Biological Resources Assessment Update

The Oaks Senior Living Community: a Residential Care Facility Project

Marinwood, Unincorporated Marin County, California

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LIST OF ACRONYMS AND ABBREVIATIONS

BCC	USFWS Bird of Conservation Concern
BRA	Biological Resources Assessment
Cal-IPC	California Invasive Pest Council
CCH	Consortium of California Herbaria
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFP	CDFW California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CWA	Clean Water Act
CWP	Marin Countywide Plan
DBH	Diameter at breast height
EIR	Environmental Impact Report
ESA	Federal Endangered Species Act
FT	Federal Threatened
GIS	Geographic Information Systems
Inventory	CNPS Inventory of Rare and Endangered Plants
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OWHM	Ordinary High Water Mark
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
SCA	Stream Conservation Area
SSC	CDFW Species of Special Concern
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VMP	Vegetation Management Plan
WBWG	Western Bat Working Group
WRA	WRA, Inc.

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EXECUTIVE SUMMARY

The purpose of this report is provide an updated analysis of natural community and special-status species issues and project impacts for the site of The Oaks Senior Living Community: a Residential Care Facility Project (Project), at APN 164-270-05, Marin County, California (Study Area). Specifically, WRA's intention was to repeat the literature review following the methods of the Biological Resources Section of the Oakview Master Plan Environmental Impact Report (EIR; Nichols and Berman 2002) for the proposed Project, to determine whether any newly recognized potential sensitive habitat areas or special-status plant and animal species that may not have been included in the EIR have potential to occur in the vicinity of the Study Area, and to assess if there are any new or significant impacts to biological resources based on the revised project design.

WRA conducted follow-up resource assessment surveys on August 12, 2015, March 17, 2016 April 19, 2016 and March 17, 2017, during which the Study Area was examined for: (1) potential to support special-status species and sensitive habitats identified in the Project's EIR (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations within the current regulatory framework, and with the most up-to-date information on special-status species and sensitive habitats in the vicinity of the Study Area. WRA observed eight biological communities, 88 plant species, and six wildlife species. Potentially sensitive biological communities include perennial stream, seasonal wetland, riparian coast live oak woodland, and purple needlegrass grassland. Non-sensitive biological communities include non-native grassland, coast live oak woodland, broom patch, and developed areas. No special-status plant or wildlife species were observed. Six special-status plant species and nine special-status wildlife species have a moderate or high potential to occur within the Study Area.

A detailed analysis of potential impacts to sensitive biological communities and special-status species and required mitigation measures in compliance with the 2002 EIR is included in Section 5 of this report. With implementation of mitigation measures, all impacts are considered less-than-significant under the California Environment Quality Act (CEQA).

1.0 INTRODUCTION

During the months of August 2015, and March and April 2016, and March 2017, WRA, Inc. (WRA) performed an assessment of biological resources and project impacts for the site of the proposed The Oaks Assisted Living Facility Development Project (Project), at APN 164-270-05, Marin County, California (Study Area, Figure 1). The approximately 10.43 acre Study Area includes the entire aforementioned parcel expanded out to include all areas within a minimum 20-foot buffer of the limit of disturbance of the Project. The Study Area is located west of Hwy 101 north of Lucas Valley Road and east of Las Galinas Avenue within the unincorporated area of Marinwood in Marin County, California. WRA repeated the literature review of the Biological Resources Section of the Oakview Master Plan Final Environmental Impact Report(EIR; Nichols and Berman 2002) for the proposed Project, expanded out to include additional resources defined in Section 3.2.1 as per currently accepted methods. The purpose of the assessment was to determine whether any newly recognized potential sensitive habitat areas or special-status plant and animal species that may not have been included in the EIR, have potential to occur in the vicinity of the Study Area, and/or if any sensitive habitats or special-status plant and animal species described in the EIR no longer have potential to occur within the Study Area.

Information gathered was used to analyze impacts of the current Project to existing sensitive biological resources. WRA conducted the follow-up biological resources assessment surveys on August 12, 2015, March 17, 2016 and April 19, 2016, and March 17, 2017 to determine if existing conditions provide suitable habitat for any special-status plant or wildlife species not described in the EIR and to determine if suitable habitat is present in the Study Area for species listed in the EIR. The current Study Area is only a portion of the Study Area for which the past EIR was conducted; therefore not all sensitive species listed in the EIR have potential to occur due to fewer habitat types. While the EIR Study Area encompassed a larger area within and including the vicinity of the current Study Area, impacts and mitigation measures described in the EIR are applicable to the current Project, with the exception to some wildlife species.

This report describes the results of the site visits, which assessed the Study Area for the (1) potential to support special-status species and sensitive habitats identified in the Project's EIR (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations within the current regulatory framework, and with the most up-to-date information on special-status species and sensitive habitats in the vicinity of the Study Area. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats require that protocol-level surveys be conducted. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may occur as a result of the proposed Project and required mitigation measures to compensate for those impacts, in compliance with the mitigation measures outlined in the EIR.

A biological resources assessment (BRA) provides general information on the potential presence of sensitive species and habitats. The BRA is not an official protocol-level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment is based on information available at the time of the study and on-site conditions that were observed on the date of the site visits.

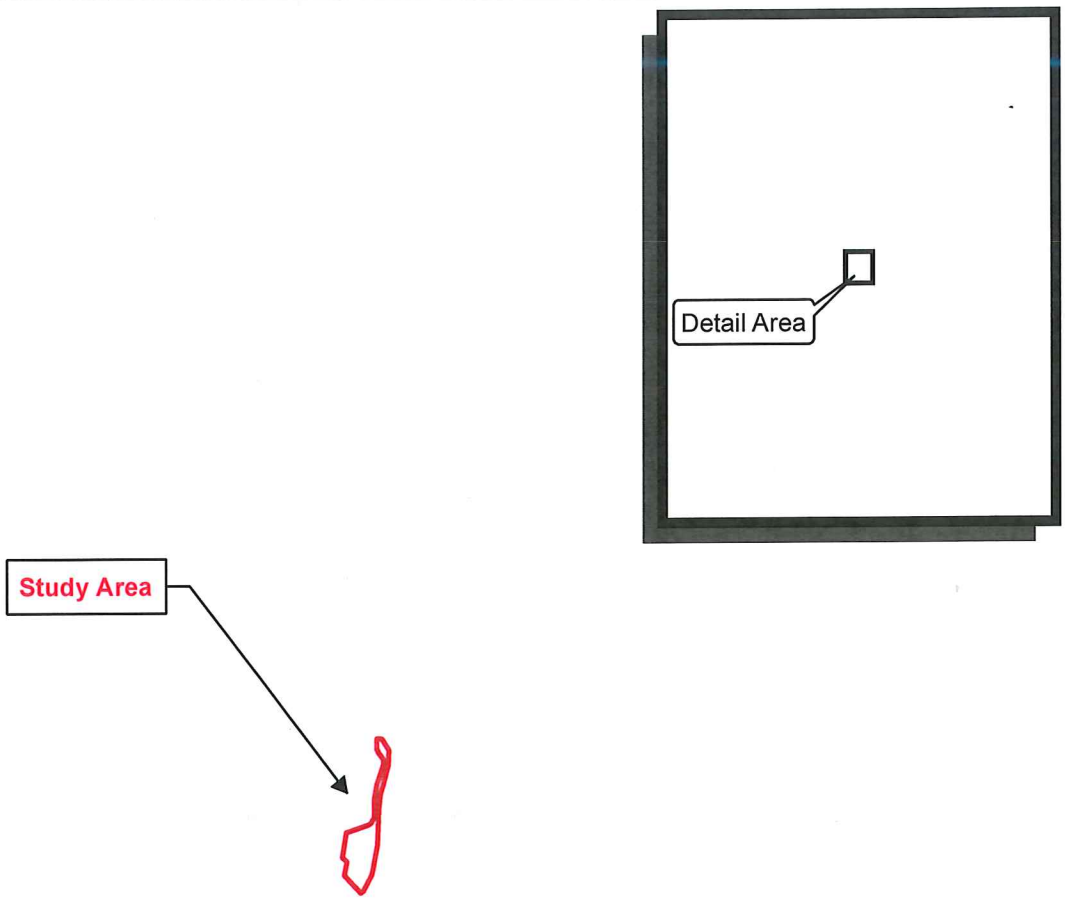

Figure 1. Study Area Location Map

The Oaks Assisted Living Facility
Development Project
Marin County, California

N
W E
S

0 1,000 2,000 4,000
Feet

Map Prepared Date: 12/1/2016
Map Prepared By: pkobylarz
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\25000\25128\GIS\ArcMap\Figure 1 Location.mxd

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2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the BRA, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Special-status Species

2.1.1 Plant and Wildlife Species

Special-status species include those plants and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. Additionally, CDFW Species of Special Concern, CDFW California Fully Protected species, USFWS Birds of Conservation Concern, and CDFW Special-status Invertebrates are all considered special-status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a "High Priority" or "Medium Priority" species for conservation by the WBWG are typically considered special-status and also considered under CEQA. In addition to regulations for special-status species, most native birds in the United States (including non-status species) are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code (CFGC), i.e., sections 3503, 3503.5 and 3513. Under these laws, deliberately destroying active bird nests, eggs, and/or young is illegal. The CFGC also protects bat species (including non-status species) and their roosting habitats; relevant sections include 86; 2000; 2014; 3007; 4150, as well as Title 14 of California Code of Regulations.

Plant species included within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (Inventory) with California Rare Plant Rank (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Very few Rank 3 or Rank 4 plant species meet the definitions of Section 1901 Chapter 10 of the Native Plant Protection Act or Sections 2062 and 2067 of the CDFW Code that outlines CESA. However, CNPS and CDFW strongly recommend that these species be fully considered during the preparation of environmental documentation relating to CEQA. This may be particularly appropriate for the type locality of a Rank 4 plant, for populations at the periphery of a species range or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates. A description of the CNPS Ranks is provided below in Table 1.

Table 1. Description of CNPS Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

2.1.2 Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

2.2 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Federal Clean Water Act (CWA); state regulations such as the Porter-Cologne Act, Section 1600-1616 of the CFGC, CEQA; Habitat Conservation Plans (HCPs) or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

2.2.1 Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. The term "Waters of the U.S." is defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas - according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987) and the

Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Regional Supplement; Corps 2008) - are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology.

Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

2.2.2 Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404.

"Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State", are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

2.2.3 Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of CFGC. Alterations to or work within or adjacent to streambeds or lakes generally requires a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream"; therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.2.4 Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its Natural Diversity Database (CNDDB; CDFW 2016). Sensitive plant communities are also identified by CDFW (CDFG 2003, CDFG 2007, CDFG 2009). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2014) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFW or USFWS must be considered and evaluated under CEQA (CCR: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in City or County General Plans or ordinances.

2.2.5 Relevant Local Policies, Ordinances, Regulations

Oakview Master Plan Final Environmental Impact Report

The County of Marin approved an EIR in 2002 for the Oakview Master Plan which covers the Project. Since the 2002 EIR, the project has been amended to incorporate the assisted living option that was evaluated in the EIR. The Oakview Master Plan EIR analyzed impacts to special-status plant and wildlife species, sensitive vegetation communities, and jurisdictional wetlands and non-wetland waters associated with the proposed project pursuant to the CEQA. The EIR included several mitigation measures to reduce potentially significant impacts to less-than-significant levels. Prior to approval of the precise development plan, the Applicant is required to demonstrate compliance with the mitigation measures outlined in the EIR.

Marin County Native Tree Preservation and Protection Ordinance

Marin County Municipal Code Chapter 22.75, "Native Tree Preservation and Protection", (Tree Ordinance) establishes regulations for the preservation of native trees in the non-agricultural, unincorporated areas of Marin County. Protected trees are defined as native oaks (*Quercus* spp.), willows (*Salix* spp.), Sargent cypress (*Hesperocyparis sargentii* [*Cupressus s.*]), and madrone (*Arbutus menziesii*) with a minimum Diameter at Breast Height (DBH; measured 4.5 feet above grade) of 6 inches, and most other native tree species, including Douglas fir (*Pseudotsuga menziesii*) and California bay (*Umbellularia californica*) with a minimum DBH of 10 inches. Heritage trees are defined as native oaks, willows, Sargent cypress, and madrone with a minimum DBH of 16 inches, and most other native tree species with a minimum DBH of 30 inches. It is unlawful to remove one or more protected or heritage trees on an undeveloped lot without a tree removal permit, except as provided for in Section 22.75.050 (Exemptions) and as provided for in Section 22.75.080 (Tree Removal Permits) of the Ordinance. The owner of property upon which protected tree is located may request to remove heritage or protected trees not otherwise exempt from the Ordinance by filling an application for a Tree Removal Permit application.

Oak Woodland Conservation Act

Under the California Oak Woodlands Conservation Act (2004), impacts to oak woodlands receive consideration under CEQA regardless of whether the woodland is composed of oak (*Quercus* spp.) vegetation types considered to be sensitive by the CDFW. California Public Resources Code (PRC) 21083.4 requires each county in California to implement an oak woodland protection

policy to mitigate for the loss of oak woodlands resultant from approved projects within their jurisdiction. In this policy, oak trees are defined as all native species of oaks larger than five inches DBH (diameter at breast height, or 4.5 feet above grade). At least one of four mitigation alternatives for significant conversions of oak woodlands are required in this regulation: 1) conserve oak woodlands through the use of a conservation easement, 2) plant an appropriate number of trees, including maintaining plantings and replacing dead or diseased trees, 3) contribute funds to the Oak Woodlands Conservation Fund, as established under Section 1363 (a) of the Fish and Game Code, and 4) other mitigation measures developed by the County.

Marin County Stream Conservation Ordinance

In Marin County, a Stream Conservation Area (SCA) is designated along all natural watercourses shown as a solid or dashed blue line on the most recent appropriate USGS quadrangle map, or along watercourses supporting riparian vegetation for a length of 100 feet or more (Marin Countywide Plan 1994). The SCA consists of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks. Development activities that may occur within a SCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

3.0 METHODS

On August 12, 2015, March 17, 2016, and April 19, 2016, the Study Area was traversed on foot to determine (1) biological communities present within the Study Area, (2) if existing conditions provide suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present. All plant and wildlife species encountered were recorded and are summarized in Appendix A.

3.1 Biological Communities

Prior to the site visit, the online soil survey (USDA, NRCS 2016) was examined to determine if any unique soil types with potential to support sensitive plant communities and/or aquatic features are present in the Study Area. In addition, we reviewed the Novato United States Geological Survey (USGS) 7.5-minute quadrangle topographic maps (USGS 1980), the National Wetlands Inventory (NWI) (USFWS 2016a), and aerial photographs of the Study Area (Google Earth 2016) to identify potential sensitive habitats and areas for further investigation during the site visit. Following the site visit, biological communities present in the Study Area were classified based on existing plant community descriptions described in *A Manual of California Vegetation, Online Edition* (CNPS 2016a) and classified by NatureServe Comprehensive Ecological Reports (2014). However, in some cases it was necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA or other state, federal, and local laws, regulations, and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

Wetlands and Waters

The Study Area was surveyed to determine if any wetlands and waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFW were present. The preliminary assessment of wetlands was based on the presence of wetland plant indicators, wetland hydrology and/or wetland soils. Any potential wetland areas were identified as areas dominated by plant species

with a wetland indicator status[1] of OBL, FACW, or FAC as given on the current National Wetlands Plant List (Lichvar 2014)[2]. Evidence of wetland hydrology may include direct evidence (i.e., primary indicators) such as visible inundation or saturation, algal mats, or oxidized root channels, or indirect evidence (i.e., secondary indicators) such saturation visible on aerial imagery. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, or soils that contain redoximorphic features, as defined by the Natural Resources Conservation Service (NRCS) publication *Field Indicators of Hydric Soils in the United States* (NRCS 2010). The preliminary assessment of non-wetland waters assessment was based primarily on the presence of unvegetated, ponded areas or flowing water, or evidence indicating their presence such as an OHWM or a defined drainage course.

Followup surveys focused on wetlands were conducted in April 2016 and in March 2017 following above-average wet years.

Other Sensitive Biological Communities

The Study Area was evaluated for the presence of other sensitive biological communities, including riparian areas, sensitive plant communities recognized by CDFW. Prior to the site visit, aerial photographs, local soil maps, the List of Vegetation Alliances (CDFG 2010), and *A Manual of California Vegetation, Online Edition* (CNPS 2016a) were reviewed to assess the potential for sensitive biological communities to occur in the Study Area. If present, these communities are described in Section 4.1.2 below.

