incidental take provisions is rendered to a federal lead agency via a Section 7 consultation. Pursuant to the requirements of FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed species may be present in the study area and determine whether the proposed project will jeopardize the continued existence of or result in the destruction or adverse modification of critical habitat of such species (16 USC 1536 (a)[3], [4]). Other federal agencies designate species of concern (species that have the potential to become listed), which are evaluated during environmental review under the National Environmental Protection Act (NEPA) or CEQA although they are not otherwise protected under FESA.

3.3.2 California Endangered Species Act and Fully Protected Species

The California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050 to 2097) is similar to the FESA. The California Fish and Wildlife Commission is responsible for maintaining lists of threatened and endangered species under CESA. CESA prohibits the take of listed and candidate (petitioned to be listed) species. “Take” under California law means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill (California Fish and Game Code, Section 86). The CDFW can authorize take of a state-listed species under Section 2081 of the California Fish and Game Code if the take is incidental to an otherwise lawful activity, the impacts are minimized and fully mitigated, funding is ensured to implement and monitor mitigation measures, and CDFW determines that issuance would not jeopardize the continued existence of the species. A CESA permit must be obtained if a project will result in the “take” of listed species, either during construction or over the life of the project. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of the FESA, CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the Fish and Game Code.

Legal protection is also provided for wildlife species in California that are identified as “fully protected animals.” These species are protected under Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species at any time. CDFW is unable to authorize incidental take of fully protected species when activities are proposed in areas inhabited by these species. CDFW has informed non-federal agencies and private parties that they must avoid take of any fully protected species in

carrying out projects. However, Senate Bill 618 (2011) allows the CDFW to issue permits authorizing the incidental take of fully protected species under the CESA, so long as any such take authorization is issued in conjunction with the approval of a Natural Community Conservation Plan that covers the fully protected species (California Fish and Game Code Section 2835).

3.4 CEQA SIGNIFICANCE

Section 15064.7 of the State CEQA Guidelines encourages local agencies to develop and publish the thresholds that 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 included 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 the 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 the CDFW or USFWS;
- Have a substantial adverse effect on State or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- 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 Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan.

An evaluation of whether or not 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.

3.4.1 California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (California Fish and Game Code Sections 1900-1913) requires all state agencies to use their authority to carry out programs to conserve endangered and

otherwise rare species of native plants. Provisions of the act prohibit the taking of listed plants from the wild and require notification of CDFW at least 10 days in advance of any change in land use (other than changing from one agricultural use to another), which allows CDFW to salvage listed plants that would otherwise be destroyed.

The California Native Plant Society (CNPS) is a non-governmental conservation organization that has developed a list of plants of special concern in California. This information is published in the *Inventory of Rare and Endangered Vascular Plants of California*. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The following identifies the definitions of the CNPS Rare Plant Ranking System:

- Rank 1A: Plants presumed Extinct in California and either rare or extinct elsewhere
- Rank 1B: Plants Rare, Threatened, or Endangered in California and elsewhere
- Rank 2A: Plants presumed extirpated in California but common elsewhere
- Rank 2B: Plants Rare, Threatened, or Endangered in California, but more common elsewhere
- Rank 3: Plants about which we need more information – A Review List
- Rank 4: Plants of limited distribution – A Watch List

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants with a Ranking of 1A through 2B may be considered to meet the definition of endangered, rare, or threatened species under Section 15380(d) of CEQA (see above), and impacts to these species may be considered “significant.”

In addition, CDFW recommends, and local governments may require, protection of species which are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants with a CNPS Ranking of 3 and 4.

3.4.2 California Department of Fish and Wildlife Species of Concern

Some additional fish, amphibian, reptile, bird, and mammal species may receive consideration by CDFW and lead agencies during the CEQA process, in addition to species that are formally listed under FESA or CESA or are fully protected. These species are included on the Special Animals List, which is maintained by CDFW. This list tracks species in California whose numbers, reproductive success, or habitat may be in decline. In addition to “Species of Special Concern” (SSC), the Special Animals List includes species that are tracked in the California Natural Diversity Database (CNDDDB) but warrant no legal protection. These species are identified as “California Special Animals” (CSA).

Additionally, California Fish and Game Code Subsections 3503 and 3800 prohibit the possession, take, or needless destruction of birds, their nests, and eggs, and the salvage of dead nongame birds. California Fish and Game Code Subsection 3503.5 protects all birds in the orders of Falconiformes and Strigiformes (birds of prey). Fish and Game Code Subsection 3511 states that fully protected birds or parts thereof may not be taken or possessed at any time. Fish and Game Code Subsection 3513 states that it is unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act. The Attorney General of California has released an opinion that the Fish and Game Code prohibits incidental take.

3.5 ROSEVILLE NATIVE OAK TREE ORDINANCE

The City of Roseville (City) Native Oak Tree Ordinance (Ordinance) regulates encroachment within the protected zone and removal of protected trees (City of Roseville 2020a). Protected trees include any native oak, defined as valley oak (*Quercus lobata*), blue oak (*Quercus douglasii*), interior live oak (*Quercus wislizeni*), or any hybrid between these species, with a trunk diameter of six inches or greater at breast height (54 inches or 4.5-feet above grade) measured as a total of a single trunk or multiple trunks. The tree protection zone) is the area within a circle around the tree defined by the largest radius of the canopy plus one foot.

City projects, such as the Mahany Trail Project, do not require a tree permit, but are required to comply with the preservation and mitigation requirements of the Native Oak Tree Ordinance. The City requires mitigation for tree removal. However, trees identified by an arborist as dead or hazardous trees do not require mitigation. The City may approve any of the following methods or combination thereof; however, on-site tree replacement is the preferred method.

- Replacement trees may be planted on-site or in other areas where maintenance and irrigation are provided to ensure survival of the trees. Removal of protected trees to be replaced shall be calculated based upon an inch for an inch replacement of the DBH of the removed tree(s) where:
 - One 15-gallon tree will replace 1-inch DBH of the removed tree;
 - One 24-inch box tree will replace two inches; and
 - One 36-inch box tree will replace three inches.

The replacement trees shall have a combined diameter equivalent not less than the total diameter of the tree(s) removed. A minimum of 50 percent of the replacement requirement shall be met with native oak trees and up to 50 percent may be fulfilled with non-native species;

- Relocation of native oak trees from one area to another, may be considered by the City in certain cases. Credit shall be given for relocation on the same basis as replacement, and guidelines and limitations for relocation are outlined under the Ordinance;
- Implementation of a revegetation program to propagate native oak trees from seed using currently accepted methods; and/or
- Payment of an in-lieu mitigation fee, if the City determines that the other methods outlined above are not feasible or desirable.

4.0 HABITATS AND SPECIAL-STATUS SPECIES

The ±133-acre Study Area includes 95.25 acres of annual grassland, 5.96 acres of oak woodland, 5.24 acres riparian woodland, and 4.34 acres of disturbed area. Aquatic features include 18.01 acres of vernal pools, 2.43 acres of seasonal wetlands, 0.38 acre of seasonal drainage, and 1.43 acres of perennial drainage (Kaseberg Creek), all of which are anticipated to be jurisdictional waters. Paved multi-use trails and a gravel access road that leads to an existing utility building transects the central portions of the Study Area. Many overhead utility lines cross the site, including three lines of high-voltage transmission towers and two lines of utility poles. Numerous informal dirt paths cross the annual grassland, oak woodland, and portions of the riparian habitat (Figure 2).

Regionally occurring special-status species were identified by conducting a search of the California Natural Diversity Database (CDFW 2020), the CNPS Ranking List (CNPS 2020), and the USFWS IPaC list (USFWS 2020) for special-status species documented within the *Pleasant Grove, Nicolaus, Sheridan, Verona, Roseville, Taylor Monument, Rio Linda, and Citrus Heights* USGS quadrangles. HELIX biologist Marisa Britts conducted a biological constraints level survey on February 17 and 18, 2020. An arborist survey was also conducted within the Study Area by a HELIX International Society of Arboriculture (ISA)-Certified Arborist Charlotte Marks (WE-10519A) on February 17, 18, and 19, 2020.

A total of forty-four special-status wildlife and thirteen special-status plant species have the potential to be found in the vicinity of the Study Area (Appendix A). Based on research and site conditions, twenty-four special-status wildlife and nine special-status plants have the potential to occur within the Study Area. Special-status wildlife species with potential to occur in the Study Area are burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), western spadefoot toad (*Spea hammondi*), western pond turtle (*Actinemys marmorata*), pallid bat (*Antrozous pallidus*), valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and andrenid bee (*Andrena subapasta*). Additionally, there is potential for nesting birds and raptors, including grasshopper sparrow (*Ammodramus savannarum*), long-billed curlew (*Numenius americanus*), purple martin (*Progne subis*), Nuttall's woodpecker (*Picoides nuttallii*), oak titmouse (*Baeolophus inornatus*), yellow-billed magpie (*Pica nuttalli*), black-crowned night heron (*Nycticorax nycticorax*), common yellowthroat (*Geothlypis trichas*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), song sparrow (Modesto population) (*Melospiza melodia*), tricolored blackbird (*Agelaius tricolor*), and white-tailed kite (*Elanus leucurus*), and vernal pool invertebrates, including California linderiella (*Linderiella occidentalis*), Ricksecker's water scavenger beetle (*Hydrochara rickseckeri*), vernal pool fairy shrimp (*Branchinecta lynchi*), and vernal pool tadpole shrimp (*Lepidurus packardii*), to occur. Special-status plant species with the potential to occur within the Study Area include stinkbells (*Fritillaria agrestis*), Sanford's arrowhead (*Sagittaria sanfordii*), Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii* ssp. *myersii*), Red Bluff dwarf rush (*Juncus leiospermus*), and valley brodiaea (*Brodiaea rosea* ssp. *vallicola*).

Table 1, below, lists the habitats and the number of special-status species that could occur within that habitat (note that a species may occur in multiple habitats). For example, Swainson's hawk may forage in the annual grasslands and has the potential to nest in the oak woodland, therefore this species is identified in both habitats. Information on these species is included in the discussion of the appropriate habitat below. Species observed during field surveys are included in Appendix B and representative site photos are included in Appendix C.

**Table 1
HABITATS AND POTENTIAL SPECIAL-STATUS SPECIES**

Habitat	Acres	Potential Special-Status Species	
		Wildlife	Plants
Annual Grassland	95.25	Burrowing owl *Swainson’s hawk Nesting birds and raptors Western spadefoot toad	Stinkbells
Oak Woodland	5.96	Nesting birds and raptors *Pallid bat	
Riparian Woodland and Creek	6.67	Nesting birds and raptors *Pallid bat *Swainson’s hawk Western pond turtle Valley elderberry longhorn beetle *Andrenid bee	Sanford’s arrowhead
Vernal Pool	18.01	Vernal pool invertebrates Western spadefoot toad *Andrenid bee	Boggs Lake hedge Dwarf downingia Legenere Pincushion navarretia Red bluff dwarf rush Valley brodiaea

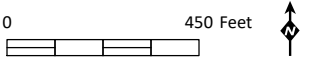
(*)Species has the potential to occur in multiple habitats.



- Legend
- Active Nest
 - Study Area - 133.05 Acres
 - Oak Woodland - 5.96 Acres
 - Riparian Woodland - 5.24 Acres
 - Annual Grassland - 95.25 Acres
 - Disturbed - 4.34 Acres
 - Vernal Pool - 18.01 Acres
 - Seasonal Wetland - 2.43 Acres
 - Seasonal Drainage - 0.38 Acre
 - Kaseberg Creek - 1.43 Acres

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Source: Aerial (City of Roseville, 4/22/2019).



4.1 ANNUAL GRASSLAND

Annual grassland occurs within the majority of the Study Area, Figure 2. The annual grassland landscape supports many different grasses, forbs, and isolated small clusters of trees and shrubs. Growth occurs during early spring turning the landscape green. During the summer many of the plants in this community are dormant. Plants commonly found in the annual grassland include wild oat (*Avena fatua*), Italian ryegrass (*Festuca perennis*), barley (*Hordeum marinum*), brome (*Bromus* sp.), wild rye (*Elymus* sp.), and medusa head (*Elymus caput-medusae*), as well as forbs such as filarees (*Erodium* spp.) and mustard (*Brassica* sp.). California’s Mediterranean type grasslands are recognized among the world’s “hot spots” of native biodiversity, despite being generally dominated by non-native species (Bartolome et al. 2014).

Within the annual grasslands are seasonal wetland and drainages, as well as vernal pools, which are discussed in more detail below. Seasonal wetlands and drainages are dependent on rainfall and they can be inundated for days to weeks after a storm.

Black-tailed deer (*Odocoileus hemionus columbianus*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), pocket gopher (*Thomomys bottae*), and house mouse (*Mus musculus*) were documented within the Study Area. Western meadowlarks (*Sturnella neglecta*) and western kingbirds (*Tyrannus verticalis*) feed on insects and seeds, red tailed hawks (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), and red shouldered hawks (*Buteo lineatus*) feed on gophers and mice that are commonly found within annual grassland habitats. Evidence and/or observations of these species was noted during the field survey of the Study Area. Additional species observed are listed in Appendix B.

Appendix A lists the number of known CNDDDB occurrences of special-status species within a 5-mile radius of the Study Area as well as additional information about special-status species with the potential to occur within the Study Area. Swainson’s hawk has the potential to forage in the annual grassland and is discussed in further detail in Section 4.3 – Riparian Woodland and Creek.

4.1.1 Burrowing Owl

Burrowing owl is a California Species of Special Concern. This small ground-dwelling owl generally inhabits gently sloping areas, characterized by low, sparse vegetation (Poulin et al. 2011). The breeding season for burrowing owls is from February to August, peaking in April and May (Zeiner et al. 1990). Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. Burrowing owls are also known to use artificial burrows including pipes, culverts, and nest boxes. The annual grassland and existing ground squirrel burrows within this community provide suitable habitat for this species within the Study Area. The burrows within the annual grassland and drainages/culverts provide wintering and nesting habitat for this species. This species is predominantly non-migratory in California.

4.1.2 Grasshopper Sparrow

Grasshopper sparrow is a California Species of Special Concern. This small sparrow frequents annual grassland and grasshopper sparrow nests are often constructed at the base of an overhanging clump of grass. These weak fliers don’t tend to fly around much but rather scurry on the ground like mice (Cornell Lab of Ornithology 2019). This migratory bird is observed between April and June during the summer breeding season in California.

4.1.3 Long-Billed Curlew

Long-billed curlew is a Bird of Conservation Concern. It is the largest bird in the sandpiper family. The long-billed curlew nests in low-growing vegetation (4 to 8-inches high) and is often found in annual grasslands and vernal pools during the summer breeding months. In the winter, they migrate to the coast where they inhabit wetlands, tidal estuaries, mudflats, flooded fields, and occasionally beaches (Cornell Lab of Ornithology 2019).

4.1.4 Purple Martin

The purple martin is California Species of Special Concern. This species is in the swallow family and is known to perform aerial acrobatics to snap up flying insects. They nest in wide variety of open annual grasslands and partially open habitats like the of the riparian woodland and creek and oak woodland communities within the Study Area. They nest in tree cavities, abandoned woodpecker holes, crevices in rocks, and sometimes in bird houses or gourds put up by humans. At the end of the summer breeding season they gather in big flocks and make their way to South America (Hood 2017).

4.1.5 Tricolored Blackbird

The tricolored blackbird is a California Threatened Species. Tricolored blackbirds look very much like their cousin, the red-winged blackbird. What distinguishes these two species from one and other is the addition of the white strip on the shoulder of the tricolored blackbird. Male tricolored blackbirds are entirely black with a bright red shoulder patch bordered below by a white to cream-colored band. Females are dark gray-brown overall. This species forages in grasslands and breeds in freshwater marshes. Nests occur in large colonies of up to thousands of individuals (NatureServe 2020). Nesting locations must be large enough to support a minimum colony of approximately fifty pairs (Zeiner et al. 1990). This species forages in grasslands and agricultural fields with low-growing vegetation (Shuford and Gardladi 2008).

4.1.6 Western Spadefoot Toad

Western spadefoot toad is a California Species of Special Concern. This species spends most of the year underground, where individuals seek refuge from desiccation by constructing and residing in small burrows. Adults emerge from underground with the onset of the first rains of the season (Zeiner et al. 1988-1990). Breeding and egg laying occur in temporary pools and quiet streams. Breeding typically end in March, but may extend as late as May, depending on rainfall (Stebbins 2003; Zeiner et al. 1988-1990). Egg masses contain approximately 10 to 42 eggs, and are attached to vegetation or other submerged objects, and hatch within approximately two weeks (Zeiner et al. 1988-1990). Western spadefoot toads are most commonly found in grassland habitats containing vernal pool complexes but can also be found in burrows adjacent to drainages. This species has been found to move an average of 800 feet from its breeding pool (Muths 2003). Its skin is smoother than that of the wester toad and it has two pale strips along its back. The “spade” is a sharp, black ridge on its hind feet that enables the toad to dig its burrow.

4.1.7 Stinkbells

Stinkbells are a CNPS Rare Plant Rank 4.2 plant species. Stinkbells are a perennial bulbiferous herb found in clay soils, sometimes in serpentinite soil in moist annul grasslands. Flowers are white with greenish to

pinkish markings on the outer surface and purple brown on the inner surface. The flowers have an unpleasant odor, hence its name. The typical bloom period is between March and June (CNPS 2020).