3.2 Special-status Species

3.2.1 Literature Review

Prior to the site visits, the potential for special-status species to occur in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. A literature review was conducted of the same references reviewed in the Biological Resources Section of the EIR where available, and expanded to include:

- California Natural Diversity Database (CNDDB) records for the Novato and eight surrounding 7.5-minute USGS quadrangle maps (CDFW 2016);
- CNPS Inventory records (CNPS 2015b)
- Consortium of California Herbaria (CCH 2016)
- *The Jepson Manual, Second Edition* (Baldwin et al. 2012)
- *Marin Flora* (Howell et. al., 2007)
- Jepson eFlora (2016)
- *A Manual of California Vegetation, Online Edition* (CNPS 2016a)

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[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative Wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

[2] The wetland assessment was conducted prior to the release of the 2016 National Wetlands Plant List (NWPL). Changes to the wetland indicator status of particular species were analyzed and did not change the results of the assessment.

- U.S. Fish and Wildlife Service (USFWS) list of Endangered and Threatened Wildlife and Plant Species for Marin County (2016);
- CDFG publication "California Bird Species of Special Concern" (Shuford and Gardali 2008)
- A Field Guide to Western Reptiles and Amphibians (Stebbins and McGinnis 2012)
- Cal Fish Map database (2016)
- Marin Countywide Plan (CWP) biological resources policies;
- The Final Environmental Impact Report (Nichols and Berman 2002) for the Oakview Master Plan Use Permit Vesting Tentative Map, which addresses biological surveys and field reconnaissance efforts conducted in 1985, 1995, 1996, and 2000.

3.2.2 Site Assessment

A site visit was made to the Study Area to search for suitable habitats for special-status species. Habitat conditions observed at the Project Site were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.
- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recently recorded (i.e. CNDDB, or EIR) on the site.

The site assessment identifies the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Study Area. The site visit does not constitute a protocol-level survey, nor does it determine the actual presence or absence of a species. However, if a special-status species was observed during the site visit, its presence was recorded and is discussed here.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up-to-date information regarding species' biology and ecology.

If a special-status species was observed during the site visit, its presence was recorded and is discussed in Section 4.2. For some species, a site assessment visit at the level conducted for

this report may not be sufficient to determine presence or absence to the specifications of regulatory agencies. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described in Section 5.0.

4.0 RESULTS

The Study Area is directly south of existing residential and commercial development along Marinwood Avenue and would be accessible via a proposed extension of Miller Avenue and bridge across Miller Creek at the northern end of the Study Area. The Study Area is bordered by open space to the west, Highway 101 to the east, Miller Creek and mixed use development the north, open space and Lucas Valley Road to the south. The Study Area is predominantly east facing except for the slopes flanking Miller Creek. Elevation ranges from 110 to 50 feet, sloping downward to the east. Evidence of past ground disturbance was found in portions of the Study Area, including a series of BMX bike trails which meander through the oak woodland and riparian oak woodland in the vicinity of Miller Creek, two old bridge footings within the creek, and remnants of an old gravel road in the northern portion of the Study Area.

4.1 Biological Communities

Table 2 summarizes the area of each biological community type observed in the Study Area. Descriptions for each biological community are contained in the following sections. Four sensitive biological communities are found in the Study Area: perennial stream, seasonal wetland, riparian coast live oak woodland, and purple needlegrass grassland. Non-sensitive biological communities include non-native grassland, coast live oak woodland, broom patch, and developed areas. Biological communities within the Study Area are shown on Figure 2.

Table 2. Summary of Biological Communities in the Study Area

Community Type	Area (acres or square feet)
Non-Sensitive	
Developed	0.03 ac.
Broom patch	0.19 ac.
Non-native grassland	7.04 ac.
Sensitive	
Perennial Stream (Miller Creek)	0.15 ac.
Riparian coast live oak woodland	0.29 ac.
Coast live oak woodland	1.73 ac.
Purple needlegrass grassland	1.01 ac.
Seasonal wetland	264 sq. ft. (0.006 ac.)

4.1.1 Non-sensitive biological communities

Non-native grassland

The majority of the Study Area (approximately 7.04 acres) is characterized as non-native grassland. Non-native grasslands within the Study Area contain elements of several non-native grassland alliances described by CNPS (2016a), including: wild oats grassland (*Avena* spp. Herbaceous Semi-Natural Alliance), and Harding grass swards (*Phalaris aquatica* Herbaceous Semi-Natural Alliance). Areas mapped as non-native grassland are dominated by non-native

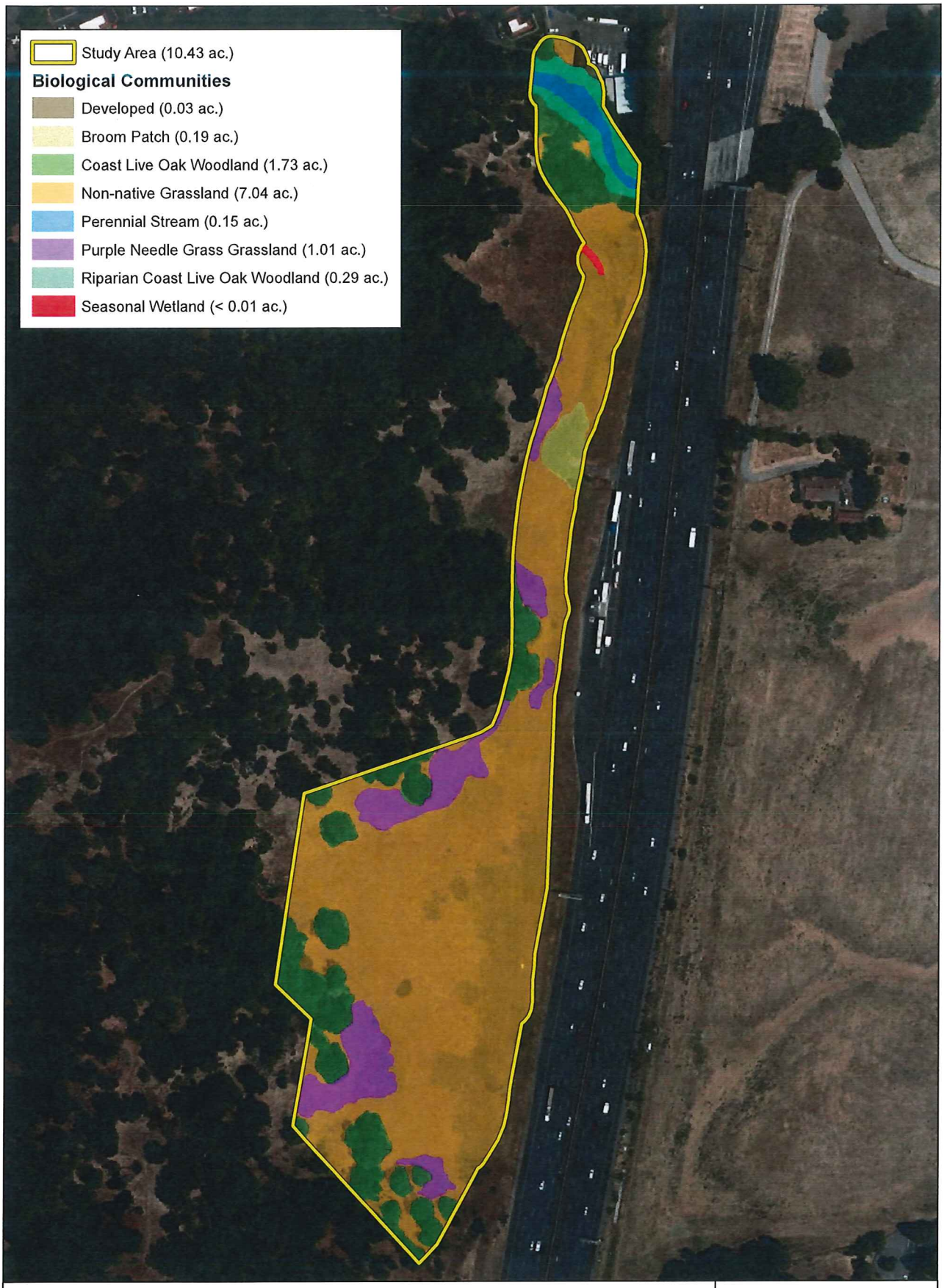

Figure 2. Biological Communities

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ENVIRONMENTAL CONSULTANTS

The Oaks Assisted Living Facility
Development Project
Marin County, California

1 Inch = 156 Feet
0 75 150 300
Feet

Map Prepared Date: 11/15/2016
Map Prepared By: fhourigan
Base Source: ESRI World Imagery
Data Source(s): WRA

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grasses including slim oat *(Avena barbata)*, ripgut brome (*Bromus diandrus*), rattlesnake grass (*Briza maxima*), and Harding grass (*Phalaris aquatica*). Native and non-native forbs present within this community include: Douglas iris (*Iris douglasiana*), sky lupine (*Lupinus nanus*) cut leaved geranium (*Geranium dissectum*), field bindweed (*Convolvulus arvensis*), teasel (*Dipsacus fullonum*), and spring vetch (*Vicia sativa*). This community also contains a small number of individual coyote brush (*Baccharis pilularis*) shrubs.

Broom patch

French broom (*Genista monspessulana*) is a non-native ornamental shrub native to Europe. The species is considered highly invasive in California (Cal-IPC 2006) and is widely spreading within Marin County (Howell et al. 2007). One distinct broom patch, totaling approximately 0.19 acre exists in the northern portion of the Study Area. This alliance was mapped in accordance with Sawyer et al. (2009) as having French broom or Scotch broom (*Cytisus scoparius*) greater than 15 percent relative cover and 60 percent relative cover in the shrub canopy. Areas mapped as broom patch are dominated by French broom. Other species observed within broom patches include fennel (*Foeniculum vulgare*), teasel, and non-native grasses.

Developed

A small portion of the Study Area is developed. The developed area is located in the northern end of the Study Area and consists of a corporation yard at the end of Marinwood Avenue.

4.1.2 Sensitive Biological Communities

Four potentially sensitive biological communities were observed in the Study Area, including purple needlegrass grassland, riparian coast live oak woodland, perennial stream, and seasonal wetland. Descriptions for each potentially sensitive biological community are contained below.

Coast live oak woodland

Coast live oak (*Quercus agrifolia*) woodland is present in upland settings in the northern and western portions of the Study Area. Coast live oak woodland (*Quercus agrifolia* Woodland Alliance) within the Study Area was mapped according to Sawyer et al. (2009) as containing coast live oak greater than 50 percent relative cover in the tree canopy, or greater than 33 percent relative cover in the tree canopy when California bay is co-dominant. Areas mapped as coast live oak woodland are dominated by coast live oak in the tree canopy; however, California bay and valley oak (*Quercus lobata*) are also present at lower densities. This community has a sparse understory of shrubs and herbs, including poison oak (*Toxicodendron diversilobum*), hedge parsley (*Torilis arvensis*) and non-native grasses including ripgut brome and slim oat. Coast live oak woodland associated with Miller Creek was mapped as riparian coast live oak woodland, and is discussed below. The Study Area contains approximately 1.73 acres of non-riparian coast live oak woodland. Coast live oak woodland has a sensitivity ranking of G5 S4 indicating that it is globally secure and apparently secure in California (CDFW 2016, Natureserve 2014), however it is considered sensitive under the CEQA through the Oak Woodlands Conservation Act (PRC 21083.4). This community contains individual trees protected per the Marin County Native Tree Preservation and Protection Ordinance (WRA 2016b).

Purple needlegrass grassland

Purple needlegrass is a native perennial bunchgrass which is common and widespread on slopes and flats in Marin County (Howell et al. 2007). Purple Needlegrass Grasslands (*Stipa* [*Nasella*] *pulchra* Herbaceous Alliance) within the Study Area were mapped in accordance with CNPS (2016a) as containing purple needlegrass greater than 10 percent relative cover of the herbaceous layer. Purple needlegrass grasslands within the Study Area contain purple needlegrass from 10 to 50 percent relative cover. Observed associated species include blue wild rye (*Elymus glaucus* ssp. *glaucus*), slender oats (*Avena barbata*) and false brome (*Brachypodium distachyon*). The Study Area contains approximately 1.01 acres of purple needlegrass grassland. Purple needlegrass grassland has a sensitivity ranking of G4 S3?, indicating that it is apparently globally secure but vulnerable in California (CDFW 2016, NatureServe 2014), and this community is also treated as potentially sensitive in the Project's EIR (Nichols and Berman 2002).

Riparian coast live oak woodland

Riparian coast live oak woodland is present in the northern portion of the Study Area along Miller Creek. Areas mapped as riparian coast live oak woodland meet the membership rules as described above (Sawyer et al. 2009) to be considered coast live oak woodland. This community is distinct from non-riparian coast live oak woodland due to its location at or directly above the top of bank of Miller Creek, and it differs slightly in its species composition. Riparian coast live oak woodland is co-dominated by coast live oak and California bay in the tree canopy with several white alder (*Alnus rhombifolia*) also present. The understory of this community is relatively disturbed and dominated by non-native shrubs including French broom and Himalayan blackberry (*Rubus armeniacus*), both of which are considered highly invasive by the Cal-IPC. Other significant disturbances observed within this community include an BMX bike jump track and scattered trash and debris left by an apparent homeless encampment. Native and non-native grasses and forbs observed in the understory include bracken fern (*Pteridium aquilinum*), common bedstraw (*Galium aparine*), rabbit foot grass (*Polypogon monspeliensis*), and veldt grass (*Ehrharta erecta*). Areas mapped as riparian coast live oak woodland are potentially within CDFW jurisdiction under Section 1602 of the CFGC. The EIR considers potential impacts to riparian vegetation as potentially significant. This community also contains individual trees protected per the Marin County Native Tree Preservation and Protection Ordinance (WRA 2016b).

Seasonal Wetland

The Study Area contains a single seasonal wetland depression occupying approximately 637 square feet (0.015 acre). In 2016, the seasonal wetland depression occupied approximately 214 square feet (0.005 acre). The seasonal wetland depression is located in the northern portion of the Study Area within the limit of disturbance of the Project. This feature appears to be next to an old road that has highly degraded and become grown over. Evidence of the old road is a shallow restrictive gravel layer throughout the majority of the depressional feature. The seasonal wetland is dominated by hydrophytic vegetation, including seaside barley (*Hordeum marinum* ssp. *gussoneanum*), California false semaphore grass (*Pleuropogon californica*), Italian ryegrass (*Festuca perennis*), pennyroyal (*Mentha pulegium*) and hyssop loosestrife (*Lythrum hyssopifolia*), with indicators of wetland hydrology (biotic crust and oxidized rhizospheres along living roots), and wetland soils (prominent redox concentrations). Surface water was observed in the seasonal wetland during the March 2016 and March 2017 site visits. The area mapped as seasonal wetland contains a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology sufficient to meet the requirements as a jurisdictional feature under Section 404 of the CWA.

A previous wetland delineation for the larger Oakview Estates Project (APNs # 156-27-005, -006, and -007), was conducted by LSA Associates, Inc. (LSA) in 1999. The previous delineation identified eight seasonal wetland seeps within or directly adjacent to the current Project parcel. The previous delineation was first verified by the Corps, in a letter dated March 31, 2000. The delineation was revised in March 2005 to exclude one seasonal wetland seep (Jurisdictional Feature # S8), and was subsequently re-verified by the Corps in 2005, and re-verified "as-is" in 2014. The most recently verified delineation describes seven seasonal wetlands seeps (Jurisdictional Features # S5-S7, S9, and S10-S13; LSA 1999) totaling approximately 0.95 acre within or directly adjacent to the current Project parcel.

WRA assessed previously delineated wetlands within the reduced Study Area in 2015, 2016, and 2017 and determined that only one of the previously mapped wetland features, a small (637 square feet [0.015 acre]) seasonal wetland depression described above, met all three wetland criteria, after a very wet year. The March 2016 survey, resulted in 214 square feet (0.005 acre) within the Study Area. No seep wetlands were encountered within the Study Area. One other feature met two of the three wetland criteria (hydrology and soils), but did not meet the wetland vegetation criterion. The remainder of the features met either one or no wetland criteria (WRA 2016a, 2017). WRA has submitted a request to the Corps to verify the wetland delineation based on existing conditions (WRA 2017).

Perennial stream

The Study Area contains approximately 0.15 acre (287.28 linear feet) of the perennial stream within the northern portion of the Study Area. Miller Creek, a perennial USGS blue-line stream traverses the northern boundary of the Study Area from flowing from east to west. The bed of the channel is composed of rock and cobble mixed with sands and silts. Miller Creek was delineated within the Study Area based on observable OHWM indicators including: presence of a bed and bank, scouring, wrack, sediment deposition, and water stains on the banks. The stream appears to flow 9 to 12 months in a normal rainfall year. The channel was dry during the August 2015 site visit, and was flowing during the March and April 2016 and March 2017 site visits. Areas mapped as perennial stream are considered jurisdictional under Section 404 of the CWA and Section 1602 of the CFGC.

4.2 Special-status Species

4.2.1 Plants

Based upon a review of the resources and databases given in Section 3.2.1, 93 special-status plant species have been documented within the vicinity of the Study Area, which was defined to include the Novato USGS 7.5-minute quadrangle and eight surrounding quadrangles (CDFW 2016, CNPS 2016b). One special-status plant, Mt. Diablo cottonweed (*Micropus amphibolus* [*M. amphibola*], CNPS Rank 3), was documented in seven locations scattered throughout the larger Oakview Project Area during rare plant surveys in 1996.

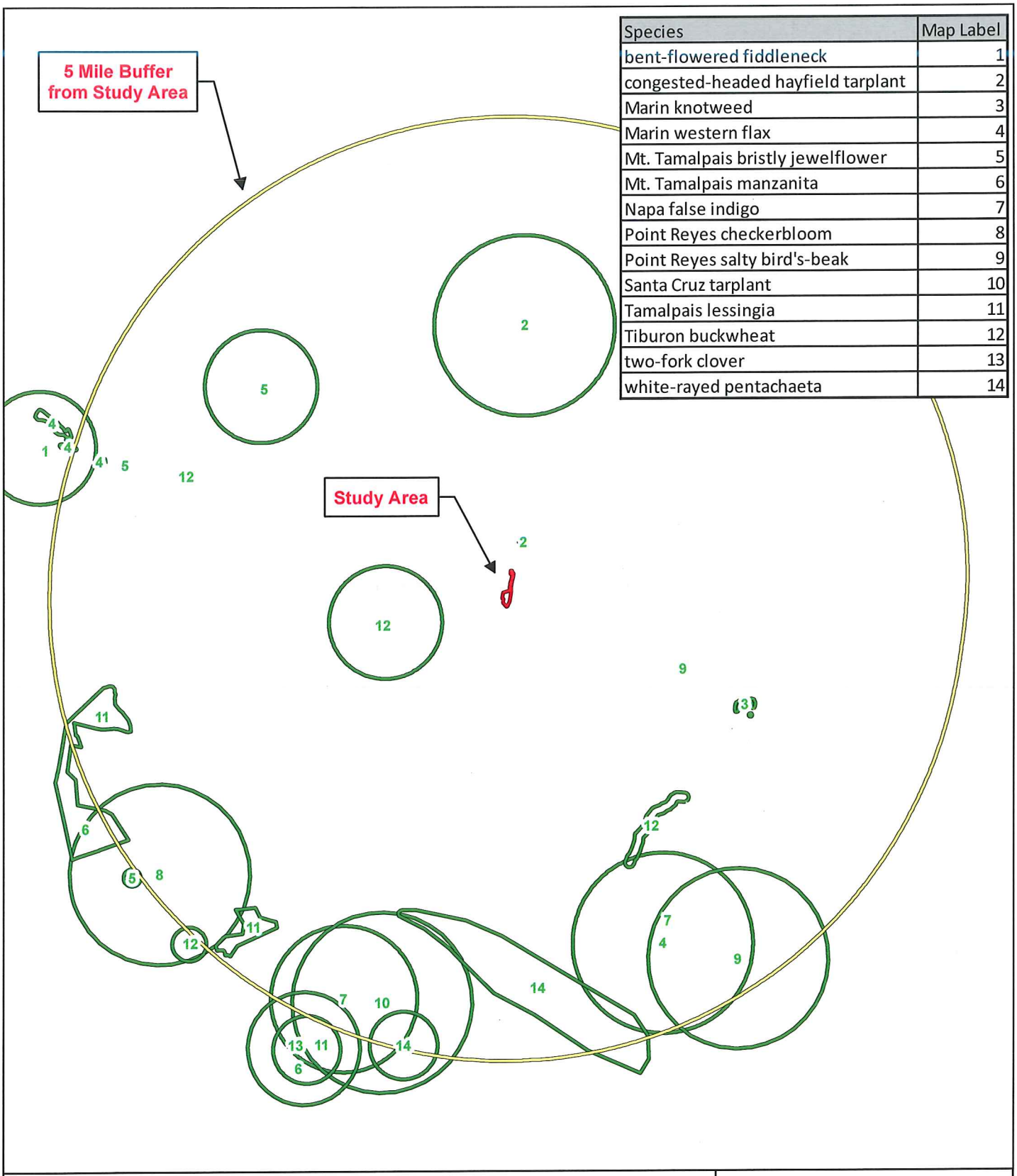
Of the 93 special-status plant species in the vicinity of the Study Area, five have a moderate or high potential to occur, primarily due to the presence of grassland habitat and proximity to documented occurrences. A total of three site visits were conducted covering the documented bloom period of all species with potential to occur within the Study Area. No special-status plant species were observed within the Study Area. Table 3 summarizes the habitat requirements and rationale for the species determined to have a moderate or high potential to occur within the Study

Area. Special-status plant species documented within 5 miles of the Study Area in the CNDDB are shown in Figure 3.

Table 3. Special-status Plant Species with the Potential to Occur in the Study Area

SPECIES / STATUS	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE PROJECT AREA
Napa false indigo *Amorpha californica* var. *napensis* (CNPS Rank 1B)	Broadleaved upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet. Blooms Apr-Jul.	**Moderate Potential (Not Observed).** The Study Area contains potentially suitable woodland habitat that could support this species. The nearest documented occurrence is approximately 4.6 miles to the south of the Study Area (CDFW 2016). This species was not observed during site visits which were conducted during the documented bloom period of the species.
bent-flowered fiddleneck *Amsinckia lunaris* (CNPS Rank 1B)	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 1640 feet. Blooms Mar-Jun.	**Moderate Potential (Not Observed).** The Study Area contains potentially suitable grassland habitat that could support this species. The nearest documented occurrence is approximately 5.3 miles to the west of the Study Area (CDFW 2016). This species was not observed during site visits which were conducted during the documented bloom period of the species.
California bottle-brush grass *Elymus californicus* (CNPS Rank 4)	Broadleaved upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet. Blooms May-Aug (Nov).	**Moderate Potential (Not Observed).** The Study Area contains potentially suitable broadleaved upland forest and riparian forest that could support this species. This species was not observed during the site visits which were conducted during the documented bloom period of the species.
congested-headed hayfield tarplant *Hemizonia congesta* ssp. *congesta* (CNPS Rank 1B)	Valley and foothill grassland/sometimes roadsides. Elevation ranges from 70 to 1840. Blooms Apr-Nov.	**Moderate Potential (Not Observed).** The Study Area contains potentially suitable grassland habitat that could support this species. The nearest documented occurrence is approximately 0.4 miles to the north of the Study Area on the St. Vincent's school property (CDFW 2016). This species was not observed during the site visits which were conducted during the documented bloom period of the species.
Mt. Diablo cottonweed *Micropus amphibolus* (CNPS Rank 3)	Broadleaved upland forest, chaparral, cismontane woodland, valley and foothill grassland/rocky. Elevation ranges from 150 to 2710 feet. Blooms Mar-May.	**Moderate Potential (Not Observed).** This species was documented in seven locations scattered throughout the larger Oakview Project site during rare plant surveys in 1996. However, the Study Area lacks rocky substrates associated with this species. This species was not observed within the Study Area during the site visits which were conducted during the documented bloom period of the species.
marsh microseris *Microseris paludosa* (CNPS Rank 1B)	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 20 to 1160 feet. Blooms Apr-Jun (Jul).	**Moderate Potential (Not Observed).** The Study Area contains potentially suitable grassland and woodland habitat that could support this species. This species was not observed within the Study Area during the site visits which were conducted during the documented bloom period of the species.

The remaining 88 special-status species, including the remainder of the species reported in the 2002 EIR are either unlikely or have no potential to occur within the Study Area due to one or more of the following reasons:



Species	Map Label
bent-flowered fiddleneck	1
congested-headed hayfield tarplant	2
Marin knotweed	3
Marin western flax	4
Mt. Tamalpais bristly jewelflower	5
Mt. Tamalpais manzanita	6
Napa false indigo	7
Point Reyes checkerbloom	8
Point Reyes salty bird's-beak	9
Santa Cruz tarplant	10
Tamalpais lessingia	11
Tiburon buckwheat	12
two-fork clover	13
white-rayed pentachaeta	14

Figure 2. CNDDB Special Status Plant Species within 5 Miles of Study Area

The Oaks Assisted Living Facility Development Project
Marin County, California

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Map Prepared Date: 12/1/2016
Map Prepared By: pkobylarz
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

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Hydrologic conditions (e.g. vernal pool, brackish marsh) necessary to support the special-status plants do not exist in the Study Area;

- Edaphic (soil) conditions (e.g. serpentine, volcanics) necessary to support the special-status plants do not exist in the Study Area;
- Topographic conditions (e.g. west-facing, seaward slopes) necessary to support the special-status plants do not exist in the Study Area;
- Associated vegetation communities (e.g. chaparral, coniferous forest) necessary to support the special-status plants do not exist in the Study Area.

4.2.2 Wildlife

The project plan and associated Study Area footprint have been updated since 2002 and corresponding wildlife species and impacts discussed in the 2002 EIR were also updated. A total of 41 special-status wildlife species and 18 non-special status wildlife species have been documented in CNDDB within a nine quadrangle vicinity of the Study Area. Special-status wildlife species documented within 5 miles of the Study Area in the CNDDB are shown in Figure 4. A total of 19 special-status wildlife species were identified as potentially occurring in the Study Area in the 2002 EIR. No new species were determined to have potential to occur within the Study Area.

Based on the updated review only nine of the 19 special-status species that are discussed in the 2002 EIR have the potential to occur in the Study Area:

- western mastiff bat (*Eumops perotis californicus*), SSC
- pallid bat (*Antrozous pallidus*), SSC
- Townsend western big-eared bat (*Corynorhinus townsendii*), SSC
- golden eagle (*Aquila chrysaetos*), BCC, CFP
- white-tailed kite (*Elanus leucurus*) , CFP
- prairie falcon (*Falco mexicanus*), BCC
- peregrine falcon (*Falco peregrinus*) , BCC, CFP
- loggerhead shrike (*Lanius ludovicianus*) , BCC, SSC
- Central California Coast steelhead (*Oncorhynchus mykiss*), FT

Three of the species listed in the 2002 EIR no longer have a designation from CDFW or USFWS and not considered special-status; these species are:

- Cooper's hawk (*Accipiter cooperii*)
- sharp-shinned hawk (*Accipiter striatus*)
- California horned lark (*Eremophila alpestris actia*)

The remaining seven special-status wildlife species identified in the 2002 EIR do not have the potential to occur due to one or more of the following reasons:

- Aquatic habitats (e.g., rivers, ponds, estuaries) necessary to support the special-status wildlife species are not present in the Study Area;
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Study Area;

- Physical structures and vegetation (e.g., mines, old-growth trees) necessary to provide nesting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area;
- Host plants (e.g., dog violet, harlequin lotus) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area;
- Historic and contemporary disturbance (e.g., human visitation, intensive mechanical noise) deter the presence of the special-status wildlife species from occupying the Study Area;
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife species documented nesting range.

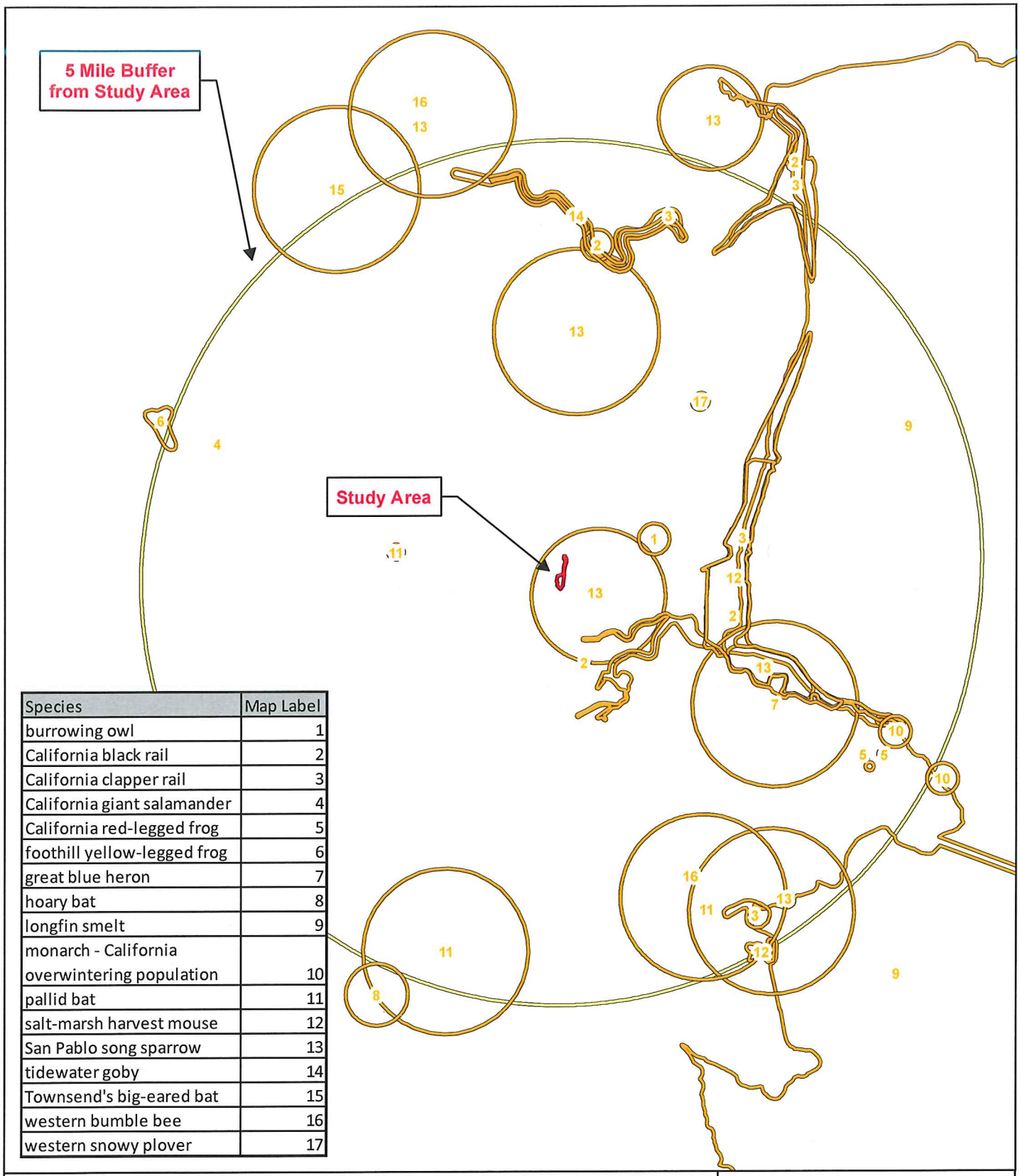
No newly listed or additional special-status species have a high or moderate potential to occur within the Study Area. Frequently, wildlife species, including designated special-status species, are documented from sites where physical and/or biological elements necessary to support critical life-cycle functions are lacking (e.g., roosting, nesting, breeding, metamorphosis, foraging, dispersal corridor). In these instances, species would be considered errant, but not occupying (i.e., occurring) within the site. With some exceptions, for purposes of analyzing potential presence, WRA biologists consider wildlife species to be unlikely or have no potential to occur in locales where habitat for critical life-cycle functions is lacking. More recent survey and database search results show that the following special-status wildlife species listed in the 2002 EIR have no potential or are unlikely to occur within the Study Area due to lack of suitable habitat and/or lack of connectivity to suitable habitat associated with nearby occurrences:

- California freshwater shrimp (*Syncaris pacifica*)
- California tiger salamander (*Ambystoma tigrinum californiense*)
- California red-legged frog (*Rana draytonii*)
- western pond turtle (*Emys marmorata*)
- foothill yellow-legged frog (*Rana boylii*)
- burrowing owl (*Athene cunicularia*)
- American badger (*Taxidea taxus*)

The following sections provide more specific detail on why these species, which were included with the 2002 EIR, are not considered to occur within the Study Area.

The EIR states that California freshwater shrimp would be limited to occasional dispersal along the channel by individuals because characteristic breeding habitat is absent. In Marin County, freshwater shrimp are limited to streams that drain to Tomales Bay, which includes Lagunitas, Stemple, and Walker Creeks. The species has not been documented in Miller Creek and the Study Area provides marginal to sub-optimal perennial stream habitat with little to no undercut banks, exposed root systems, or emergent vegetation characteristic of the species habitat (USFWS 1998).

California tiger salamander has not been documented within 10 miles of the Study Area. Habitat within the Study Area is largely isolated with Highway 101 to the east and urban development surrounding the north, south, and west boundaries. Within the Study Area, there is no seasonal ponds capable of supporting breeding for the species. Because the species is not known for the area, the site does not support breeding habitat for the species, and dispersal to and from the site is restricted, there is no potential for California tiger salamander to occur in the Study Area.