4.2 OAK WOODLAND

Oak woodland is located in the eastern and central portions of the Study Area (Figure 2). Denser stands of large, mature oaks are located in the north and central portions of the Study Area associated with Kaseberg Creek.

The oak woodland within the Study Area is primarily characterized by an overstory of native oak trees including blue oak, interior live oak, and valley oak. The understory is mostly devoid of other woody vegetation and is composed primarily of non-native annual grasses like that found in the annual grassland community. Woody plants that were observed in this community include poison oak (*Toxicodendron diversilobum*) and Himalayan blackberry (*Rubus armeniacus*).

Acorn woodpeckers (*Melanerpes formicivorus*) were seen adding acorns to acorn granaries, northern flickers (*Colaptes auratus*), a red-tailed hawk, California scrub jays (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), and red shouldered hawk were observed perched in trees or soaring above the oak woodland. In addition, a great horned owl (*Bubo virginianus*) was observed in its nest in an oak in the northeastern section of the oak woodland see Figure 2 for approximate nest location.

Special-status species with the potential to occur in the oak woodland habitat are listed below. Appendix A lists the number of known CNDDDB occurrences of special-status species within a 5 miles radius of the Study Area as well as additional information about special-status species with the potential to occur. Purple martin and stinkbells were previously discussed under Section 4.1 – Annual Grassland, as these species have the potential to occur within the annual grassland as well as the oak woodland.

4.2.1 Nuttall's Woodpecker

Nuttall's woodpecker is a Bird of Conservation Concern. This small woodpecker has black and white spots covering most of its body. Males have a bright red crown where females lack this. Nesting occurs primarily in oak cavities (Cornell Lab of Ornithology 2019) and this species is non-migratory.

4.2.2 Oak Titmouse

Oak titmouse is a Bird of Conservation Concern. This species is about the size of a sparrow. This rather plain gray bird has a crest on its head. It nests in natural tree cavities or in woodpecker holes (Hood 2017) and this species is non-migratory.

4.2.3 Pallid Bat

Pallid bat is a California Species of Special Concern. This bat is yellowish brown to cream colored. A distinguishing characteristic is its large ears that are almost half as long as the total length of its head and body. Also, its eyes are larger than most species of North American bats. Day roosts are located in crevices and occasionally in hollow trees and buildings. Pallid bats forage over riparian woodland and creek habitat. Roosts must protect bats from high temperatures during the day (Barbour; Davis 1969). This species can be observed year-round.

4.2.4 Yellow-Billed Magpie

Yellow-billed magpie or “California magpie” is a Bird of Conservation Concern. This species is only found in California and nowhere else in the world. This boisterous bird is about the size of a crow with a long tail. Its white belly and wing patches stand out against the black of its head and tail. Yellow-billed magpies’ nest in tall trees averaging 47 feet often in clumps of mistletoe (Hood 2017).

4.3 RIPARIAN WOODLAND AND CREEK

Riparian woodland and Kaseberg Creek are located in the northeast portion of the Study Area. The overstory of this community is comprised of willows (*Salix* sp.) cottonwoods (*Populus fremontii* ssp. *fremontii*), and oaks. The understory, specifically southwest of Bear Dog Park and south of Pleasant Grove Boulevard, is comprised of vines and brush such as wild grape (*Vitis californica*), coyote bush (*Baccharis pilularis*), and Himalayan blackberry.

Kaseberg Creek exhibits a bed, bank, and OHWM. The creek is not highly vegetated because of the scouring effect of fast-moving water; however, sections of the creek were colonized by plants including sedges (*Carex* sp.), rushes (*Juncus* sp.), and willows (*Salix* sp.).

Special-status species with the potential to occur in the riparian and creek habitat are listed below. Appendix A lists the number of known CNDDDB occurrences of special-status species within a 5 miles radius of the Study Area as well as additional information about special-status species with the potential to occur. Purple martin has the potential to nest and feed within the riparian and creek habitat. This species was previously discussed in Section 4.1 – Annual Grassland.

4.3.1 Black-crowned Night Heron

The black-crowned night heron is considered a California Special Animal. This primarily nocturnal, short-necked heron comes out at dusk to hunt on a variety of prey including insects, small fish, and rodents. Adults have a dark black crown and back. This species is non-migratory in this region (Hayes et al. 2006).

4.3.2 Common Yellowthroat

Common yellowthroat is a Bird of Conservation Concern. This small sparrow sized bird has yellow plumage around its throat. This species feeds in moist areas typically along creeks and drainages and nests are woven by females using various grasses (Hood 2017). This non-migratory bird is observed year-round.

4.3.3 Great Blue Heron

Great blue heron is considered a California Special Animal. This large bird stands about 4 feet tall with a wingspan of 6 feet (Hood 2017). This grey-blue bird is an expert fisherman, hunting in vernal pools, creeks, and wetlands. This non-migratory bird is observed year-round.

4.3.4 Great Egret

The great egret is considered a California Special Animal. This large all white bird has a long neck and stands about 3 feet tall. Egrets feed by wading through the water slowly, then spearing their prey with a sudden lunge (Cornell Lab of Ornithology 2019) This non-migratory bird is observed year-round.

4.3.5 Song Sparrow (“Modesto” Population)

Song sparrow is a California Species of Concern. This medium sized bulky sparrow is found in thickets and bushes. Their coloring includes brown upperparts with dark streaks on the back with white underneath with dark streaking and a dark brown spot in the middle of the breast. They have a brown cap and a long brown rounded tail (Cornell Lab of Ornithology 2019). This non-migratory bird is observed year-round.

4.3.6 Swainson’s Hawk

Swainson’s hawk is a California Threatened Species. They arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (Zeiner et al. 1990). In the Central Valley, Swainson’s hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. In the Central Valley, the most commonly used trees include cottonwoods, willows, sycamores (*Platanus* sp.), valley oaks, walnuts (*Juglans* sp.), and occasionally gum trees (*Eucalyptus* sp.), pines (*Pinus* sp.) and redwoods (*Sequoia sempervirens*) (Woodbridge 1998). Nest locations are typically located within a 10-mile radius of suitable foraging habitats, which include annual grassland and agricultural fields. There are seven historic nest locations recorded within 5 miles of the Study Area. Swainson’s hawks leave their breeding grounds to return to their wintering grounds in late August or early September.

4.3.7 White-Tailed Kite

White-tailed kite is a California Fully Protected Species. This largely pale raptor is easily identified by its entirely white tail and black shoulder patches. It has a unique way of hunting; the white-tailed kite rapidly beats its wings allowing it to hover in place. During the nonbreeding season, it gathers in communal roosts (Cornell Lab of Ornithology 2019). This non-migratory bird is observed year-round. This species was observed in the Study Area during the February 17 and 18, 2020 field survey.

4.3.8 Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle is a Federally Threatened Species. It is associated with elderberry shrubs (*Sambucus* sp.) often within riparian habitats. Adult males have red-orange wing covers with four elongate spots. Adult females have dark colored wing coverings. Females lay their eggs on the bark of elderberry shrubs. Larvae hatch and burrow into the stems, and presence can be indicated by bore-holes in stems of elderberries (USFWS 2017). Although no elderberry shrubs were observed during the field survey, a section of riparian habitat located adjacent to Bear Dog Park, in the northeastern portion of the Study Area was not fully accessible due to thick undergrowth. Therefore, there is the potential that suitable habitat exists in the Study Area for valley elderberry longhorn beetle.

4.3.9 Western Pond Turtle

Western pond turtle is a California Species of Special Concern. This species occurs in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with suitable basking sites. Suitable aquatic habitat typically has a muddy or rocky bottom. Western pond turtles nest and overwinter in areas of sparse vegetation, usually grassland, typically within 500 feet of aquatic habitat. The typical shell coloring is dark brown, blackish or olive a network of with lines and spots (Hayes et al. 2006). Western pond turtle may be present in the Study Area year-round.

4.3.10 Sanford's Arrowhead

Sanford's arrowhead is a CNPS Rare Plant Rank 1B.2 plant species. This aquatic perennial herb has leaves that are very often submerged, variable in shape, usually long and strap-shaped like an arrowhead. The plant is monoecious, with individuals bearing both male and female flowers. The male flowers have rings of stamens at the centers. Female flowers each have a spherical cluster of pistils which develops into a head of tiny fruits. The typical bloom period is May through October (CNPS 2020).

4.4 VERNAL POOLS

Vernal pools are found within the annual grasslands of the Study Area where impervious layers of clay underlie the surface soil. Vernal pools have three distinct phases: the wet phase, the flowering phase, and the dry phase. The vernal pools in the Study Area were just entering the flowering phase during the February 17 and 18 site survey, however, some deeper pools were still inundated. Common vernal pools species observed within the Study Area included woolly marbles (*Psilocarphus brevissimus*), spikerush (*Eleocharis macrostachy*), and popcorn-flower (*Plagiobothrys stipitatus*). Additionally, a common garter snake (*Thamnophis sirtalis*) was observed.

During the wet phase or rainy season, which typically occurs between November and March (April), pools fill with water creating habitats for a unique array of plants and animals. Aquatic life is teeming in the vernal pools. In addition to listed vernal pool invertebrates, water fleas (Cladocera), copepods (Copepoda), seed shrimp (Ostracoda), flatworms (Turbellaria), diving water beetles (Dytiscidae), midges (Chironomidae), crawling water beetles (Haliplidae), and Sierran treefrog (*Pseudacris sierra*) have the potential to occur within the pools. Typically, around March the vernal pools start to dry up and flowers start to emerge. Vivid yellow concentric rings are sometimes seen around the perimeter of the pool. Pink, purple, and white flowers bloom. During the summer months, vernal pools blend into the dry annual grassland landscape. Mammals, like ground squirrels and jack rabbits, birds, and insects all come to the dry pools to feed on the seeds and bulbs of the vernal pool plants. Other larger species, like raptors, feed on them.

Special-status species with the potential to occur in the vernal pool habitat are listed below. Appendix A lists the number of known CNDDDB occurrences of special-status species within a 5 miles radius of the Study Area as well as additional information about special-status species. Long-billed curlew has the potential to feed in the vernal pools in the wet season, western spadefoot toad has the potential to breed and lay eggs during the wet season. Both species are discussed in Section 4.1 – Annual Grassland. Herons and egrets have the potential to feed in the vernal pools and are discussed in Section 4.3 – Riparian Woodland and Creek.

4.4.1 Andrenid Bee

Andrenid bees are California Special Animals. These ground nesters will be underground in the summer, fall and winter and emerge in early spring to forage and pollinate early blooming plants, such as willows and other early blooming wildflowers found in vernal pools, annual grasslands, and riparian woodland.

4.4.2 California Linderiella

California linderiella is a California Special Animal. Cysts containing the invertebrates hatch soon after the vernal pools become inundated. The cysts can stay dormant as the vernal pool dries and they can withstand extreme environmental conditions until they hatch (Eriksen and Belk 1999). Unlike the other fairy shrimp, the California linderiella is a member of the family Linderiellidae. It is smaller than fairy shrimp in the family Branchinectidae, typically ~10 millimeters (0.39 inch) in length and has red eyes (Dodds 1923).

4.4.3 Ricksecker's Water Scavenger Beetle

Ricksecker's water scavenger beetle is a California Special Animal. These aquatic beetles are known to occur in vernal pools. Ideal habitat includes, neutral to slightly alkaline, clear, low dissolved salts, dominated with vernal pool plant species, and complex of vernal pool crustacean species.

4.4.4 Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp are Federally listed as Threatened. Cysts containing the invertebrates hatch soon after the vernal pool becomes inundated. The cysts can stay dormant as the vernal pool dries and they can withstand extreme environmental conditions until they hatch. Cyst dispersal can occur through watershed connections of freshwater habitats or via bird discharge (cysts are consumed by a bird and deposited in other habitats) (Eriksen and Belk 1999).

4.4.5 Vernal Pool Tadpole Shrimp

Vernal pool tadpole shrimp are Federally listed as Endangered. One of the largest crustaceans found in vernal pools, vernal pool tadpole shrimp produce cysts or eggs that lie buried in the soil until the next winter rains trigger the eggs to hatch. The cysts may hatch in as little as 4 days (Ahl 1991). Mature vernal pool tadpole shrimp range from 0.6 to 3.3 inches in length (USFWS 2006). Vernal pool tadpole shrimp have a shield-like cover called a carapace that can be olive-green, brown or gray. Their abdomen sticks out behind the carapace and ends in two long, thin tails.

4.4.6 Ahart's Dwarf Rush

Ahart's dwarf rush is State Listed as Endangered and a CNPS 1B.2 plant species. Ahart's dwarf rush is annual herb that blooms from March through May (CNPS 2020).

4.4.7 Boggs Lake Hedge-Hyssop

Boggs Lake hedge-hyssop is State Listed as Endangered and a CNPS 1B.2 plant species. Flowers are white with light green strips. This species requires fresh-water conditions and usually occurs in vernal pool habitat. The bloom period is from April through August (CNPS 2020).

4.4.8 Dwarf Downingia

Dwarf downingia is a CNPS 2B.2 plant species. A member of the bellflower family this annual herbaceous plant has flowers that are typically white to slight blue. This species requires shallow, fresh-water conditions and usually occurs in vernal pool habitat. The bloom period is March through May (CNPS 2020).

4.4.9 Legenere

Legenere is a CNPS 1B.1 plant species. A member of the bellflower family this annual herbaceous plant requires fresh-water conditions and usually occurs in vernal pool habitat. Flowers are white. The bloom period is April through June (CNPS 2020).

4.4.10 Pincushion Navarretia

Pincushion navarretia is a CNPS 1B.1 plant species. Flowers are white. This species is found in vernal pools, which are often located on acidic soils. The bloom period is April through May (CNPS 2020).

4.4.11 Red Bluff Dwarf Rush

Red Bluff dwarf is a CNPS 1B.1 plant species. This rush is a grass like annual herb in the rush family. This species requires fresh-water conditions and usually occurs in vernal pool habitat. The bloom period is March through June (CNPS 2020).

4.4.12 Valley Brodiaea

Valley brodiaea is a CNPS 4.2 plant species. This perennial bulbiferous species is typically found on silty, sandy, or gravelly loam soils within swales of annual grassland and vernal pools. The bloom period is from April through May or June (CNPS 2020).

4.5 PROTECTED TREES

A total of 259 protected native oak trees were surveyed within the Study Area by ISA-Certified Arborist Charlotte Marks (WE-10519A) on February 17, 18 and 19, 2020. Protected trees identified in the Study Area include 227 blue oaks, 23 interior live oaks, and nine valley oaks. Additionally, 502 non-protected trees including 457 blue oaks, 37 interior live oaks, seven valley oaks and one cork oak tree (*Quercus suber*) were observed within the Study Area but were not individually surveyed. A total of 19 dead native oak trees were mapped within the Study Area. Detailed tree data for all surveyed trees is included in Appendix C. The approximate locations of all surveyed trees are shown on Figure 3. Table 2 shows the number of protected trees by health and structure ratings.

**Table 2
NUMBER OF TREES BY HEALTH AND STRUCTURE RATINGS**

		Health					
Structure		Good	Fair-Good	Fair	Poor-Fair	Poor	Total Trees
	Good	0	0	0	0	0	0
	Fair-Good	0	0	2	0	0	2
	Fair	0	0	132	20	0	152
	Poor-Fair	0	0	43	31	6	80
	Poor	0	0	0	12	13	25
	Total Trees	0	0	177	63	19	259

Approximately 68 percent of the trees (177 of 259) are in Fair health and approximately 59 percent (154 of 259) are in Fair or better structure. These trees are typically suitable for preservation and integration into the project even in close proximity to people and property. However, they should be re-assessed during the final project design. A total of 62 trees (24 percent) are recommended for removal due to Poor to Poor-Fair health and structural condition, as noted in Appendix D. These trees may not be suitable for preservation around new development or in areas where people or property may be significantly injured by tree failure. Many of the trees in poor health have moderate to severe trunk rot and/or limb rot, bark wounds, trunk death, and trunk lean, which provide entry points for disease and decay organisms, and are a potential hazard to public safety in the long term. However, dead and dying trees provide vital habitat for wildlife, such as for nesting and breeding, and should be preserved where they do not pose a hazard to people or property. Therefore, even trees in poor condition should be removed only when it is determined that the tree presents an unacceptable risk to the public or infrastructure.

Legend

- ✕ Dead native oak trees
- Non-protected native oak trees
- Protected native oak trees
- Project Study Area ± 133 Acres



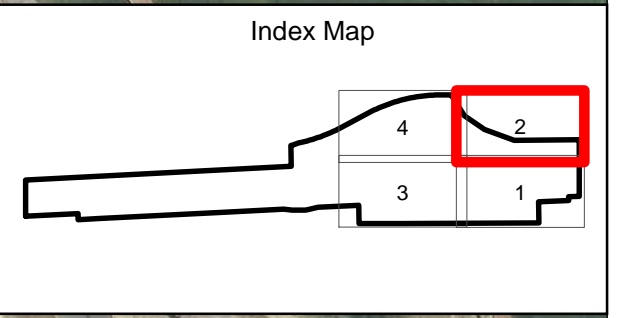
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Source: Aerial (Photo Science, Inc, 2009).



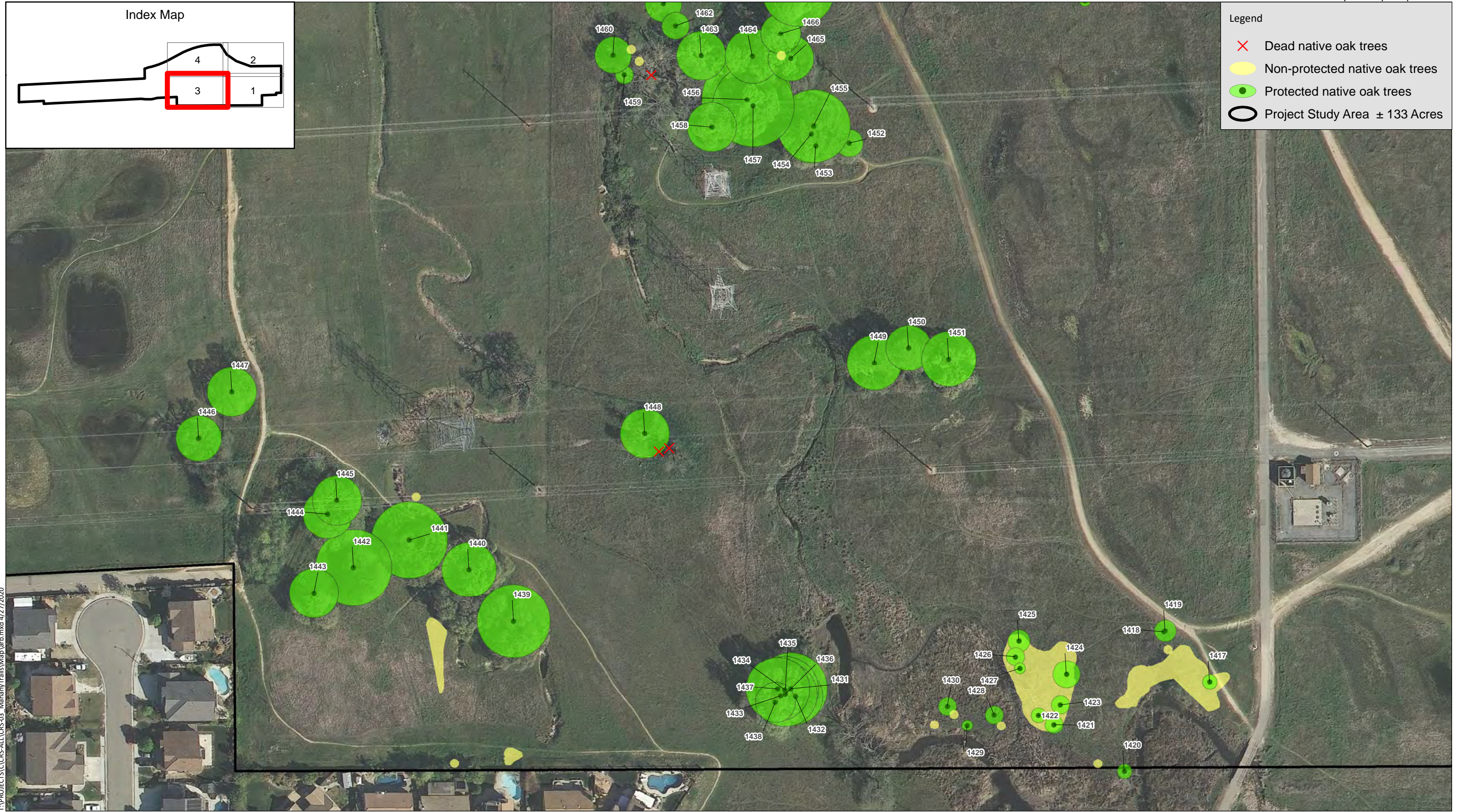
- Legend
- ✗ Dead native oak trees
 - Non-protected native oak trees
 - Protected native oak trees
 - Project Study Area ± 133 Acres



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Source: Aerial (Photo Science, Inc, 2009).



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Source: Aerial (Photo Science, Inc, 2009).



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Source: Aerial (Photo Science, Inc, 2009).

5.0 RECOMMENDATIONS

Special-status species with the potential to occur on the site include nine plant species, burrowing owl, Swainson’s hawk, other migratory birds and raptors, pallid bat, western pond turtle, western spadefoot Andrenid bee, vernal pool invertebrates, and valley elderberry longhorn beetle. White-tailed kite and two active bird nests were observed within the Study Area during the field survey.

Table 3 below summarizes recommended avoidance and minimization measures for sensitive habitats, plants, and wildlife that have the potential to occur within the Study Area and additional studies or permitting that may be required. These recommendations are further detailed following the table.

**Table 3
SUMMARY OF AVOIDANCE RECOMMENDATIONS**

Sensitive Resource	Avoidance Measures During Design	Additional Studies and Avoidance Measures During Construction
Habitat		
Vernal Pool Habitat	Avoid direct impacts and minimize impacts to watershed.	Implement water quality and erosion control measures during construction to prevent runoff into vernal pools.
Riparian Woodland Habitat	Avoid or minimize direct impacts to habitat.	Obtain 1600 Agreement prior to work in riparian areas.
Protected Trees	Avoid or minimize development within the tree protection zone.	Implement tree protection measures and mitigation for impacted trees in accordance with Native Oak Tree Ordinance.
Jurisdictional Waters	Avoid or minimize impacts to jurisdictional waters.	Submit wetland map for verification and obtain applicable permits from the USACE and RWQCB as required prior to construction.
Special-Status Species		
Special-Status Plants	Avoid or minimize direct impacts to vernal pools and Kaseberg Creek.	Conduct focused botanical survey of project footprint and surrounding 50 feet, where accessible, during bloom season prior to construction.
Burrowing Owl	Minimize impacts to annual grassland habitat.	Conduct protocol surveys prior to construction.
Swainson’s Hawk	Avoid or minimize removal of mature trees from oak woodland and riparian woodland. Minimize impacts to annual grassland habitat.	Conduct site clearing outside of nesting season. Conduct pre-construction surveys if construction will occur between February 28 and September 15. Implement avoidance measures as required until young have fledged. Implement mitigation for loss of foraging habitat as required.
Raptor Nests and other nesting birds	Avoid or minimize impacts within 50 feet of known active nests.	Conduct site clearing outside of nesting season. Conduct pre-construction surveys if construction will occur between February 1 and August 31. Implement avoidance measures as required until young have fledged.

**Table 3 (cont.)
SUMMARY OF AVOIDANCE RECOMMENDATIONS**

Sensitive Resource	Avoidance Measures During Design	Additional Studies and Avoidance Measures During Construction
Pallid Bat	Preserve dead trees or trees with hollows to the greatest extent feasible.	Conduct pre-construction surveys and implement construction training and monitoring measures if species is found.
Western Pond Turtle	Avoid or minimize impacts to Kaseberg Creek and within 500 feet of Kaseberg Creek.	Conduct pre-construction surveys and implement construction training and monitoring measures if species is found.
Western Spadefoot Toad	Avoid direct impacts to and minimize impacts within 800 feet of vernal pools and seasonal wetlands.	Conduct pre-construction surveys and implement construction training and monitoring measures if species is found.
Vernal Pool Invertebrate	Avoid direct impacts to vernal pools. Minimize impacts to vernal pool watersheds or construction within 250 feet of pools.	Consult with USFWS to determine extent of project impact once construction documents are completed. Implement water quality and erosion control measures during construction to prevent runoff into vernal pools.
Valley Elderberry Longhorn Beetle	Maintain minimum 20-foot setback from riparian areas that could not be surveyed.	Survey riparian areas within 165 feet of project area for elderberry shrubs.
Andrenid Bee	Minimize impacts to annual grassland habitat.	No species-specific measures.

5.1 SPECIAL-STATUS SPECIES

5.1.1 Special-Status Plants

Nine special-status plants have the potential to occur within the Study Area including stinkbells, Stanford’s arrowhead, Ahart’s dwarf rush, Boggs Lake hedge-hyssop, dwarf downingia, legenera, pincushion navarretia, Red Bluff dwarf rush, and valley brodiaea. These species were not observed during the field survey; however, the survey was not floristic in nature and was conducted outside of the typical identification period for these plants.

Avoidance and Minimization Measures

Special-status plant species have the potential to occur in the annual grassland, riparian woodland, and vernal pools within the Study Area. Since there are no known populations of these species, direct avoidance during design is not feasible. However, impacts to eight of the nine species can be minimized or avoided by avoiding direct impacts to vernal pools and Kaseberg Creek.

Prior to construction of any improvements in the Study Area, a qualified botanist should conduct special-status plant surveys of the Study Area during the appropriate identification period for these species. One survey conducted between April and May will satisfy the blooming period for all nine potentially occurring special-status plant species. If no special-status plants are observed within the Study Area, then a letter report documenting the survey results should be prepared and submitted to the City and no further measures are recommended.

If special-status plants are observed within the Study Area, the location of the special-status plants should be marked with pin flags or other highly visible markers and may also be marked by GPS. The Project proponent should determine if the special-status plant(s) onsite can be avoided by Project design or utilize construction techniques to avoid impacts to the special-status plant species. All special-status plants to be avoided within the Study Area should have exclusion fencing or other highly visible material marking the avoidance area and the avoidance area should remain in place throughout the entire construction period. Prior to commencement of work activities, a designated botanist/biologist should provide a Worker Environmental Awareness Program (WEAP) training to all Project-related personnel. The training should include information on identifying special-status species found on the project site, their ecology and habitat requirements, the Project boundaries, and the avoidance and minimization measures to be followed to avoid impacts to those species. Upon completion of the training, all construction personnel should sign a form stating that they have attended the training and understand all the measures. Proof of this instruction should be kept on file with the Project proponent.

If special-status plants are found within the Study Area and cannot be avoided, the Project proponent should consult with the CDFW and/or the USFWS as appropriate, and depending on the status of the plant species in question, determine appropriate measures to mitigate for the loss of special-status plant populations within the Study Area. These measures may include gathering seed from impacted populations for planting within nearby appropriate habitat, preserving or enhancing existing offsite populations of the plant species affected by the Project, or restoring suitable habitat for special-status plant species habitat as directed by the regulatory agencies.

5.1.2 Burrowing Owl

The annual grassland within the Study Area contains herbaceous habitat and some small mammal burrows that are potentially suitable nesting habitat for burrowing owl, although no burrowing owls were observed during the field survey.

Avoidance and Minimization Measures

Since there are no known populations of these species, direct avoidance during design is not feasible. However, avoiding or minimizing the loss of annual grassland habitat will reduce the potential for the project to impact burrowing owl.

Prior to the start of construction, protocol surveys for the presence of burrowing owl should be conducted by a qualified biologist in accordance with the CDFW 2012 Staff Report. If burrowing owls are observed on or within 500 feet of proposed development activities that will result in ground disturbance, then an impact assessment should be prepared and submitted to the CDFW, in accordance with the CDFW 2012 Staff Report. If it is determined that project activities may result in impacts to occupied western burrowing owl habitat, then the project proponent should consult with CDFW and develop a detailed mitigation plan establishing avoidance and mitigation measures based on the requirements set forth in Appendix A of the CDFW 2012 Staff Report (CDFW 2012).

5.1.3 Swainson's Hawk Foraging Habitat and Nesting Habitat

The annual grassland within the Study Area provides suitable foraging habitat and the mature trees in the riparian and oak woodlands provide suitable nesting habitat for Swainson's hawk. The CDFW considers five or more vacant acres of suitable foraging habitat within ten miles of an active nest within

the last five years to be significant foraging habitat for Swainson's hawk, the conversion of which to urban uses is considered a significant impact (CDFW 1994; Staff Report). Although implementation of the trail project will retain the majority of the annual grassland habitat, loss of habitat may require mitigation.

Avoidance and Minimization Measures

Since there are no known occurrences of Swainson's hawk in the Study Area, direct avoidance during design is not feasible. However, avoiding or minimizing the removal of mature trees that could be used for nesting and the loss of annual grassland foraging habitat will reduce the potential for the project to impact Swainson's hawk.

Trees should be removed between September 16 and February 28, which is outside of the Swainson's hawk nesting season, if feasible.

Prior to the start of construction, protocol surveys for active Swainson's hawk nests should be conducted by a qualified biologist in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). If no active Swainson's hawk nests are observed, then a letter report documenting the results of the survey should be provided to the City for their records, and no additional measures are recommended.

If active nests are observed on or within ¼-mile of the project site, then additional avoidance measures are recommended. CDFW should be consulted to determine to establish an appropriate noise buffer, develop take avoidance measures, and implement a monitoring and reporting program prior to any construction activities occurring within ¼-mile of the nest. A pre-construction WEAP training should be completed. Biological monitoring of the nest should be conducted until the young have fledged.

If the project impacts five or more acres of annual grassland habitat, mitigation for loss of this foraging habitat should be implemented in accordance with the Staff Report. Foraging habitat losses on projects located greater than five miles but less than ten miles of an active nest tree documented within the last five years shall be mitigated at a 0.5:1 ratio.

5.1.4 Nesting Birds and Raptors

The various habitats within the Study Area provide potential nesting and foraging habitat for many raptor and other bird species. One white-tailed kite was observed foraging and two active nests were observed within Study Area during the field survey.

Avoidance and Minimization Measures

Although only two active nests were observed during the field survey, it is likely that additional nests will be established in the future. Avoidance and minimization measures during design include maintaining a 50-foot minimum setback from known active nests and minimizing impacts to oak woodland and riparian woodland habitats.

If feasible, then ground clearing activities and tree/shrub removal should be completed between September 1 and January 31, outside of the nesting season.

If construction begins during the nesting season (February 1 through August 31), then a pre-construction nesting bird survey shall be conducted within 14 days prior to the commencement of construction activities or vegetation removal. If the pre-construction survey results in no evidence of active nests, then a letter report should be submitted to the City for their records and no additional measures are recommended.

If active nests are found, additional avoidance measures are recommended. A pre-construction WEAP training should be completed. A qualified biologist should establish an appropriate species-specific buffer zone around the nests. The biologist shall mark the buffer zone with high visible flagging or pin flags and maintain the buffer zone until all construction has been completed, until the end of the breeding season, or until the young have successfully fledged and/or the nest is no longer active. The active nests should be monitored weekly during construction to evaluate potential nesting disturbance caused by construction activities.

If establishing the typical buffer zone is impractical, then the qualified biologist may reduce the buffer, depending on the species, and conduct daily monitoring to ensure that the nest is not disturbed and that no forced fledging occurs. Daily monitoring shall occur until the qualified biologist determines that the nest is no longer occupied or that it has been determined that nesting activity is not negatively affected by adjacent Project construction activities.

5.1.5 Pallid Bat

Pallid bat has the potential to roost in hollows within trees and the existing utility building and to forage within the Study Area.

Avoidance and Minimization Measures

The potential for impacts to pallid bat can be minimized during the design process by retaining dead trees or trees with hollows whenever possible.

A qualified biologist should conduct a pre-construction survey for the pallid bat within 14 days prior to the start of tree removal or grading operations. If no bat roosts are observed, then a letter report documenting the results of the survey should be provided to the City for their records, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If pallid bat is found, additional avoidance measures are recommended. A pre-construction WEAP training should be completed. If pallid bats are roosting on or within 100 feet of the proposed project footprint, then the biologist should establish an appropriate buffer around the roost site prior to construction. At a minimum, no trees being used for roosts should be removed until the biologist has determined that bats are no longer roosting. Additional mitigation measures, such as installation of bat boxes or alternate roost structures, would be recommended only if bats are found to be roosting within the proposed project area and roosts were determined to be subject to removal during construction.

5.1.6 Western Pond Turtle

Kaseberg Creek provides aquatic habitat and the adjacent riparian and annual grassland provide upland habitat for this species.

Avoidance and Minimization Measures

The potential for impacts to western pond turtle can be minimized during the design process by avoiding or minimizing impacts to Kaseberg Creek and the surrounding upland areas within 500 feet of the channel, where this species is most likely to be found.

Prior to construction of any improvements in the Study Area, a qualified biologist should conduct a pre-construction survey within 14 days prior to the start of ground disturbance within 500 feet of riparian and creek habitat. If no western pond turtles are observed, then a letter report documenting the results of the survey should be provided to the City for their records, and no additional measures are recommended. If construction does not commence within 14 days of the pre-construction survey, or halts for more than 14 days, a new survey is recommended.

If western pond turtles are found, additional avoidance measures are recommended. A pre-construction WEAP training should be completed. A qualified biologist should conduct a pre-construction survey within 24 hours prior to commencement of construction activities within 500 feet of the perennial drainage and be present during grading activities in this area for the purpose of relocating any western pond turtles found within the construction footprint to suitable habitat away from the construction zone.

5.1.7 Western Spadefoot Toad

The annual grassland within the Study Area provides potential for upland aestivation habitat and the vernal pools and seasonal wetlands provide potential breeding habitat for western spadefoot toad.

Avoidance and Minimization Measures

The potential for impacts to western spadefoot toad can be minimized during the design process by avoiding or minimizing impacts to vernal pools and seasonal wetlands and the surrounding upland areas within 800 feet, where this species is most likely to be found.

A qualified biologist should conduct a pre-construction survey during the breeding season (February to March). This survey should include aquatic surveys of potential breeding ponds for egg masses and terrestrial surveys of surrounding uplands within 800 feet. If no western spadefoot toads are observed, then a letter report documenting the results of the survey should be provided to the City for their records, and no additional measures are recommended.

If western spadefoot toads are found, then additional avoidance measures are recommended. A pre-construction WEAP training should be completed. A qualified biologist should conduct a pre-construction survey within 24 hours prior to commencement of construction activities within 800 feet of vernal pools and seasonal wetlands and be present during grading activities in this area for the purpose of relocating any western spadefoot toad found within the construction footprint to suitable habitat away from the construction zone.