Species	Map Label
burrowing owl	1
California black rail	2
California clapper rail	3
California giant salamander	4
California red-legged frog	5
foothill yellow-legged frog	6
great blue heron	7
hoary bat	8
longfin smelt	9
monarch - California overwintering population	10
pallid bat	11
salt-marsh harvest mouse	12
San Pablo song sparrow	13
tidewater goby	14
Townsend's big-eared bat	15
western bumble bee	16
western snowy plover	17

Figure 3. CNDDB Special Status Wildlife Species within 5 Miles of Study Area

The Oaks Assisted Living Facility Development Project
Marin County, California

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Miles

Map Prepared Date: 12/1/2016
Map Prepared By: pkobylarz
Base Source: Esri Streaming - National Geographic
Data Source(s): WRA

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For California red-legged frog, the EIR states that any use of Miller Creek by this species would likely be limited to occasional dispersal along the creek channel due to the lack of breeding habitat within the creek. According to available information, California red-legged frog has not been documented in Miller Creek. This includes during protocol-level surveys for this species conducted by WRA in 2010 that covered an approximately 1.3 mile-long, upstream reach of the creek, and had negative results. The nearest documented California red-legged frog occurrence in CNDDB is located approximately 4.5 miles south east of the Study Area or 8.7 miles north of the Project Site, on the east side of the Petaluma River (CDFW 2016).

Foothill yellow-legged frog has not been documented within the Miller Creek watershed, and the closest occurrence to the Study Area is over 5 miles to the west (CDFW 2016). The intermittent nature of Miller Creek and the lack of basking habitat in the Study Area provide only suboptimal habitat for the species. Therefore, it is unlike that the species would occur in the Study Area.

Western pond turtle has not been documented within the Miller Creek watershed, and the closest occurrence to the Study Area is over 5.5 miles to the south or 9 miles to the west (CDFW 2016). The intermittent nature of Miller Creek and the lack of basking habitat in the Study Area provide only suboptimal habitat for the species. Furthermore, the Study Area does not have any perennial ponds or reservoirs more characteristic of the species habitat. Additionally, the surrounding roads and urban development greatly reduce the potential for the species to migrate to the site. Therefore, it is unlikely that the species would occur in the Study Area.

The closest documented occurrence of American badger is over 11 miles to the north (CDFW 2016). During the site visit, there were no large burrows observed, and only minimal small mammal activity evident within the tall non-native grasses that dominate the Study Area. Because of the isolated nature of the Study Area, which is surrounded on all sides by roads and urban development, it is highly unlikely that the species would be able to disperse to or from the Study Area. Therefore, it is unlikely that the species would occur in the Study Area.

The closest documented occurrence of burrowing owl to the Study Area is 1 mile to the east and 5 miles to the north (CDFW 2016). This species requires habitat with or short or barren vegetation and burrow complexes typical of California ground squirrel. Habitat within the Study Area is suboptimal for the species, as the tall dominant non-native grasses and absence of ground squirrel burrows are likely to preclude the species from occurring. While the species may seasonally occur in Marin County, and may pass through the Study Area, it is unlikely to use the Study Area for over wintering or breeding habitat. Therefore, it is unlike that the species would occur in the Study Area.

4.2.3 Critical Habitat

The Study Area is not located within designated critical habitat for federally threatened or endangered species.

5.0 POTENTIAL IMPACTS, AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

The 2002 approved EIR for the proposed Project identified potentially sensitive resources within the greater Oakview Master Plan Project Area, determined significance of potential impacts on identified sensitive resources, and made recommendations to mitigate adverse impacts to less-than-significant levels. This report serves to update the biological resources assessment contained within Section 5.3, "Biological Resources" of the 2002 EIR with an assessment of biological resources, potential impacts and mitigation, within the Project impact area based on current conditions observed within the Study Area during 2015, 2016, and 2017 site visits, and with the most up-to-date information on special-status species and sensitive biological resources with potential to occur in the Study Area. Potential impacts, avoidance, minimization, and mitigation measures, for existing sensitive biological communities, special-status plant species, and special-status wildlife species are discussed in the following sections and follow the format of the EIR for consistency. Therefore, the format of this Section may not be organized in accordance with previous Sections of the report.

5.1 Project Description

The Project proposes to develop a senior living facility with the development of a new driveway segment, attendant features such as landscaping, parking, and other associated infrastructure. The Project will include a bridge across Miller Creek at the southern terminus of Marinwood Avenue for site access to the Project parcel and a driveway on the parcel extending from the bridge to the facility. The driveway will utilize existing topography from an abandoned roadbed to minimize land disturbance to the extent feasible. The Project Plans (see ILS 2017 and RHAA 2017) show the proposed project.

5.1.1 Senior Living Facility and Affordable Workforce Apartments

The proposed senior living facility, consisting of two attached buildings will include approximately 126 units including assisted living and independent living with common areas such as a library, café, presentation hall, computer lab, communal living room, and several outdoor courtyards. An aboveground parking area will be located in front of the building and screened from the highway by a berm and landscaping. An additional parking garage will be located at the north side of the building. In addition to the residential care and independent living apartments, there will be six affordable workforce apartments located in a separate building adjacent to the northern end of the independent living portion of the project. Areas immediately surrounding the buildings will be landscaped. Bioretention planters consistent with Marin County's Storm Water Management Guidelines will be located immediately downhill of the parking lot and driveway (Figure 2 in Part 5 of this Permit Application) to capture and treat stormwater using low impact development techniques. The senior living facility is located on uplands.

5.1.2 Bridge and Driveway

A bridge over Miller Creek at the southern terminus of Marinwood Avenue and driveway are proposed to provide access to the senior living facility from the existing surface street (Marinwood Avenue). The proposed bridge is a single span, precast, pre-stressed girder bridge with a cast-in-place deck. The proposed abutment foundations consist of cast-in-drilled-hole (CIDH) piles. Each abutment will be founded on a single row of 3-foot diameter CIDH or two rows of 1.5-foot diameter CIDH on a pile cap above the OHWM and 100-year flood plain. The length of the proposed bridge is 71.6 feet and the width at the span is 32.0 feet. The bridge span is connected to an abutment with wing walls near the top of bank on both sides of the creek. The width at the

abutment and wing walls is 42.8 feet. The lower extent of the bridge is 2.0 feet above the 100-year flood elevation. Construction access and bridge construction will require removal of riparian trees, equipment access, and possibly dewatering Miller Creek or remnant pools during the dry season.

From the bridge crossing, the 24-foot wide driveway with a 4-foot wide concrete sidewalk will roughly parallel Highway 101 on the very most eastern edge of the Project Area for approximately a quarter mile from Marinwood Avenue to the building complex. Areas of the driveway will be graded to reduce slope instability adjacent to the road, and paved, requiring impacts to a seasonal wetland.

The Project includes a Vegetation Management Plan (VMP) for defensible space (Urban Forestry Associates, Inc. 2017). All areas within the 100-foot defensible space from the building envelope will be cleared of shrubs, dead tree canopies, dead fallen woody debris and ladder fuels. Mature trees within the defensible space zone will be limbed up to reduce ladder fuel potential and grasses will be mowed once a year in the late spring to reduce the threat of wildfire. The VMP prescribes additional treatments for the access road, driveways and landscaped areas similar to the prescriptions of the defensible space zone.

5.2 Significance Threshold Criteria

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, and Appendix N of the *Marin County Environmental Review Guidelines and Procedures*, a project would have a significant impact on biological resources if it would:

a) 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;

b) 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;

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

d) 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;

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,

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

The 2002 approved EIR for the proposed Project identified potentially sensitive resources within the greater Oakview Master Plan Project Area, determined significance of potential impacts on identified sensitive resources, and made recommendations to mitigate adverse impacts to less-

than-significant levels. Potential impacts, avoidance, minimization, and mitigation measures, for existing sensitive biological communities, special-status plant species, and special-status wildlife species are discussed in the following sections. Relevant impacts and mitigation measures pursuant to the EIR are referenced below.

5.3 Potentially Significant Impacts and Mitigation Measures

The majority of the Study Area is comprised of non-native grasslands which is not considered a sensitive biological community. However, the Study Area contains approximately 287 linear feet (0.15 acre) of non-wetland waters associated with Miller Creek that is within the jurisdiction of the Corps under Section 404 of the Clean Water Act, RWQCB under the Porter Cologne Act and Section 401 of the Clean Water Act, and CDFW under Section 1602 of the FGC. The Study Area also contains 637 square feet (0.015 acre) of seasonal wetland under Corps and RWQCB jurisdiction, and 0.29 acre of riparian coast live oak woodland, some or all of which is potentially within the jurisdiction of CDFW under Section 1602 of the CFGC. Anticipated temporary and permanent impacts to sensitive biological communities were assessed based on the most recent Project plans (RHAA 2017 and ILS 2017) and are shown on Figures 5a, 5b, and 5c. Impacts and mitigation required per the EIR are discussed below.

Impact 5.3-1 General Vegetation Removal and Landscaping Impacts

Impacts to native and non-native naturalized vegetation from grading, project construction and landscape plantings were assessed in Section 5.3-1 of the EIR. These impacts have not changed since the EIR. The Applicant has developed a VMP (Urban Forestry Associates, Inc. 2016) for the site which includes management prescriptions for defensible fuel space. The VMP includes annual mowing of grasses, shrub removal, and limbing up mature trees to reduce ladder fuels. The VMP includes recommendations to remove annual grasses in favor of perennial plants. Removal of shrubs which have a tendency to encroach into native purple needlegrass grasslands and annual mowing of grasses within the defensible space zone is anticipated to favor perennial purple needlegrass stands within the Study Area.

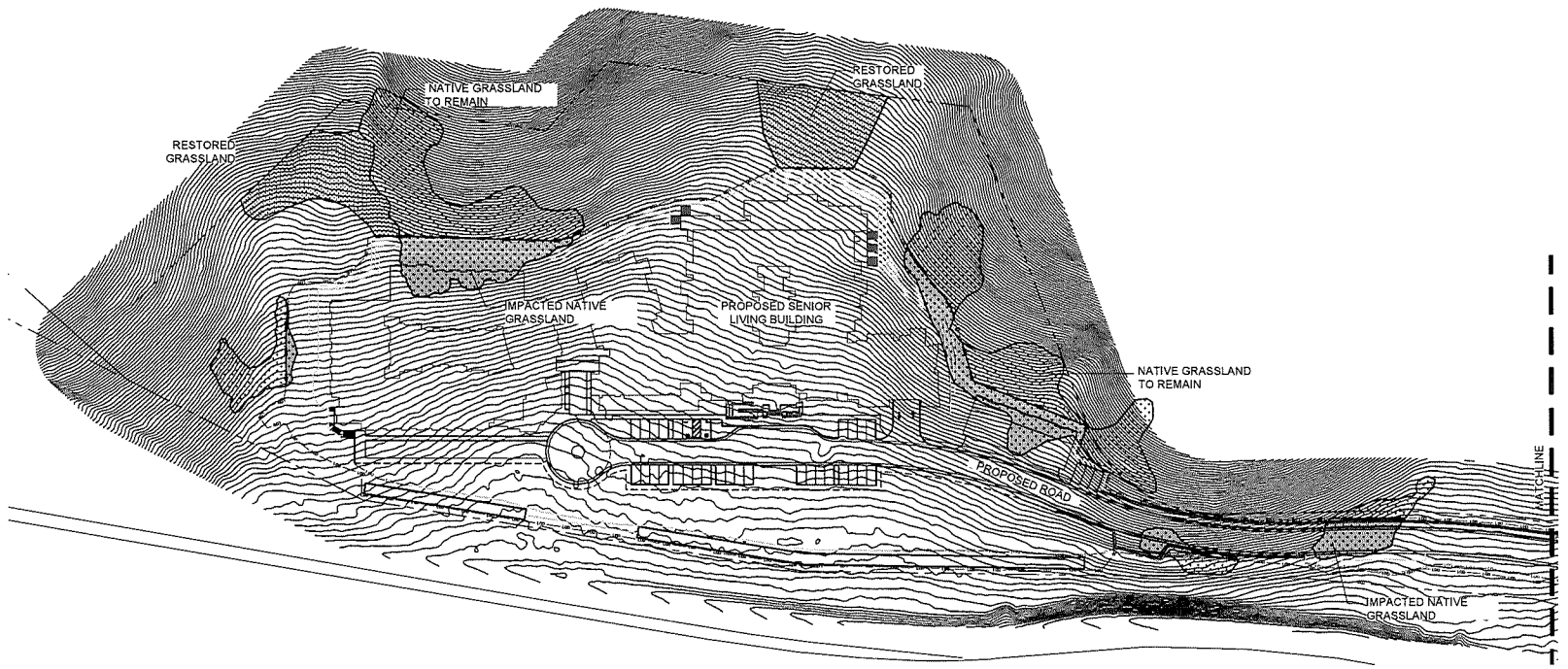
Mitigation Measure 5.3-1 General Vegetation Removal and Landscaping Impacts

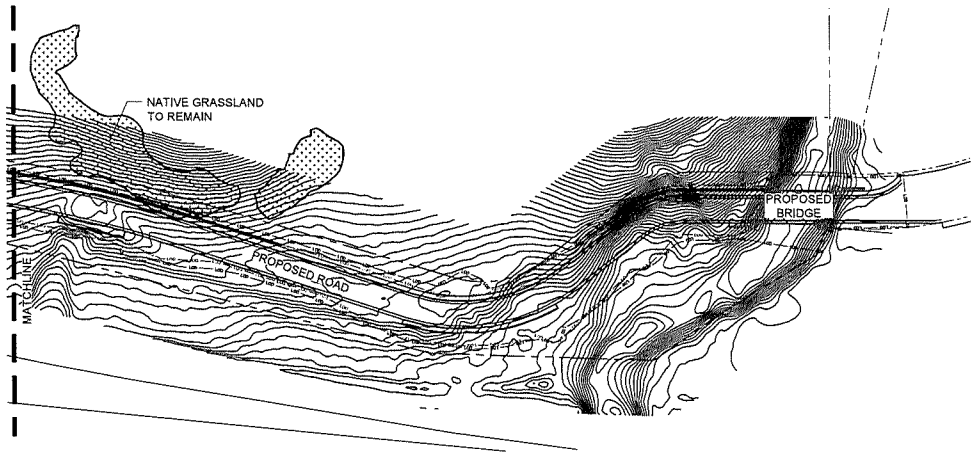
The Project will follow and implement each of the Mitigation Measures described Section 5.3-1 of the EIR. No further mitigation is required or recommended.

Impact 5.3-2 Tree Removal and Woodland Impacts

Tree impacts are shown in Figure 5a. The Project has been designed to minimize impacts to trees and woodland habitat. Individual specimen-sized trees in the southern portion of the Study Area where buildings are proposed will be purposefully retained by the Project. However, the extension of Marinwood Avenue across Miller Creek, and the continuation of the access road will result in impacts to approximately 0.09 acre (0.05 acre permanent; 0.04 acre temporary) of riparian coast live oak woodland and potential removal of 19 riparian trees. This habitat is regulated by CDFW under Sections 1600-1616 of the CFGC. As such, this impact would be potentially significant under CEQA. The Project will impact an additional 0.29 acre of non-riparian coast live oak woodland.

The Project will potentially remove 50 trees in total, 39 of which are protected per the Marin County Tree Ordinance and will be mitigated for. Trees determined to be potentially impacted include:





LEGEND

- PROPERTY LINE
- LIMIT OF GRADE
- LIMIT OF DISTURBANCE
- NATIVE GRASSLAND TO REMAIN
- PERMANENTLY IMPACTED NATIVE GRASSLAND 0.34 ACRE (14,837 SF)
- RESTORED NATIVE GRASSLAND 0.34 ACRE (14,837 SF)

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THE OAKS SENIOR LIVING COMMUNITY: A RESIDENTIAL CARE FACILITY

SAN RAFAEL, CALIFORNIA

Date	Issues And Revisions	No.
5/17/17		

PROJECT #25128
DRAWN BY: RP
CHECKED BY: SA
ORIGINAL DRAWING SIZE: 24 X 36

N

0 50
SCALE: 1" = 50'

Figure 5a.