5.1.8 Vernal Pool Invertebrates

California linderiella, Ricksecker's water scavenger beetle, vernal pool fairy shrimp, and vernal pool tadpole shrimp have the potential to occur in the vernal pools within the Study Area. As noted by USFW, indirect effects on avoided vernal pools can occur as a result of adjacent ground disturbing activities

within a 250-foot radius of avoided vernal pools, specifically, activities and/or structures that adversely affect water quality or alter the hydrology.

Avoidance and Minimization Measures

Design of the trail and other improvements should avoid direct impacts to vernal pools, minimize changes to vernal pool watersheds, and maximize setbacks to vernal pools to the greatest extent feasible. Improvements should be designed to avoid directing runoff into pools.

If the proposed trail or other improvements will be located within 250 feet of a vernal pool, consult with USFWS to determine potential project impacts and appropriate mitigation and protection measures. At a minimum, implement erosion control and water quality best practices to prevent runoff from construction site into vernal pools.

5.1.9 Valley Elderberry Longhorn Beetle

Although no elderberry shrubs were observed during the field survey, a section of riparian habitat located adjacent to Bear Dog Park, in the northeastern portion of the Study Area was not fully accessible due thick undergrowth. Therefore, elderberry shrubs could be present and may provide suitable habitat for valley elderberry longhorn beetle.

Avoidance and Minimization Measures

If an elderberry shrub is located and construction is anticipated within 165 feet of the elderberry shrubs, approval by the USFWS must be obtained and a minimum setback of 20 feet from the driplines of the elderberry shrubs must be maintained, in accordance with the *USFWS Valley Elderberry Longhorn Beetle (Desmocerus californicus dimorphus) (Framework) (USFWS 2017)*.

Project activities that will encroach into the 20-foot minimum setback area are assumed to adversely affect valley elderberry longhorn beetle. Project activities that may directly or indirectly affect elderberry shrubs with stems measuring at least one inch, require minimization measures including planting replacement habitat or purchasing mitigation credits from a USFWS-approved mitigation bank. The mitigation ratios vary based on whether exit holes are present and whether the shrubs occur within riparian habitat

5.1.10 Andrenid Bee

The annual grassland and oak woodland within the Study Area contains potentially suitable habitat for Andrenid bee, although no Andrenid bee were observed during the field survey. Since andrenid bee establishes new nests annually, the potential loss of individual nests is not expected to have a significant impact on this species.

Avoidance and Minimization Measures

Since there are no known populations of these species, direct avoidance during design is not feasible. However, avoiding or minimizing the loss of annual grassland habitat and oak woodland habitat will reduce the potential for the project to impact Andrenid bee.

No species-specific mitigation pre-construction measures are recommended for this species.

5.2 FUTURE PERMITS AND ENVIRONMENTAL COMPLIANCE

Additional environmental review and permitting may be required prior to the start of construction.

5.2.1 Environmental Review

Prior to construction, the City must complete a review of the project for compliance with state environmental regulations. If Federal funding is obtained for the project then a NEPA review may also be required. As part of the preparation of these documents additional technical studies may be required.

5.2.2 Regulatory Permits

Prior to initiation of any construction activities which could result in impacts to potentially regulated aquatic features, permits for these impacts under Section 404 and 401 of the CWA and the State Water Code will be required. As part of the permitting process, a formal aquatic resources delineation should be completed and submitted to the USACE for verification of the extent of regulated aquatic features. Any conditions included in the final permits, including prescribed mitigation measures, would be required to be implemented prior to filling or impacting these features.

If aquatic features are determined not to be subject to regulation under the CWA, then these features may still be considered waters of the State. An application for discharge of dredge or fill material should be submitted to the RWQCB prior to the start of construction.

Impacts to the bed and bank or riparian vegetation of any creek or seasonal drainage may require a streambed alteration agreement. An application for a SAA should be submitted to CDFW, which will review it and determine if an SAA is required.

5.2.3 Protected Trees

As outlined under City's Municipal Code Section 19.66.60, *Standard Policies and Procedures for Approved Work*, the following measures define procedures necessary to safeguard the health of protected trees to be preserved onsite or which may be impacted as a result of construction activities (City of Roseville 2020a).

- A minimum five-foot high chain link or substitute fence approved by the City Planning Manager ("Manager") shall be installed at the outermost edge of the protected zone ("TPZ") of each protected tree or groups of protected trees. Exceptions to this policy may occur in cases where protected trees are located on slopes that will not be graded. However, approval must be obtained from the City's Planning Division ("Planning Division") to omit fences in any area of the project.
- Tree protection fencing shall be installed in accordance with the approved fencing plan prior to the commencement of any grading operations or such other time as determined by the review body. The developer shall call the Planning Division for an inspection of the fencing prior to grading operations. Upon approval, the fences shall remain in place throughout the entire construction period and shall not be removed, relocated, taken down, or otherwise modified in whole or in part without prior written authorization from the Planning Division.

- Signs shall be installed along the tree protection fencing in four equidistant locations around each individual protected tree, or at 50-foot intervals along the fencing surrounding a grove of protected trees. The size of each sign must be a minimum of two feet by two feet and must contain the following language:

“WARNING, THIS FENCE SHALL NOT BE REMOVED OR
RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE
CITY OF ROSEVILLE PLANNING DIVISION.”

- To ensure the preservation of protected trees during construction, a minimum \$10,000.00 deposit (or greater, if deemed necessary by the Approving Authority) shall be posted and maintained. The deposit shall be posted in a form approved by the City Attorney prior to any grading, delivery of materials, or movement of heavy equipment onto the site, or issuance of any permits. Each violation of any Tree Permit condition regarding tree preservation shall result in forfeiture of a portion or the entirety of the deposit, at the discretion of the Approving Authority, provided that such determinations may be appealed (City of Roseville 2020b).
- Where a Tree Permit has been approved for construction of a retaining wall(s) within the protected zone of a protected tree, the developer will be required to provide for immediate protection of exposed roots from moisture loss during the time prior to completion of the wall. The retaining wall shall be constructed within 72 hours after completion of grading.
- Pruning of living roots of less than one-inch diameter (minor roots) may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area. Pruning of living roots over one-inch in diameter (major roots) may not be cut without approval of an ISA-Certified Arborist. Cut all roots cleanly at the edge of the trench. Do not tear or pull roots out of ground. If roots are split during excavation, follow root back to immediately above split and cut cleanly.
- If required, preservation devices such as aeration systems, oak tree wells, drains, special foundation systems, special paving and cabling systems must be installed per approved plans and certified by the project arborist.
- Every effort should be made to avoid cut and/or fill slopes within or in the vicinity of the protected zone of any protected tree. No grade changes are permitted which would cause water to drain to the area within twice the longest radius of the protected zone of any protected tree or would result in the ground being lowered on all sides of the tree.
- When permitted, trenching within the protected zone of a protected tree may only be conducted with hand tools or as otherwise directed by an arborist, in order to avoid root injury.
- A certification letter should be submitted by the project arborist to the Planning Division within five working days of completing any regulated activity within the protected zone of protected trees, attesting that all work was conducted in accordance with the appropriate permits and the requirements of this chapter.
- All conditions of approval should be adhered to as outlined under the project’s Tree Permit obtained from the City.

The following measures are general best management practices (BMPs) that are recommended to minimize the potential for injury or damage to occur to trees to be preserved onsite.

- No parking, portable toilets, dumping or storage of any construction materials, including oil, gas, or other chemicals, or other infringement by workers or domesticated animals is allowed in the TPZ;
- Minimize disturbance to the native ground surface (grass, leaf, litter, or mulch) under preserved trees to the greatest extent feasible. All brush, earth, and debris that is required to be removed within the dripline of a preserved tree should be conducted in a manner that prevents injury to the tree;
- All pruning should be done in accordance with ISA American National Standards Institute (ANSI) tree care standards using tree maintenance best practices;
- Climbing spikes should not be used on living trees;
- All exposed roots should be covered with protective material (e.g., damp burlap) during construction to prevent drying out;
- No signs, ropes, cables, or any other item should be attached to a tree; and
- No burning or use of equipment with an open flame should occur near or within the TPZ. Appropriate fire prevention techniques should be employed around all trees to be preserved. This includes prohibiting the use of tools that may cause sparks, such as metal blade trimmers or mowers.

6.0 REFERENCES

- Ahl, J.S.B. 1991. Factors affecting contributions of the tadpole shrimp, *Lepidurus packardi*, to its overwintering egg reserves. *Hydrobiologia*. 212:137-143.
- Barbour, R. W., and W. H. Davis. 1969. *Bats of America*. Univ. of Kentucky Press, Lexington.
- Bartolome, J., B. Allen-Diaz, S. Barry, L. Ford, M. Hammond, P. Hopkinson, F. Ratcliff, S. Spiegel, and M. White. 2014. Grazing for biodiversity in Californian Mediterranean grasslands. *Rangelands*. 36(5):36-43.
- City of Roseville. 2020a. *Chapter 19.66, Tree Preservation Ordinance*. City of Roseville Municipal Code. Roseville, California. Available online at: http://qcode.us/codes/roseville/?view=desktop&topic=19-iv-19_66-19_66_020.
- 2020b. *Chapter 19.80, Appeals*. City of Roseville Municipal Code. Roseville, California. Available online at: http://qcode.us/codes/roseville/?view=desktop&topic=19-iv-19_66-19_66_020.
- California Department of Fish and Wildlife (CDFW [formerly CDFG]). 1994. Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California. November 1, 1994.
2012. Staff Report on Burrowing Owl Mitigation. State of California, California Natural Resources Agency. Department of Fish and Wildlife. March 7, 2012.
2020. California Natural Diversity Database, Biogeographic Data Branch, Department of Fish and Wildlife. *Pleasant Grove, Nicolaus, Sheridan, Verona, Roseville, Taylor Monument, Rio Linda, and Citrus Heights* USGS quadrangles Accessed [2/6/2020].
- California Native Plant Society (CNPS). 2020. *Online Electronic Inventory of Rare and Endangered Vascular Plants of California. Online edition, v8-02. Pleasant Grove, Nicolaus, Sheridan, Verona, Roseville, Taylor Monument, Rio Linda, and Citrus Heights* USGS quadrangles. Available online at <http://www.cnps.org/cnps/rareplants/inventory>. Accessed [2/6/2020].
- Cornell Lab of Ornithology. 2019. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. <https://www.allaboutbirds.org>. Accessed on [4/23/2020].
- Dodds, G. S., 1923. *A new species of phyllopod (Branchinecta occidentalis) Occas*. *Papers Mus. Zool.* 141: 1–3.
- Eriksen, C. and D. Belk. 1999. *Fairy Shrimps of California's Puddles, Pools, and Playas*. Mad River Press, Inc. Eureka, CA.
- Hayes, Peter J., Peggy Kraus-Kennedy, and Molly Keller. 2006. *The Outdoor World of the Sacramento Region: A Local Field Guide With Details and Colored Drawings of More Than 600 Plants, Birds, Mammals, Reptiles, Amphibians, Fish, And Insects*. The American River Natural History Association. Sacramento, CA.

- Hood, Charles. 2017. *A California Guide to The Birds Among Us*. Versa Press, East Peoria.
- Muths E. Home range and movements of boreal toads in undisturbed habitat. *Copeia*. 2003;2003: 160-165.
- NatureServe. 2020. NatureServe Explorer: An Online Encyclopedia of Life [Web Application]. Version 7.1. NatureServe, Arlington, Virginia. Available online at: <http://www.natureserve.org/explorer>. Accessed [3/27/2020].
- Poulin, Ray, L. Danielle Todd, E. A. Haug, B. A. Millsap and M. S. Martell. 2011. *Burrowing Owl (Athene cunicularia)*, *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology.
- Shuford, W.D., and Gardladi, T. editors. 2008. *California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.
- Stebbins, R. C. 2003. *Western Amphibians and Reptiles, 3rd Edition*. Boston: Houghton Mifflin Co.
- Swainson's Hawk Technical Advisory Committee. 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley.
- U.S. Fish and Wildlife Service (USFWS). 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service; Sacramento, California. 28 pp.
2020. *Information for Planning and Conservation (IPaC) Trust Resource Report: Mahany Open Space*. Available online at: <https://ecos.fws.gov/ipac/project/JCM4ZKD535C2ZBAFJLG3WYHFVI>. Accessed [2/6/2020].
2006. Draft recovery plan for listed species of the Rogue Valley vernal pool and Illinois Valley wet meadow ecosystems. Region 1, Portland, Oregon. xiii + 136 pages.
- Woodbridge, B. 1998. Swainson's Hawk (*Buteo swainsoni*). The Riparian Bird Conservation Plan: A Strategy for Reversing the Decline of Riparian-associated Birds in California. California Partners in Flight. Available at: www.prbo.org/calpif/htmldocs/species/riparian/swainsons_hawk.htm.
- Zeiner, D.C., W.F. Laudenslayer, Jr., K.E. Mayer, and M. White, eds. 1990. California's Wildlife: California Wildlife Habitat Relationships. Wildlife and Habitat Data Analysis Branch, California Department of Fish and Game. Available online at: <http://www.dfg.ca.gov/whdab/html/cawildlife.html>.

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Appendix A

Regionally Occurring Listed and Special-Status Species

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Appendix A
Regionally Occurring Listed and Special-Status Species

Table 1 — Legally Protected Species

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Plants				
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	--; CE; --; 1B	Annual herb found on clay soils in vernal pools and swamps, occasionally along lake margins, from 10 to 2,375 meters.	Blooming period: April – August	High. The Study contain suitable vernal pool habitat for this species. There are three CNDDDB records for this species within five miles of the Study Area (CDFW 2020).
Invertebrates				
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT; --; --; --	Associated with elderberry shrubs (<i>Sambucus</i> sp.) often within riparian habitats. Presence can be indicated by bore-holes in stems of elderberries.	March – June (Adults) Year – round (Larvae)	Low. Elderberry shrubs were not noted during the site survey however, sections of the riparian habitat west of Bear Dog Park and North of Kaseberg Creek were not accessible due to dense thorny brush. Therefore, elderberry shrubs have the potential to occur within this section of the Study Area.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FT; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Calaveras, Colusa, Contra Costa, El Dorado, Fresno, Glenn, Kings, Madera, Merced, Monterey, Napa, Placer, Riverside, Sacramento, San Benito, San Joaquin, San Luis Obispo, Santa Barbara, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Ventura, Yolo, and Yuba counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification	High. The Study contain suitable vernal pool habitat for this species. There are 26 CNDDDB records for this species within five miles of the Study Area (CDFW 2020).
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Butte, Tehama, Glenn, Yolo, Solano, Stanislaus, Merced, and Ventura counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification	None. Although the Study Areas contains vernal pool habitat, the Study is outside of the known geographical range of this species.
Vernal pool tadpole shrimp <i>Lepidurus packardii</i>	FE; --; --; --	Inhabits vernal pools, swales, and ephemeral freshwater habitat. Known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Kings, Merced, Placer, Fresno, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	High. The Study Area contains suitable vernal pool and ephemeral freshwater habitat for this species. There is one CNDDDB record for this species within five miles of the Study Area (CDFW 2020).
Fish				
Delta smelt <i>Hypomesus transpacificus</i>	FT; CE; --; --	Found in open waters of bays, tidal rivers, channels, and sloughs.	Year – Round	None. The Study Area does not contain suitable habitat to support this species (i.e., open waters of bays, tidal rivers, channels, and sloughs).
Chinook salmon-Central Valley spring-run <i>Oncorhynchus tshawytscha</i>	FT; CT; --; --	Found in the ocean, rivers, creeks, and large inland lakes.	Year-round	None. The Study Area does not contain suitable habitat to support this species. Although Kaseberg Creek transects a portion of the Study Area, this creek hydrology does not provide enough flow to support this large fish species
Longfin smelt <i>Spirinchus thaleichthys</i>	FC; CT; --; --	Inhabits estuaries and bays in the Delta and Sacramento-San Joaquin Rivers. Migrate to freshwater to spawn.	(November) December – February (June)	None. The Study Area does not contain suitable habitat for this species (i.e., estuaries and bays in the Delta).
Steelhead - Central Valley DPS <i>Oncorhynchus mykiss irideus</i>	FT; --; --; --	Found in the ocean, rivers, creeks, and large inland lakes. This distinct population only occurs in the Sacramento and San Joaquin Rivers and their tributaries.	Year – Round	None. This species is confined to the uppermost portions of the watershed (e.g. Miners and Secret Ravine) for rearing due to the consistently cooler summer temperatures (GANDA 1998) There is one CNDDDB record for this species within five miles of the Study Area (CDFW 2020).
Amphibians/Reptiles				
California red-legged frog <i>Rana draytonii</i>	FT; CSC; --; --	Found near quiet, permanent pools of streams, marshes, and ponds with extensive vegetation below 1200 meters. Typically occurs in humid forests, woodlands, grassland, and foothill habitats. Adults may disperse considerable distances between pools during rain events. Breeds in permanent pools from January through July.	Year – Round	None. This species is generally considered extirpated from the valley.

**Appendix A (cont.)
Regionally Occurring Listed and Special-Status Species**

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
California tiger salamander Central Population <i>Ambystoma californiense</i>	FT; CT--; --	Breeds in vernal pools and seasonal ponds in grasslands and oak savannas. Adults spend summer in small mammal burrows.	Drift fence studies during fall and winter for upland habitats. November – February (adults) March 15 – May 15 (larvae)	None. The Study Area is not within the known range of the species.
Giant garter snake <i>Thamnophis gigas</i>	FT; CT--; --	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands in Sacramento, Sutter, Butte, Colusa, and Glenn counties.	Active outside of dormancy period November-mid March	None. The Study Area is outside of the current known range of the species.
Birds				
Bald eagle <i>Haliaeetus leucocephalus</i>	FD; CE; --; --	Breeding habitat most commonly includes areas within 2.5 miles (4.0 kilometers) of coastal areas, bays, rivers, lakes, and reservoirs. Nests usually are in tall trees or on pinnacles or cliffs near water.	Year round	None. The Study Area does not contain suitable habitat for this species (i.e., within 2.5 miles (4.0 kilometers) of coastal areas, bays, rivers, lakes, and reservoirs).
Bank swallow <i>Riparia riparia</i>	--; CT; --; -- Nesting	Colonial breeder found in open and partly open situations, frequently near flowing water. Nests on steep sand, dirt, or gravel banks, in burrows dug near the top of the bank, along the edge of inland water, or along the coast, or in gravel pits or road embankments.	February – October	None. The Study Area does not provide suitable habitat for this species. The banks of the creek are not steep and gravel riparap is adjacent to busy roadways.
California black rail <i>Laterallus jamaicensis coturniculus</i>	--; CT; --; --	Saltwater, brackish, and freshwater marshes. Does not occur in wetland areas with annual fluctuations in water level and need a permanent water source of at least 1 inch in depth.	Year – round	None. Although the Study Area contains wetland, there is seasonal fluctuation in the hydrology with no permanent water and no marsh habitat is present.
Golden eagle <i>Aquila chrysaetos</i>	--; CFP; --; --	Open and semi-open areas in the mountains up to 12,000 feet in elevation. They are also found in canyon lands, rimrock, terrain, and riverside cliffs and bluffs. Nest are built on cliffs and steep escarpments in grassland, in trees, chaparral, shrubland, forests and man-made structures within vegetated areas.	Year -round	None. The Study Area does not contain suitable habitat for this species. The Study Area is relatively flat lacking the steep cliff and bluff habitat for nesting this species is generally associated with.
Swainson's hawk <i>Buteo swainsoni</i>	--; CT; --; --	Nest peripherally in valley riparian systems, lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley.	Breeding: March – October	High. The Study Area provides suitable nesting habitat within the riparian and oak woodland. The annual grassland provides foraging habitat for this species as numerous rodent burrows were observed during the March 2020 site survey. There are seven CNDDDB record for this species within five miles of the Study Area (CDFW 2020).
Tricolored blackbird <i>Agelaius tricolor</i>	--; CCE; CSA; --	Nests in colonies near fresh water, usually within emergent wetland habitat with tall, dense cattails, tule, willow, blackberry, wild rose, and other marshy vegetation. Forages in open grassland, wetland, and agricultural habitats.	Year – Round	Low. Nesting habitat for this species is limited within the Study Area to small patches within the riparian and creek habitat. Suitable foraging habitat exists for this species within the annual grassland community. There is one CNDDDB records for this species within five miles of the Study Area (CDFW 2020).
Western yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT; CE; --; --	Found in woodlands, thickets, orchards, and streamside groves. Breeds mostly in dense deciduous stands, including forest edges, tall thickets, dense second growth, overgrown orchards, and scrubby oak woodlands. Often found in willow groves around marshes. In the west, mostly in streamside trees, including cottonwood-willow groves in arid country.	Late Spring – Early Fall (Breeding)	None. Although the Study Area contains some riparian habitat, this species requires large blocks of riparian habitat for nesting. Along the Sacramento River, nesting yellow-billed cuckoos occupied home ranges which included 25 acres (10 hectares) or more of riparian habitat. Another study on the same river found riparian patches with yellow-billed cuckoo pairs to average 99 acres (40 hectares). Home ranges in the South Fork of the Kern River averaged about 42 acres (17 hectares) (CDFW 2017).

Table 1 includes federal threatened or endangered species and eagles, and State threatened, endangered, or fully protected species.

**Appendix A (cont.)
Regionally Occurring Listed and Special-Status Species**

Table 2 — Species Subject to CEQA Review

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	--; --; --; 1B	Annual herb found in mesic areas in valley and foothill grasslands from 30 to 229 meters.	Blooming period: March – May	High. The Study Area provides suitable habitat for this species within the vernal pool habitat.
Dwarf downingia <i>Downingia pusilla</i>	--; --; --; 2B	An annual herb found in mesic areas within valley and foothill grassland and vernal pool habitats from 1 to 445 meters.	Blooming period: March – May	High. The Study Area contains suitable vernal pool and grassland habitat for this species. There are sixteen CNDDDB records for this species within five miles of the Study Area (CDFW 2020F).
Hispid bird's-beak <i>Chloropyron mole</i> ssp. <i>hispidum</i>	--; --; --; 1B	Annual hemiparasite herb found on alkaline soil in meadows and seeps, playas, valley and foothill grasslands, from 1-155 meters.	Blooming period: June – September	None. The Study Area does not provide suitable habitat for this species (i.e., alkaline soils in meadows and seeps, playas).
Legenere <i>Legenere limosa</i>	--; --; --; 1B	Annual herb found in vernal pools from 1 to 880 meters.	Blooming period: April – June.	High. The Study Area contains suitable vernal pool habitat for this species. There are three CNDDDB records for this species within five miles of the Study Area (CDFW 2020).
Pincushion navarretia <i>Navarretia myersii</i> ssp. <i>myersii</i>	--; --; --; 1B	Annual herb often found in acidic soils within vernal pools from 20 to 330 meters.	Blooming period: April – May	Low. Although the Study Areas contains vernal pools, the soils may not be the adequate pH for this species to thrive.
Red Bluff dwarf rush <i>Juncus leiospermus</i>	--; --; --; 1B	Annual herb in vernal moist chaparral, cismontane woodlands, meadows and seeps, valley and foothill grasslands, and vernal pools from 35-1,250 meters.	Blooming period: March – June	High. The Study Area contains suitable vernal pool and annual grassland habitat for this species. There is one CNDDDB record for this species within five miles of the Study Area (CDFW 2020).
Sanford's arrowhead <i>Sagittaria sanfordii</i>	--; --; --; 1B	Perennial rhizomatous herb found in assorted shallow freshwater wetlands, marshes, and swamps from 0 to 650 meters.	Blooming period: May – October	High. The seasonal wetlands within the Study Area provide suitable habitat for this species. There are three CNDDDB records for this species within five miles of the Study Area (CDFW 2020).
Wolly rosemallow <i>Hibiscus lasiocarpus</i> var. <i>occidentalis</i>	--; --; --; 1B	Perennial rhizomatous herb often found on the sides of levees within freshwater marshes and swamps from 0 to 120 meters.	Blooming period: June-September	None. The Study Area does not provide suitable habitat for this species.
Invertebrates				
California linderiella <i>Linderiella occidentalis</i>	--; CSA; --; --	Found in most landforms, geologic formations and soil types supporting vernal pools in California. They are typically found in deeper vernal pools throughout elevations ranging from 10 to 1,159 meters.	USFWS protocol-level wet-season sampling and/or dry season cyst identification.	High. The Study Area contains suitable vernal pool habitat for this species. There are twenty-two CNDDDB records for this species within five miles of the Study Area (CDFW 2020).
Fish				
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	--; CSC; --; --	Inhabits the streams and tributaries of the Sacramento-San Joaquin Rivers in estuaries, marshes, and freshwater.	Spawns in spring (sometimes in winter and early summer).	None. The Study Area is not within the known watersheds this species inhabits.
Amphibians/Reptiles				
Western pond turtle <i>Emys marmorata</i>	--; CSA; --; --	Occurs in a variety of aquatic habitats such as ponds, creeks, ditches, lakes, and marshes. Prefers areas with abundant vegetation and rocky or muddy substrate. Exposed banks or other basking areas such as logs or cattail mats are required. Upland habitat typically occurs within woodlands, forests, or grasslands, within the vicinity of aquatic habitat.	Year – Round	High. The Study Area provides suitable aquatic and upland habitat for this species in the riparian and creek habitats.
Western spadefoot <i>Spea hammondi</i>	--; CSC; --; --	Found in a variety of upland habitats, including lowlands, foothills, grasslands, open chaparral, and pine-oak woodlands. Habitat preferences include shortgrass plains, and sandy or gravelly soils for burrowing (e.g., alkali flats, washes, alluvial fans). Hibernates/aestivates for most of the year underground. During the breeding season are found in temporary rain pools, and slow-moving streams (e.g., areas flooded by intermittent streams).	Breeding: January – May	High. The annual grassland and vernal pools located throughout the Study Area provided suitable habitat for this species. Numerous suitable burrows were noted during the 2020 survey. There are five CNDDDB record for this species within five miles of the Study Area (CDFW 2020).

**Appendix A (cont.)
Regionally Occurring Listed and Special-Status Species**

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Birds				
Black-crowned night heron <i>Nycticorax nycticorax</i>	--; CSA; --; --	Found in saltwater, brackish and freshwater habitats that include marshes, swamps, wooded streams, mangroves, lake shores, ponds, and lagoons. Roosting occurs in mangrove forests or swampy woodlands. Nesting occurs in trees near coastal marshes or on marine islands, swamps, marsh vegetation, clumps of grass on the dry ground, orchards, etc. Nesting usually occurs with other heron species.	Winter (Non-breeding)	Low. Wetlands, vernal pools and riparian habitat located within the Study Area provide foraging habitat for this species. However, no rookeries were observed.
Burrowing owl <i>Athene cunicularia</i>	--; CSC; --; -- (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.	Year – round	High. The annual grassland located throughout the Study Area provides suitable habitat for this species. Numerous suitable burrows were noted during the 2020 survey. There is one CNDDDB record for this species within five miles of the Study Area (CDFW 2020).
California thrasher <i>Toxostoma redivivum</i>	--; CSC; --; --	Found in chaparral within shrubs and small trees and woodlands if ample underbrush is present. This species is only in California and a small part of Baja California.	Year-Round	None. The Study Area does not provide suitable habitat for this species (i.e., chaparral).
Common Yellowthroat <i>Geothlypis trichas</i>	BCC; --; --; --	Found in open habitats such as marshes, wetland edges, and brushy fields. they are also found in dry upland pine forests, palmetto thickets, drainage ditches, hedgerows, orchards, fields, burned-over oak forests, shrub-covered hillsides, river edges, and disturbed sites. They winter in similar habitats with dense vegetation in the southern United States, Mexico, Central America, and the Caribbean.	Year Round	High. The Study Area provides suitable foraging and nesting habitat for this species within the annual grassland, oak woodland, and riparian habitats.
Grasshopper sparrow <i>Ammodramus savannarum</i>	--; CSC; --; --	Frequents dense, dry, or well drained grassland, especially native grassland. Nests at base of overhanging clump of grass. This species is known from Los Angeles, Mendocino, Orange, Placer, Sacramento, San Diego, San Luis Obispo, Solano, and Yuba counties, in California.	April – July (breeding)	Low. Although portions of the Study Area contain annual grasslands that provide habitat for this species, the Study Area shows signs of recent grazing, thus reducing vegetation density that the species requires for nesting.
Great blue heron <i>Ardea herodias</i>	--; CSA; --; --	Inhabits both freshwater and saltwater habitats and forages in grassland and agricultural field. Breeding colonies are located within 2 to 4 miles of feeding areas, often in isolated swamps or on islands, and near lakes and ponds bordered by forests.	Year – round	Present. This species was observed feeding in Kaseberg Creek within the Study Area during the March 2020 site visit. Wetlands, vernal pools and riparian habitat located within the Study Area provide foraging habitat for this species. However, no rookeries were observed.
Great egret <i>Ardea alba</i>	--; CSA; --; --	Found in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, ponds, fields and meadows. Nests primarily in tall trees, or in woods or thickets near water.	Year – round	Present. This species was observed feeding in a seasonal wetland within the Study Area during the March 2020 site visit. Wetlands, vernal pools and riparian habitat located within the Study Area provide foraging habitat for this species. However, no rookeries were observed.
Lewis' woodpecker <i>Melanerpes lewis</i>	BCC; --; --; --	Found in open forest and woodland, often logged or burned, including oak, coniferous forest (primarily ponderosa pine), riparian woodland (dominated by cottonwood), orchards, and less commonly in pinyon-juniper habitat. In winter uses oak woodlands, nut and fruit orchards. Nests in natural tree cavities, abandoned northern flicker holes or previously used cavities.	Year Round	None. This species inhabits transitional habitats between oak and coniferous forests at higher elevations than the Study Area.
Long-billed curlew <i>Numenius americanus</i>	BCC; --; --; --	Nests in low-growing vegetation (4-8" high), including shortgrass and mixed grass prairies and agricultural fields. In the winter, they migrate to the coast where they inhabit wetlands, tidal estuaries, mudflats, flooded fields, and occasionally beaches.	Summer (breeding)	Low. Although portions of the Study Area contain annual grasslands that provide habitat for this species, the Study Area shows signs of recent grazing, thus reducing vegetation high that the species requires for nesting.

Appendix A (cont.)
Regionally Occurring Listed and Special-Status Species

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Nuttall's woodpecker <i>Picoides nuttallii</i>	BCC; --; --; --	Found primarily in oak woodlands and in riparian woods; rarely in conifer.	Year Round	High. The oak woodland and riparian habitat provide suitable foraging and nesting habitat for this species.
Oak titmouse <i>Baeolophus inornatus</i>	BCC; --; --; --	Found in oak and pine-oak woodland, arborescent chaparral, and oak-riparian associations. Nests are constructed in natural tree cavities, in woodpecker holes or bird boxes approximately 1 to 11 meters above ground.	Year Round	High. The oak woodland and riparian habitat provide suitable foraging and nesting habitat for this species.
Purple martin <i>Progne subis</i>	--; CSC; --; --	Nests in wide variety of open and partly open habitats that are often near water or around towns. Nests in tree cavities, abandoned woodpecker holes, crevices in rocks, and sometimes in bird houses or gourds put up by humans.	Summer (breeding)	High. The Study Area provides suitable nesting and foraging habitat for this species within the annual grassland, riparian and oak woodland habitat. There is one CNDDDB occurrence documented within five miles of the Study Area (CDFW 2020).
Short-billed dowitcher <i>Limnodromus griseus</i>	BCC; --; --; --	Found in small lakes, and in manmade environments such as impoundments, sewage ponds, and flooded farm fields as well as in muddy margins of rivers, lakes, and bays. Migrants also rest on rocky and sandy shorelines and occasionally feed in such places, but they forage mostly where there is a fine muddy bottom covered by a few inches of water.	Year Round	None. The Study Area does not provide habitat for this species.
Song sparrow ("Modesto" population) <i>Melospiza melodia</i>	--; CSC; --; --	Found in thickets, brush, marshes, roadsides, gardens. Habitat varies over its wide range. In most areas, found in brushy fields, stream sides, shrubby marsh edges, woodland edges, hedgerows, well-vegetated gardens. Some coastal populations live in salt marshes. Nests in dense streamside brush in southwestern deserts, and in any kind of dense low cover on Aleutian Islands, Alaska.	Year – round	High. The Study Area provides suitable nesting and foraging habitat for this species within the annual grassland, riparian and oak woodland habitat.
White-tailed kite <i>Elanus leucurus</i>	--; CFP; --; -- (nesting)	Inhabits savanna, open woodlands, marshes, desert grassland, partially cleared lands and cultivated fields. Nests in trees, often near a marsh in savanna, open woodland, partially cleared lands, and cultivated fields. Foraging occurs within ungrazed or lightly grazed fields and pastures.	Year – round	Present. This species was observed in the riparian habitat and foraging in the annual grassland during the 2020 site assessment. The Study Area provides suitable foraging habitat within the annual grassland and nesting habitat for this species within the existing trees located in the oak woodland and riparian habitat. There are eight CNDDDB occurrence for this species within five miles of the Study Area (CDFW 2020).
Yellow-billed magpie <i>Pica nuttalli</i>	BCC; --; --; --	Found in open oak woodland and oak savannas. Forages and nests in agricultural areas and pastures that feature tall trees (average 47 feet) in large tress often in clumps of mistletoe.	Year Round	High. The Study Area provides suitable foraging and nesting habitat for this species within the annual grassland, oak woodland, and riparian habitats.
Mammals				
Pallid bat <i>Antrozous pallidus</i>	--; CSC; --; --	Found in grasslands, shrublands, woodlands, and forests from sea level up through mixed conifer forest habitats. Roosts in colonies usually in rock crevices, caves, mines, hollow trees, and buildings.	March – October	Low. The Study Area provides suitable roosting habitat for this species within the mixed oak woodland however, the Study Areas lacks caves or mines that this species often utilizes.

Table 2 includes state and federal species of concern and Rank 1 and 2 CNPS species.