NATIVE GRASSLAND IMPACTS AND MITIGATION PLAN

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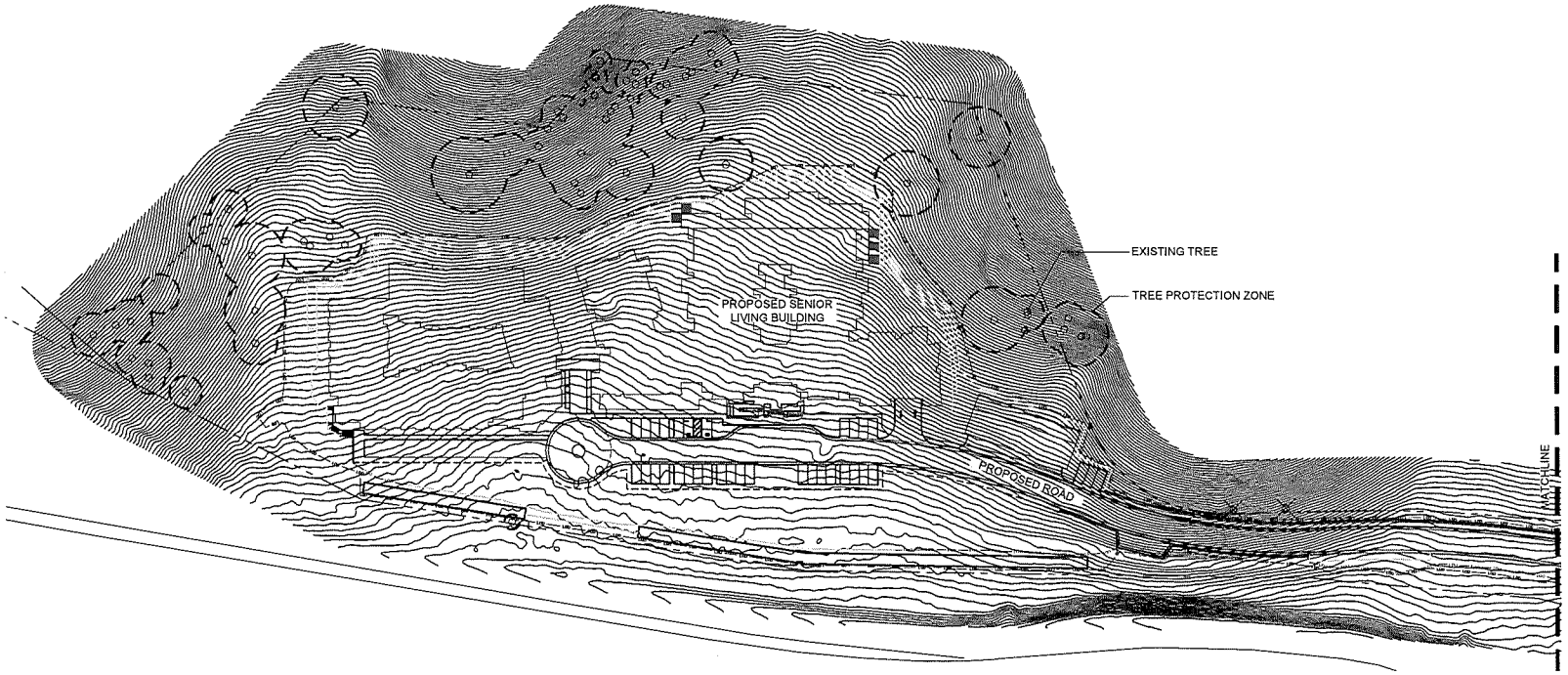

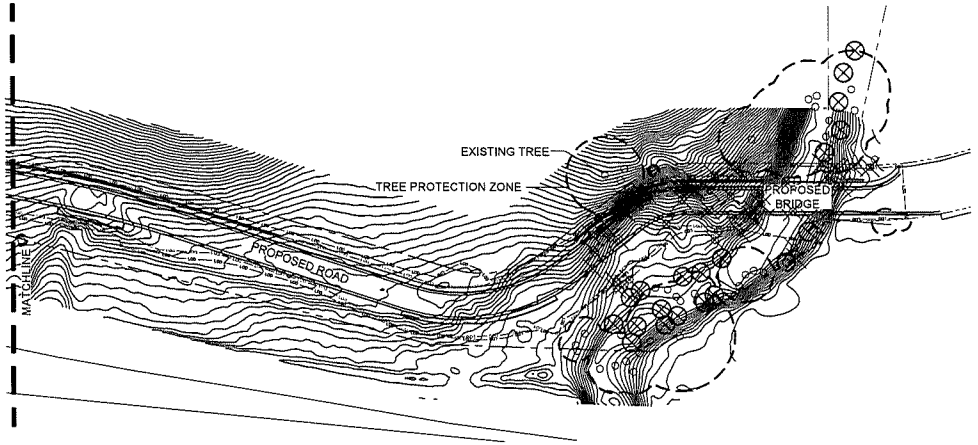

LEGEND

- PROPERTY LINE
- LIMIT OF GRADE
- LIMIT OF DISTURBANCE
- EXISTING TREE
- IMPACTED EXISTING TREE (50 TOTAL, 19 RIPARIAN)
- TREE PROTECTION ZONE
- NATIVE RIPARIAN TREE TO BE PLANTED (19)

*SEE LANDSCAPE PLANS FOR NON-RIPARIAN TREES TO BE PLANTED

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SCALE: 1" = 50'

Figure 5b.

TREE IMPACTS AND PROTECTION PLAN

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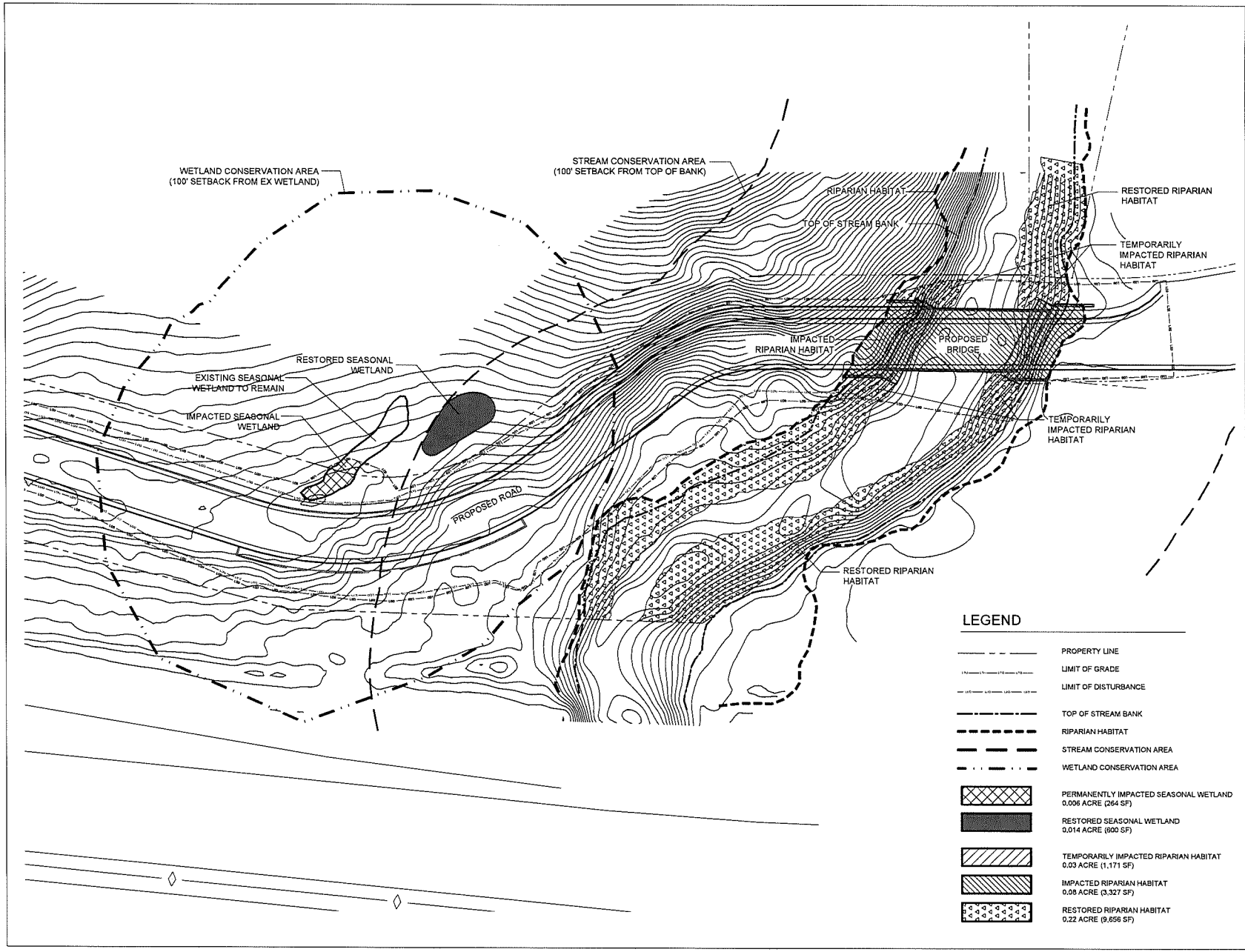

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ORIGINAL DRAWING SIZE: 24 X 36

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SCALE: 1 " = 20 '

Figure 5c.

SEASONAL WETLAND & RIPARIAN IMPACTS & MITIGATION PLAN

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any tree whose trunk is within the limit of disturbance, and any tree in the vicinity of the limit of disturbance if the limit of disturbance encroaches more than 1/3 into the tree canopy. Thirty-nine of the potentially impacted trees are considered protected per the Marin County Tree Ordinance, 10 are either too small to be considered protected, or of a non-native species not specifically protected per the ordinance, and one tree (tree #1954) is dead and therefore considered exempt per the ordinance.

Mitigation Measure 5.3-2 Tree Removal and Woodland Impacts

The Applicant will follow all applicable mitigation measures described in Section 5.3-2 of the EIR, the majority of which are excerpted below. Section 5.3-2 states that a separate Tree Removal Permit would not be required for the Project because the potential effects of development have been considered as part of the EIR and measures as outlined below were recommended to minimize tree removal, provide for protection of trees to be preserved, and replace trees lost as a result of proposed development. However, the removal of 19 riparian trees will require consideration in a Section 1602 Streambed Alteration Agreement from CDFW.

Mitigation Measure 5.3·2(c)

A certified arborist should prepare detailed guidelines to protect trees to be preserved from possible damage. Trees to be retained should be identified in the field with flags or other obvious marking method before any grading. Standards contained in the preservation guidelines should include the following:

- Grade changes should be avoided within 1.5 times the width of the tree dripline, and any encroachment should be prohibited closer than one-third the distance from the dripline to the trunk.
- Restrictions on the limits of grading, adjustments to the final grade of cut and fill slopes, and use of retaining walls should all be used to protect individual trees worthy of preservation.
- Temporary fencing should be provided along the outermost edge of the drip line of each tree or group of trees to be retained in the vicinity of grading to avoid compaction of the root zone and mechanical damage to trunks and limbs.
- Paving within the tree dripline should be prohibited or stringently minimized by using porous materials such as gravel, loose boulders, cobbles, wood chips, or bark mulch where hardscape improvements arc necessary for access in the vicinity of trees.
- Trenching within the tree dripline should be prohibited, and any required utility line within the dripline should be installed by boring or drilling through the soil.
- The amount of landscape irrigation within the tree dripline should be minimized by prohibiting turf or any landscaping with high water requirements and by limiting permanent irrigation improvements to bubbler, drip, or subterranean systems.
- Storage of construction equipment, materials, and stockpiled soils should be prohibited within the tree driplines.

Mitigation Measure 5.3-2(d)

A tree replacement program should be prepared to provide for replacement of native trees removed by proposed development. The tree replacement program should be included as a component of the project's Landscape and Vegetation Management Plan (required by Mitigation

Measure 5.3-1 [a]) and implemented as part of site revegetation and landscaping. Provisions of the tree replacement program should include the following:

- Oaks and other native trees should be replaced at a ratio of 2:1 (ratio of replacement trees to number of trees removed).
- The 39 protected trees within the Study Area will be replaced at a 2:1 ratio, resulting in the planting of at least 78 trees consisting of species native to the Study Area within the Project parcel or on the adjacent parcel to the west.
- Species composition of plantings in the tree replacement program should generally be consistent with the percentage of each tree species removed. If off-site nursery stock is used for replacement plantings, plants preferably should be seedlings with a container size of one-gallon or smaller. Younger plant material tends to have a higher survival rate than older nursery stock which has become established under ideal growing conditions provided at most nurseries.
- A program to collect seed and grow seedlings for use in the tree replacement program should be considered as part of the tree replacement program. Seed should be collected on-site in the fall months, planted in temporary containers, and maintained for a period of one or more years until seedlings are ready for planting. Oak seedlings grown from an on-site seed source would be preferable to use of off-site nursery stock, and this program should be encouraged.
- If trees proposed for removal are successfully salvaged and transplanted, no additional replacement mitigation should be required for those trees.
- Tree replacement plantings should be monitored as part of the Landscape and Vegetation Management Plan (required for the project by Mitigation Measure 5.3-l[a]) for a minimum of five years. If mature salvaged trees die within this time period, replacement plantings should be made at the 2:1 ratio. Any on-site salvage, locally collected and grown seedlings, or nursery stock plantings lost within this monitoring period should be replaced at a 1:1 ratio on an annual basis.

Precise Development Plan approval should be conditioned on incorporation of Mitigation Measures 5.3-2(b), 5.3-2(c), and 5.3-2(d) in the project. Recommended refinement of Grading Plans to protect existing trees should be completed before preparation of the Precise Development Plan. Tree preservation guidelines should be completed before preparation of the Precise Development Plan, with details incorporated into the Final Landscape Plan and with preservation methods followed during grading and construction. Tree replacement planting should be performed as part of landscape improvements with monitoring conducted as specified in the Landscape Plans and VMP.

Impact 5.3-3 Disturbance to Native Grasslands

The Project will result in the conversion/development of approximately 0.34 acre of purple needlegrass grasslands (see Figure 5b). Density of purple needlegrass within areas mapped as purple needlegrass grassland range from 10 to 50 percent with an average of 30 percent cover. Purple needlegrass grassland receives consideration under CEQA because it is considered a sensitive plant community by the CDFW, and disturbance to native grasslands were assessed as a significant impact under the EIR.

Mitigation Measure 5.3-3 Disturbance to Native Grasslands

The Applicant shall follow all applicable mitigation measures described in Section 5.3-3 of the EIR. A grassland restoration and enhancement plan will be developed to mitigate for the loss of purple needlegrass grasslands at a ratio of 1:1 impacted purple needlegrass grassland: restored purple needlegrass grassland. A total of 0.34 acre of purple needlegrass grasslands will be restored within the Project parcel or on the adjacent parcel to the west.

Impact 5.3-4 Disturbance to Freshwater Seeps and Wetlands

A formal wetland delineation for the larger Oakview Estates Project (APNs # 156-27-005, -006, and -007), was conducted by LSA (LSA 1999) and first verified by the Corps in 2000. The original verified delineation included eight seasonal wetlands (Jurisdictional Features # S5-S9, S10-S13 within or directly adjacent to the current Project parcel. The delineation was revised to exclude seasonal wetland # S8 and subsequently re-verified by the Corps in 2005, and 2014. The most recently verified delineation describes seven seasonal wetlands seeps totaling approximately 0.95 acre within or directly adjacent to the current Project parcel. WRA assessed the seven previously delineated wetlands within the reduced Study Area encompassing the Project parcel (APN # 164-27-005), the eastern portion of the adjacent parcel (APN # 164-27-005), and associated access from the southern terminus of Marinwood Avenue, to determine the extent and distribution of jurisdictional features under existing conditions. WRA delineated approximately 0.15 acre (287 linear feet) of perennial stream (Miller Creek) within the northern portion of the Study Area and determined that only one of the previously mapped wetland features, a small 637 square feet (0.005 acre) seasonal wetland depression described in Section 4.1.2 above, met all three wetland crit1ria (WRA 2017). No seep wetlands were encountered within the Study Area. The other six previously identified wetland features did not meet wetland criteria. WRA has submitted a request to the Corps to verify the wetland delineation based on existing conditions.

Figure 5c shows impacts to seasonal wetland and riparian habitats. The Project will permanently impact 264 square feet (0.006 acre) of seasonal wetland. This wetland feature is regulated by, and would require permits from, the Corps under Section 404 of the CWA, and the RWQCB under section 401 of the CWA and the Porter-Cologne Water Quality Control Act.

The Project also includes the construction of a free-span bridge over Miller Creek. Bridge construction will result in approximately 871 square feet (0.02 acre) of permanent shading impacts to the creek waters below the OHWM, which could potentially be considered impacts by the CDFW and RWQCB, and approximately 1,742 square feet (0.04 acre) of temporary impacts to the perennial stream (Corps/RWQCB/CDFW jurisdiction) resulting from the potential removal of two existing abutments located at or below the OHWM. Bridge construction will also result in 3,327 square feet (0.08 acre) of permanent impacts and 1,171 square feet (0.03 acre) of temporary impacts to riparian habitat within RWQCB and CDFW jurisdiction.

Mitigation Measure 5.3-4 Disturbance to Freshwater Seeps and Wetlands

The Applicant shall follow all applicable mitigation measures described in Section 5.3-4 of the EIR. Prior to filling of jurisdictional waters, or construction activities within Corps, RWQCB or CDFW jurisdiction, necessary regulatory permits will be obtained from the appropriate agencies. Regulatory permits to be obtained include Corps Nationwide Permit #14, Regional Water Quality Control Board Section 401 Water Quality Certification and/or Waste Discharge Requirement, and

CFGC Section 1602 Streambed Alteration Agreement. Prior to proposed filling of jurisdictional waters, compliance with all regulatory agency permit conditions shall be demonstrated. The Applicant will propose to mitigate for permanent impacts to Corps jurisdictional wetlands by either: (1) restoring wetlands on the Project parcel or on the adjacent parcel to the west at a ratio determined by the Corps, (2) purchasing an appropriate amount of mitigation credits by an approved mitigation bank within the Project service area, or (3) another type of mitigation as approved by the Corps and RWQCB through the permitting process.

Impact 5.3-5 Disturbance to Stream Conservation Areas and Riparian Habitat

Impacts to Stream Conservation Areas (SCAs) and riparian habitat were assessed in Section 5.3-5 of the EIR. These impacts have not changed since the EIR.

Mitigation Measure 5.3-5 Disturbance to Stream Conservation Areas and Riparian Habitat

Impacts to riparian habitat will be covered by Mitigation measure 5.3-4(c) and 5.3-6 of the FIER. No additional mitigation required.

Impact 5.3-6 Disturbance to Fish and Wildlife Habitat

Impacts to fish and wildlife habitat were assessed in Section 5.3-6 of the EIR. This section provides updated impacts to all special-status wildlife species with potential to occur in the Study Area and required mitigation per Section 5.3-6 of the EIR.

Special-status Bats

Pallid bat, western mastiff bat, and Townsend big-eared bat are special-status species of bats with the potential to roost within portions of the oak and riparian woodland found within the Study Area. Foraging may also take place over the aquatic and open grassland habitats found throughout the Study Area. Oak woodland and riparian preservation and avoidance measures required per Section 5.3-2 and 5.3-5 of the EIR will benefit potential bat roost habitat. Any removal of large trees or potentially suitable roost habitat to facilitate Project construction could impact special-status bat species. Tree removal and roost disturbance could occur during the installation of such Project related activities as construction of the roadways, buildings, and the bridge over Miller Creek. Additionally, the operation of loud machinery in the immediate vicinity of a maternity roost site could impact the species by causing the parent to abandon the roost or induce elevated stress levels for the individuals occupying the maternity site.

Special-status Birds

Several species of special-status birds have the potential to occur within the Study Area, and include: white-tailed kite, golden eagle, prairie falcon, peregrine falcon, and loggerhead shrike. Oak woodland and riparian preservation and avoidance measures required per Section 5.3-2 and 5.3-5 of the EIR will benefit potential nesting bird habitat; however, the Project will involve some impacts to oak and riparian woodland, non-native grassland, and vegetation along or adjacent to aquatic features within the Study Area.

The removal of terrestrial vegetation is likely to occur from Project activities including the creation and enhancement of roads, installation of buildings, installation of the bridge, and vegetation clearing, each of which has the potential to impact potential nesting and foraging habitat for avian species. The operation of construction machinery during breeding season could also cause disturbance to breeding birds, and could impact nesting activity. Special-status and other native bird species are protected during the nesting season by the MBTA and CFGC.

Steelhead and Fish Habitat

The Project is designed to limit impacts to aquatic features in the Study Area. The Project will involve the installation of bridge across Miller Creek that will result in the removal of riparian vegetation and work below top of bank. No work is planned to occur within the wetted channel. The bridge installation will require the full or partial removal of two existing bridge footings which are remnant from an old bridge across Miller Creek that no longer exists. Removal of the old bridge footings is expected to increase the habitat functions and values of the creek. The new bridge footings will be installed above bankfull width but below the top of bank. Riparian preservation and avoidance measures discussed in Section 5.3-5 will benefit steelhead and fish habitat within Miller Creek; however, the Project will involve impacts to fish habitat in Miller Creek.

Disturbance to the banks of Miller Creek is likely to occur during the removal of riparian vegetation, placement of the footings and bridge support, and installation of the bridge deck. Increased erosion and sediment input from bank disturbance could degrade stream habitat and result in elevated turbidity levels encountered by steelhead during rearing and migration. Additionally, the operation of construction equipment around and above the stream surface could result in the discharge or fuels, oils, or other contaminants. While no spawning habitat for steelhead occurs in the Study Area, the species may migrate through and seasonally rear in the perennial portions of Miller Creek. Any potential direct effects to this species, or degradation of downstream habitat would, be a potentially significant impact.

Mitigation Measure 5.3-6 Disturbance to Fish and Wildlife Habitat

Special-status Bats

Potential significant impacts to roosting special-status bats may be mitigated through avoiding disturbance to active roost sites. If tree removal or trimming is required, it is recommended to take place between September and October. This window falls outside of both the maternity and hibernation period for bats and avoids the breeding bird window. Tree removal can take place during this period without a breeding bird or bat roost survey.

If removal of large oaks or riparian trees (DBH >12 inch) occurs during the bat roosting season (November through August), these trees shall be inspected by a qualified biologist for the presence of bat roosts. Potential bat roosts include large oak trees, broad leafed riparian trees, exfoliating bark, tree cavities, and snags. If a maternity roost is detected, a 200-foot buffer will be placed around the maternity site until the bats are no longer utilizing the site. Non-maternity roost sites can be removed under the direction of the biologist.

Any large tree (DBH >12 inch) that will be removed shall be left on the ground for 24 hours before being taken offsite or chipped. This period will allow any day roosting bats the opportunity to leave before the tree is either removed from the area or chipped.

Implementation of the above measures would mitigate potentially significant impacts to special-status bats to a less-than-significant level should they occur on-site.

Special-status Birds

Potential significant impacts to nesting special-status birds may be mitigated through avoiding disturbance to active nest sites. Mitigation Measure 5.3-7 from the 2002 EIR, excerpted below, shall be implemented to avoid impacting nesting special-status birds.

The following measures would be required to mitigate impacts on special-status bird species. If any active nests are established within the vicinity of proposed grading in the future, they shall be avoided until young birds are able to leave the nest (fledge) and forage on their own. Avoidance may be accomplished either by scheduling grading and tree removal during the non- nesting period (August 15 through January 14) or, if this is not feasible, by conducting a pre-grading survey for raptor nests. Provisions of the pre-grading survey effort, if necessary, shall include the following:

- If grading is scheduled during the sensitive nesting period (January 15 through August 14), a qualified wildlife biologist shall conduct a pre-grading raptor survey to confirm the presence or absence of active nests in the vicinity of proposed construction activities.
- If active nests are encountered, the biologist shall prepare and implement species-specific measures to prevent abandonment of the active nest(s). At a minimum, grading in the vicinity of a nest's tree shall be deferred until the young birds have fledged, and a construction-disturbance within a distance determined by the biologist shall be provided. Grading or other disturbance in the vicinity of the nest shall not be permitted until the biologist confirms that the young raptors have fledged. The biologist shall submit a survey report to the County verifying that the young have fledged before grading in the construction-disturbance setback area is initiated.
- As necessary, representatives of the [CDFW] and USFWS shall be consulted about appropriate construction restrictions, building setbacks, landscape screening, and other methods to ensure compliance with the MBTA and provisions of the CFGC.

Implementation of the above measures would mitigate potentially significant impacts to special-status birds to a less-than-significant level should they occur on-site.

Steelhead and Fish Habitat

Potential significant impacts to steelhead and fish habitat may be mitigated through the following measures. For all work within jurisdictional areas involving fill for the bridge crossings or removal of the old bridge footings, a Section 404 permit application shall be submitted to the Corps and a Section 401 Water Quality Certification will be obtained. In addition, a Streambed Alteration Agreement shall be requested from the CDFW. If in-channel work will occur, the Corps may initiate consultation with National Marine Fisheries Service (NMFS) if there is a potential for adverse impact to the species and to determine the appropriate impact avoidance, minimization, and mitigation measures (if any) for the proposed Project.

Avoidance and minimization measures that may be required by NMFS and CDFW, and shall be implemented during the proposed Project, include the following:

- Work below top of bank shall be conducted in isolation from flowing water and will only occur during the dry season (April 15 to October 31). In the event that flowing water is

present, the work area shall be isolated, and flowing water shall be diverted around the work area.

- The appropriate Corps, CDFW, and RWQCB permits shall be obtained prior to conducting work within the active channel or below top of bank within the Study Area. The Corps may initiate consultation with NMFS to determine if any additional impact avoidance, minimization, and mitigation measures would be required for the proposed Project. The Corps, CDFW, and NMFS (if necessary) will be consulted regarding the bridge crossing design. Additional avoidance and minimization measures recommended in these permits shall be followed to reduce the potential to impact steelhead and fish habitat.

Implementation of the above measures would mitigate potentially significant impacts to steelhead and fish habitat in Miller Creek to a less-than-significant level.

Mitigation Measure 5.3-9 Impacts to Special-Status Plant Species

Potential impacts to special-status plants were assessed in Section 5.3 of the EIR, and systematic surveys for special-status plant species were conducted in March, April, and July 1996. WRA conducted three additional site visits in August 2015, and March and April 2016, and collected floristic data during these site visits. The site visits were conducted within the documented bloom periods of all species with potential to occur in the Study Area, and no special-status plant species were observed within the Study Area.

Mitigation Measure 5.3-9 Impacts on Special-Status Plant Species

No additional surveys or mitigation measures are recommended for special-status plant species.

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APPENDIX A

LIST OF OBSERVED PLANT AND WILDLIFE SPECIES

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Table A-1. Plant Species observed in the Study Area, August 12, 2015, March 17, 2016, and April 19, 2016.

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Agavaceae	*Chlorogalum pomeridianum* var. *pomeridianum*	common soap plant	forb	native	--	--	NL
Anacardiaceae	*Toxicodendron diversilobum*	poison oak	shrub	native	--	--	NL
Apiaceae	*Conium maculatum*	poison hemlock	forb	non-native	--	moderate	FACW
Apiaceae	*Foeniculum vulgare*	fennel	forb	non-native	--	high	NL
Apiaceae	*Perideridia kelloggii*	Kellogg's yampah	forb	native	--	--	NL
Apiaceae	*Sanicula bipinnatifida*	purple sanicle	perennial herb	native	-	-	NL
Apiaceae	*Torilis arvensis*	hedge parsley	forb	non-native	--	moderate	NL
Araliaceae	*Hedera helix*	English ivy	vine	non-native	--	high	NL
Asteraceae	*Artemisia douglasiana*	mugwort	forb	native	--	--	FAC
Asteraceae	*Baccharis pilularis* ssp. *consanguinea*	coyote brush	shrub	native	--	--	NL
Asteraceae	*Carduus pycnocephalus*	Italian thistle	forb	non-native	--	moderate	NL
Asteraceae	*Cirsium vulgare*	bull thistle	forb	non-native	--	moderate	FACU
Asteraceae	*Delairea odorata*	Cape ivy	forb	non-native	--	high	NL
Asteraceae	*Erigeron canadensis*	Canadian horseweed	forb	native	--	--	FACU
Asteraceae	*Helenium puberulum*	rosilla	forb	native	--	--	FACW
Asteraceae	*Hemizonia congesta* ssp. *lutescens*	yellow hayfield tarweed	forb	native	--	--	NL
Asteraceae	*Heterotheca sessiliflora* ssp. *echioides*	sessileflower false goldenaster	forb	native	--	--	NL
Asteraceae	*Hypochaeris radicata*	hairy catsear	forb	non-native	--	moderate	FACU
Asteraceae	*Pseudognaphalium luteoalbum*	Jersey cudweed	forb	non-native	--	--	FAC
Asteraceae	*Senecio vulgaris*	old man in the Spring	forb	non-native	--	--	FACU
Asteraceae	*Sonchus asper* ssp. *asper*	prickly sow thistle	forb	non-native	--	assessed	FAC
Asteraceae	*Symphyotrichum chilense*	Pacific aster	forb	native	--	--	FAC
Asteraceae	*Xanthium spinosum*	spiny cocklebur	forb	native	--	--	FACU
Betulaceae	*Alnus rhombifolia*	white alder	tree	native	--	--	FACW
Brassicaceae	*Nasturtium officinale*	watercress	forb	native	--	--	OBL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Caprifoliaceae	*Lonicera hispidula*	pink honeysuckle	shrub	native	--	--	FACU
Caryophyllaceae	*Polycarpon tetraphyllum*	fourleaf manyseed	forb	non-native	--	--	NL
Caryophyllaceae	*Stellaria media*	common chickweed	forb	non-native	--	--	FACU
Chenopodiaceae	*Dysphania ambrosioides*	Mexican tea	forb	non-native	--	--	FAC
Convolvulaceae	*Convolvulus arvensis*	field bindweed	forb	non-native	--	assessed	NL
Cyperaceae	*Carex tumulicola*	split awn sedge	perennial graminoid	native	-	-	FACU
Cyperaceae	*Cyperus eragrostis*	tall flatsedge	graminoid	native	--	--	FACW
Dipsacaceae	*Dipsacus fullonum*	Fuller's teasel	forb	non-native	--	moderate	FAC
Euphorbiaceae	*Croton setiger*	turkey mullein	forb	native	--	--	NL
Fabaceae	*Genista monspessulana*	French broom	shrub	non-native	--	high	NL
Fabaceae	*Lupinus nanus*	Valley sky lupine	annual herb	native	-	-	NL
Fabaceae	*Trifolium willdenovii*	tomcat clover	forb	native	--	--	NL
Fabaceae	*Vicia sativa*	Spring vetch	annual herb, vine	non-native	-	-	FACU
Fabaceae	*Vicia sativa* ssp. *sativa*	pubescent common vetch	forb	non-native	--	--	FACU
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak	tree	native	--	--	NL
Fagaceae	*Quercus lobata*	valley oak	tree	native	--	--	FACU
Geraniaceae	*Erodium botrys*	long beaks storkbill	forb	non-native	--	assessed	FACU
Geraniaceae	*Geranium dissectum*	wild geranium	annual herb	non-native	-	limited	NL
Iridaceae	*Iris douglasiana*	Douglas iris	perennial herb	native	-	-	NL
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	forb	native	--	--	FACW
Juncaceae	*Juncus patens*	Rush	perennial grasslike herb	native	-	-	FACW
Juncaceae	*Juncus phaeocephalus* var. *phaeocephalus*	brownhead rush	graminoid	native	--	--	FACW
Lamiaceae	*Mentha pulegium*	pennyroyal	forb	non-native	--	moderate	OBL
Lamiaceae	*Mentha spicata*	spearmint	forb	non-native	--	--	OBL
Lauraceae	*Umbellularia californica*	California bay	tree	native	--	--	FAC
Linaceae	*Linum bienne*	Flax	annual herb	non-native	-	-	NL

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Lythraceae	*Lythrum hyssopifolia*	hyssop loosestrife	forb	non-native	--	moderate	OBL
Oleaceae	*Fraxinus latifolia*	Oregon ash	tree	native	--	--	FACW
Onagraceae	*Epilobium ciliatum* ssp. *ciliatum*	fringed willowherb	forb	native	--	--	FACW
Phrymaceae	*Mimulus cardinalis*	scarlet monkeyflower	forb	native	--	--	FACW
Plantaginaceae	*Kickxia elatine*	sharpleaf cancerwort	forb	non-native	--	--	UPL
Plantaginaceae	*Plantago lanceolata*	English plantain	forb	non-native	--	limited	FAC
Plantaginaceae	*Veronica arvensis*	corn speedwell	forb	non-native	--	--	FACU
Poaceae	*Avena barbata*	slender oat	graminoid	non-native	--	moderate	NL
Poaceae	*Brachypodium distachyon*	false brome	graminoid	non-native	--	moderate	NL
Poaceae	*Briza maxima*	big quakinggrass	graminoid	non-native	--	limited	NL
Poaceae	*Briza minor*	little quakgrass	graminoid	non-native	--	--	FAC
Poaceae	*Bromus diandrus*	Ripgut brome	annual grass	non-native (invasive)	-	Moderate	NL
Poaceae	*Bromus hordeaceus*	Soft chess	annual grass	non-native (invasive)	-	Limited	FACU
Poaceae	*Cynodon dactylon*	Bermuda grass	graminoid	non-native	--	moderate	FACU
Poaceae	*Danthonia californica*	California oatgrass	perennial grass	native	-	-	FACU
Poaceae	*Digitaria ischaemum*	smooth crabgrass	graminoid	non-native	--	--	FACU
Poaceae	*Ehrharta erecta*	panic veldtgrass	graminoid	non-native	--	moderate	NL
Poaceae	*Elymus glaucus* ssp. *glaucus*	blue wildrye	graminoid	native	--	--	FACU
Poaceae	*Festuca bromoides*	brome fescue	graminoid	non-native	--	--	FACU
Poaceae	*Festuca perennis*	Italian rye grass	graminoid	non-native	--	moderate	FAC
Poaceae	*Hordeum marinum* ssp. *gussoneanum*	Mediterranean barley	graminoid	non-native	--	moderate	FAC
Poaceae	*Paspalum dilatatum*	dallis grass	graminoid	non-native	--	--	FAC
Poaceae	*Phalaris aquatica*	harding grass	graminoid	non-native	--	moderate	FACU
Poaceae	*Pleuropogon californicus*	semaphore grass	perennial grass (rhizomatous)	native	-	-	OBL
Poaceae	*Poa annua*	annual bluegrass	graminoid	non-native	--	--	FACU
Poaceae	*Polypogon monspeliensis*	rabbit's-foot grass	graminoid	non-native	--	limited	FACW

Family	Scientific name	Common name	Life form	Origin	Rare Status[1]	Invasive Status[2]	Wetland indicator[3]
Poaceae	*Stipa pulchra*	purple needlegrass	graminoid	native	--	--	NL
Polygonaceae	*Persicaria hydropiperoides*	common smartweed	forb	native	--	--	OBL
Polygonaceae	*Persicaria punctata*	dotted smartweed	forb	native	--	--	OBL
Polygonaceae	*Polygonum aviculare* ssp. *aviculare*	dooryard knotweed	forb	non-native	--	--	FACW
Polygonaceae	*Rumex acetosella*	common sheep sorrel	forb	non-native	--	moderate	FACU
Polygonaceae	*Rumex pulcher*	fiddle dock	forb	non-native	--	--	FAC
Rosaceae	*Rubus armeniacus*	Himalayan blackberry	shrub	non-native	--	high	FACU
Rosaceae	*Rubus ursinus*	California blackberry	shrub	native	--	--	FACU
Salicaceae	*Salix lasiolepis*	arroyo willow	tree	native	--	--	FACW
Sapindaceae	*Aesculus californica*	California buckeye	tree	native	--	--	NL
Urticaceae	*Urtica dioica* ssp. *holosericea*	hoary nettle	forb	native	--	--	FAC

All species identified using the *Jepson Manual II: Vascular Plants of California* (Baldwin et al. 2012) and *Marin Flora* (Howell et al. 2007); Nomenclature follows Baldwin et al. 2012

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2016)

- FE: Federal Endangered
- FT: Federal Threatened
- SE: State Endangered
- ST: State Threatened
- SR: State Rare
- Rank 1A: Plants presumed extirpated 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 more 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

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2016)

- High: Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
- Moderate: Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited-moderate distribution ecologically
- Limited: Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
- Assessed: Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, California (Lichvar 2016)

- OBL: Almost always found in wetlands; >99% frequency
- FACW: Usually found in wetlands; 67-99% frequency
- FAC: Equally found in wetlands and uplands; 34-66% frequency

FACU:	Usually not found in wetlands; 1-33% frequency
UPL:	Almost never found in wetlands; >1% frequency
NL:	Not listed, assumed almost never found in wetlands; >1% frequency
NI:	No information; not factored during wetland delineation

Table A-2. Wildlife Species Observed in the Study Area on August 12, 2015.