**Appendix A (cont.)
Regionally Occurring Listed and Special-Status Species**

Table 3 — Other Species of Interest

Special-Status Species	Regulatory Status	Habitat Requirements	Identification/ Survey Period	Potential for Occurrence
Plants				
Adobe navarretia <i>Navarretia nigelliformis</i>	--; --; --; 4.2	Annual herb found on clay and sometimes serpentinite soils in foothill grasslands and sometimes in vernal pools from 100 to 1,000 meters.	Blooming period: April-June	None. Although the Study Area contains vernal pools, the Study Area is outside the known elevation range of this species.
Parry's rough tarplant <i>Centromadia parryi</i> ssp. rudis	--; --; --; 4.2	Annual herb found in alkaline soil, in vernal mesic, seeps, sometimes roadsides, in valley and foothill grasslands, vernal pools, from 0 to 100 meters.	Blooming period: May – October	None. The Study Area does not contain suitable habitat (i.e., alkaline soil) to support this species.
Stinkbells <i>Fritillaria agrestis</i>	--; --; --; 4.2	Perennial bulbiferous herb found in clay soils, sometimes in serpentinite, chaparral, cismontane woodland, pinyon and juniper woodland, and valley and foothill grassland from 10 to 1,555 meters.	Blooming period: March – June	High. The Study Area provides suitable habitat for this species within the annual grassland. There is one CNDDDB record for this species within five miles of the Study Area (CDFW 2020).
Valley brodiaea <i>Brodiaea rosea</i> ssp. <i>vallicola</i>	--; --; --; 4.2	Perennial bulbiferous herb found in old alluvial terraces on silty, sandy, or gravelly loam soils within swales of valley and foothill grassland and vernal pools.	Blooming period: April – May (June)	High. The Study Area provides suitable habitat for this species within the annual grassland and vernal pool habitats located throughout the Study Area. Although there are no CNDDDB records within 5 miles of the Study Areas, there are two occurrences within 15 miles to the north and west of the Study Area.
Invertebrates				
Antioch Dunes anthicid beetle <i>Anthicus antiochensis</i>	--; CSA; --; --	Found in interior sand dunes and sandbars that are either bare or contain little vegetation cover. Feeds on dead insects. Actively scavenges at night, burrowing into the sand and remaining inactive during the day. Adults overwinter, emerge in the spring to lay eggs from which the larvae hatch, and the next generation of adults emerges in early summer. Adults are most commonly collected in June and July (Davis 1991).	Spring-Summer	None. The Study Area does not contain suitable habitat (i.e., sand dunes) to support this species.
An andrenid bee <i>Andrena subapasta</i>	--; CSA; --; --	Found in grassland habitats within El Dorado, Placer, Sacramento, and San Joaquin counties. Ground nesters that will be underground from summer, fall and winter and emerge in early spring to forage and pollinate early bloomers, such as willows, maples, violets and other early blooming wildflowers.	Spring – Fall	High. The Study Area provides suitable habitat for this species within the ruderal habitat. There is one CNDDDB record for this species within five miles of the Study Area (CDFW 2019).
Sacramento Valley tiger beetle <i>Cicindela hirticollis abrupta</i>	--; CSA; --; --	Typically found near aquatic environments. Their burrows are located in moist soils that are far enough away from water bodies to avoid being inundated with water. Most frequently found on the sandy shorelines of rivers, lakes, and oceans. (Pearson et al., 2006; Schlesinger and Novak 2011)	Spring-Fall	None. The Study Area does not contain suitable habitat (i.e., sandy shorelines of rivers, lakes, and oceans) to support this species.
Sacramento anthicid beetle <i>Anthicus sacramento</i>	--; CSA; --; -- (S1)	Found in loose sands along the Sacramento and San Joaquin rivers, from Shasta to San Joaquin counties, and at one site along the Feather River at Nicolaus. Adults overwinter, emerge in the spring to lay eggs from which the larvae hatch, and the next generation of adults emerge in early summer. The collection of larvae in the fall indicates a second generation may be produced. Adults are most commonly collected in June, July, and August (Davis 1991).	Year-Round	None. The Study Area does not contain suitable habitat (i.e., rivers) to support this species.
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	--; CSA; --; --	An endemic aquatic beetle known to occur in vernal pools that are inundated in winter and spring and dry during the summer months. Ideal habitat includes, neutral to slightly alkaline, clear, low dissolved salts, dominated with vernal pool plant species, and complex of vernal pool crustacean species. Known to occur in the Central Valley below 300 meters in elevation.	Year – round	Low. The Study Area provides suitable habitat for this species within the vernal pool habitats located throughout the Study Area. Although there are no CNDDDB records within 5 miles of the Study Areas, the species is known to occur in the Central Valley below 300 meters in elevation.

Table 3 includes Rank 3 and 4 CNPS species and non-listed invertebrates, which may not be subject to CEQA review.

REFERENCES:

GANDA. 1998. Cirby-Linda-Dry Creek Flood Control Project - Biological Assessment for Chinook Salmon and Steelhead Trout. Prepared for the City of Roseville, Community Development Department and Dames & Moore. 37 pp., plus 187 5/20/2005 appendices.

Appendix B

Plant and Wildlife Species Observed

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Appendix B Plant Species Observed

Family	Scientific Name	Common Name	Native (N), Non-native (NN), Invasive (I)
Dicots			
Anacardaceae	<i>Toxicodendron diversilobum</i>	poison oak	N
Apiaceae	<i>Sanicula bipinnatifida</i>	purple sanicle	N
Araceae	<i>Lemna sp.</i>	duckweed	N
Araceae	<i>Baccharis pilularis</i>	Coyote brush	N
Boraginaceae	<i>Amsinckia intermedia</i>	fiddleneck	N
Asteraceae	<i>Centaurea solstitialis</i>	yellow star thistle	NN, I
Asteraceae	<i>Dittrichia graveolens</i>	stinkwort	NN, I
Asteraceae	<i>Hypochaeris glabra</i>	smooth cat's ear	NN, I
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	NN
Asteraceae	<i>Layia fremontii</i>	Fremont layia	N
Asteraceae	<i>Leontodon saxatilis ssp. longirostris</i>	hawkbit	NN
Asteraceae	<i>Psilocarphus brevissimus</i>	woolly marbles	N
Asteraceae	<i>Silybum marianum</i>	blessed milkthistle	NN, I
Asteraceae	<i>Sonchus oleraceus</i>	sow thistle	NN
Asteraceae	<i>Xanthium strumarium</i>	rough cocklebur	N
Brassicaceae	<i>Brassica nigra</i>	black mustard	NN, I
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed	NN
Euphorbiaceae	<i>Croton setiger</i>	turkey-mullein	N
Euphorbiaceae	<i>Triadica sebifera</i>	Chinese tallowtree	NN, I
Fabaceae	<i>Trifolium hirtum</i>	rose clover	NN, I
Fabaceae	<i>Trifolium sp.</i>	clover	~
Fabaceae	<i>Vicia sp.</i>	vetch	~
Fabaceae	<i>Vicia villosa</i>	hairy vetch	NN
Fagaceae	<i>Quercus douglasii</i>	blue oak	N
Fagaceae	<i>Quercus lobata</i>	valley oak	N
Fagaceae	<i>Quercus wislizeni var. wislizeni</i>	interior live oak	N
Geraniaceae	<i>Erodium botrys</i>	big heron bill	NN
Geraniaceae	<i>Geranium dissectum</i>	wild geranium	NN, I
Geraniaceae	<i>Geranium molle</i>	crane's bill geranium	NN
Myrsinaceae	<i>Lysmachia arvensis</i>	scarlet pimpernel	NN
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	N
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	NN, I
Polemoniaceae	<i>Navarretia leucocephala</i>	white headed navarretia	N
Polygonaceae	<i>Persicaria sp.</i>	smartweed	(N)
Polygonaceae	<i>Polygonum aviculare ssp. depressum</i>	prostrate knotweed	NN
Polygonaceae	<i>Polypogon monspeliensis</i>	rabbitsfoot grass	NN, I
Polygonaceae	<i>Rumex crispus</i>	curly dock	NN, I
Polygonaceae	<i>Rumex pulcher</i>	fiddle dock	NN
Rosaaceae	<i>Rubus armeniacus</i>	Himalayan blackberry	NN, I
Rosaceae	<i>Rosa sp.</i>	rose	NN
Salicaceae	<i>Populus fremontii ssp. fremontii</i>	Fremont cottonwood	N

**Appendix B (cont.)
Plant Species Observed**

Family	Scientific Name	Common Name	Native (N), Non-native (NN), Invasive (I)
Salicaceae	<i>Salix sp.</i>	willow	~
Typhaceae	<i>Typha sp.</i>	cattail	N
Verbenaceae	<i>Phyla nodiflora</i>	lippia	N
Viscaceae	<i>Phoradendron leucarpum ssp. macrophyllum</i>	mistletoe	N
Vitaceae	<i>Vitis californica</i>	California grape	N
Monocots			
Cyperaceae	<i>Cyperus eragrostis</i>	tall cyperus	N
Cyperaceae	<i>Eleocharis acicularis</i>	needle spike rush	N
Cyperaceae	<i>Eleocharis macrostachya</i>	spikerush	N
Juncaceae	<i>Juncus bufonius</i>	common toad rush	N
Juncaceae	<i>Juncus sp.</i>	rush	N
Poaceae	<i>Alopecurus saccatus</i>	Pacific foxtail	N
Poaceae	<i>Avena barbata</i>	slender oat	NN, I
Poaceae	<i>Brachypodium distachyon</i>	false brome	NN, I
Poaceae	<i>Briza minor</i>	little quaking grass	N
Poaceae	<i>Bromus diandrus</i>	ripgut grass	NN, I
Poaceae	<i>Bromus hordeaceus</i>	soft chess	NN, I
Poaceae	<i>Cynosurus echinatus</i>	annual dogtail grass	NN, I
Poaceae	<i>Elymus caput-medusae</i>	medusa head	NN, I
Poaceae	<i>Elymus cf. ponticus</i>	tall wheat grass	NN
Poaceae	<i>Festuca bromoides</i>	brome fescue	NN
Poaceae	<i>Festuca perennis</i>	rye grass	NN, I
Poaceae	<i>Hordeum marinum</i>	seaside barley	NN
Poaceae	<i>Hordeum murinum</i>	foxtail barley	NN, I
Poaceae	<i>Muhlenbergia rigens</i>	deergrass	N
Themidaceae	<i>Dichelostema capitatum</i>	blue dicks	N
Themidaceae	<i>Triteleia hyacinthina</i>	white brodiaea	N

Appendix B (cont.) Wildlife Species Observed

Order	Family	Scientific Name	Common Name
Piciformes	Picidae	<i>Melanerpes formicivorus</i>	Acorn woodpecker
Passeriformes	Corvidae	<i>Corvus brachyrhynchos</i>	American crow
Passeriformes	Turdidae	<i>Turdus migratorius</i>	American robin
Apodiformes	Trochilidae	<i>Calypte anna</i>	Anna's hummingbird
Coraciiformes	Alcedinidae	<i>Megaceryle alcyon</i>	Belted kingfisher
Passeriformes	Tyrannidae	<i>Sayornis nigricans</i>	Black phoebe
Charadriiformes	Recurvirostridae	<i>Himantopus mexicanus</i>	Black-necked stilt
Lagomorpha	Leporidae	<i>Lepus californicus</i>	Black-tailed jackrabbit
Artiodactyla	Cervidae	<i>Odocoileus hemionus</i>	Black-tailed mule deer
Passeriformes	Icteridae	<i>Euphagus cyanocephalus</i>	Brewer's blackbird
Rodentia	Sciuridae	<i>Otospermophilus beecheyi</i>	California ground squirrel
Galliformes	Odontophoridae	<i>Callipepla californica</i>	California quail
Passeriformes	Corvidae	<i>Aphelocoma californica</i>	California scrub-jay
Passeriformes	Passerellidae	<i>Melospiza crissalis</i>	California towhee
Anseriformes	Anatidae	<i>Branta canadensis</i>	Canada goose
Passeriformes	Corvidae	<i>Corvus corax</i>	Common raven
Passeriformes	Passerellidae	<i>Junco hyemalis</i>	Dark-eyed Junco
Lagomorpha	Leporidae	<i>Sylvilagus audubonii</i>	Desert cottontail
Carnivora	Felidae	<i>Felis catus</i>	Domestic cat
Carnivora	Canidae	<i>Canis lupus familiaris</i>	Domestic dog
Passeriformes	Sturnidae	<i>Sturnella vulgaris</i>	European starling
Squamata	Colubridae	<i>Thamnophis sp.</i>	Garter snake
Pelecaniformes	Ardeidae	<i>Ardea alba</i>	Great egret
Strigiformes	Strigidae	<i>Bubo virginianus</i>	Great horned owl
Passeriformes	Fringillidae	<i>Haemorhous mexicanus</i>	House finch
Passeriformes	Passeridae	<i>Passer domesticus</i>	House sparrow
Passeriformes	Troglodytidae	<i>Troglodytes aedon</i>	House wren
Charadriiformes	Charadriidae	<i>Charadrius vociferus</i>	Killdeer
Anseriformes	Anatidae	<i>Anas platyrhynchos</i>	Mallard
Columbiformes	Columbidae	<i>Zenaidura macroura</i>	Mourning dove
Piciformes	Picidae	<i>Colaptes auratus</i>	Northern flicker
Passeriformes	Mimidae	<i>Mimus polyglottos</i>	Northern mockingbird
Accipitriformes	Accipitridae	<i>Buteo lineatus</i>	Red-shouldered hawk
Accipitriformes	Accipitridae	<i>Buteo jamaicensis</i>	Red-tailed hawk
Passeriformes	Icteridae	<i>Agelaius phoeniceus</i>	Red-winged blackbird
Galliformes	Phasianidae	<i>Phasianus colchicus</i>	Ring-necked pheasant
Columbiformes	Columbidae	<i>Columba livia</i>	Rock pigeon
Anura	Hylidae	<i>Hyla sierrae (formerly Pseudacris sierrae)</i>	Sierran tree frog
Accipitriformes	Cathartidae	<i>Cathartes aura</i>	Turkey vulture
Squamata	Phrynosomatidae	<i>Sceloporus occidentalis</i>	Western fence lizard
Rodentia	Sciuridae	<i>Sciurus griseus</i>	Western gray squirrel
Passeriformes	Icteridae	<i>Sturnella neglecta</i>	Western meadowlark
Galliformes	Phasianidae	<i>Meleagris gallopavo</i>	Wild turkey

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Appendix C

Representative Site Photos

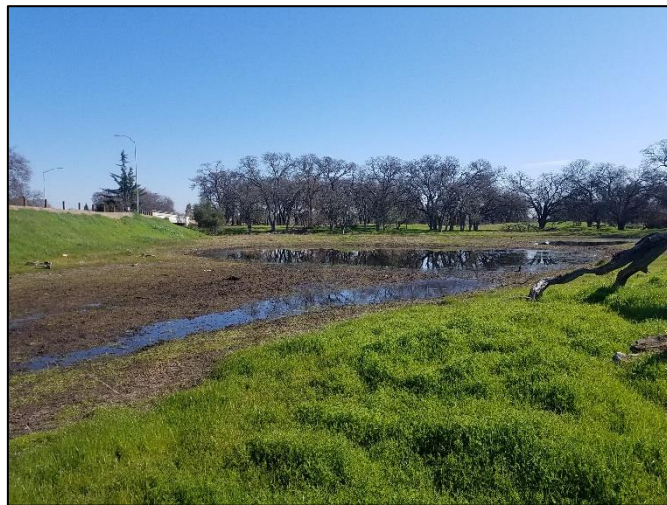
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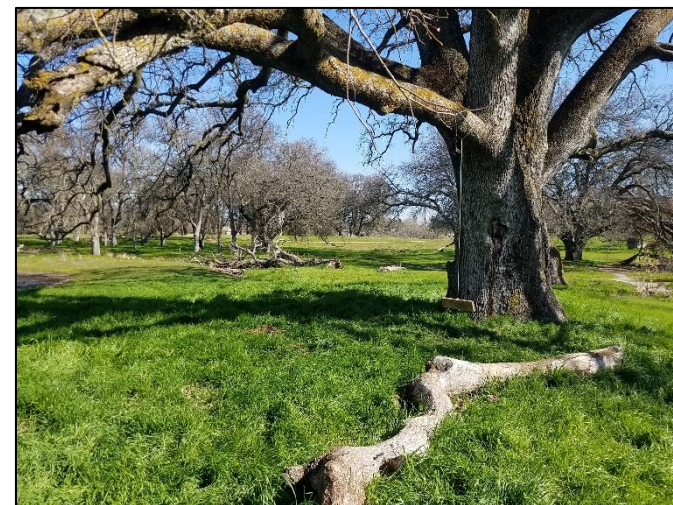
Dirt path within the annual grassland in the western portion of the Study Area.



Garter snake observed along the fringe of a vernal pool.



Overview of an annual grassland, wetland, and adjacent oak woodland west of Kaseberg Creek.



Tree swing on a mature oak within the oak woodland habitat.

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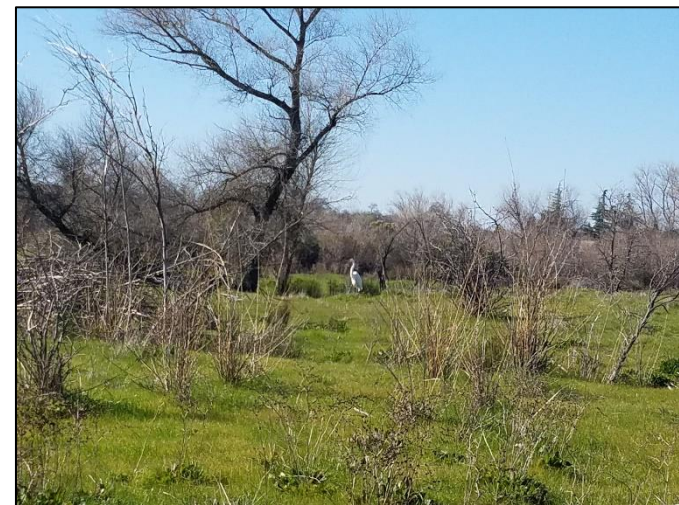
Conspan along Pleasant Grove Boulevard.



Seasonal wetland and oak woodland within the central portion of the Study Area.



Active great horned owl nest in oak.



Egret observed in the riparian and creek habitat.

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Appendix D

Tree Survey Data

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**Appendix D
Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1201	Blue Oak	1	14	40	27	Fair	Poor-Fair	Poor-Fair	lean, asymmetrical canopy, burls, trunk rot, epicormic growth
1202	Blue Oak	1	24	37	30	Poor	Poor	Poor	nails in trunk, wood plank, trunk scar, trunk rot, leader death, epicormic growth , limb rot
1203	Blue Oak	1	30	17	27	Poor	Poor-Fair	Poor	trunk rot, trunk split, asymmetrical canopy, lean, included bark, trunk scar, limb rot
1204	Blue Oak	2	27,59	45	42	Poor	Poor-Fair	Poor-Fair	trunk rot, included bark, limb failure, limb rot
1205	Blue Oak	3	12,20,16	15	30	Fair	Fair	Fair	included bark, multiple trunks, burls, epicormic growth
1206	Blue Oak	2	24,24	35	55	Fair	Fair	Fair	active owl nest, included bark, lean, limb rot, bark damage
1207	Blue Oak	1	52	30	47	Fair	Poor-Fair	Fair	limb failure, included bark, limb rot, bark damage, sapsucker damage
1208	Blue Oak	1	25	20	42	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, nest cavity, included bark, limb rot, lean, asymmetrical canopy
1209	Interior Live Oak	3	4,6,9	15	22	Fair	Fair	Fair	included bark, dieback
1210	Blue Oak	1	19	22	30	Fair	Poor-Fair	Poor-Fair	lean, included bark, asymmetrical canopy, limb rot
1211	Blue Oak	1	23	25	35	Poor-Fair	Poor	Poor	trunk rot, trunk cavity, hollow trunk, lean, included bark, asymmetrical canopy
1212	Blue Oak	1	27	25	40	Fair	Fair	Fair	included bark, epicormic growth, lean, asymmetrical canopy, wire embedded in the trunk, limb rot
1213	Blue Oak	1	30	22	30	Poor	Poor	Poor	trunk rot, trunk cavity, leader death, burls, included bark, woodpecker damage
1214	Blue Oak	1	9	17	20	Fair	Fair	Fair	included bark, burls
1215	Blue Oak	1	15	17	45	Fair	Fair	Fair	included bark, trunk scar
1216	Blue Oak	1	33	32	42	Poor-Fair	Fair	Poor-Fair	included bark, exfoliating bark , trunk rot, limb rot, lean, bark damage
1217	Blue Oak	1	35	30	37	Poor-Fair	Fair	Fair	included bark, limb rot, trunk rot, nest cavity
1218	Blue Oak	1	19	27	42	Poor-Fair	Fair	Fair	included bark, lean, limb rot, trunk rot, epicormic growth, asymmetrical canopy
1219	Blue Oak	1	13	25	27	Fair	Poor-Fair	Fair	epicormic growth, asymmetrical canopy, trunk scar
1220	Blue Oak	1	25	27	45	Fair	Poor-Fair	Fair	exposed roots, included bark, lean, asymmetrical canopy, burls, limb rot
1221	Blue Oak	1	18	8	25	Poor	Poor	Poor	almost dead
1222	Interior Live Oak	1	10	15	20	Poor-Fair	Fair	Fair	trunk rot, included bark, fungus, epicormic growth, slight lean
1223	Interior Live Oak	2	5,2	8	10	Poor-Fair	Fair	Poor-Fair	trunk rot, lean, dieback, included bark, trunk scar
1224	Blue Oak	1	7	8	17	Fair	Fair	Fair	included bark, bark damage
1225	Blue Oak	3	7,2,2	8	15	Poor-Fair	Poor	Poor	dead tree on trunk, included bark, trunk scar, bark damage, lean
1226	Interior Live Oak	3	5,3,2	8	12	Fair	Fair	Fair	multiple trunks, included bark, bark damage
1227	Interior Live Oak	5	3,4,3,2,2	10	12	Fair	Fair	Fair	pruning cuts, multiple trunk at base, included bark, dieback
1228	Blue Oak	1	39	40	35	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, trunk death, included bark, limb rot, nest cavities, lean, asymmetrical canopy
1229	Interior Live Oak	2	4,4	10	17	Fair	Fair	Fair	included bark, dieback, dead tree at base, bark damage
1230	Interior Live Oak	4	4,3,2,1	6	10	Fair	Fair	Fair	multiple trunk at base, included bark, dead limb on trunk, bark damage
1231	Blue Oak	1	8	12	17	Fair	Fair	Fair	lean, included bark
1232	Interior Live Oak	1	13	15	22	Fair	Fair	Fair	included bark, dieback, lean
1233	Interior Live Oak	7	9,5,6,3,1,6,9	17	20	Fair	Fair	Fair	multiple trunks, included bark, dieback, bark damage
1234	Blue Oak	1	51	35	65	Fair	Fair	Fair	weighted limbs, nest cavity, burls, included bark, wood plank, bark damage, limb rot
1235	Blue Oak	1	56	40	62	Poor-Fair	Fair	Poor-Fair	trunk cavity, trunk wound, trunk rot, included bark, weighted limbs, burrows at the base of the trunk, rope swing, limb rot

**Appendix D
Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1236	Blue Oak	1	33	37	40	Fair	Fair	Fair	wire embedded in the trunk, lean, included bark, burls, limb rot
1237	Blue Oak	1	30	37	50	Fair	Fair	Fair	included bark, asymmetrical canopy, burls, limb rot
1238	Interior Live Oak	1	10	12	25	Fair	Fair	Fair	lean, included bark, dieback
1239	Blue Oak	1	22	15	27	Poor-Fair	Poor-Fair	Poor-Fair	trunk cavity, trunk rot, trunk death, woodpecker damage, included bark, lean
1240	Interior Live Oak	2	6,9	12	22	Fair	Fair	Fair	included bark, slight lean, dieback
1241	Interior Live Oak	2	6,6	12	15	Fair	Fair	Fair	included bark, dieback, codominant trunks
1242	Blue Oak	1	7	10	15	Fair	Fair	Fair	included bark
1243	Interior Live Oak	3	6,4,4	3	15	Fair	Fair	Fair	bark damage, multiple trunk, included bark, sapsucker damage
1244	Blue Oak	3	5,4,2	6	15	Fair	Fair	Fair	multiple trunks, included bark
1245	Interior Live Oak	3	6,4,2	10	12	Fair	Fair	Fair	multiple trunks, included bark, bark damage, dieback
1246	Blue Oak	3	4,6,5	10	20	Fair	Fair	Fair	fused trunks, included bark, multiple trunk
1247	Blue Oak	3	4,3,3	6	10	Fair	Fair	Fair	included bark, multiple trunk
1248	Blue Oak	1	4,2	8	12	Fair	Fair	Fair	codominant trunks, included bark, slight lean
1249	Blue Oak	3	6,4,3	10	22	Fair	Fair	Fair	multiple trunks, fused trunks, included bark
1250	Blue Oak	1	8	12	25	Fair	Fair	Fair	included bark, epicormic growth
1251	Blue Oak	2	6,4	8	17	Fair	Fair	Fair	included bark, codominant trunks, epicormic growth
1252	Valley Oak	2	11,6	15	30	Fair	Fair	Fair	codominant trunks, included bark, epicormic growth, slight lean
1253	Blue Oak	1	6	10	20	Fair	Fair	Fair	slight lean, included bark
1254	Blue Oak	2	5,4	12	20	Fair	Fair	Fair	included bark, slight lean
1255	Interior Live Oak	1	7	12	17	Fair	Fair	Fair	slight lean, included bark, dieback, bark damage
1256	Interior Live Oak	5	4,2,1,2,1	8	10	Fair	Poor-Fair	Fair	multiple trunk at base, included bark, dieback
1257	Blue Oak	1	8	12	22	Fair	Fair	Fair	included bark
1258	Blue Oak	4	4,3,2,2	6	12	Poor-Fair	Poor-Fair	Poor-Fair	bark damage, included bark, multiple trunks, epicormic growth
1300	Blue Oak	2	11,10	17	25	Fair	Fair	Fair	slight lean, asymmetrical canopy, included bark, epicormic growth
1301	Blue Oak	1	36	30	37	Poor-Fair	Poor-Fair	Poor-Fair	lean, limb rot, included bark, asymmetrical canopy, trunk rot, burls
1302	Blue Oak	1	33	27	37	Poor-Fair	Poor-Fair	Poor-Fair	lean, included bark, burls, trunk rot, burrow at the base of the trunk, epicormic growth
1303	Blue Oak	1	39	22	37	Poor-Fair	Poor	Poor-Fair	trunk rot, trunk fail, included bark, wood planks, lean
1304	Blue Oak	1	49	27	35	Poor-Fair	Poor	Poor-Fair	burrow at the base of the trunk, included bark, trunk rot, hollow trunk, lean, trunk cavity, asymmetrical canopy
1305	Blue Oak	1	8	8	15	Fair	Fair	Fair	included bark, bark damage
1306	Blue Oak	1	16	17	25	Fair	Poor-Fair	Fair	asymmetrical canopy, trunk rot, slight lean, included bark, burls
1307	Blue Oak	1	19	22	40	Fair	Poor-Fair	Fair	burls, lean, included bark, limb rot, asymmetrical canopy, burrow at the base of the trunk
1308	Blue Oak	1	12	12	25	Fair	Fair	Fair	burls, included bark, limb rot
1309	Blue Oak	1	12	35	27	Fair	Poor-Fair	Poor-Fair	severe lean, included bark, limb rot
1310	Blue Oak	1	20	27	42	Fair	Fair	Fair	asymmetrical canopy, included bark
1311	Blue Oak	2	11,17	30	47	Fair	Poor-Fair	Fair	codominant trunks, included bark, lean
1312	Blue Oak	1	21	22	50	Fair	Fair	Fair	limb rot, included bark

**Appendix D
Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1313	Blue Oak	1	15	17	40	Fair	Fair	Fair	included bark, slight lean, limb rot
1314	Blue Oak	1	17	17	35	Fair	Poor-Fair	Fair	lean, asymmetrical canopy, included bark, burls
1315	Blue Oak	1	13	8	25	Poor	Poor	Poor	trunk failure, trunk rot, hollow trunk, burls, lean, woodpecker damage
1316	Blue Oak	1	27	35	42	Fair	Fair	Fair	included bark, lean, asymmetrical canopy
1317	Blue Oak	1	11	15	20	Fair	Poor-Fair	Fair	asymmetrical canopy, lean, epicormic growth, included bark
1318	Blue Oak	1	11	12	30	Fair	Fair	Fair	included bark, epicormic growth
1319	Blue Oak	1	21	35	47	Fair	Fair	Fair	included bark, slight lean, burls
1320	Blue Oak	1	9	4	25	Poor	Poor	Poor	trunk rot, leader death, epicormic growth
1321	Blue Oak	1	15	20	47	Fair	Fair	Fair	included bark, slight lean
1322	Blue Oak	1	17	30	37	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, included bark, epicormic growth, lean, trunk death, woodpecker damage, asymmetrical canopy
1323	Blue Oak	2	15,13	30	37	Fair	Fair	Fair	codominant trunks, included bark, limb rot
1324	Blue Oak	1	28	22	50	Fair	Fair	Fair	limb rot, limb death, included bark
1325	Blue Oak	1	27	25	52	Poor-Fair	Fair	Fair	included bark, slight lean, limb death, limb rot, nest cavity
1326	Blue Oak	1	27	35	42	Fair	Poor-Fair	Fair	included bark, lean, limb rot, asymmetrical canopy
1327	Blue Oak	1	11	15	27	Fair	Poor-Fair	Poor-Fair	limb rot, lean, asymmetrical canopy, included bark
1328	Blue Oak	1	8	17	22	Fair	Poor-Fair	Fair	lean, asymmetrical canopy, limb rot, burls
1329	Blue Oak	1	7	12	20	Poor-Fair	Poor	Poor-Fair	trunk rot, woodpecker damage, trunk scar, trunk cavity, lean, epicormic growth
1330	Blue Oak	1	26	30	47	Fair	Fair	Fair	included bark
1331	Blue Oak	1	23	27	40	Fair	Poor-Fair	Poor-Fair	lean, asymmetrical canopy, included bark, limb rot, burls, trunk cavity
1332	Blue Oak	2	23,18	25	45	Fair	Fair	Fair	asymmetrical canopy, slight lean, included bark
1333	Blue Oak	1	28	20	47	Fair	Fair	Fair	burrow at the base of the trunk, included bark, burls, limb rot
1334	Blue Oak	1	27	20	45	Poor-Fair	Fair	Poor-Fair	included bark, limb rot, trunk rot, trunk cavity, burls
1335	Blue Oak	1	15	25	35	Fair	Poor-Fair	Poor-Fair	limb rot, asymmetrical canopy, lean, included bark
1336	Blue Oak	2	10,11	15	30	Poor	Poor	Poor	almost dead
1337	Blue Oak	1	18	27	47	Fair	Fair	Fair	asymmetrical canopy, included bark, lean
1338	Blue Oak	2	19,8	15	25	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, trunk death, included bark, woodpecker damage ,epicormic growth, lean, asymmetrical canopy
1339	Blue Oak	1	14	22	45	Fair	Fair	Fair	asymmetrical canopy, slight lean, included bark
1340	Blue Oak	2	10,11	22	30	Fair	Poor-Fair	Fair	included bark, lean, burls, epicormic growth
1341	Blue Oak	2	15,11	27	35	Fair	Poor-Fair	Fair	included bark, lean, asymmetrical canopy
1342	Blue Oak	3	12,10,14	22	30	Fair	Fair	Fair	limb rot, included bark
1343	Blue Oak	1	16	15	50	Poor-Fair	Fair	Fair	limb rot, included bark
1344	Blue Oak	1	13	20	50	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, trunk cavity, epicormic growth, limb death
1345	Blue Oak	1	18	27	30	Poor-Fair	Poor-Fair	Poor-Fair	limb rot, trunk rot, lean, included bark
1346	Blue Oak	1	18	30	50	Fair	Fair	Fair	included bark, bark damage
1347	Blue Oak	1	13	32	37	Poor-Fair	Poor	Poor-Fair	asymmetrical canopy, lean, trunk rot, limb rot, trunk cavity, included bark
1348	Blue Oak	1	17	22	47	Fair	Fair	Fair	asymmetrical canopy, included bark, slight lean, limb rot

**Appendix D
Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1349	Blue Oak	1	30	32	47	Fair	Fair	Fair	limb rot, included bark
1350	Blue Oak	1	23	27	42	Fair	Fair	Fair	included bark, limb rot
1351	Blue Oak	1	17	15	37	Poor-Fair	Fair	Fair	trunk cavity, limb rot, included bark, trunk rot
1352	Blue Oak	1	19	22	45	Fair	Fair	Fair	included bark, pruning cuts, burls, bark damage
1353	Blue Oak	2	17,25	30	45	Fair	Poor-Fair	Fair	epicormic growth, included bark, lean, limb rot
1354	Blue Oak	1	27	27	47	Poor-Fair	Poor-Fair	Poor-Fair	asymmetrical canopy, lean, trunk rot, included bark, bark damage, trunk scar
1355	Blue Oak	1	33	22	42	Fair	Fair	Fair	basal cavity , included bark, slight lean, asymmetrical canopy
1356	Blue Oak	2	11,18	15	25	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, trunk cavity, included bark, lean, asymmetrical canopy, burls
1357	Blue Oak	1	21	22	47	Poor-Fair	Fair	Fair	epicormic growth, limb rot, included bark, nest cavity
1358	Blue Oak	1	22	25	30	Poor	Poor-Fair	Poor	burls, trunk rot, included bark, limb death, limb rot
1359	Blue Oak	1	31	20	50	Fair	Fair	Fair	exposed roots, included bark
1360	Blue Oak	1	22	30	50	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, exposed roots, limb rot, included bark, slight lean
1361	Blue Oak	1	26	25	55	Poor-Fair	Fair	Poor-Fair	trunk rot, trunk death, included bark, limb rot, epicormic growth
1362	Blue Oak	2	13,15	30	37	Poor-Fair	Fair	Fair	included bark, burls, limb rot, limb death, epicormic growth
1363	Blue Oak	2	13,18	22	55	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, included bark, limb rot, limb death, lean, asymmetrical canopy
1364	Blue Oak	1	9	12	15	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, trunk cavity, lean, included bark
1365	Blue Oak	1	15	25	50	Poor-Fair	Poor-Fair	Poor-Fair	exposed roots, included bark, lean, burls, limb rot
1366	Blue Oak	1	24	30	55	Fair	Fair	Fair	limb rot, included bark, lean
1367	Blue Oak	2	23,22	40	47	Poor-Fair	Poor-Fair	Poor-Fair	included bark, lean, trunk rot, limb rot
1368	Blue Oak	2	12,16	20	40	Poor-Fair	Poor-Fair	Poor-Fair	included bark, burls, epicormic growth, limb rot
1369	Blue Oak	1	9	8	27	Fair	Poor-Fair	Poor-Fair	growing into another tree, included bark, limb rot, epicormic growth, burls
1370	Blue Oak	2	20,12	20	55	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, trunk death, included bark, limb rot, epicormic growth
1371	Blue Oak	1	21	25	55	Poor	Poor	Poor	almost dead
1372	Blue Oak	1	14	35	45	Fair	Poor-Fair	Fair	epicormic growth, slight lean
1373	Blue Oak	1	19	30	50	Fair	Fair	Fair	included bark, lean
1374	Blue Oak	2	12,23	25	42	Poor-Fair	Poor-Fair	Poor-Fair	epicormic growth, included bark, codominant trunks, limb rot, asymmetrical canopy, lean, trunk rot, trunk cavity
1375	Blue Oak	1	16	27	35	Fair	Poor-Fair	Fair	asymmetrical canopy, lean, epicormic growth
1376	Blue Oak	2	22,11	30	25	Poor-Fair	Poor-Fair	Poor-Fair	trunk death, trunk rot, woodpecker damage, included bark, lean, asymmetrical canopy, limb rot
1377	Blue Oak	1	6	10	15	Fair	Fair	Fair	included bark
1378	Blue Oak	2	5,1	8	15	Fair	Fair	Fair	included bark, codominant trunks
1379	Blue Oak	4	4,4,4,5	10	17	Fair	Fair	Fair	included bark, multiple trunk
1380	Interior Live Oak	7	6,6,7,7,8,2,9	12	20	Fair	Fair	Fair	included bark, exposed roots
1381	Blue Oak	2	5,3	10	15	Fair	Fair	Fair	included bark, slight lean
1382	Blue Oak	1	7	8	17	Fair	Fair	Fair	included bark, epicormic growth
1383	Blue Oak	4	2,2,2,2	6	12	Fair	Fair	Fair	included bark, multiple trunk
1384	Blue Oak	4	5,5,2,1	8	12	Fair	Fair	Fair	included bark, epicormic growth