Common Name (status if applicable)	Species
BIRDS	
Western scrub-jay	*Aphelocoma californica*
great egret	*Ardea alba*
American crow	*Corvus brachyrhynchos*
dark-eyed junco	*Junco hyemalis*
FISHES	
three-spine stickleback	*Gasterosteus aculeatus*
REPTILES	
Western fence lizard	*Sceloporus occidentalis*

*** Key to status codes:**

FE	Federal Endangered
FT	Federal Threatened
FC	Federal Candidate
FD	Federal De-listed
BCC	USFWS Birds of Conservation Concern
SE	State Endangered
SD	State Delisted
ST	State Threatened
SR	State Rare
SSC	CDFG Species of Special Concern
CFP	CDFG Fully Protected Animal
WBWG	Western Bat Working Group High or Medium Priority species

APPENDIX B

SPECIAL-STATUS SPECIES DATABASE SEARCHES

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)
 AND Quad IS (Bolinas (3712286) OR Novato (3812215) OR Petaluma (3812226) OR Petaluma Point (3812214) OR Petaluma River (3812225) OR San Geronimo (3812216) OR San Quentin (3712284) OR San Rafael (3712285) OR Sears Point (3812224))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Allium peninsulare var. franciscanum Franciscan onion	PMLIL021R1	None	None	G5T1	S1	1B.2
Alopecurus aequalis var. sonomensis Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
Amorpha californica var. napensis Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
Amsinckia lunaris bent-flowered fiddleneck	PDBOR01070	None	None	G2G3	S2S3	1B.2
Arctostaphylos montana ssp. montana Mt. Tamalpais manzanita	PDERI040J5	None	None	G3T3	S3	1B.3
Arctostaphylos virgata Marin manzanita	PDERI041K0	None	None	G2	S2	1B.2
Astragalus pycnostachyus var. pycnostachyus coastal marsh milk-vetch	PDFAB0F7B2	None	None	G2T2	S2	1B.2
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T2	S2	1B.2
Blennosperma bakeri Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
Calamagrostis crassiglumis Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.2
Calochortus tiburonensis Tiburon mariposa-lily	PMLIL0D1C0	Threatened	Threatened	G1	S1	1B.1
Cardamine angulata seaside bittercress	PDBRA0K010	None	None	G5	S1	2B.1
Carex lyngbyei Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
Castilleja affinis var. neglecta Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1T2	S1S2	1B.2
Ceanothus decornutus Nicasio ceanothus	PDRHA04440	None	None	G1	S1	1B.2
Ceanothus masonii Mason's ceanothus	PDRHA04200	None	Rare	G1	S1	1B.2
Centromadia parryi ssp. parryi pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
Chloropyron molle ssp. molle soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
Chorizanthe cuspidata var. cuspidata San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
Chorizanthe valida Sonoma spineflower	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
Cirsium hydrophilum var. vaseyi Mt. Tamalpais thistle	PDAST2E1G2	None	None	G2T1	S1	1B.2
Delphinium bakeri Baker's larkspur	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
Delphinium luteum golden larkspur	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
Dirca occidentalis western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Entosthodon kochii Koch's cord moss	NBMUS2P050	None	None	G1	S1	1B.3
Eriogonum luteolum var. caninum Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fritillaria lanceolata var. tristulis Marin checker lily	PMLIL0V0P1	None	None	G5T2	S2	1B.1
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia capitata ssp. chamissonis blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
Gilia capitata ssp. tomentosa woolly-headed gilia	PDPLM040B9	None	None	G5T1	S1	1B.1
Gilia millefoliata dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
Helianthella castanea Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	PDAST4R065	None	None	G5T1T2	S1S2	1B.2
Hesperolinon congestum Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Horkelia tenuiloba thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2
Kopsiopsis hookeri small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
Lasthenia conjugens Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
Lessingia micradenia var. micradenia Tamalpais lessingia	PDAST5S063	None	None	G2T2	S2	1B.2
Lilium pardalinum ssp. pitkinense Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
Microseris paludosa marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
Mielichhoferia elongata elongate copper moss	NBMUS4Q022	None	None	G5	S4	4.3
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Navarretia rosulata Marin County navarretia	PDPLM0C0Z0	None	None	G2	S2	1B.2
Pentachaeta bellidiflora white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
Plagiobothrys glaber hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
Plagiobothrys mollis var. vestitus Petaluma popcornflower	PDBOR0V0Q2	None	None	G4?TX	SX	1A
Pleuropogon hooverianus North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
Polygonum marinense Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
Quercus parvula var. tamalpaisensis Tamalpais oak	PDFAG051Q3	None	None	G4T2	S2	1B.3
Sidalcea calycosa ssp. rhizomata Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
Sidalcea hickmanii ssp. viridis Marin checkerbloom	PDMAL110A4	None	None	G3T1T2	S1S2	1B.3
Stebbinsoseris decipiens Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
Streptanthus batrachopus Tamalpais jewelflower	PDBRA2G050	None	None	G2	S2	1B.3
Streptanthus glandulosus ssp. niger Tiburon jewelflower	PDBRA2G0T0	Endangered	Endangered	G4T1	S1	1B.1
Streptanthus glandulosus ssp. pulchellus Mt. Tamalpais bristly jewelflower	PDBRA2G0J2	None	None	G4T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Symphyotrichum lentum Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
Trifolium amoenum two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Triquetrella californica coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2

Record Count: 64

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)
 AND Quad IS (Bolinas (3712286) OR Novato (3812215) OR Petaluma (3812226) OR Petaluma Point (3812214) OR Petaluma River (3812225) OR San Geronimo (3812216) OR San Quentin (3712284) OR San Rafael (3712285) OR Sears Point (3812224))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Adela oplerella Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Candidate Threatened	G2G3	S1S2	SSC
Ambystoma californiense California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Andrena blennospermatis Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Aplodontia rufa phaea Point Reyes mountain beaver	AMAFA01012	None	None	G5T2	S2	SSC
Ardea alba great egret	ABNGA04040	None	None	G5	S4	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Asio flammeus short-eared owl	ABNSB13040	None	None	G5	S3	SSC
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	None	G2G3	S1	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Caecidotea tomalensis Tomales isopod	ICMAL01220	None	None	G2	S2S3	
Calicina diminua Marin blind harvestman	ILARAU8040	None	None	G1	S1	
Callophrys mossii bayensis San Bruno elfin butterfly	IILEPE2202	Endangered	None	G4T1	S1	
Callophrys mossii marinensis Marin elfin butterfly	IILEPE2207	None	None	G4T1	S1	
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Circus cyaneus northern harrier	ABNKC11010	None	None	G5	S3	SSC
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Cypseloides niger black swift	ABNUA01010	None	None	G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
Egretta thula snowy egret	ABNGA06030	None	None	G5	S4	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
Geothlypis trichas sinuosa saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
Hydrochara rickseckeri Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lavinia symmetricus ssp. 2 Tomales roach	AFCJB19022	None	None	G4T2T3	S2	SSC
Melospiza melodia pusillula Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2S3	SSC
Melospiza melodia samuelis San Pablo song sparrow	ABPBXA301W	None	None	G5T2?	S2?	SSC
Microcina tiburona Tiburon micro-blind harvestman	ILARA47060	None	None	G1	S1	
Microtus californicus sanpabloensis San Pablo vole	AMAFF11034	None	None	G5T1T2	S1S2	SSC
Nycticorax nycticorax black-crowned night heron	ABNGA11010	None	None	G5	S4	
Oncorhynchus kisutch coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Oncorhynchus mykiss irideus steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	
Phalacrocorax auritus double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
Pogonichthys macrolepidotus Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
Pomatiopsis binneyi robust walker	IMGASJ9010	None	None	G1	S1	
Rallus longirostris obsoletus California clapper rail	ABNME05016	Endangered	Endangered	G5T1	S1	FP
Rana boylii foothill yellow-legged frog	AAABH01050	None	None	G3	S3	SSC
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys raviventris salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sorex ornatus sinuosus Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
Sorex vagrans halicoetes salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
Speyeria zerene sonomensis Sonoma zerene fritillary	IILEPJ6083	None	None	G5T1	S1	
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	SSC
Syncaris pacifica California freshwater shrimp	ICMAL27010	Endangered	Endangered	G1	S1	
Talanites ubicki Ubick's gnaphosid spider	ILARA98030	None	None	G1	S1	
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S3	
Trachusa gummifera San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
Vespericola marinensis Marin hesperian	IMGASA4140	None	None	G2	S2	

Record Count: 59

CNPS California Native Plant Society Rare and Endangered Plant Inventory

Plant List

93 matches found. *Click on scientific name for details*

Search Criteria

Found in 9 Quads around 38122A5

Scientific Name	Common Name	Family	Lifeform	Rare Plant Rank	State Rank	Global Rank
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	1B.2	S1	G5T1
Alopecurus aequalis var. sonomensis	Sonoma alopecurus	Poaceae	perennial herb	1B.1	S1	G5T1
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	1B.2	S2	G4T2
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	1B.2	S2S3	G2G3
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	4.3	S4	G4
Arctostaphylos montana ssp. montana	Mt. Tamalpais manzanita	Ericaceae	perennial evergreen shrub	1B.3	S3	G3T3
Arctostaphylos virgata	Marin manzanita	Ericaceae	perennial evergreen shrub	1B.2	S2	G2
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	Pteridaceae	perennial rhizomatous herb	4.2	S3	G3
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	4.2	S3	G3
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Fabaceae	perennial herb	1B.2	S2	G2T2
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	1B.2	S2	G2T2
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual herb	1B.1	S1	G1
Calamagrostis crassiglumis	Thurber's reed grass	Poaceae	perennial rhizomatous herb	2B.1	S2	G3Q
Calamagrostis ophitidis	serpentine reed grass	Poaceae	perennial herb	4.3	S3	G3
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	4.2	S4	G4
California macrophylla	round-leaved filaree	Geraniaceae	annual herb	1B.2	S3?	G3?
Calochortus tiburonensis	Tiburon mariposa lily	Liliaceae	perennial bulbiferous herb	1B.1	S1	G1
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	4.2	S4	G4
Cardamine angulata	seaside bittercress	Brassicaceae	perennial herb	2B.1	S1	G5
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	2B.2	S3	G5
Castilleja affinis var. neglecta	Tiburon paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	1B.2	S1S2	G4G5T1T2
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	4.2	S4	G4T5
Ceanothus decornutus	Nicasio ceanothus	Rhamnaceae	perennial shrub	1B.2	S1	G1

Ceanothus gloriosus var. exaltatus	glory brush	Rhamnaceae	perennial evergreen shrub	4.3	S4	G4T4
Ceanothus gloriosus var. gloriosus	Point Reyes ceanothus	Rhamnaceae	perennial evergreen shrub	4.3	S4	G4T4
Ceanothus masonii	Mason's ceanothus	Rhamnaceae	perennial evergreen shrub	1B.2	S1	G1
Ceanothus pinetorum	Kern ceanothus	Rhamnaceae	perennial evergreen shrub	4.3	S3	G3
Ceanothus rigidus	Monterey ceanothus	Rhamnaceae	perennial evergreen shrub	4.2	S4	G4
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	1B.2	S2	G3T2
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S2	G4?T2
Chloropyron molle ssp. molle	soft bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	S1	G2T1
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	Polygonaceae	annual herb	1B.2	S1	G2T1
Chorizanthe valida	Sonoma spineflower	Polygonaceae	annual herb	1B.1	S1	G1
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	Asteraceae	perennial herb	1B.2	S1	G2T1
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	4.2	S3	G3G4
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	1B.2	S1	G1
Cypripedium californicum	California lady's-slipper	Orchidaceae	perennial rhizomatous herb	4.2	S4	G4
Delphinium bakeri	Baker's larkspur	Ranunculaceae	perennial herb	1B.1	S1	G1
Delphinium luteum	golden larkspur	Ranunculaceae	perennial herb	1B.1	S1	G1
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	1B.2	S2	G2
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	2B.2	S2	GU
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	4.3	S4	G5
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	4.3	S4	G4
Entosthodon kochii	Koch's cord moss	Funariaceae	moss	1B.3	S1	G1
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	3	S3?	G3?
Eriogonum luteolum var. caninum	Tiburon buckwheat	Polygonaceae	annual herb	1B.2	S2	G5T2
Erysimum franciscanum	San Francisco wallflower	Brassicaceae	perennial herb	4.2	S3	G3
Fissidens pauperculus	minute pocket moss	Fissidentaceae	moss	1B.2	S2	G3?
Fritillaria lanceolata var. tristulis	Marin checker lily	Liliaceae	perennial bulbiferous herb	1B.1	S2	G5T2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	1B.2	S2	G2
Gilia capitata ssp. chamissonis	blue coast gilia	Polemoniaceae	annual herb	1B.1	S2	G5T2
Gilia capitata ssp. tomentosa	woolly-headed gilia	Polemoniaceae	annual herb	1B.1	S1	G5T1
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	1B.2	S2	G2
Grindelia hirsutula var. maritima	San Francisco gumplant	Asteraceae	perennial herb	3.2	S1	G5T1Q
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	1B.2	S2	G2
Hemizonia congesta ssp.	congested-headed	Asteraceae	annual herb	1B.2	S1S2	G5T1T2

congesta	hayfield tarplant					
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	1B.1	S1	G1
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	1B.1	S1	G1
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	perennial herb	1B.2	S2	G2
Kopsiopsis hookeri	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	2B.3	S1S2	G4?
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	1B.1	S1	G1
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Leptosiphon croceus	coast yellow leptosiphon	Polemoniaceae	annual herb	1B.1	S1	G1
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	4.2	S3	G3
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	3	S3?	G3?
Lessingia micradenia var. micradenia	Tamalpais lessingia	Asteraceae	annual herb	1B.2	S2	G2T2
Lilium pardalinum ssp. pitkinense	Pitkin Marsh lily	Liliaceae	perennial bulbiferous herb	1B.1	S1	G5T1
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	3.2	S3S4	G3G4
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	1B.2	S2	G2
Mielichhoferia elongata	elongate copper moss	Mielichhoferiaceae	moss	4.3	S4	G5
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	1B.1	S2	G4T2
Navarretia rosulata	Marin County navarretia	Polemoniaceae	annual herb	1B.2	S2	G2
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	1B.1	S1	G1
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	Apiaceae	perennial herb	4.2	S4	G5T4
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	4.2	S3	G3
Plagiobothrys glaber	hairless popcornflower	Boraginaceae	annual herb	1A	SH	GH
Plagiobothrys mollis var. vestitus	Petaluma popcornflower	Boraginaceae	perennial herb	1A	SX	G4?TX
Pleuropogon hooverianus	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	1B.1	S2	G2
Pleuropogon refractus	nodding semaphore grass	Poaceae	perennial rhizomatous herb	4.2	S4	G4
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	3.1	S2	G2Q
Quercus parvula var. tamalpaisensis	Tamalpais oak	Fagaceae	perennial evergreen shrub	1B.3	S2	G4T2
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb	4.2	S3	G4
Ribes victoris	Victor's gooseberry	Grossulariaceae	perennial deciduous shrub	4.3	S4	G4
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	Malvaceae	perennial rhizomatous herb	1B.2	S2	G5T2
Sidalcea hickmanii ssp. viridis	Marin checkerbloom	Malvaceae	perennial herb	1B.1	SH	G3TH
Stebbinsoseris decipiens	Santa Cruz microseris	Asteraceae	annual herb	1B.2	S2	G2
Streptanthus batrachopus	Tamalpais jewelflower	Brassicaceae	annual herb	1B.3	S2	G2
Streptanthus glandulosus ssp. niger	Tiburon jewelflower	Brassicaceae	annual herb	1B.1	S1	G4T1
Streptanthus glandulosus ssp. pulchellus	Mt. Tamalpais bristly jewelflower	Brassicaceae	annual herb	1B.2	S2	G4T2

Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	1B.2	S2	G2
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	1B.2	S2	G2
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2	S2	G2

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U.S. Fish & Wildlife Service

ECOS

ECOS / Species Reports / Species By County Report

Species By County Report

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the IPaC application.

County: Marin, CA

Group	Name	Population	Status	Lead Office	Recovery Plan Name	Recovery Plan Action Status	Recovery Plan Stage
Amphibians	California tiger Salamander (*Ambystoma californiense*)	U.S.A. (CA - Sonoma County)	Endangered	Sacramento Fish and Wildlife Office	Draft Recovery Plan for the Santa Rosa Plain	Recovery efforts in progress, but no implementation information yet to display.	Draft
Birds	Short-tailed albatross (*Phoebastria (=Diomedea) albatrus*)	Entire	Endangered	Anchorage Fish and Wildlife Field Office	Short-Tailed Albatross (Phoebastria albatrus) Final Recovery Plan	Implementation Progress	Final
	California least tern (*Sterna antillarum browni*)		Endangered	Carlsbad Fish and Wildlife Office	Revised California Least Tern Recovery Plan	Implementation Progress	Final Revision 1
	California clapper rail (*Rallus longirostris obsoletus*)	Entire	Endangered	San Francisco Bay-Delta Fish and Wildlife	Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California	Implementation Progress	Final
	Yellow-billed Cuckoo (*Coccyzus americanus*)	Western U.S. DPS	Threatened	Sacramento Fish and Wildlife Office	-	-	-
	Western snowy plover (*Charadrius alexandrinus nivosus*)	Pacific coastal pop.	Threatened	Arcata Fish and Wildlife Office	Final Recovery Plan for the Western Snowy Plover	Implementation Progress	Final
	Northern spotted owl (*Strix occidentalis*	Entire	Threatened	Oregon Fish and Wildlife	Revised Recovery Plan for the Northern	Implementation Progress	Final Revision 1

	caurina)			Office	Spotted Owl		
	Marbled murrelet (*Brachyramphus marmoratus*)	CA, OR, WA	Threatened	Washington Fish and Wildlife Office	Recovery Plan for the Threatened Marbled Murrelet (Brachyramphus marmoratus) in Washington, Oregon, and California	Implementation Progress	Final
Crustaceans	California freshwater shrimp (*Syncaris pacifica*)	Entire	Endangered	Sacramento Fish and Wildlife Office	California Freshwater Shrimp (Syncaris pacifica Holmes) Recovery Plan	Implementation Progress	Final
Fishes	Delta smelt (*Hypomesus transpacificus*)	Entire	Threatened	San Francisco Bay-Delta Fish and Wildlife	Recovery Plan for the Sacramento-San Joaquin Delta Native Fishes	Implementation Progress	Final
	Tidewater goby (*Eucyclogobius newberryi*)	Entire	Endangered	Ventura Fish and Wildlife Office	Recovery Plan for the Tidewater Goby (Eucyclogobius newberryi)	Implementation Progress	Final
Flowering Plants	Sonoma alopecurus (*Alopecurus aequalis var. sonomensis*)		Endangered	Sacramento Fish and Wildlife Office	-	-	-
	Soft bird's-beak (*Cordylanthus mollis ssp. mollis*)		Endangered	San Francisco Bay-Delta Fish and Wildlife	Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California	Implementation Progress	Final
	Baker's larkspur (*Delphinium bakeri*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Baker's Larkspur (Delphinium bakeri)	Implementation Progress	Final
	Yellow larkspur (*Delphinium luteum*)		Endangered	Sacramento Fish and Wildlife Office	-	-	-
	Santa Cruz		Threatened	Ventura	-	-	-

	tarplant (*Holocarpha macradenia*)			Fish and Wildlife Office			
	Contra Costa goldfields (*Lasthenia conjugens*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon	Implementation Progress	Final
	Pitkin Marsh lily (*Lilium pardalinum ssp. pitkinense*)		Endangered	Sacramento Fish and Wildlife Office	-	-	-
	Presidio Manzanita (*Arctostaphylos hookeri var. ravenii*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Coastal Plants of the Northern San Francisco Peninsula	Implementation Progress	Final
	Sonoma sunshine (*Blennosperma bakeri*)		Endangered	Sacramento Fish and Wildlife Office	Draft Recovery Plan for the Santa Rosa Plain	Recovery efforts in progress, but no implementation information yet to display.	Draft
	Tiburon mariposa lily (*Calochortus tiburonensis*)		Threatened	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area	Implementation Progress	Final
	Sonoma spineflower (*Chorizanthe valida*)		Endangered	Sacramento Fish and Wildlife Office	Seven Coastal Plants and the Myrtle's Silverspot Butterfly Recovery Plan	Implementation Progress	Final
	Presidio clarkia (*Clarkia franciscana*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area	Implementation Progress	Final
	Marin dwarf-flax (*Hesperolinon congestum*)		Threatened	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area	Implementation Progress	Final

	Burke's goldfields (*Lasthenia burkei*)		Endangered	Sacramento Fish and Wildlife Office	Draft Recovery Plan for the Santa Rosa Plain	Recovery efforts in progress, but no implementation information yet to display.	Draft
	Sebastopol meadowfoam (*Limnanthes vinculans*)		Endangered	Sacramento Fish and Wildlife Office	Draft Recovery Plan for the Santa Rosa Plain	Recovery efforts in progress, but no implementation information yet to display.	Draft
	Tiburon jewelflower (*Streptanthus niger*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area	Implementation Progress	Final
	Showy Indian clover (*Trifolium amoenum*)		Endangered	Sacramento Fish and Wildlife Office	-	-	-
	San Francisco manzanita (*Arctostaphylos franciscana*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Outline for the Arctostaphylos franciscana (Franciscan manzanita)	Recovery efforts in progress, but no implementation information yet to display.	Outline
	Marsh Sandwort (*Arenaria paludicola*)		Endangered	Ventura Fish and Wildlife Office	Recovery Plan for Marsh Sandwort (Arenaria paludicola) and Gambel's Watercress (Rorippa gambelii)	Implementation Progress	Final
	Tiburon paintbrush (*Castilleja affinis ssp. neglecta*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area	Implementation Progress	Final
	Clover lupine (*Lupinus tidestromii*)		Endangered	Sacramento Fish and Wildlife Office	Seven Coastal Plants and the Myrtle's Silverspot Butterfly	Implementation Progress	Final

					Recovery Plan		
	White-rayed pentachaeta (*Pentachaeta bellidiflora*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area	Implementation Progress	Final
	Beach layia (*Layia carnosa*)		Endangered	Arcata Fish and Wildlife Office	Seven Coastal Plants and the Myrtle's Silverspot Butterfly Recovery Plan	Implementation Progress	Final
	San Francisco lessingia (*Lessingia germanorum (=L.g. var. germanorum)*)		Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for Coastal Plants of the Northern San Francisco Peninsula	Implementation Progress	Final
	Robust spineflower (*Chorizanthe robusta var. robusta*)		Endangered	Ventura Fish and Wildlife Office	Recovery Plan for Robust Spineflower (Chorizanthe robusta robusta)	Implementation Progress	Final
Insects	Mission blue butterfly (*Icaricia icarioides missionensis*)	Entire	Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for San Bruno Elfin and Mission Blue Butterflies	Implementation Progress	Final
	Myrtle's silverspot butterfly (*Speyeria zerene myrtleae*)	Entire	Endangered	Sacramento Fish and Wildlife Office	Seven Coastal Plants and the Myrtle's Silverspot Butterfly Recovery Plan	Implementation Progress	Final
	San Bruno elfin butterfly (*Callophrys mossii bayensis*)	Entire	Endangered	Sacramento Fish and Wildlife Office	Recovery Plan for San Bruno Elfin and Mission Blue Butterflies	Implementation Progress	Final
	Callippe silverspot butterfly (*Speyeria callippe callippe*)	Entire	Endangered	Sacramento Fish and Wildlife Office	-	-	-
	Bay checkerspot butterfly (*Euphydryas editha bayensis*)	Entire	Threatened	Sacramento Fish and Wildlife Office	Recovery Plan for Serpentine Soil Species of the San Francisco Bay	Implementation Progress	Final

					Area		
Mammals	Salt marsh harvest mouse (*Reithrodontomys raviventris*)	wherever found	Endangered	San Francisco Bay-Delta Fish and Wildlife	Recovery Plan for Tidal Marsh Ecosystems of Northern and Central California	Implementation Progress	Final
	Southern sea otter (*Enhydra lutris nereis*)		Threatened	Ventura Fish and Wildlife Office	Final Revised Recovery Plan for the Southern Sea Otter (Enhydra lutris nereis)	Implementation Progress	Final Revision 1
Reptiles	Leatherback sea turtle (*Dermochelys coriacea*)	Entire	Endangered	North Florida Ecological Services Field Office	Recovery Plan for Leatherback Turtles in the U.S. Caribbean, Atlantic, and Gulf of Mexico	Implementation Progress	Final Revision 1
					Recovery Plan for U.S. Pacific Populations of the Leatherback Turtle	Implementation Progress	Final Revision 1
	Green sea turtle (*Chelonia mydas*)	Except where endangered	Threatened	North Florida Ecological Services Field Office	Recovery Plan for U.S. Pacific Populations of the Green Turtle	Implementation Progress	Final Revision 1
					Recovery Plan for U.S. Population of Atlantic Green Turtle	Implementation Progress	Final Revision 1
	Olive ridley sea turtle (*Lepidochelys olivacea*)	Except where endangered	Threatened	North Florida Ecological Services Field Office	Recovery Plan for U.S. Pacific Populations of the Olive Ridley Turtle	Implementation Progress	Final Revision 1

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APPENDIX C

SITE PHOTOGRAPHS

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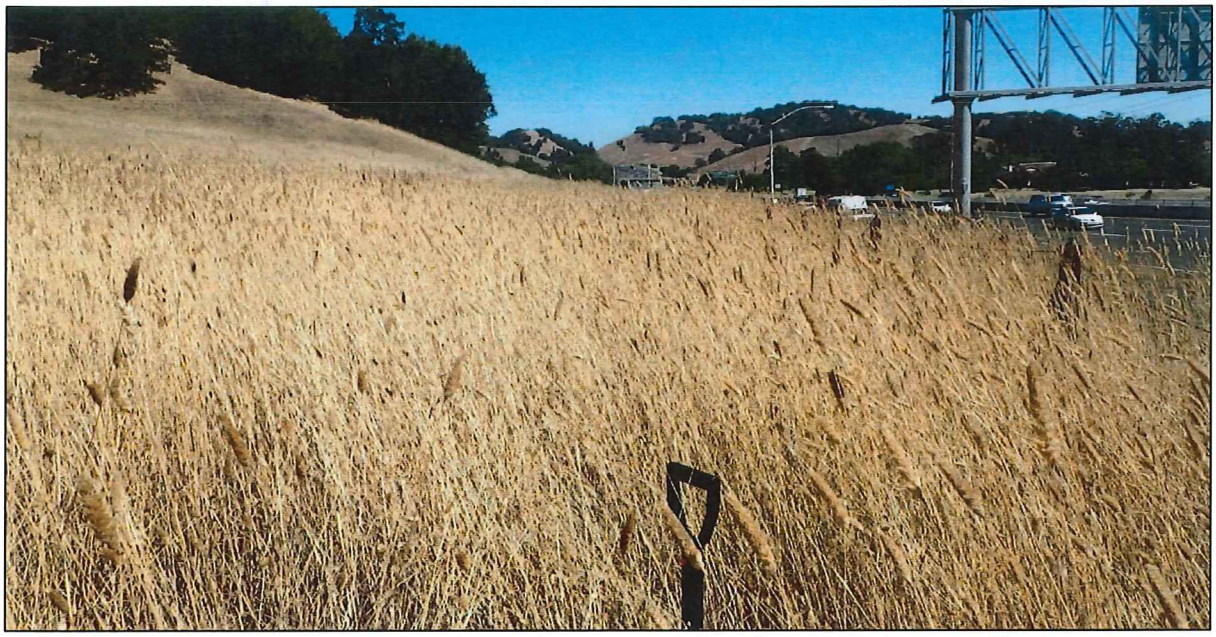
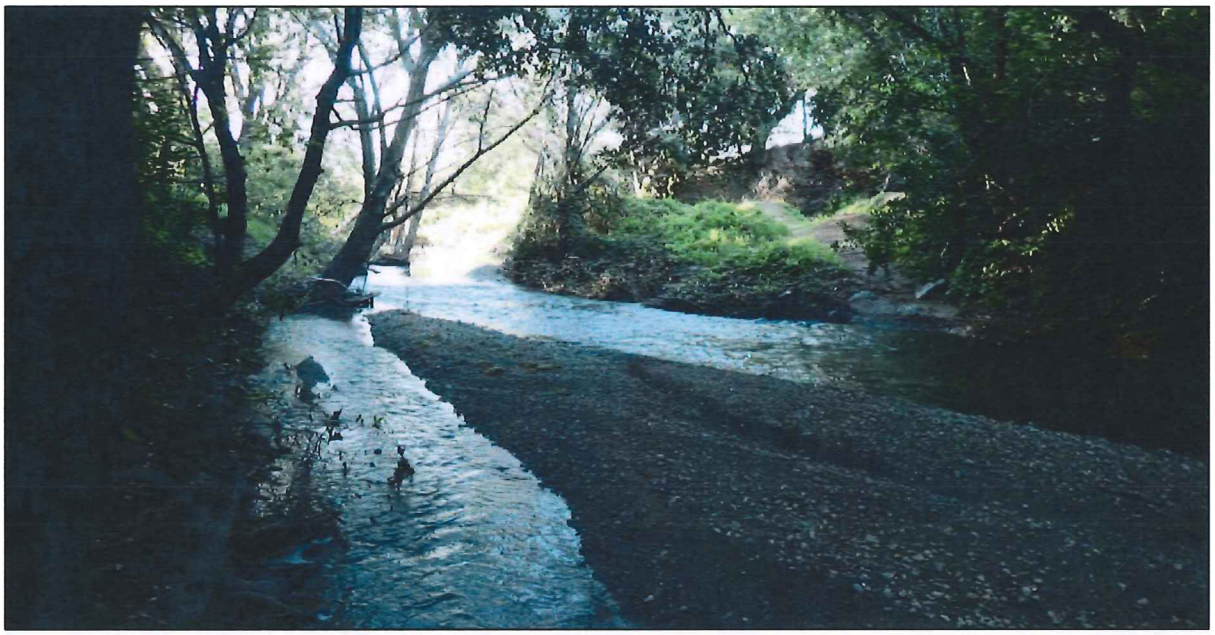


Photograph 1. Photograph depicting non-native grassland dominated by Harding grass (*Phalaris aquatica*). Photograph location is in previously delineated wetland feature, determined to be upland in 2015 and 2016 site visits. Photograph taken August 12, 2015.

Photograph 2. Photograph depicting purple needlegrass grassland dominated by purple needlegrass (*Stipa pulchra*) in the foreground and non-native grassland dominated by slim oat (*Avena barbata*) in the background. Photograph taken August 12, 2015.

Photograph 3. Photograph depicting BMX bike jump track disturbance within the riparian coast live oak woodland community. Trash and invasive Himalayan blackberry (*Rubus armeniacus*) are shown on the right. Photograph taken August 12, 2015.



Photograph 4. Photograph depicting perennial stream (Miller Creek) near the site of the proposed bridge crossing. Photograph taken March 17, 2016.

Photograph 5. Photograph depicting seasonal wetland located on former road cut within the Study Area. Photograph taken at peak of inundation on March 17, 2016.

Photograph 6. Photograph depicting seasonal wetland during the dry season. Photograph taken August 12, 2016.

Photograph 7. Photograph depicting broom patch dominated by French broom (*Genista monspessulana*). Photograph taken March 17, 2016.

Photograph 8. Photograph depicting non-native annual grassland in the southern portion of the Study Area, the site of the proposed building facilities. Coast live oak woodland is visible in the background on the right. Photograph taken April 19, 2016.