**Appendix D
Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1385	Blue Oak	3	6,3,3	8	10	Fair	Fair	Fair	slight lean, included bark
1386	Blue Oak	4	3,4,3,2	5	12	Fair	Fair	Fair	multiple trunk, included bark
1387	Blue Oak	3	2,4,6	8	12	Fair	Fair	Fair	included bark, slight lean, multiple trunk
1388	Blue Oak	2	4,3	8	15	Fair	Fair	Fair	codominant trunks, included bark, epicormic growth
1389	Blue Oak	7	4,3,2,1,2,1,1	8	10	Fair	Poor-Fair	Fair	burrow at the base of the trunk, included bark, lean, asymmetrical canopy, epicormic growth, multiple trunk
1390	Interior Live Oak	7	4,4,5,3,4,11,11	15	20	Fair	Fair	Fair	riprap at base of the tree, multiple trunk, included bark
1391	Blue Oak	2	4,3	6	17	Fair	Fair	Fair	included bark, codominant trunks
1392	Blue Oak	4	4,3,1,1	8	17	Fair	Fair	Fair	multiple trunk, included bark
1393	Blue Oak	7	4,4,4,2,1,1,1	10	15	Fair	Poor-Fair	Fair	bark damage, included bark, multiple trunk, epicormic growth
1394	Blue Oak	1	33	27	37	Poor-Fair	Fair	Fair	asymmetrical canopy, included bark, limb fail, limb rot
1395	Blue Oak	1	19	30	22	Fair	Poor-Fair	Poor-Fair	sever lean, asymmetrical canopy, epicormic growth, included bark
1396	Blue Oak	1	27	25	37	Fair	Fair	Fair	included bark, epicormic growth, limb rot, bark damage, burls
1397	Blue Oak	1	10	15	25	Fair	Poor-Fair	Poor-Fair	lean, epicormic growth, asymmetrical canopy, included bark
1398	Blue Oak	1	27	37	25	Fair	Poor-Fair	Poor-Fair	lean, asymmetrical canopy, limb rot, included bark
1399	Blue Oak	1	9	10	17	Poor	Poor-Fair	Poor-Fair	trunk rot, lean, included bark, rope on trunk
1400	Blue Oak	1	39	30	42	Fair	Poor-Fair	Fair	included bark, weighted limbs, asymmetrical canopy, burrows at the base of the trunk, limb rot
1401	Valley Oak	2	9,6	10	15	Fair	Fair	Fair	included bark, codominant trunks
1402	Valley Oak	2	4,3	4	10	Fair	Fair	Fair	included bark, codominant trunks
1403	Blue Oak	5	9,3,2,2,3	12	17	Fair	Fair	Fair	included bark, multiple trunks, asymmetrical canopy
1404	Valley Oak	2	4,6	10	22	Fair	Fair	Fair	slight lean, included bark, codominant trunks
1405	Valley Oak	1	9	10	25	Fair	Fair-Good	Fair	included bark, bark damage
1406	Blue Oak	2	3,6	8	12	Fair	Fair	Fair	included bark, codominant trunks
1407	Blue Oak	3	4,3,2	5	8	Fair	Fair	Fair	included bark, multiple trunk
1408	Blue Oak	1	7	10	15	Fair	Fair	Fair	included bark
1409	Valley Oak	2	5,2	8	20	Fair	Fair	Fair	included bark, codominant trunks
1410	Blue Oak	1	8	12	15	Fair	Fair	Fair	lean, included bark
1411	Blue Oak	3	5,4,4	6	12	Fair	Fair	Fair	included bark, codominant trunks, nest
1412	Blue Oak	1	6	8	10	Fair	Fair	Fair	included bark, slight lean
1413	Blue Oak	2	5,1	6	12	Fair	Fair	Fair	included bark, nest, epicormic growth
1414	Valley Oak	1	8	8	25	Fair	Fair	Fair	included bark
1415	Valley Oak	1	8	8	20	Fair	Fair-Good	Fair	included bark, epicormic growth
1416	Valley Oak	2	5,4	8	17	Fair	Fair	Fair	included bark, codominant trunks
1417	Blue Oak	2	5,3	8	17	Fair	Fair	Fair	included bark, codominant trunks
1418	Blue Oak	1	6	10	25	Fair	Fair	Fair	slight lean, included bark
1419	Blue Oak	3	8,3,4	12	15	Fair	Fair	Fair	included bark, codominant trunks , asymmetrical canopy, epicormic growth
1420	Blue Oak	3	2,8,3	8	10	Fair	Fair	Fair	included bark, multiple trunk

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Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1421	Blue Oak	1	9	10	22	Fair	Fair	Fair	included bark, epicormic growth
1422	Blue Oak	2	6,4	8	12	Poor	Poor-Fair	Poor	included bark, fire damage, woodpecker damage, exfoliating bark, trunk rot
1423	Blue Oak	4	4,2,1,2	10	15	Poor-Fair	Fair	Fair	bark scar, included bark, multiple trunks, pruning cuts, bark damage
1424	Blue Oak	1	12	15	27	Fair	Fair	Fair	included bark
1425	Blue Oak	3	3,2,8	12	17	Fair	Fair	Fair	included bark, slight lean
1426	Blue Oak	3	4,6,2	10	20	Fair	Fair	Fair	included bark, codominant trunks, trunk scar, bark damage
1427	Blue Oak	2	5,3	6	10	Fair	Fair	Fair	lean, bark damage, included bark, codominant trunks
1428	Blue Oak	2	6,5	10	25	Fair	Fair	Fair	included bark, codominant trunks
1429	Blue Oak	3	4,2,2	6	8	Fair	Fair	Fair	included bark, multiple trunks, trunk scar
1430	Blue Oak	3	4,5,8	10	20	Fair	Fair	Fair	included bark, multiple trunks, bark damage
1431	Blue Oak	1	34	40	35	Poor-Fair	Poor	Poor-Fair	asymmetrical canopy, included bark, lean, limb failure, trunk rot, wood plank
1432	Blue Oak	1	30	30	45	Poor-Fair	Poor	Poor-Fair	trunk rot, limb failure, asymmetrical canopy, lean, limb rot
1433	Blue Oak	1	12	10	25	Fair	Poor-Fair	Fair	slight lean, asymmetrical canopy, bark damage
1434	Blue Oak	1	15	37	27	Fair	Poor-Fair	Poor-Fair	asymmetrical canopy, lean
1435	Blue Oak	1	29	30	65	Fair	Fair	Fair	included bark, limb rot
1436	Blue Oak	1	35	35	45	Poor-Fair	Poor-Fair	Poor-Fair	included bark, lean, asymmetrical canopy, limb rot, limb fail
1437	Blue Oak	2	21, 32	35	32	Poor-Fair	Poor-Fair	Poor-Fair	lean, asymmetrical canopy, included bark, codominant trunks, bark damage, limb rot, wood plank
1438	Blue Oak	1	20	22	15	Poor-Fair	Poor	Poor-Fair	lean, asymmetrical canopy, limb rot, trunk rot
1439	Blue Oak	1	33	40	57	Fair	Fair	Fair	included bark, limb rot, bark damage
1440	Blue Oak	1	39	30	42	Poor-Fair	Fair	Fair	wood plank, included bark, slight lean, limb rot
1441	Blue Oak	1	38	42	60	Poor-Fair	Poor-Fair	Poor-Fair	trunk rot, included bark, slight lean, limb rot, limb fail
1442	Blue Oak	1	49	42	65	Poor-Fair	Fair	Poor-Fair	limb failure, limb rot, included bark
1443	Blue Oak	1	47	27	42	Poor	Poor-Fair	Poor-Fair	trunk rot, included bark, limb failure, trunk rot, limb rot
1444	Blue Oak	1	29	27	50	Fair	Poor-Fair	Fair	lean, limb rot, burrow at the base of the trunk , included bark, asymmetrical canopy
1445	Blue Oak	1	38	27	35	Poor-Fair	Poor-Fair	Poor-Fair	included bark, burl, trunk rot, trunk fail, asymmetrical canopy
1446	Blue Oak	1	38	25	27	Poor-Fair	Poor	Poor-Fair	topped, power lines, weight lmb, included bark, lean
1447	Blue Oak	1	43	27	32	Fair	Fair	Fair	limb rot, included bark
1448	Blue Oak	1	34	27	30	Fair	Fair	Fair	included bark, topped, utility lines
1449	Blue Oak	1	34	30	35	Poor-Fair	Poor-Fair	Poor-Fair	nails in the trunk, included bark, topped, utility lines, burls, pruning cuts
1450	Blue Oak	1	41	25	32	Poor-Fair	Poor-Fair	Poor-Fair	limb rot, trunk rot, included bark, burls, epicormic growth, utility lines
1451	Blue Oak	1	39	30	45	Fair	Fair	Fair-Good	utility lines, included bark, weighted limbs, asymmetrical canopy
1452	Blue Oak	1	24	15	30	Fair	Fair	Fair	sapsucker damage, dieback, slight lean, included bark
1453	Blue Oak	1	18	17	25	Fair	Fair	Fair	dieback, included bark, slight lean
1454	Blue Oak	3	17,32,26	32	45	Fair	Poor-Fair	Fair	multiple trunk at base, lean, included bark, dieback, epicormic growth, trunk fail, trunk rot
1455	Blue Oak	1	18	40	20	Fair	Poor-Fair	Poor-Fair	lean, dieback, lean, asymmetrical canopy
1456	Blue Oak	1	30	50	25	Poor	Poor	Poor	partially uprooted, trunk rot, trunk death, included bark, dieback, exposed roots, lateral trunk

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Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1457	Blue Oak	1	14	45	8	Poor	Poor	Poor	limb rot, trunk rot, lateral limb, epicormic growth, dieback, included bark
1458	Blue Oak	1	29	27	42	Poor-Fair	Poor-Fair	Poor-Fair	asymmetrical canopy, bark damage, limb rot, trunk rot, exfoliating bark
1459	Interior Live Oak	2	6,3	10	12	Fair	Fair	Fair	lean, included bark, dead tree limbs on trunk
1460	Interior Live Oak	4	8,9,14,19	20	27	Fair	Fair	Fair	multiple trunk, bark damage, lean, exposed roots, dieback
1461	Interior Live Oak	6	3,6,5,8,2,10	20	20	Poor-Fair	Fair	Fair	bark damage, exfoliating bark, multiple trunks, lean, included bark, dieback, limb rot
1462	Interior Live Oak	5	5,6,7,7,7	15	22	Fair	Fair	Fair	multiple trunks, included bark, dieback, slight lean
1463	Blue Oak	1	24	27	35	Fair	Fair	Fair	limb rot, included bark, exfoliating bark, dieback
1464	Blue Oak	1	19	30	37	Fair	Fair	Fair	dieback, included bark, lean, asymmetrical canopy
1465	Blue Oak	1	34	25	27	Poor-Fair	Poor	Poor-Fair	lean, weighted limbs, included bark, asymmetrical canopy, dieback, limb rot
1466	Blue Oak	1	33	22	47	Fair	Fair	Fair	included bark, dieback
1467	Blue Oak	1	40	30	42	Fair	Fair	Fair	burrow at the base of the trunk, slight lean, included bark, limb rot
1468	Blue Oak	1	36	40	35	Poor-Fair	Poor-Fair	Poor-Fair	severe lean, included bark, dieback, limb rot, weighted limbs
1469	Blue Oak	1	32	25	32	Fair	Poor-Fair	Fair	included bark, lean, asymmetrical canopy, epicormic growth
1470	Blue Oak	1	30	27	35	Fair	Poor-Fair	Fair	lean, included bark, limb rot, asymmetrical canopy
1471	Blue Oak	1	29	25	45	Poor-Fair	Fair	Fair	lean, asymmetrical canopy, limb rot, fire damage
1472	Blue Oak	1	40	30	27	Poor	Poor	Poor	trunk fail, severe trunk rot, trunk cavity
1473	Blue Oak	1	43	30	47	Fair	Fair	Fair	asymmetrical canopy, included bark, limb rot
1474	Blue Oak	1	39	30	42	Fair	Poor-Fair	Fair	included bark, old wood duck nest box, epicormic growth, limb rot, fused limbs, weighted limbs
1475	Blue Oak	5	7,3,3,2,2	8	12	Fair	Fair	Fair	included bark, bark scar
1476	Blue Oak	1	40	27	37	Fair	Poor-Fair	Fair	weighted limbs, included bark, pruning cuts, burls, limb rot
1477	Blue Oak	1	42	27	35	Fair	Fair	Fair	included bark, limb rot, epicormic growth, pruning cuts, burls
1478	Blue Oak	1	42	25	37	Fair	Poor-Fair	Poor-Fair	included bark, weighted limbs, limb rot, bark scars, epicormic growth
1479	Blue Oak	1	28	27	37	Fair	Fair	Fair	included bark, burls, epicormic growth
1480	Blue Oak	1	33	30	47	Fair	Fair	Fair	included bark, limb rot,
1481	Blue Oak	1	38	22	35	Fair	Fair	Fair	included bark, weighted limbs
1482	Interior Live Oak	1	6	6	12	Fair	Fair	Fair	lean, included bark, dieback
1483	Blue Oak	3	3,3,2	5	10	Fair	Fair	Fair	multiple trunks, included bark, slight lean
1484	Blue Oak	1	8	6	12	Fair	Fair	Fair	included bark, epicormic growth
1485	Blue Oak	5	2,2,1,1,4	6	12	Poor	Poor	Poor	bark scars, exfoliating bark, included bark, multiple trunks, trunk rot
1486	Blue Oak	1	42	30	32	Fair	Poor-Fair	Fair	burls, included bark, weighted limbs, limb rot
1487	Blue Oak	1	51	27	40	Poor-Fair	Poor-Fair	Poor-Fair	limb fail, trunk rot, woodpecker damage, included bark
1488	Blue Oak	1	40	27	47	Fair	Poor-Fair	Fair	limb rot, included bark, trunk rot, burls
1489	Blue Oak	1	25	25	42	Fair	Poor-Fair	Fair	burls, limb rot, included bark, bark damage
1490	Blue Oak	1	41	20	32	Fair	Fair	Fair	included bark, burls, limb rot
1491	Blue Oak	1	38	27	32	Poor-Fair	Poor-Fair	Poor-Fair	burls, included bark, limb rot, trunk rot, nest cavities
1492	Blue Oak	1	33	25	45	Fair	Fair	Fair	bark damage, included bark, limb rot

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Tree Survey Data**

Tree Number	Tree Species	No. of Trunks	DBH (inches)	DLR (feet)	Height (feet)	Health	Structure	Vigor	Notes
1493	Blue Oak	1	23	25	20	Poor	Poor	Poor	trunk rot, hollow trunk, trunk fail, woodpecker damage
1494	Blue Oak	1	35	25	47	Fair	Fair	Fair	dead tree on trunk, included bark, burls, limb rot
1495	Blue Oak	1	19	20	35	Fair	Fair	Fair	asymmetrical canopy, included bark, limb rot
1496	Blue Oak	1	15	22	27	Fair	Poor-Fair	Fair	lean, included bark, asymmetrical canopy, epicormic growth
1497	Blue Oak	1	31	22	42	Fair	Fair	Fair	asymmetrical canopy, included bark, limb rot
1498	Blue Oak	1	43	22	47	Poor-Fair	Fair	Fair	included bark, limb rot, trunk rot, exfoliating bark, woodpecker damage
1499	Blue Oak	1	46	32	42	Poor-Fair	Poor	Poor-Fair	lean, trunk rot, wood planks on trunk, included bark, trunk fail, woodpecker damage, weighted limbs
1500	Blue Oak	1	50	25	40	Poor	Poor	Poor	partially uprooted, lateral trunk, hollow trunk, trunk split, included bark